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Federal Budgetary Institution of Science Institute of Socio-Economic Development of Territories of Russian Academy of Science (ISEDT RAS), which existed as Vologda Scientific Coordinating Center of Central Economic and Mathematical Institute of RAS until March 2009, is situated on the territory of the Vologda Oblast. V.A. Ilyin, Doctor of Economics, Professor, Honored Scientist of Russia, is the permanent director of the Institute. A lot of great scientists have played an important role in the formation and the development of ISEDT RAS as a scientific institution such as: academicians D.S. Lvov, V.L. Makarov, V.I. Mayevsky, A.D. Nekipelov, Y.S. Osipov. Everything that has been done before and is being done nowadays by the personnel of the Institute, it would be impossible without the constant support of the Vologda Oblast's Government and city leaders.

The formation of the scientific personnel with an active life position, a great demand for Institute's investigation, academic community's support of the new journal published by ISEDT RAS, which combined efforts of the economic institutes of RAS in the Northwestern Federal District, and furthermore development of international ties have become the main outcomes of the last years.

MAIN RESEARCH DIRECTIONS

Due to the Resolution № 96 by the Presidium of Russian Academy of Sciences dated from March 31, 2009 ISEDT RAS carries out investigations in the following fields:

- problems of economic growth, scientific basis of regional policy, sustainable development of territories and municipalities, and transformations of socio-economic space;
- regional integration into global economic and political processes, problems of economic security and competitiveness of territorial socio-economic systems;
- territorial characteristics of living standards and lifestyle, behavioral strategies and world view of different groups of the Russian society;
- development of regional socio-economic systems, implementation of new forms and methods concerning territorial organization of society and economy, development of territories' recreational area;
- socio-economic problems regarding scientific and innovative transformation activities of territories;
- elaboration of society's informatization problems, development of intellectual technologies in information territorial systems, science and education.

INTERNATIONAL TIES AND PROJECTS

In order to integrate scientific activities of the Institute's scholars into global research area, every year international scientific conferences take place, which result in cooperation agreements.

Every year ISEDT RAS signs cooperation agreements with different scientific establishments:

2007 – Cooperation agreement is signed with Institute of Sociology, of the National Academy of Sciences of Belarus , Center for Sociological and Marketing Investigations at the "International Institute of Humanities and Economics" (Belarus, 2008).

2008 – Protocol of intentions is signed with Alexander's Institute at the Helsinki University (Finland, 2008).

2009 – Cooperation agreement is signed with Center for System Analysis of Strategic Investigations of NAS (Belarus, 2009).

2010 – Cooperation agreement is signed with Institute of Economics of the National Academy of Sciences of Belarus (Minsk, 2010).

2011 – Cooperation agreements are signed with National Institute of Oriental Languages and Civilizations (Paris, 2011), Institute of Business Economy at Eszterhazy Karoly College (Hungary, 2011), Republican research and production unitary enterprise "Energy Institute of NAS" (Belarus, 2011). Protocol of intentions are signed with Jiangxi Academy of Social Sciences (China, 2011), Research and Development Center for Evaluation and Socio-Economic Development and the Science Foundation of Abruzzo region (Italy, 2011).

2012 – Cooperation agreement is signed with Center for social research at the Dortmund Technical University (Germany, 2012).

2013 – Cooperation agreement is signed with Jiangxi Academy of Social Sciences (China, 2013).

July 2013 – The application for research performance by international consortium involving ISEDT RAS within the 7th Framework Programme of European Community.

NEW PUBLICATIONS OF ISEDT RAS

Shabunova A.A., Solov'eva T.S., Lastochkina M.A. Social Structure and Mobility in the Russian Society. Under scientific supervision of V.A. Ilyin

Problems of Social Consolidation: Disabled People in the Regional Community. Team of authors under editorship of A.A. Shabunova

Shabunova A.A., Rossoshanskii A.I., Belekhova G.V. Problems of Russia's Modernization. Human Well-Being: Trends and Prospects.

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Issues of Russia's Transition to the New Stage of Its Nation-Building

Vladimir Aleksandrovich ILYIN
Doctor of Economics, Professor, Honored Scientist of the Russian Federation
Institute of Socio-Economic Development of Territories of RAS
56A, Gorky Street, Vologda, 160014, Russian Federation, ilin@vscc.ac.ru

After the collapse of the Soviet Union, Russia found itself in a situation when all the ties existing between the republics of the Union were broken, ethnic relations deteriorated sharply, the social consequences of political and economic crisis aggravated. All this plunged millions of people into despair and led to an unprecedented differentiation of the society into the rich and the poor; it also caused an upsurge of social and political tensions, an increase in mortality, including mortality from suicide, which meant that Russian people were psychologically unable to adapt to the new conditions of life. In fact, the current "hybrid warfare"[1] against Russia was waged in that very period.

Many people link the new stage of the Russian history to the consequences of the "Crimean spring" (when Crimea and Sevastopol joined the Russian Federation) and to President Putin's successful foreign policy (especially in relation to the U.S. and the conflicts in Ukraine and Syria). However, in our opinion, this new stage started back in 2000, when, as a result of compromised decisions of various political forces, Vladimir Putin was elected President of the Russian Federation[2], which was followed by efforts to overcome degradation processes in Russia's economy and to eliminate profound consequences of the "turbulent 1990s".

The period of stabilization of the political and economic situation allowed the Russian society to accumulate a critical mass in anticipation of change, to relate the Western

[1] Glazyev S.Yu. *O vneshnikh i vnutrennikh ugrozakh ekonomicheskoi bezopasnosti Rossii v usloviyakh amerikanskoi agressii: doklad na zasedanii RAN 29 oktyabrya 2014 g.* [On the External and Internal Threats to Economic Security of Russia in the Conditions of American Aggression: a Report at the Meeting of the Russian Academy of Sciences, October 29, 2014]. Available at: http://promportalndg.ru/сергейглазьев-овнешнихивнутренних/

[2] Vladimir Putin became Acting President on December 31, 1999 after Boris Yeltsin's early retirement; March 26, 2000 Vladimir Putin won the presidential election with over 52% of the vote; May 7 he officially took office as Head of State.

values that penetrated into Russia in the early 1990s to the Russians' own mentality. In our view, this was a crucial and an integral part of the new stage of Russian statehood.

After a while, the policy aimed at stabilization ceased to meet the demands of the people – the society needed new ideas and actual steps that would make people proud of their country, just like the people of the past were proud of the achievements of the USSR: social protection, outstanding achievements in science, sport and art, and, of course, the victory in the Great Patriotic War and the contribution of Soviet scientists to the exploration of outer space[3].

The evidence that the post-Soviet society was developing a need for national identity became clear in 2007 when Vladimir Putin delivered his speech at the Munich Security Conference (February 2007). In the speech, the President of the Russian Federation for the first time "demonstrated the fundamental will of Russia, as a planetary geopolitical power, to participate in shaping the future world order"[4].

We can assume that the second step was Vladimir Putin's speech at the meeting of the Valdai International Discussion Club in September 2013. **It was "the first large-scale attempt on the part of Russia's authorities to formulate a new political ideology for Russia after the collapse of the Soviet Union and to consider from a critical perspective the issue concerning the values that must make the foundation of the new Russian identity, Eurasian peace and international relations"**[5].

After that, public attention was focused on the successful performance of the Russian team at the Olympic Games in Sochi (February 2014), accession of Crimea and Sevastopol to the Russian Federation (March 2014), armed aggression against the Donbass population launched by the Ukrainian authorities. All these events could not but strengthen the consolidation of different social groups and adherents of various political viewpoints.

It was not only the idea of revival of the "Russian world" and restoration of Russia's status as a major center of multipolar world order that has consolidated the people of Russia. Consolidation of the society was facilitated by concrete measures that the President took to "return Crimea and Sevastopol to their native harbor"[6], and by the successful efforts on the part of Russia's authorities that managed to implement successfully and in the shortest possible period the mega-project for building the sports, transport and tourist infrastructure in the framework of the Winter Olympics in Sochi.

[3] According to the 2007 VCIOM data, "the vast majority of Russians admires the exploits of the heroes of the Great Patriotic War of 1941–1945 (93%), and is proud of the Soviet designers who launched the first artificial Earth satellite in 1957 (84%) and sent the first man into space in 1961 (91%)". (Source: VCIOM: Russians are Proud of War Heroes and Space Explorers. Official Website of RBC. Available at: http://top.rbc.ru/society/19/01/2007/99081.shtml

[4] Dugin A. *Ekho "myunkhenskoi rechi". Prezident Putin vstupil na put' geopoliticheskoi revolyutsii* [Echo of the "Munich Speech". President Putin Embarked on a Path of Geopolitical Revolution]. Available at: http://okoplanet.su/politik/politikrus/230532aleksandrduginehomyunhenskoy-rechiprezidentputinvstupilnaputgeopoliticheskoyrevolyucii.html

[5] Makhmudov R. Valdaiskaya rech' Vladimira Putina: kriticheskii analiz [Vladimir Putin's Valdai Speech: a Critical Analysis]. *Informatsionnyi portal http://www.12news.uz/* [Information Portal http://www.12news.uz/]. Available at: http://www.12news.uz/news/2013/09/30/valdaiskayarech'-vladimiraputinakri/

[6] Stenogramma vystupleniya V.V. Putina na mitinge "My vmeste!" v podderzhku prinyatiya Kryma v sostav Rossiiskoi Federatsii 18 marta 2014 g. [Transcript of Vladimir Putin's Speech at the Meeting in Support of Crimea's Accession to the Russian Federation "We Are Together!"]. *Ofitsial'nyi sait Prezidenta Rossii* [Official Website of the President of Russia]. Available at: http://kremlin.ru/events/president/news/20607

In the middle of 2010s many scientists said that Russia was on the threshold of a new stage in its development: after almost 15 years of waiting, a "new resurgent" Russia at last made the transition to a new – "bright and optimistic" – age[7].

The new stage of Russia's history is largely connected with the events unfolding on the world stage. This leads to the realization of the people's need for national identity and for the return of the former greatness of the USSR that prior to its collapse was one of the two global superpowers.

It should be noted that recent armed conflicts that break out now and then only "pour oil on the flames" of international relations, while the "flame" itself is associated above all with the desperate attempts that certain countries undertake in fear of loosing the "right" to carry out "social experiments for export, to make attempts to push for changes within other countries based on ideological preferences"[8]. Iraq, Afghanistan, Yugoslavia, Libya, Ukraine, Syria – the armed conflicts in all of these countries involved the USA – the country that is spreading the so-called "democratic values" around the world ignoring the fact that in so doing it violates a basic principle of international law – the right to state sovereignty. The U.S. is facing the overaccumulation of capital in financial pyramids and obsolete industries, it is losing the markets on which it sells its products, and the share of the dollar in international transactions is decreasing. Consequently, the U.S. is trying to preserve its leadership by waging a world war for the purpose of weakening its competitors and partners as well[9].

Speaking at the 70th session of the UN General Assembly, Vladimir Putin quite clearly outlined the possible consequences of this strategy of building relations with international partners: "It would suffice to look at the situation in the Middle East and North Africa... An aggressive foreign interference has resulted in a brazen destruction of national institutions and the lifestyle itself. Instead of the triumph of democracy and progress, we got violence, poverty and social disaster. Nobody cares a bit about human rights, including the right to life"[10]. Russian President stressed that such behavior represents an attempt to undermine the credibility and legitimacy of the UN, which is an extremely dangerous act that can lead to the collapse of the entire architecture of international relations.

[7] Osipov G.V. Ne upustit' predostavivshiisya shans! [Do not Miss This Chance!]. *Sotsiologiya i ekonomika sovremennoi sotsial'noi real'nosti. Sotsial'naya i sotsial'no-politicheskaya situatsiya v Rossii v 2013 godu* [Sociology and Economics of the Current Social Reality. Social and Socio-Political Situation in Russia in 2013]. Moscow: ISPI RAN. P. 17.

[8] Stenogramma vystupleniya V.V. Putina na plenarnom zasedanii yubileinoi 70i sessii General'noi Assamblei OON [Transcript of Vladimir Putin's Speech at the Plenary Meeting of the Anniversary 70th Session of the UN General Assembly]. *Ofitsial'nyi sait Prezidenta RF* [Official Website of the President of Russia]. Available at: http://kremlin.ru/events/president/news/50385

[9] Glazyev S.Yu. O neotlozhnykh merakh po ukrepleniyu ekonomicheskoi bezopasnosti Rossii: doklad na zasedanii Soveta bezopasnosti 15.09.2015 [On Urgent Measures to Strengthen the Economic Security of Russia: a Report on the Meeting of the Security Council, September 15, 2015]. *Biznes Online: delovaya elektronnaya gazeta* [Business Online: the Business Online Newspaper], 2015, September 15. Available at: http://www.businessgazeta.ru/article/140998/

[10] Stenogramma vystupleniya V.V. Putina na plenarnom zasedanii yubileinoi 70i sessii General'noi Assamblei OON [Transcript of Vladimir Putin's Speech at the Plenary Meeting of the Anniversary 70th Session of the UN General Assembly]. *Ofitsial'nyi sait Prezidenta RF* [Official Website of the President of Russia]. Available at: http://kremlin.ru/events/president/news/50385

Besides, Vladimir Putin openly stated that in order to counter the spread of terrorism, Russia provides military and technological assistance to Iraq, Syria and other countries that fight against terrorist groups in this region. The subsequent military operation of the Russian air force in Syria carried out at the formal request of Syrian President Bashar al-Assad has shown that Russia in its fight against terrorism does not intend to do nothing but call for the establishment of an international coalition. Russia is willing to take real action on a legitimate basis.

Thus, if Vladimir Putin's 2007 Munich Speech carried a message that Russia was capable of acquiring the status of one of the centers of multipolar world order, then eight years later, as it follows from the speech of the President of the Russian Federation at the Anniversary Session of the UN General Assembly in September 2015, it is already clear that each of his conceptual messages has concrete actions behind it, or, at least, actual readiness for such actions. The accession of Crimea and Sevastopol to the Russian Federation, President Putin's firm position concerning the Ukrainian and Syrian issues, the establishment of relations with foreign partners in compliance with the inner understanding of ideological development that is supported by the vast majority of Russia's population, the pursuit of international politics from the position of equal partner (somewhere "walking a fine line", but always within the framework of international law) – all these facts implement the need of the Russian society for national identity and are, perhaps, the main element in the current support of the President.

It is no coincidence that, in the opinion of the population, the head of state is most successful in "strengthening Russia's international standing" *(table)*. According to the polls conducted by ISEDT RAS, 56% of Russians are proud of the country's position in the international arena and 73% are proud of its military power.

However, if foreign policy becomes the unifying aspect that brings together representatives of various political forces and finds support in various strata of the Russian society, then the internal contradictions, which cha-racterize a very low level of

Table 1. In your opinion, how successful is the RF President in coping with challenging issues? (as a percentage of the number of respondents)

Indicator	2000	2007	2008	2009	2010	2011	2012	2013	2014	2015	Dynamics, 2015 r. +/- to		
											2000	2007	2014
Strengthening Russia's international standing													
Successful	**42.3**	**58.4**	**55.1**	**49.5**	**49.9**	**46.2**	**43.1**	**45.6**	**50.4**	**51.4**	**+9**	**-7**	**+1**
Unsuccessful	**30.9**	**24.9**	**23.7**	**30.4**	**29.3**	**33.7**	**37.9**	**36.2**	**32.4**	**31.2**	**0**	**+6**	**-1**
Imposing order in the country													
Successful	31.4	53.2	48.2	39.1	41.1	36.6	35.4	39.4	48.0	50.1	+19	-3	+2
Unsuccessful	49.2	34.0	34.2	43.5	42.5	50.0	50.7	47.5	39.1	37.9	-11	+4	-1
Protecting democracy and strengthening the citizens' freedoms													
Successful	23.5	44.4	39.9	36.7	36.3	32.4	28.8	31.8	37.5	40.3	+17	-4	+3
Unsuccessful	43.8	37.0	35.9	41.5	42.6	48.3	52.3	51.0	45.4	41.0	-3	+4	-4
Economic recovery and increase in the citizens' welfare													
Successful	**25.6**	**47.2**	**36.7**	**31.6**	**33.5**	**30.7**	**28.5**	**31.3**	**34.8**	**34.8**	**+9**	**-12**	**0**
Unsuccessful	**52.9**	**39.1**	**46.0**	**52.4**	**51.6**	**56.1**	**57.9**	**56.8**	**53.4**	**51.6**	**-1**	**+13**	**-2**

administration in the socio-economic system, are still at the initial stage of their resolution and they make this system ineffective.

The late 1980s – early 1990s witnessed the establishment in Russia of an "oligarch-comprador" administration system; according to experts, it "aggravates the dramatic systemic crisis and expands it to the sphere of internal policy"[11].

The change of technological modes and centuries-old cycles of accumulation is inevitably accompanied by a deep restructuring of economy on the basis of fundamentally new technologies and new mechanisms of reproduction of capital; this restructuring is the reason for the current escalation of international military and political tensions. Critical dependence on the imports of foreign technology can be overcome with the help of large-scale programs for import substitution that take into account material, financial and human resources available. This cannot be done within the existing system of economic regulation, which abandoned planning methods, the preparation of balance sheets, goal programming, science and technology forecasting or system design[12].

Fused interests of the bureaucracy and business create a profoundly unjust state in which there is a redistribution of the most important resources from the groups that make efforts to modernize the society to the highest ranks that strive for unlimited personal enrichment.

Unfortunately, the entire hierarchy of executive power, including the current Government of Russia, continues to pursue the liberal course that hinders the country's transition to the path that would promote actual movement toward a modern, dynamic and efficient economy. "Those who destroyed the Soviet Union have not disappeared, they have not even left the historical scene. Of course, some left, some died, some realized their mistake and are now trying to expiate their historical guilt. But many of them have remained in the halls of power"[13].

In May 2015, summarizing the three-year performance of the Government (half of its constitutional term), Chairman of the Cabinet of Ministers Dmitry Medvedev clearly demonstrated that the views of Russian officials are inconsistent with the actual situation in the country[14]. The same can be said about his September article headlined "The new reality: Russia and global challenges", which, as a matter of fact, is a mere sequel to the article "Go forward, Russia!" and in which the Prime Minister "evades the talk about actual causes of economic problems... he advocates and justifies unpopular measures

[11] Gubanov S.S. Kompradorskii rezhim derzhitsya na voloske istorii: interv'yu S.S. Gubanova gazete «Biznes Online» ot 24.02.2015 [The Comprador Regime Is Hanging by a Single Thread of History: an Interview with Sergei Gubanov in the Newspaper "Business Online", February 24, 2015]. *Ofitsial'nyi sait gazety "Biznes Online"* [Official Website of the Newspaper "Business Online"]. Available at: http://www.businessgazeta.ru/article/126419/

[12] Glazyev S.Yu. O neotlozhnykh merakh po ukrepleniyu ekonomicheskoi bezopasnosti Rossii: doklad na zasedanii Soveta bezopasnosti 15.09.2015 [On Urgent Measures to Strengthen the Economic Security of Russia: a Report on the Meeting of the Security Council, September 15, 2015]. *Biznes Online: delovaya elektronnaya gazeta* [Business Online: the Business Online Newspaper], 2015, September 15. Available at: http://www.businessgazeta.ru/article/140998/

[13] Polyakov Yu.M. O prostranstve russkoi kul'tury [About the Space of Russian Culture]. *Ofitsial'nyi sait Izborskogo kluba* [Official Website of Izborsk Club]. Available at: http://www.dynacon.ru/content/articles/1280/

[14] D. Medvedev udivil rossiyan svoim vzglyadom na ekonomiku [Dmitry Medvedev Surprised the Russians with His View of the Economy]. *Nezavisimaya gazeta* [Independent Newspaper], 2015, no. 101, May 25.

and reforms in education, healthcare, pension system... thus an obvious weakness of the text is its reticence and unwillingness (or inability) to be frank with the audience up to the end"[15].

In recent years, the assessment of economic situation by the Government has been contrary to the opinion of experts[16]. While the Government pointed out that the change was "very good", the change was "for the better"[17]; experts predicted a "tangible reduction in the standard of living and quality of life for the majority of the population... the return of the Russian society to the level of poverty that it had 10 years ago"[18].

Moreover, the assertion that it is all the fault of Rosstat's deficient methodology is gradually becoming less convincing; in other words, the Government's understanding of economic situation in the country is not an error but a conscious strategy. In the middle of 2014, Sergei Gubanov, Chief Editor of the journal "Economist", said that the imperfection of the statistics is Rosstat's misfortune rather than its fault[19]. In early 2015,

[15] Remchukov K.V. Rossiya, vpered! Chast' vtoraya: v svoei antikrizisnoi stat'e prem'erministr ukhodit ot razgovora ob istinnykh prichinakh problem v ekonomike [Go forward, Russia! Part Two: the Prime Minister in His Anti-Crisis Article Evades the Conversation about the True Causes of the Problems in the Economy]. *Nezavisimaya gazeta* [Independent Newspaper], 2015, no. 206, September 25.

[16] Some examples:

"Russia ranks first in the world among major countries according to the inequality of distribution of wealth. In the countries with a socio-democratic tradition (the Nordic countries, Germany) the ratio of the average income of the richest 10% to the poorest 10% (R/P 10% ratio) is 3–7 times. In Russia in 1991 it was 4.5 times, in 2014 – 16 times according to official statistics, and 25–40 times according to expert estimates (taking into account hidden income). The threshold critical R/P 10% ratio is considered to be 10 to 1. The number of Russians with incomes below the subsistence level in the first quarter of 2015 reached 23 million and, judging by the forecast of inflation and people's incomes, it could rise by a third" (source: Glazyev S.Yu. Zapredel'noe neravenstvo. Politika gosudarstva protivorechit interesam naseleniya [Outrageous Inequality. Governmental Policy Is Contrary to the Interests of the People]. *Zavtra* [Tomorrow], 2015, no. 29 (1130), July 23. Available at: http://zavtra.ru/content/view/zapredelnoeneravenstvo/)

"...It can be asserted that in 2014 we experienced only a partial impact of the anti-Russian sanctions; 2015 will become the year of the sanctions. Many indicators deteriorated in 2014: investment, record-breaking devaluation of the ruble; inflation has been accelerating since 2012. Socio-economic situation in general has worsened. In contrast to the crisis *(2008 – V. I.)*, it is not a short-term but a long-term process, so is impossible to forecast the onset of recovery" (source: Aganbegyan A.G. Socio-Economic Development of Russia: Results and Prospects, Sanctions (Proceedings of the Public Seminar). *News on the Official Website of the Russian Presidential Academy of National Economy and Public Administration (RANEPA)*. Available at: http://www.emba.ranepa.ru/novosti/seminarabelagezevichaaganbegyanaabelaganbegyannaibolshiyuscherbotsanktsiyzhdetrossiuv2015g)

"The shocks of 2014 exacerbated the problems that had accumulated over a quarter of a century: deterioration of individual industries, reduction of export and import by dozens of percent in early 2015; nationwide losses in the real sector and banks. The following dynamics is expected: stabilization at a lower level, as after a stroke, new jumps of the ruble, the space of uncertainty and risks; weak responses to challenges (crisis management plan), while negative external factors are acting with the same force. The result is an economy which is sliding downhill" (source: Mirkin Ya.M. Vnezapnyi povorot [Sudden Turn]. *Zhurnal novoi ekonomicheskoi assotsiatsii* [The Journal of the New Economic Association], 2015, no. 2 (26), p. 197.).

[17] Interview with Dmitry Medvedev to the channel "Rossiya", May 23, 2015. *News on the Official Website of the RF Government*. Available at: http://government.ru/news/18220/

[18] Glazyev S.Yu. Zapredel'noe neravenstvo. Politika gosudarstva protivorechit interesam naseleniya [Outrageous Inequality. Governmental Policy Is Contrary to the Interests of the People]. *Zavtra* [Tomorrow], 2015, no. 29 (1130), July 23. Available at: http://zavtra.ru/content/view/zapredelnoeneravenstvo/

[19] "The *alleged tiny increase* that the Kremlin believes in was received through purely *statistical trick*... If the rows are *distorted*, then science loses a powerful analytical tool of comparison... There is a fall by 0.7 percent, but in the dollar terms this fall was greater – about 1.2 percent. Instead of a decline, the statistics presents a *fake growth*... The indicators for the end of 2014 were *adjusted* in an even more sophisticated way – through the decrease in the deflator. Minus 1.5 percent was converted to plus 0.6 percent. This *macroeconomic eyewash* is probably the only innovation that Alexey Ulyukaev has introduced in the work of the Ministry of Economic Development" (source: Интервью проф. Губанова о причинах стагнации российской экономики, 30 июня 2014 г. An Interview with Professor Gubanov about the Reasons of Stagnation of the Russian Economy, June 30, 2014. *Information Center Aftershock*. Available at: http://aftershock.su/?q=node/240304)

he was much more explicit in his assessment: "Lies have become part of the system. In turn, erroneous and distorted analytical data obviously cause the adoption of wrong public decisions that make the situation even worse"[20].

However, the reality is inexorable, and today it, so to say, "pinned down" the officials, forcing them "to admit that their economic calculations are flawed"[21]. However, on TV programs we still hear statements that "the situation has become tougher, but nothing terrible has happened"[22] and "no matter how the situation may develop, all social obligations will be fulfilled as they have always been"[23] (although it is planned to strengthen the principle of targeted social support to the most vulnerable categories of the population, and this, according to experts, is "a euphemism designed to soften the blow from a possible suspension of the indexation of pensions and the raising of the retirement age"[24].

The position of the Government again raises controversy: it agrees with experts that Russia's economy is in a critical condition, but, at the same time, the people are informed that its performance is good. Moreover, "if we listen to the statements made by the financial block of the Government, and other reputable personalities in the Russian economy, we can note a remarkable fact: almost all of them link the future to the weak ruble, and the strong ruble, on the contrary, was one of the factors that prevented the Russian economy from moving forward"[25].

"A generally recognized postulate of Russia's economic policy is that it is based on dogmatic, false and harmful notions concerning the usefulness of market self-organization mechanisms and non-interference of the state in regulation issues. Based on false assumptions from the very beginning, the policy of present-day monetarists and monetarism has already caused economic stagnation and recession and deprived the economy of the prospects and impulses for development… As the national economy is deteriorating, the welfare of those who pursue this policy and those who thrive on it – the offshore oligarchy – is growing"[26].

In addition, in recent years, the quality of public administration is reflected in numerous instances of corruption, as evidenced by a series of investigations against the directors of RUSNANO, SKOLKOVO and Oboronservis; the arrests of the governors Vasilii Yurchenko, Sergei Bozhenov, Nikolai Denin, Aleksandr Khoroshavin, Vyacheslav Gaizer, vice-governors Vadim Lukoyanov, Aleksandr Ivanov, Nikolai Sandakov, Viktor Nechaev and others. There are still "hundreds of less notable cases against government officials,

[20] Gubanov S. S. *The Comprador Regime is Hanging on a Thread of History*. Available at: http://www.businessgazeta.ru/article/126419/

[21] V pravitel'stve priznali ushcherbnost' ekonomicheskikh raschetov [The Government Acknowledged Flaws in Economic Calculations]. *Nezavisimaya gazeta* [Independent Newspaper], 2015, September 22.

[22] *VTB Head Andrei Kostin (News Rossiya 24)*. Available at: http://www.vestifinance.ru/videos/23936

[23] *News of Channel One Russia (Medvedev at the International Investment Forum in Sochi)*. Available at: http://www.1tv.ru/news/economic/293401

[24] Vladimir Putin otkhodit na vtoruyu liniyu oborony. Prezident teryaet kontrol' nad defitsitom byudzheta [Vladimir Putin Backs Off to a Second Line of Defense. The President Loses Control over the Budget Deficit]. *Nezavisimaya gazeta* [Independent Newspaper], 2015, September 23. Available at: http://www.ng.ru/economics/20150923/4_putin.html

[25] Why There Will No Longer Be the Strong Ruble. *Information Portal "Vesti",* October 02, 2015. Available at: http://www.vestifinance.ru/articles/62986

[26] Glazyev S.Yu. Nishcheta i blesk rossiiskikh monetaristov. Chast' 1 [The Miseries and Splendors of Russian Monetarists. Part 1]. *Ekonomicheskaya nauka sovremennoi Rossii* [Economics of Contemporary Russia], 2015, no. 2, pp. 78.

deputies, city heads. These cases can pass unnoticed under a superficial glance from the federal level... Members of this "group of cronies" often ask their Moscow patrons for protection; criminal proceedings are ceased after the interference of certain influential persons"[27].

A special anti-corruption unit was created within the power structures. Like in the 1930s – 1940s, it was done "due to a pressing necessity to purge the elites when the country was facing the threat of war... There were party bosses, former civil war gunmen who had to be put down, and the elite that had to be purged and very quickly too"[28].

Today, charges are brought not only against individuals, but also against organized groups, thus indicating a deep moral decay of the elites. The operations that aim to expose illegal actions of administrative elite have a wide public resonance and are a factor that promotes the growth of trust in law enforcement agencies.

According to Levada-Center, the level of trust in the national security agencies in the period from 2014 to September 2015 increased from 46 to 50%, the level of trust in the police increased from 21 to 29%. During this same period, the share of the Russians who trust the Government decreased from 46 to 45%.

According to sociological polls conducted by ISEDT RAS, in the period from February 2014 to October 2015, the level of trust in the Federal Security Service increased from 36 to 40%, in the police – from 35 to 41%, while the level of trust in the authorities did not change: the RF Government – 48–49%, the Federation Council – 40%, the State Duma – 33–35%, the Vologda Oblast Administration – 36–37%. Among all the state institutions the level of trust increased only in relation to the President of the Russian Federation (from 57 to 60%), which is no doubt connected with his political strategy on the international arena.

However, according to experts, the fact that financial authorities focus on the interests of financial and currency speculators and offshore oligarchy aggravates the contradictions between the ruling elite and the people, making these contradictions antagonistic. This undermines people's confidence in the state power institutions and weakens its two pillars – bureaucracy and law enforcement agencies[29]. The inconsistency of action is also proved by the fact that the punishment lasts just as long as the attention of the public is locked on the case[30]. Many people who make, to put it mildly, "ineffective" management decisions, remain in key positions for decades during their whole "productive" life, and they only change the names of organizations or parties in which they work[31].

[27] Tikhonov S. Khoteli posadok? [Did You Want Them to be Put Away?]. *Ekspert* [Expert], 2015, no. 40 (959), September 28. Available at: http://expert.ru/expert/2015/40/hoteliposadok/

[28] *Ibidem*.

[29] Glazyev S.Yu. Zapredel'noe neravenstvo. Politika gosudarstva protivorechit interesam naseleniya [Outrageous Inequality. Governmental Policy Is Contrary to the Interests of the People]. *Zavtra* [Tomorrow], 2015, no. 29 (1130), July 23. Available at: http://zavtra.ru/content/view/zapredelnoe-neravenstvo/

[30] See, for example, the developments concerning the detention of Evgeniya Vasilyeva (source: Maksimov A. Zhenechka v stoge sena [Zhenechka in a Haystack]. *Zavtra* [Tomorrow], 2015, no. 32, August 13. Available at: http://zavtra.ru/content/view/zhenechkavstogesena/; Maksimov A. Komediya strogogo rezhima [High Security Comedy]. *Zavtra* [Tomorrow], 2015, no. 35, September 3. Available at: http://zavtra.ru/content/view/komediyastrogorezhima/)

[31] See, for example, Delyagin M. Bezgramotnyi rifmoplet [Illiterate Verse-Monger]. *Zavtra* [Tomorrow], 2015, no. 37, September 17. Available at: http://zavtra.ru/content/view/bezgramotnyijrifmoplyot/; Delyagin M. Otlichnyi troechnik [Excellent C Student]. *Zavtra* [Tomorrow], 2015, no. 33, August 20. Available at: http://zavtra.ru/content/view/zurabov/

Thus, nowadays Russia is at the crossroads of its development. In the transition to a new stage of Russian statehood there arise comprehensive and systemic problems that do not allow experts to make clearly positive forecasts[32].

The challenges that Russia faces at the present stage of its history can be organized in two groups.

First, it is *international relations* in which Russia is playing an increasingly important role and which are becoming more and more strained due to frequent breakouts of armed conflicts.

Second, it is the current *system of public administration*, which, according to experts, is "incompatible with life interests of the production sector and population"[33] and becomes a formidable obstacle to effective interaction between government and society[34].

We see that domestic policy is lagging critically behind global political achievements. The President enjoys obvious successes in enhancing the international status of Russia. However, the liberal wing of the Government hampers the solution of national security issues of the 21st century. There are not two but even three principal ways out of this conflict situation: "revolution from above", "revolution from below" and "revolution from outside". Given the scope and significance of Russia in the global division of labor, we cannot hope that "everything will somehow turn out fine on its own"[35].

As for the Russians themselves, their expectations can be described as "restrained uneasiness". Almost half of them are characterized by negative social and psychological feeling (a quarter of them feel anxiety, one in five is experiencing apathy, irritability, less often – anger)[36]. **"The citizens realize the gravity of the situation in the economy and do not believe the authorities are able to pull the country out of the crisis. But those very citizens support Russia's foreign policy that helped regain its glory"[37].**

[32] According to Gennadii Osipov, the consequences of the events of 2014 (in the first place – the accession of Crimea to Russia) "can be fatal for our country, and they can be marked by new moral and economic recovery, as well as by the gloom of disappointment and the deepest decline of everything" (source: Osipov G.V. Ne upustit' predostavivshiisya shans! [Do not Miss This Chance!]. *Sotsiologiya i ekonomika sovremennoi sotsial'noi real'nosti. Sotsial'naya i sotsial'no-politicheskaya situatsiya v Rossii v 2013 godu* [Sociology and Economics of the Current Social Reality. Social and Socio-Political Situation in Russia in 2013]. Moscow: ISPI RAN, 2013. P. 12.).

[33] Glazyev S.Yu. Zapredel'noe neravenstvo. Politika gosudarstva protivorechit interesam naseleniya [Outrageous Inequality. Governmental Policy Is Contrary to the Interests of the People]. *Zavtra* [Tomorrow], 2015, no. 29 (1130), July 23. Available at: http://zavtra.ru/content/view/zapredelnoe-neravenstvo/

[34] "Change of priorities is impossible without changing the entire system of values, and in this respect, Russia today is split into power and property, into the minority (maximum 10% of the population) that owns much and the enormous poor majority (over 90% of the population). The former professes Western liberal values, providing a free and unhindered transfer of Russian assets and resources to the West, the latter professes traditional values of the Russian civilization and is deprived of virtually any form of participation in the structures of power and property" (source: Kon'kov N., Nagornyi A. Glazyev i plan revolyutsii sverkhu: vokrug doklada "O neotlozhnykh merakh po ukrepleniyu ekonomicheskoi bezopasnosti Rossii" [Sergei Glazyev and the Plan of the Revolution from Above: Around the Report "On the Urgent Measures to Strengthen Russia's Economic Security"]. *Zavtra* [Tomorrow], 2015, September 24. Available at: http://zavtra.ru/content/view/glazeviplanrevolyutsii-sverhu/)

[35] *Ibidem*.

[36] Rossiiskoe obshchestvo v kontekste novykh realii (tezisy o glavnom): informatsionno-analiticheskoe rezyume po itogam obshchenatsional'nogo issledovaniya [Russian Society in the Context of New Realities (Theses about the Most Important Things): the Information-Analytical Summary of the Findings of a National Survey]. *IS RAN* [IS RAS]. Moscow, 2015. P. 4.

[37] Grazhdan ne volnuet rost bednosti. Vnutrennie problemy strany vyvedeny iz politicheskoi povestki [Citizens Do Not Care about the Growth of Poverty. Internal Problems of the Country Have Been Withdrawn from the Political Agenda]. *Vedomosti: gazeta* [Vedomosti: Newspaper], 2015, June 14. Available at: http://www.vedomosti.ru/opinion/articles/2015/06/15/596296grazhdannevolnuetrost-smertnostiibednosti

Commenting on the situation, we can compare it with socio-cultural transformation, which, according to RAS Academician Viktor Polterovich, is going on all over the world: from collectivism to individualism and further to collaborativeness; from centralism to competition and cooperation, from socialism – through liberalism to "cooperation philosophy"[38].

Just as centralism and collectivism prevailed in the USSR during the Communist regime, just as the competition and individualism of the "turbulent 1990s" ruled after its collapse, today we are talking about collaborativeness and "cooperation philosophy", i.e. a moderate but necessary intervention of the state in economic and social processes management"[39].

The willingness to cooperate is an essential principle in dealing with international issues. Every head of state regularly talks about it, although not all of them demonstrate this willingness under specific circumstances and in specific actions. As for domestic politics, it has much more controversy. Having declaring a policy of rapprochement with the society[40], the authorities are content with making promises, forecasts and unsubstantiated statements. All this resembles a simulation of cooperation, which Jean Toshchenko described as "the substitution of activity in all its manifestations", "the fruit of activity (conscious or unconscious), when artificial conditions for processes and phenomena are created in order to meet specific (selfish) group and corporate goals that are presented as socially significant", "the result of the lack of clear strategic goals and science basis, the result that fits in those conditions when there is no stable feedback with the people, when their opinion is disregarded and their proposals ignored; when it is suggested that the people should follow the decisions made by those in power". The very imitation, according to Jean Toshchenko, is the reason for social apathy, distrust in the government, low electoral turnout and the overall anomie of the society[41].

[38] Polterovich V.M. Ot sotsial'nogo liberalizma k filosofii sotrudnichestva [From Social Liberalism to a Philosophy of Collaboration]. *Obshchestvennye nauki i sovremennost'* [Social Sciences and Modernity], 2015, no. 4, p. 45.

[39] "Unlike competition that inevitably leads to the parallel use of resources to achieve mutually exclusive goals and, consequently, to their wasteful spending, cooperation involves harmonization of efforts... The increasing role of cooperation institutions is a natural result of technological, cultural and institutional evolution... The transformation described here increases the efficiency of institutions from the social and individual viewpoints: the sphere of compulsion inherent in power institutions and the institutions of unlimited competition is reducing; the goals of interaction are achieved at a lower cost. It is not only about material but also about social and psychological ("moral") costs: the observed evolution expands opportunities to implement interactions in the framework of the moral norms that are widely recognized in modern societies" (source: Polterovich V.M. Ot sotsial'nogo liberalizma k filosofii sotrudnichestva [From Social Liberalism to a Philosophy of Collaboration]. *Obshchestvennye nauki i sovremennost'* [Social Sciences and Modernity], 2015, no. 4, p. 45).

[40] In our view, the state has finally and irrevocably turned toward cooperation with the society; the state has openly invited it to participate in the decision of internal issues as a full participant. It happened, when the All-Russia People's Front was established (2011); when at the highest levels of power they began to say that "the main criterion in assessing the work of the authorities is the opinion of the people" (President Putin's speech in October 2012 at a video conference on the efficiency of executive authorities of RF subjects); when the assessment by the people was included in the List of indicators to assess the performance of executive authorities of RF subjects (Decree of the RF President of August 21, 2012 No. 1199 "About assessing the performance efficiency of executive authorities of RF subjects").

[41] Toshchenko Zh.T. Novye liki deyatel'nosti: imitatsiya [New Images of Activity: Imitation]. *Sotsiologicheskie issledovaniya* [Sociological Studies], 2012, no. 12, pp. 23-35.

It is known that a chain is only as strong as its weakest link. And since the "ideological power is in the same hands, we can expect nothing useful from these people anymore; they prevent Russia from moving forward; today we need a new paradigm, we need new ideas how to improve our country; we need new carriers of these ideas..."[42].

According to Valerii Fadeev, Chief Editor of the journal "Expert", "there is no doubt that in the near future a new political configuration that will ensure a breakthrough will be created"[43]. However, more than two years passed and still there is no solution to this problem, and there are fewer and fewer reasons for optimism.

Obviously, without solving key problems "at home, in our own country"[44], the results achieved in the international political arena cannot have a solid foundation, so today, at the crossroads of a new stage of Russia's history, the main challenge facing the society, science and government is to bring national macroeconomic policy "in line with the common understanding of the principles of social justice and truth, and to make it useful for the development of the production sphere"[45]; to improve public administration for the purpose of restructuring the economy on the principles of vertical integration; to fight corruption, to undertake real action to reduce outrageous social inequality and all that really hinders the realization of the presidential program and complicates the pursuit of an independent sovereign policy.

Information about the Author

Vladimir Aleksandrovich Ilyin – Doctor of Economics, Professor, Honored Scientist of the Russian Federation, Director, Federal State Budgetary Institution of Science Institute of Socio-Economic Development of Territories of Russian Academy of Science (56A, Gorky Street, Vologda, 160014, Russian Federation, ilin@vscc.ac.ru)

[42] Vyiti iz breda [Come Out of Delirium]. *Ekspert* [Expert], 2013, no. 19, May 13–19.

[43] *Ibidem*.

[44] During the "direct line" in April 2015, the Russian President pointed out: "The sanctions certainly contribute to our difficulties, but still it is not the most important thing" (source: Stenogramma «pryamoi linii» s Prezidentom RF V.V. Putinym ot 16 aprelya 2015 g. [Transcript of the "Direct Line" with Russian President Vladimir Putin on April 16, 2015]. *Ofitsial'nyi sait Prezidenta RF* [Official Website of the President of the Russian Federation]. Available at: http://kremlin.ru/events/president/news/49261).

[45] Glazyev S.Yu. Zapredel'noe neravenstvo. Politika gosudarstva protivorechit interesam naseleniya [Outrageous Inequality. Governmental Policy Is Contrary to the Interests of the People]. *Zavtra* [Tomorrow], 2015, no. 29 (1130), July 23. Available at: http://zavtra.ru/content/view/zapredelnoeneravenstvo/

Public Opinion Monitoring of the State of the Russian Society

As in the previous issues, we publish the results of the public opinion monitoring of the state of the Russian society conducted by ISEDT RAS in the Vologda Oblast[1].

The following tables show the dynamics of a number of parameters indicating the social feeling and socio-political sentiment of the Vologda Oblast population in August – October 2015, and also on average for the last six surveys (December 2014 – October 2015). These data are compared with the data for 2013–2014, and also for 2007 (the last year of Vladimir Putin's second presidential term, when the assessment of the President's activity was the highest) and for 2011 (the last year of Dmitry Medvedev's presidency).

Estimation of performance of the authorities

In August – October 2015, the level of approval for Vladimir Putin's work as president decreased slightly[2] (from 72 to 69%); however, it remains higher than in 2011–2014.

The share of negative assessments did not change and remained 18%, which is, in general, consistent with the average value for the last 12 months.

On average for the last six polls, the level of approval of the federal authorities by the Vologda Oblast residents remains higher than in 2013 and 2014.

For reference: the nationwide level of approval of the RF President's performance remains stable. According to VCIOM, the share of positive assessments is 86–87%, negative – 69% (in September – 1st half of October 2015).

According to Levada-Center, the share of Russians who express their approval for Vladimir Putin's work as president is 83–84%, the proportion of negative characteristics is 15–17% (in August – September 2015).

[1] The polls are held six times a year in Vologda, Cherepovets, and in eight districts of the oblast (Babayevsky District, Velikoustyugsky District, Vozhegodsky District, Gryazovetsky District, Kirillovsky District, Nikolsky District, Tarnogsky District and Sheksninsky District). The method of the survey is a questionnaire poll by place of residence of respondents. The volume of a sample population is 1500 people aged from 18 and older.

The sample is purposeful and quoted. The representativeness of the sample is ensured by the observance of the proportions between the urban and rural population, the proportions between the inhabitants of settlements of various types (rural communities, small and medium-sized cities), age and sex structure of the oblast's adult population. Sampling error does not exceed 3%.

More details on the results of ISEDT RAS polls are available at http://www.vscc.ac.ru/

[2] In accordance with the methodology of the survey, the decline in the assessments of the RF President's performance is within the margin error (3%)

How do you assess the current performance of..? (as a percentage of the number of respondents)

Answer option	2007	2011	2013	2014	Dec. 2014	Feb. 2015	Apr. 2015	June 2015	Aug. 2015	Oct. 2015	Average for the last six surveys	Dynamics (+/-), the last six surveys in comparison with...			
												2014	2013	2011	2007
RF President															
I approve	75.3	58.7	55.3	64.1	66.0	66.3	67.5	69.5	72.0	69.3	68.4	+4	+13	+10	-7
I don't approve	11.5	25.6	29.4	22.3	19.7	20.5	16.2	16.1	17.8	18.1	18.1	-4	-11	-8	+7
Chairman of the RF Government*															
I approve	-*	59.3	48.9	54.2	56.3	56.1	56.5	59.1	60.7	58.1	57.8	+4	+9	-2	-
I don't approve	-	24.7	32.8	27.6	24.7	24.7	20.5	19.5	22.5	21.0	22.2	-5	-11	-3	-
Governor															
I approve	55.8	45.7	44.4	40.1	39.3	38.3	37.1	40.5	41.5	38.7	39.2	-1	-5	-7	-17
I don't approve	22.2	30.5	33.2	38.9	37.0	37.4	37.5	35.4	35.4	36.0	36.5	-2	+3	+6	+14

* Included into the survey since 2008.

The assessment of success of the President's actions in addressing the key problems of the country in the last two months decreased slightly:

– the share of the Vologda Oblast residents who think that the President successfully copes with the task of restoring order in the country decreased from 52 to 49% (within the margin of error of the survey);

– the share of those who believe that the President is successful in protecting democracy and strengthening citizens' freedoms decreased from 43 to 38%;

– the share of those who believe that the President successfully copes with the task of economic recovery and promotes the increase in the welfare of citizens decreased from 37 to 32%.

The assessment of the President's efforts to strengthen international positions of Russia remains stable. In February – October 2015, the proportion of positive assessments was 51–52%.

The share of negative judgments on all of these issues did not change in the last two months.

In general over the last six polls the assessment of the performance of the President on all the key issues remains more positive than in 2013–2014.

In your opinion, how successful is the RF President in coping with challenging issues?*
(as a percentage of the number of respondents)

Answer option	2007	2011	2013	2014	Dec. 2014	Feb. 2015	Apr. 2015	June 2015	Aug. 2015	Oct. 2015	Average for the last six surveys	Dynamics (+/-), the last six surveys in comparison with...			
												2014	2013	2011	2007
Strengthening Russia's international standing															
Successful	58.4	46.2	45.7	50.4	50.8	50.4	52.7	51.1	52.2	50.7	51.3	+1	+6	+5	-7
Unsuccessful	24.9	33.7	36.2	32.4	30.3	29.5	28.7	32.5	32.4	33.1	31.1	-1	-5	-3	+6
*Index of success***	*133.5*	*112.5*	*109.5*	*118.0*	*120.5*	*120.9*	*124.0*	*118.6*	*119.8*	*117.6*	120.2	*+2*	*+11*	+8	*-13*
Imposing order in the country															
Successful	53.2	36.6	39.4	48.0	52.1	50.3	50.1	49.9	51.7	48.6	50.5	+3	+11	+14	-3
Unsuccessful	34.0	50.0	47.5	39.1	35.1	37.3	37.5	38.0	37.9	38.7	37.4	-2	-10	-13	+3
Index of success	*119.2*	*86.6*	*91.9*	*108.9*	*117.0*	*113.0*	*112.6*	*111.9*	*113.8*	*109.9*	113.0	+4	*+21*	*+26*	*-6*
Protecting democracy and strengthening the citizens' freedoms															
Successful	44.4	32.4	31.8	37.5	40.7	39.5	39.2	42.2	42.6	38.1	40.4	+3	+9	+8	-4
Unsuccessful	37.0	48.3	51.0	45.4	41.9	40.9	39.9	38.3	41.7	44.3	41.2	-4	-10	-7	+4
Index of success	*107.4*	*84.1*	*80.8*	*92.1*	*98.8*	*98.6*	*99.3*	*103.9*	*100.9*	*93.8*	99.2	*+7*	*+18*	+15	*-8*
Economic recovery and increase in the citizens' welfare															
Successful	47.2	30.7	31.3	34.8	37.6	34.4	34.7	36.2	36.6	32.1	35.3	+1	+4	+5	-12
Unsuccessful	39.1	56.1	56.8	53.4	50.8	51.5	49.9	49.9	52.6	54.3	51.5	-2	-5	-5	+12
Index of success	*108.1*	*74.6*	*74.5*	*81.4*	*86.8*	*82.9*	*84.8*	*86.3*	*84.0*	*77.8*	83.8	*+2*	*+9*	*+9*	*-24*

* Ranked according to the average value of the index of success for the last 6 surveys.
** The indices are calculated as follows: the share of negative answers is subtracted from the share of positive answers, then 100 is added to the obtained value, so as not to have negative values. Thus, completely negative answers would give the total index of 0, and completely positive answers would give the total index of 200; the balance between the former and the latter expresses the value of the index 100, which is, essentially, a neutral mark.

The structure of the Russians' preferences concerning political parties in August – October 2015 did not see any significant changes: the "United Russia" is supported by 38–39%, KPRF – by 7%, LDPR – by 6%, the "Just Russia" – by 3–4%.

The proportion of the Vologda Oblast residents who believe that the "United Russia" expresses their interests, increased by 5 percentage points (from 33 to 38%) on average over the last six polls compared to 2014.

Which party expresses your interests? (as a percentage of the number of respondents)

Party	2007	Election to the RF State Duma 2007, fact	2011	Election to the RF State Duma 2011, fact	2013	2014	Dec. 2014	Feb. 2015	Apr. 2015	June 2015	Aug. 2015	Oct. 2015	Average for the last six surveys	Dynamics (+/-), the last six surveys in comparison with…			
														2014	2013	2011	2007
United Russia	30.2	60.5	31.1	33.4	29.4	32.8	36.7	38.8	38.2	40.3	38.5	38.0	38.4	+6	+9	+7	+8
KPRF	7.0	9.3	10.3	16.8	11.3	9.7	8.3	7.7	7.8	6.8	7.1	6.9	7.4	-2	-4	-3	0
LDPR	7.5	11.0	7.8	15.4	7.2	7.6	7.8	6.7	6.1	5.4	5.9	6.1	6.3	-1	-1	-2	-1
Just Russia	7.8	8.8	5.6	27.2	4.6	3.5	3.2	4.1	3.7	3.3	3.5	3.3	3.5	0	-1	-2	-4
Other	1.8	–	1.9	–	0.6	0.3	0.1	0.3	0.1	0.2	0.1	0.1	0.2	0	0	-2	-2
No party	17.8	–	29.4	–	34.9	34.4	32.7	30.3	31.5	32.5	33.8	32.3	32.2	-2	-3	+3	+14
It is difficult to answer	21.2	–	13.2	–	10.2	11.7	11.1	12.0	12.5	11.6	11.1	13.3	11.9	0	+2	-1	-9

In October 2015 compared to August 2015 certain negative changes are seen in the dynamics of assessments of social well-being.

Nevertheless, people's estimates remain higher than at the beginning of the year:

– in the past two months there was a slight decrease (from 73 to 70%) in the proportion of the Vologda Oblast residents who positively assess their mood (this figure was 62% in February 2015);

– the proportion of positive assessments of the stock of patience decreased from 82 to 78% (this figure was 74% in February 2015).

The structure of social self-identification remains consistently low since June 2015: 50% of the Vologda oblast residents consider themselves to be "poor and extremely poor", 39% – consider themselves to be "people with average income".

The consumer sentiment index (CSI) that describes the people's forecasts of development of the economy and their personal wealth did not change in the last two months and amounted to 78 points. It is higher than at the beginning of 2015 (76 p.), and lower than in 2013–2014, when it was 88–90 points.

Estimation of social condition (as a percentage of the number of respondents)

Answer option	2007	2011	2013	2014	Dec. 2014	Feb. 2015	Apr. 2015	June 2015	Aug. 2015	Oct. 2015	Average for the last six surveys	Dynamics (+/-), the last six surveys in comparison with...			
												2014	2013	2011	2007
Mood															
Usual condition, good mood	63.6	63.1	68.6	69.4	70.9	61.8	67.6	69.5	73.1	70.4	68.9	-1	0	+6	+5
I feel stress, anger, fear, depression\	27.8	28.9	26.2	24.9	24.1	31.3	26.6	24.4	23.5	25.4	25.9	+1	0	-3	-2
Stock of patience															
Everything is not so bad; it's difficult to live, but it's possible to stand it	74.1	74.8	79.3	80.8	80.0	74.3	78.9	79.0	82.2	78.2	78.8	-2	-1	+4	+5
It's impossible to bear such plight	13.6	15.3	14.2	12.6	13.6	17.3	14.9	14.7	13.3	13.9	14.6	+2	0	-1	+1
Social self-identification*															
The share of people who consider themselves to have average income	48.2	43.1	43.9	43.2	42.3	38.3	36.7	39.4	39.9	39.2	39.3	-4	-5	-4	-9
The share of people who consider themselves to be poor and extremely poor	42.4	44.3	46.9	49.1	51.0	53.3	51.6	48.0	50.5	50.2	50.8	+2	+4	+7	+8
Consumer sentiment index															
Index value, points	105.9	89.6	90.3	87.6	82.3	75.7	73.4	80.1	77.9	77.7	77.9	-10	-12	-12	-28

* Question: "Which category do you belong to, in your opinion?"

Conclusion

Thus, in October 2015 there was a slight (within the margin of error of the survey) decrease in the assessments of performance of state administration authorities, as well as in the proportion of the Vologda Oblast residents who positively characterize their mood and stock of patience.

The speech delivered by President Putin at the 70th anniversary session of the UN General Assembly did not influence the Russian society in the same way as his 2013 speech at the meeting of the Valdai International Discussion Club. We recall that at Valdai the President announced his conceptual vision of Russia's future, dwelling upon the "spiritual bonds" of the Russian people, the "Russian world", the unacceptability of a unipolar world order. After that, in the tide of the

"Crimean spring" events (when Crimea and Sevastopol joined the Russian Federation), research centers (VCIOM, Levada-Center, ISEDT RAS) registered record-breaking levels of support for the President among Russians.

In October 2015, the President, in fact, continued to develop the conceptual provisions that he had announced in February 2007 at the Security Conference in Munich. Speaking at the 70th session of the UN General Assembly, Vladimir Putin made it perfectly clear that the unipolar world order was unacceptable, and he cautioned against the consequences that may result from the hegemony of a dominant power in international political relations.

The changes observed in October 2015, in our view, have three reasons:

- **first of all, a "slow and long" downgrade of the President's rating was forecasted back in mid-2015, because even at that time his rating reached its top and could not grow any higher[3];**
- **second, there are no significant changes in dealing with internal economic issues. Despite V. Putin's statement that economic issues occupy at least 80% of his work time, if not more [4], statistical data and sociological polls show negative trends in the dynamics of the standard of living.**

According to Rosstat, real disposable money incomes of Russians in January – August 2015 amounted to 96.9% of the corresponding period of the previous year, real wages – to 91%. The consumer price index in September 2015 amounted to 100.6% of August 2015 and 100.5% of December 2014. In general, the proportion of Russians with money incomes below the subsistence level was 15.1% in the first half of 2015, in 2014 it was 11.2% (for comparison).

According to the data of sociological polls conducted in 2015, more than half of the population (52–54%) think that the Russian President fails to cope with the issues of economic recovery and increase in citizens' welfare; 50–53% consider themselves to be poor or extremely poor, the majority of Russians think that their financial position will deteriorate as well as economic situation in the country (as evidenced by the consumer sentiment index, which is about 75–77 points according to all the polls in 2015, i.e. it remains below 100 points, which means that negative assessments prevail over positive ones).

In addition to the pessimistic data of statistics and sociological surveys that indicate stagflation in the economy and difficulties in people's financial situation, the trust in the government is undermined by frequent corruption scandals involving substantial sums of money (for example, the cases of RUSNANO and Oboronservis; arrests of governors Aleksandr Khoroshavin, Vyacheslav Gaizer, etc.).

The third reason why the level of approval of the Government is declining consists in the fact that the military action which Russia launched against terrorists in Syria could trigger memories of the terrorist attacks that occurred in Russia in the midst of the Chechen war. Since September 30, 2015, the Russian air force at the formal request of Syrian President Bashar al-Assad has been carrying

[3] Gorbachev A., Garmonenko D. Prezident i ego reiting [President and His Rating]. *Nezavisimaya gazeta* [Independent Newspaper], 2015, July 10. Available at: http://www.ng.ru/politics/2015-07-10/1_president.html

[4] Vystuplenie Prezidenta RF na VII investitsionnom forume "Rossiya zovet!" 13 oktyabrya 2015 g. [Speech of the RF President at the 7th Russia Calling! Investment Forum, October 13, 2015]. *Ofitsial'nyi sait Prezidenta RF* [Official Website of the President of Russia]. Available at: http://www.kremlin.ru/events/president/transcripts/50498

out surgical military strikes against the targets of terrorist groups in Syria. Despite the intentions that are, in general, quite clear ("to counter the spread of terrorism[5], and, in particular, to prevent **terrorists from penetrating into Russia),this fact could cause social anxiety due to the fear of recurrence of such tragedies as the "Nord-Ost" (2002) or the terrorist act in Beslan (2004).**

We think that further dynamics of public opinion will depend on three factors:

- **the first one – how successful the actions of the President and the Government will be in overcoming the negative trend of stagflation in the economy and deterioration of the standard of living;**
- **the second one – how effective Russia's actions in Syria will be, which largely depends on its policy toward foreign partners, their interest in the cooperation on the establishment of an anti-terrorist coalition;**
- **the third one – how successful the actions of power structures and law enforcement agencies will be with regard to preventing terrorist acts on the territory of Russia. Currently, each case can become a major focus of public attention and can have a significant impact on people's attitudes to the authorities and on the general perception of the situation in the country.**

[5] Vystuplenie V.V. Putina na plenarnom zasedanii yubileinoi 70i sessii General'noi Assamblei OON [Vladimir Putin's Speech at the Plenary Meeting of the Anniversary 70th Session of the UN General Assembly]. *Ofitsial'nyi sait Prezidenta RF* [Official Website of the President of Russia]. Available at: http://kremlin.ru/events/president/news/50385

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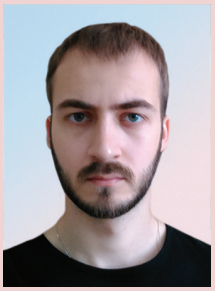
New Technological Shape of Basic Branches of RF Industrial Regions*

Ol'ga Aleksandrovna
ROMANOVA
Doctor of Economics, Professor
Institute of Economics, Ural Branch of the Russian Academy of Sciences
29, Moscovskaya Street, Ekaterinburg, 620014, Russian Federation, econ@uran.ru



Dmitrii Vladimirovich
SIROTIN
Institute of Economics, Ural Branch of the Russian Academy of Sciences
(29, Moscovskaya Street, Ekaterinburg, 620014, Russia, sirotind.umk@mail.ru

Abstract. The article emphasizes the increasing importance of industry in the economic development of both developing and developed countries. It highlights the decisive role of basic industries of the RF industrial regions in ensuring the level of their socio-economic development. The work substantiates the possibility to develop basic industries of some industrial regions as the ones that are knowledge-intensive, high-tech and can meet the requirements of new industrialization. The authors propose their understanding of new industrialization in terms of inclusive development. The article introduces a term "repositioning of the regional industrial complex" as a gradual process of interdependent technological, economic, social-institutional, environmental and organizational change based on innovation. It proves that this complex should be viewed as a network of competitive and structurally balanced productions, satisfying individualized needs of the high-tech sector in knowledge-intensive goods and services and increased quality needs of traditional industries. The study offers a methodological approach to single out the priority directions

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for technological development of basic sectors in the industrial regions. Its unique feature is to carry out bibliometric modeling as a preliminary framework disclosing key areas of basic industries development at the first stage; to conduct research in the regional patent activity in the selected development directions at the second stage; to single out the agreed priorities to upgrade basic industries on the basis of the Foresight methodology at the third stage. The case study of the Urals helps substantiate the prerequisites for the formation of a new technological shape of the regional metallurgical complex. The authors develop scenarios for repositioning of metallurgy of the region and describe corresponding stages, characterized by the system of proposed indicators.

Key words: industrial region; bibliometric modelling; patent analysis; foresight; priorities; repositioning; technological shape; scenario approach.

Introduction

Industry is a backbone of the Russian economy. It is a key factor of economic growth. Despite the fact that in the period of serious market transformations the role of industry in shaping the country's GDP, tax revenues, employment and other macroeconomic indicators narrowed, it still occupies the leading place in the economy, creating necessary conditions for economic growth. However, today Russia addresses the challenge of new industrialization, involving the update of the technological, socio-economic base of economy and the change of the ways to manage the country's economic complex. During the formation of new industries and infrastructure there is a mismatch between techno-economic and socio-institutional spheres. There are also internal contradictions in the economic system between new and old technologies. The process of their overcoming is socio painful, difficult and long-term. Therefore, in our view, new industrialization affects management and organization not only at the level of individual firms, industries and sectors, but also the entire system of social and political regulation. Successful implementation of new industrialization requires fundamental changes in investment behavior, technological solutions and organizational models. These changes will improve the efficiency of decision-making, promote positive changes in the mentality of society and the institutional environment, supporting and regulating the desired economic and social processes.

It appears that new industrialization should focus on inclusive economic growth, which is manifested not only in the growth rates of macroeconomic indicators, but also in the improved distribution of growth results and the extension of equal opportunities for all society members [21, 17]. **Thus, new industrialization can be interpreted as a synchronous process involving not only the creation of new high-tech sectors, but also the effective and innovative update of its traditional sectors as a result of agreed quality changes between techno-economic and socio-institutional spheres, carried out on the basis of inclusive development principles through interactive, technological, social, political and administrative changes.**

The successful experience of new industrialization in Europe shows that it is the modern diversified industrial sector that determines rapid and qualitative economic

growth. The reason is that of all sectors the industry ensures the highest growth rates of labor productivity and has a high multiplier effect on other economic sectors.

Repositioning of basic industries under new industrialization. The RF industry forms about 35% of the country's GDP. Among federal districts we can single out the Ural Federal District, as the share of industry in GRP amounts to more than 55% (*tab. 1*). The share of the Ural Federal District in the Russian industry ranged from 19 to 21% over the last decade (2004–2014).

The technological shape of any industrialized country and its regions characterizes not so much the industry in general as the level and the quality of development of manufacturing industries. By GDP amount Russia ranks the 6th in the world, but by share of value added in the manufacturing sector – the 17th, lagging behind South Korea by 3 times and the U.S. by 24 times.

As mentioned above, the qualitative structure of the industry is largely determined by the share of manufacturing in its composition. The Sverdlovsk and Chelyabinsk oblasts are in the lead in the Ural Federal District; there the share of manufacturing activities exceeds 82% (*tab. 2*). It can be noted that in the Middle Urals the level of industrial production concentration exceeds the national average by 4 times.

The global trends of industry development indicate high growth rates of high-tech, environmentally-friendly industries,

Table 1. Share of industry in GRP of RF federal districts, 2013

Federal District	Share of industry in GRP
Central Federal District (CFD)	24.5%
Northwestern Federal District (NWFD)	33.1%
Southern Federal District (SFD)	23.7%
North-Caucasian Federal District (NCFD)	14.5%
Volga Federal District (VFD)	44.1%
Ural Federal District (UrFD)	55.7%
Siberian Federal District (SFD)	38.2%
Far Eastern Federal District (FEFD)	37.5%

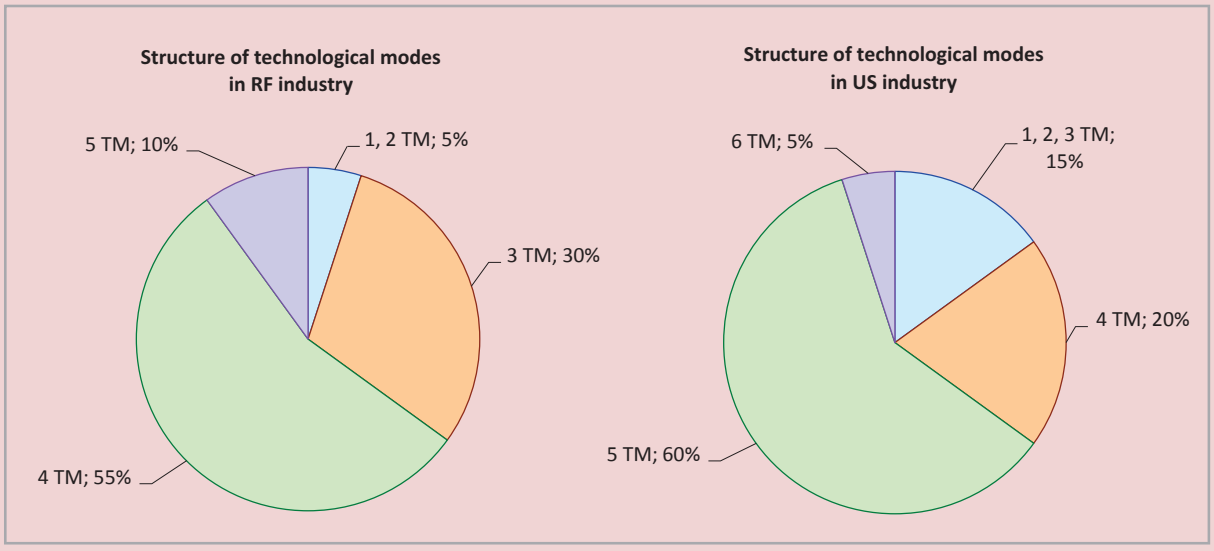
Table 2. Share of manufacturing in the structure of industry in the UFD regions, 2013

Subject	Share of manufacturing activities in the structure of industry
Chelyabinsk Oblast	86.4%
Sverdlovsk Oblast	82.3%
Kurgan Oblast	75.2%
Tyumen Oblast, in general, including	10.1%
Yamalo-Nenets Autonomous Okrug	2.5%
Khanty-Mansi Autonomous Okrug	2.3%

characterized by the high rates of decline in resource intensity and growth in labor productivity in the developed countries. Manufacturing activities in the developed countries (the USA, Germany, etc.) do not only satisfy needs of the territories where they are located, but also have high export potential. The solution of the problem to develop high-tech industries in the country like, for example, Germany was ensured by the "New high-tech strategy", adopted in 2006. It encouraged the implementation of the national innovation system reform. The realized programs involved the use of nanotechnology virtually in all industrial sectors of the economy. They had two main goals: 1) support of strategic sectors (biotechnology, space, energy, information and communication, etc.), which development will create new markets and become the basis for future development; 2) formation of a new social mentality, when new ideas have the highest value [1]. In addition, nowadays Germany is implementing the program "Industry 4.0": the national education system is adapted to the co-development of industrial and information technological bases [5]. The program elaboration was stimulated by the experts' forecast on the formation of the next (fourth) industrial revolution in the coming years. In these conditions the enhancement of manufacturing industry competitiveness is of strategic importance.

The quality of the industry technological structure in any country is characterized by the structure of formed technological modes (TM). If in the US industry 5 TM dominates and the elements of 6 TM are being actively formed, in the Russian industry the technologies of lower modes are functioning (*fig. 1*) [6].

Figure 1. Structure of technological modes (TM) in the industry of the Russian Federation and the USA



The current pace of changes in global market conditions, uncertainty, geopolitical transformations and, at the same time, the formation of a domestic economy development vector on the basis of new industrialization principles lead to the fact that the successful development of the Middle Urals industrial complex can be focused not so much on addressing the needs of traditional industries as new high-tech ones. The complex development should involve market prospects and realization of competitive advantages. In this regard, under new industrialization further development of the Urals industrial complex is connected with the new development priorities, unique repositioning of the old industrial region into the region with the strong scientific-technological and production base that meets modern requirements of world standards. The key objectives of this transformation are the following: creation of new markets aimed at high-tech consumption sectors and satisfaction of increasing quality demands of traditional customers of industrial products.

The uncertainty of conditions and factors determining the repositioning of the regional industrial complex involves the need for a uniform approach to understanding of the term "repositioning". We carried out the research in the conceptual framework concerning the interpretation of this term suggested by domestic economists, identified their similarities and differences. It helped propose the author's definition of this term in relation to a regional industrial complex (RIC). We understand RIC repositioning as a **gradual process of interrelated technological, economic, social-institutional, environmental and organizational changes based on innovation, helping due to the achieved indicators of best available technologies and the implemented principles of "green economy" to generate a new technological shape of the industrial complex as a network community of competitive, structurally balanced production, meeting individualized needs of the high-tech sector in knowledge-intensive goods and services and increased quality demands of traditional branches of the economy.**

The conducted studies [7, 11, 13, 15] identified the preconditions indicating real possibilities for repositioning of basic industries and the formation of their new, modern, technological shape. Person, his/her creativity and entrepreneurial activity is a defining resource of this repositioning. The importance of such traditional resources, as mineral, scientific-technological, industrial, institutional, is not diminished. However, the requirements to their quality are changed dramatically, considerable attention is paid to the possibilities of varying the combination of resources used. This combination helps increase "recombination potential" and contributes to the achievement of new industrialization goals.

The article considers metallurgy as an example of a typical basic industry of the Ural industrial region. It discloses preliminary estimates of resource potential of new industrialization and identifies technological and economic prerequisites for the formation of its new technological shape [8, 9, 10].

In the Middle Urals industry the decisive role in the region's economic development is played by the metallurgical complex, whose share in the structure of manufacturing

industries amounts to more than 55%. The region provides more than 10% of Russia's production of metal-roll. Before the geopolitical crisis that began in the 2nd half of 2014 the export of the Sverdlovsk Oblast metallurgical enterprises covered 86 countries near and far abroad. Due to a number of large-scale investment projects, implemented in 2010–2014, the Middle Urals metallurgy set up production of new high-tech steel products [16]. There is no open-hearth steelmaking (3 TM), and steelmaking capacities are distributed between converter (4 TM) and electric furnace (5 TM) production methods. The achieved technological production level gives an opportunity to manufacture high quality metal which corresponds to the modern requirements of high-tech industries.

Methodological approach to the change in the technological mode of the basic industry. The formation of new markets, focused on high-tech industry consumption, and the increased competition on the construction materials market actualizes the need to develop methodologies identifying the priorities of technological development of metallurgy and contributing to the change in its technological shape. The Institute of Economics, the Ural Branch of RAS developed a methodological approach to the identification of priorities of metallurgy technological development, applied to the Middle Urals metallurgy. The first stage of this approach involved the construction of the bibliometric model revealing interaction of metallurgy with related research activities. During bibliometric modeling we built the information model on the basis of different flows of documentation taking into account their specificity. The study highlights the main areas of nanoscience as the key discipline of the 6 TM kernel having strong relations with iron and steel production, involved in the development of high-tech industries. We also studied the state and the speed of elaboration of the promising directions.

The analysis of nanoscience development revealed the high growth rate and the dynamics of publication activity of the works devoted to nanomaterials. This suggests that materials take one of significant places in the structure of the scientific base of the latest TM. There is a relatively strong correlation among academic disciplines, proposing the idea of nanomaterials (nanostructured materials; bulk nanomaterials, obtained by hardening from the melt and severe plastic deformation; powder nanomaterials, etc.) and fundamental metallurgical disciplines (metal science; technology of foundry processes, etc.). As a result of the bibliometric analysis we selected materials and processing methods that are shared in nanotechnology and metallurgy and, thus, formed the basis for further analysis.

In accordance with the developed methodological approach we identified the scientific areas appropriate to the headings of the International Patent Classification (IPC). The attribution of the selected research areas to the relevant IPC headings allowed us to single out 4 main subgroups of metallurgy and 4 separate directions, using the opportunities of nanotechnology. Having determined the directions of technological development of the scientific base of high-tech industries and metallurgy we found points of their intersection (*tab. 3*). The study was conducted on the basis of analyzed databases of the European Patent

Table 3. Correlation of the directions of technological development of the scientific base of high-tech industries and metallurgy in accordance with the International Patent Classification (IPC 8th edition)

Directions of nanosciences		Directions of metallurgy	
IPC code	Designation	IPC code	Designation
B82B	Nanostructures, their fabrication and processing	C21	Metallurgy of iron
B01J	Chemical or physical processes, e.g. catalysis, colloid chemistry; tools to carry them out	C22	Metallurgy; alloys of ferrous or nonferrous metals; treatment of alloys or non-ferrous metals
B81B	Microstructural devices or systems, e.g. micromechanical devices	C23	Coating metallic material; coating other materials with metallic material; chemical surface treatment; etc.
C09	Dyes, paints, varnishes, etc.	C25	Electrolytic methods of production, recovery or refining of metals, and coating; devices therefor (scope – non-ferrous metallurgy)

Office and the Federal Institute of Industrial Property. So, at the first we built a process map of world metallurgy development in the conditions of 6 TM and also specified a scientific vector of the Russian metallurgy development.

The second stage of the developed methodological approach presupposes the identification of scientific and technological potential of the Middle Urals in terms of the requirements of best available technologies to steel products. We formulated a hypothesis on the consideration of the patent granting dynamics as one of the factors justifying the choice of priority directions to improve the quality of domestic products. In our view, the growth in patent activity can be a characteristic of innovative activity. Under this hypothesis relying on the previously selected promising areas of metallurgy development we had an additional stage of patent analysis, which specified the regional identity of potentialities, the date of receipt and the status of the patent.

To test the method we studied the patent database according to the RF registered patents referring to materials, technical equipment and methods for increasing the quality of steel. On the basis of the patent classification we determined the intersection points of the search headings of metallurgical specializations and the nanoscience practical application sections that helped narrow down the selection of priority metallurgical directions. Then we considered the following areas: treating molten steel in a ladle (IPC code C21C7 ladle treatment); high-pressure metal processing, with/without heat treatment (IPC code C21D8; C21D9); coating using molten and solid coating material (IPC code C23C); and obtaining rare earth metals (IPC code C22B59) *(tab. 4)*. The analyzed period equaled to 12 years (2003–2014). The detailed analysis made it possible to trace the development of each selected area at the international, federal and regional levels.

The combination of the selected areas forms the technological base boundaries, reflecting the specific requirements of the best available technologies to steel products. We analyzed the granted patents by basic perspective directions of industry development

Table 4. Dynamics of granting patents by RF federal districts by promising areas of metallurgy development, units

Federal district	Year of patent publication												
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total for 12 years
Total in Russia	57	44	33	37	33	51	56	48	54	66	58	65	602
CFD	25	16	12	15	15	23	29	16	35	26	31	37	280
of these, number of foreign right holders	7	3	5	8	4	11	4	8	19	14	7	5	95
NWFD	12	6	4	5	3	2	6	2	10	10	5	15	80
of these, number of foreign right holders		2		1			1		2	1	2	1	10
SFD	1	1		1	3	2	1	3	2		1	1	16
NCFD						2				1			3
VFD	7	4	7	7	3	6	4	8	1	5	3	4	59
UFD	9	17	7	7	4	12	12	13	3	18	16	3	121
SFD	2		3	2	5	4	4	6	3	6	2	5	42
FEFD	1												1

Compiled by the data provided by the public registers of the Federal Institute of Industrial Property. Available at: http://www1.fips.ru/wps/portal/Registers/

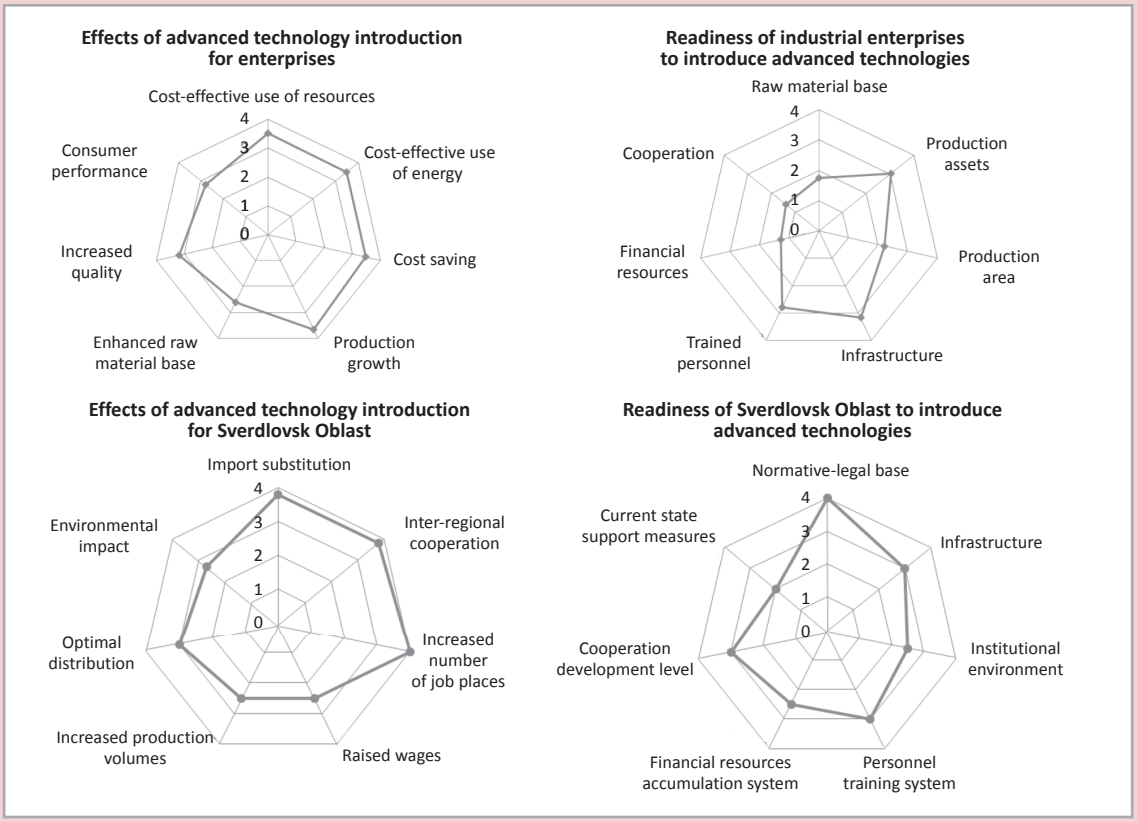
in the world and found out a steady, positive trend in this indicator in Russia, similar to the global one.

At the federal level active granting of patents considered as promising is conducted through the Central Federal District (with about 37% of the grant receivers in this district being foreigners). The Ural Federal District, where patent owners are concentrated mostly in the Chelyabinsk and Sverdlovsk oblasts, lags behind only the Central Federal district by development of perspective directions and steel occupies the leading position by development of technologies for liquid steel processing.

To clarify the development priorities, agreed at the previous stages, we conducted further research based on the Foresight methodology, which fully conforms to modern scientific approaches and existing practices of making long-term forecasts [2, 18, 20, 22]. Under this methodology we worked out an expert questionnaire reflecting the specifics of engineering support of the metallurgical complex in the Middle Urals. This study was focused not only on forecasting, but also on forming a coherent vision of innovative development prospects among "key players" of metallurgy in the region. The representatives of regional authorities, large industrial enterprises, business, science and education were involved in the solution of this problem. We held a number of meetings with experts, compiled a preliminary list of promising technology areas, conducted a survey, made conclusions and published results [14].

We proposed to assess the identified priority areas in terms of the timeliness of implementation and achievement of a positive effect for business and economy of the Middle Urals, in general (*fig. 2*).

Figure 2. Expert evaluation of possibilities and effectiveness of perspective technologies implementation at metallurgical enterprises of the Sverdlovsk Oblast [14, pp. 242-243]



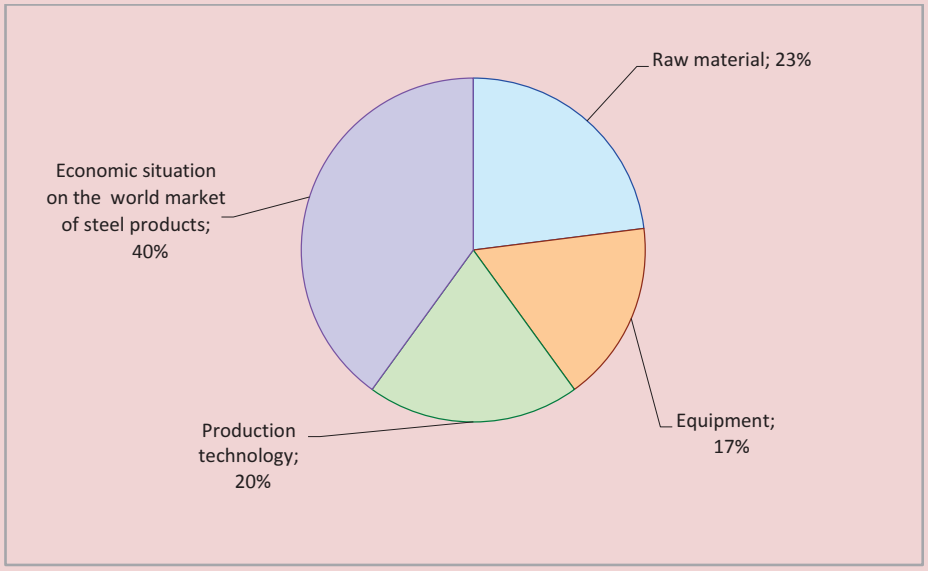
According to the research results (see fig. 2), the Sverdlovsk Oblast is not fully prepared for the introduction of advanced technologies, primarily due to the weak government support and the immature legal framework. Regional infrastructure and the staff training system are other obstacles. Financial resources, inadequate cooperation and insufficient provision with certain raw materials are key constrains for industrial enterprises to introduce advanced technologies.

The expert panels also take into account the main risk factors accompanying the introduction of new technologies of steelmaking. Both the probability of their occurrence and the impact on a manufacturer are considered (*fig. 3*).

The figure shows that in the crisis conditions of economic development the relevance of risk-based assessment of the world situation is increasing.

The research helped reveal and systematize the list of priority regional directions of technological development of metallurgy and assess the degree of influence of production and socio-economic risk groups. The technological development of steel industry is largely determined by the rising share of

Figure 3. Production and socio-economic risks of steelmaking, %



high-tech metal products, which volatility depends on the development of consumption sectors. The results allowed us to construct a steelmaking development vector relative to the changes on the consumer market (*fig. 4*).

Such a significant change in the share of the high-tech metal products market, shown in the figure, is caused by the idea to form an optimal variant of its growth following the programs to develop metallurgy and steel consuming industries by 2050. The experience of European metallurgy, implementing best available technologies, is taken into account. By key indicators European metallurgy exceeds the domestic by 60–70%.

To identify the expected metal consumption structure we analyzed the normative-legislative base defining the Strategy for the development of the domestic industry, including ferrous metallurgy of Russia [3, 4, 12]. Besides, we considered existing and planned investment projects and specified the structure of the high-tech metal products consumers for the period up to 2050 (*fig. 5*).

Though the proportion of high-tech metal products consumers has risen from 17 to 70%, the structural changes are forecasted. The figure indicates that by 2050 the consumer segment of energy and transport will reduce by more than 2 times, the consumption of steel products by aircraft-and shipbuilding industries will grow by 10% and new consumption sectors will appear: biotechnology (7%) and information and communication (5%).

Scenario approach to the metallurgical complex development in the Middle Urals. Steel industry is greatly influenced by many external and internal factors, that is why it is difficult to single out quantitative parameters for forecasting. In this regard it is rational to apply a scenario approach [19]. We elaborated 4 scenarios for metallurgy development in the

Figure 4. Steelmaking development vector relative to changes in the consumer market

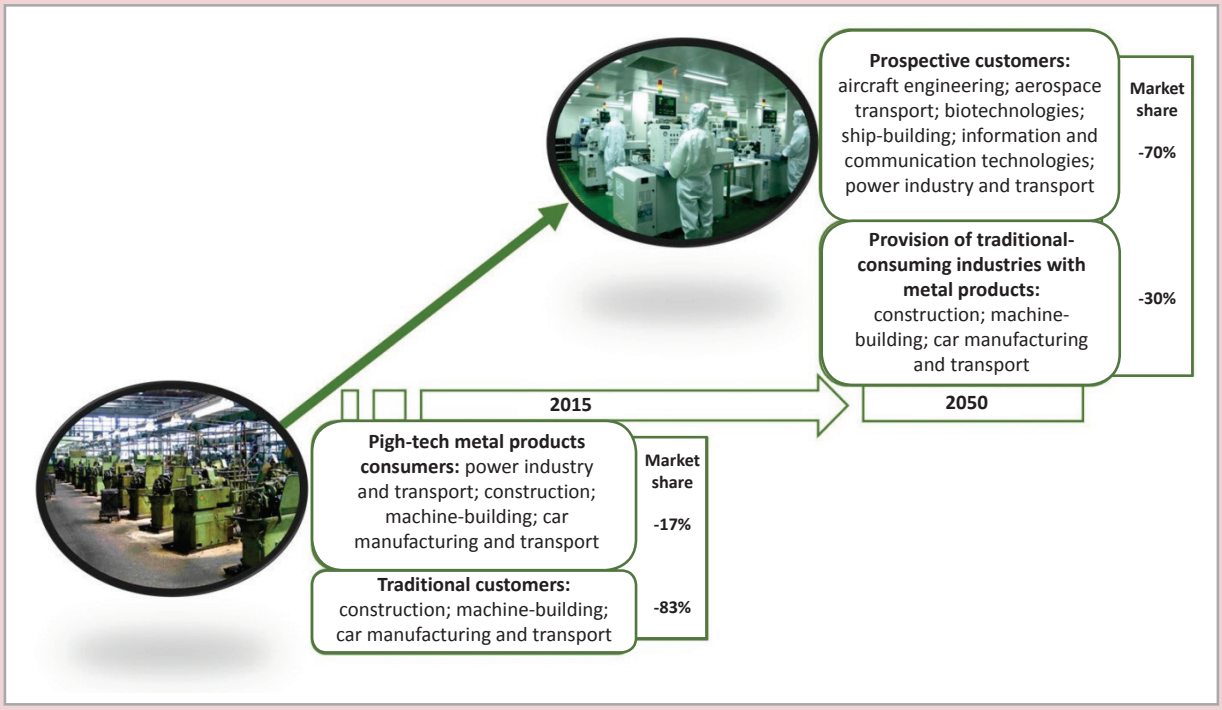
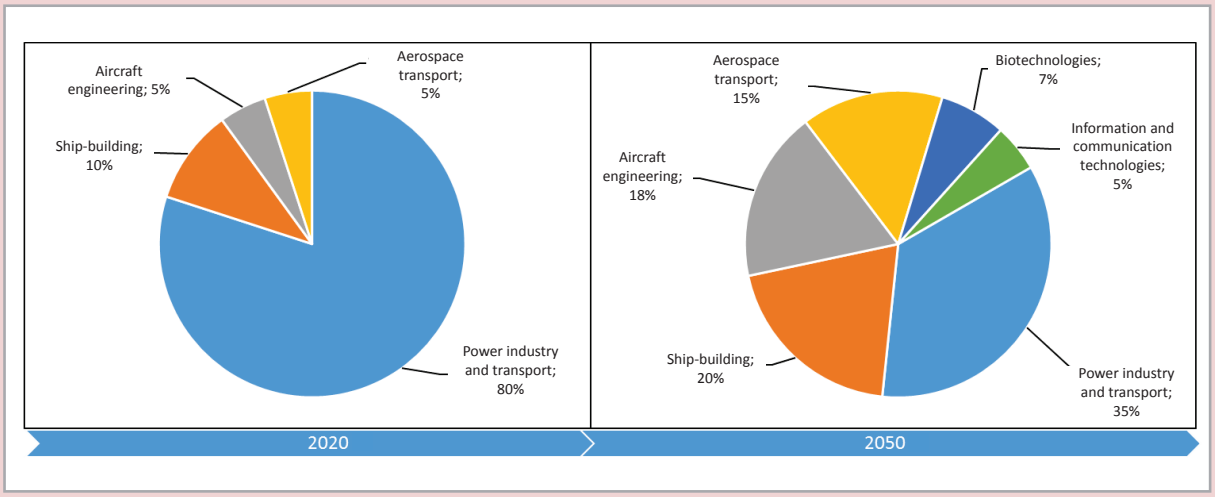


Figure 5. Structure of high-tech metal products consumers of the Middle Ural



Middle Urals: negative, inertial, innovative and "image of the future". The scenario "image of the future" is essentially of qualitative nature. It is based on the elaborated predictive tools, the metallurgical complex development programs and the analytical generalizations of development trends in the steel consuming industries on global and domestic markets.

While working out the scenarios as initial parameters to characterize the stages of regional metallurgical complex repositioning, we singled out the indicators in accordance with the ones adopted in metallurgy of developed countries, the strategy for domestic industry development and the forecast of socially-economic development of the Sverdlovsk Oblast. To specify them, we, using the method of principal components, systematized the indicators forming the critical directions of repositioning. As a result, we had 3 main components (F1, F2, F3) defined by the set of dependent variables (*tab. 5*).

The selection of the most significant factors that influence metallurgy repositioning in the region helped identify the guidelines for decision making in the changing socio-economic and political conditions. We worked out the scenarios of metallurgical complex development in the Middle Ural for the period up to 2030, such as negative; inertial and innovative.

The negative scenario assumes the industry development in the face of rising foreign risks, capital outflows and instability of the national currency system. Oil contracts can dip to 40 U.S. dollars per barrel. In this situation the slowdown of the national economy will affect the sectors, such as metallurgy, machine building and construction. In this case the key risks are the following: dependence on world prices; preservation of economic policy aimed at selling products of first processing stages. The reduced investment in the complex will lead to the growth of material and energy intensity of production, the slowdown in the rate of fixed assets renewal and the decrease in product competitiveness. It will hamper repositioning of the metallurgical complex in the Urals, in general, maintaining the existing trends. This scenario does not involve significant investment in the industry.

The inertial scenario simulates the situation in the metallurgical complex, when the crisis impact on the Russian economy is not excessive, the national currency is weakened and the current trends in the national economy are preserved. The price of a barrel of Brent crude oil remains not below 50 U.S. dollars. Major institutional and organizational changes and critical deterioration of the situation are not expected. This scenario is characterized by the following risks: probability of macroeconomic instability, either directly or indirectly affecting the Russian economy; formation of long-term budget deficit; emergence of crisis phenomena in the banking system. No technological change in metallurgy of the Middle Urals is expected. On the other hand, during the period of active demand on the world market metallurgy was restructured, it has certain capabilities to maintain an acceptable technological level. The sector's upgrade follows the principles of further modernization of traditional industries and search for the ways to promote development

Table 5. Formation of principal components and interpretation of solutions

Component	Indicators forming the main component	Proportion of the total variance, %	Directions for repositioning
F_1	Sum of indicators of a and b sub-components	48.8	Effectiveness of innovative activity
a	Indicator of competitiveness of domestic steel products on the world market, βm, adjusted by ratio of the cost of export-import operations, % Issued patents for invention related to promising directions, units Finished iron and steel products, thousand tons Cost of product innovations, thousand rubles	47	Effectiveness of product metal base development
b	Share of steel production in electric furnaces % Share of steel products of high processing stage, % Share of innovative products, % Costs of process innovations, thousand rubles	46.8	Effectiveness of technological development of metallurgy
F_2	Volumes of air pollutants, thousand tons Contribution to the pollution of surface water bodies: volume of polluted waste water, million m^3 Labor productivity in steelmaking, thousand rubles Investment in fixed capital, million rubles Resource intensity of rolled steel, kg/t Energy density of rolled products, kgoe/t	36.5	Ecological-economic effectiveness of investment activity
F_3	Average staffing number in the industry, thousand people Share of highly qualified specialists, %	14.7	Provision of the industry with highly qualified specialists

projects of high-tech branches. The process of the inertial scenario implementation assumes the increase in import substitution of metal products of high processing stages.

The innovative scenario involves the establishment of the modern high-tech complex with high labor productivity that meets the requirements of sustainability, energy and resource saving production and gives an opportunity to speak about the possibility to form a new technological image of metallurgy. The feasibility of this scenario presupposes technological, institutional, economic and organizational changes. The functioning of innovative industries and the creation of business climate to boost investment activity contribute to the development of public-private partnership. The growth of investment activity in the sector, including at the expense of small and medium-sized regional enterprises, is expected. The application of the innovative scenario is possible if the price of a barrel of Brent crude oil is not below 60 U.S. dollars, the sanctions are lifted, the business activity are improved, the situation on the world metal market is enhanced and the investment in the real sector is increased. The implementation of the innovative scenario indicates the repositioning process of metallurgy. Investors, business communities and the society in the territories where the metallurgical enterprises are located perceive the industry as modern and high production with advanced network interactions.

Conclusion

Thus, the metallurgical complex repositioning is the process of gradual generation of the new technological shape of the basic sector in the region, changing the perception of steelmaking as a "dirty industry". The formation of the new technological basis, meeting and in some areas exceeding the requirements of the best available technologies and the green economy, the shift towards knowledge-intensive production and satisfaction of individualized needs of the high-tech sector of economy and the radical change in the qualification structure of labor resources will characterize the defining features of the new technological shape of the regional metallurgical complex.

Information about the Authors

Ol'ga Aleksandrovna Romanova – Doctor of Economics, Professor, Department Head, Federal State-Financed Scientific Institution Institute of Economics, Ural Branch of the Russian Academy of Sciences (29, Moscovskaya Street, Ekaterinburg, 620014, Russian Federation, econ@uran.ru)

Dmitrii Vladimirovich Sirotin – Junior Research Associate, Federal State-Financed Scientific Institution Institute of Economics, Ural Branch of the Russian Academy of Sciences (29, Moscovskaya Street, Ekaterinburg, 620014, Russia, sirotind.umk@mail.ru)

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Interregional Cooperation in the Emerging Eurasian Economic Space

Konstantin Anatol'evich GULIN
Doctor of Economics, Associate Professor
Institute of Socio-Economic Development of Territories of RAS
56A, Gorky Street, Vologda, 160014, Russia, gil@vscc.ac.ru

Abstract. In 2015 the Treaty on the Eurasian Economic Union entered into force and presented a new stage of reintegration of the countries on the territory of the former USSR. The success of this project will depend not only on collaboration at the national level, but also on the degree of the EEU countries' involvement in the integration process. The academic debate on this issue is a relevant and practically important task. The article highlights the results of the international online-conference "Interregional cooperation in the emerging Eurasian Economic Space", conducted by the Institute of Socio-Economic Development of Territories of RAS June, 16–20 2015. It considers the issues associated with interregional trade and economic cooperation, interaction in the sphere of science and innovation and various aspects of humanitarian cooperation. It raises important problems of cross-border cooperation of the EEU states. The article makes a conclusion about the need to develop the integration process both in scope (through expanded directions of cooperation, which should not be limited only to contacts at the highest political level or trade partnership) and depth (through involvement of regions, enterprises, different social groups, individual citizens).

Key words: international cooperation, integration, Eurasian Economic Space, interregional relations.

January 1, 2015 the Treaty on the Eurasian Economic Union (EEU) replaced the Treaty on the Establishment of the Eurasian Economic Community (EURASEC), adopted in 2001. It marked a new stage of reintegration of the states on the territory of the former USSR. The EEU includes Armenia, Belarus, Kazakhstan, Kyrgyzstan and Russia.

The Union seeks the goal of comprehensive modernization, cooperation and enhanced competitiveness of national economies and creation of conditions for the stable development in the interests of raising living standards of the population will depend not only on collaboration at the national level, but also on the degree of the EEU countries' involvement in the integration process. The academic debate on this issue is a relevant and practically important task.

In the period from 16 to 20 June 2015 the Institute of Socio-Economic Development of Territories of RAS held an international online-conference "Interregional cooperation in the emerging Eurasian Economic Space" on the special ground (http://eeu-conf.isert-ran.ru/). There were over 20 reports in 3 thematic sections:

1. Experience, problems and prospects for interregional trade and economic cooperation within the Eurasian Economic Union.

2. Cooperation in the sphere of science and innovation – a factor to increase regions' competitiveness within the Eurasian Economic Union.

3. Humanitarian cooperation – expansion of conditions to develop human potential of regions in the Eurasian Economic Space.

The article summarizes the main results of the event.

The cooperation of countries forming the Eurasian Economic Space has many aspects. It affects not only trade or political relations, but many other areas as well. The broad range of issues concerning the cooperation between countries and regions of the Eurasian Economic Union was presented by the conference participants.

Chief Research Associate of the Institute of Socio-Political Research of RAS Doctor of Philosophy, Professor E.M. Andreev reviews current Eurasian integration processes: theoretical-methodological and practical aspects of the implementation. The economic regionalization in the post-Soviet space is characterized by the fact that it involves newly independent states (NIS) – parts of the single state in the past. The post-Soviet integration processes are influenced by many factors, such as: high economic and social divergence of NIS; incomplete identity formation of most new countries, existing historical conflicts and contradictions; significant institutional differences between countries together with the high level of management centralization; Russia's economic dominance in the post-Soviet space together with its technological weakness; fuel and raw material economy specialization of the leading countries in the region; underdeveloped infrastructure together with the great length of space, etc.

Associate Professor of the West Kazakhstan Agrarian-Technical University Named Zhangir Khan, Ph.D. in Economics G.A. Aiesheva

touches upon the issues of potential and prospects of innovative cooperation of the EEU countries. She makes a conclusion about the necessity to boost innovative activity in educational institutions, provide scientific-technological support of innovative activity and promote integration of science, education and production. In this regard, the scientific community of the EEU countries should actively establish ties to exchange experience, train students, improve personnel's qualification and cooperate with manufacturers. For example, Kazakh specialists want to learn about the best proposals and projects to develop renewable energy sources and raise their economic efficiency. According to the scientist, the implementation of the Interstate Program for Innovation Cooperation of CIS Member-States for the Period until 2020 can ensure effective interaction of national innovation systems in the innovative space and mobilize existing scientific and technical potential.

Innovative cooperation is also elaborated in the report of ISEDT RAS Senior Research Associate Ph.D. in Economics M.A. Lastochkina, analyzing the modernization level in the EEU countries. She concludes that successful functioning of innovative economy in these countries requires the presence of national innovation systems of institutions and social practices, creating real opportunities for the development of innovative type. For the purpose of modernization the countries should consider and implement the ways to boost the competitiveness of industries, mainly due to the development of innovation. It will ensure the effective inclusion of EEU countries in the global economic system.

ISEDT RAS Junior Research Associate I.V. Kuzmin evaluates the interregional cooperation in the sphere of innovative activity and the critical directions of its development. There are advantages of international innovative cooperation within the Eurasian Economic Union, such as a lack of a language barrier and geographical proximity. The researcher proposes tools of Russian-foreign partnership; particularly, to use the potential of both regional and national programs and innovative infrastructure networks aimed at the encouragement of international innovative cooperation.

Professor of Novosibirsk State University of Economics and Management, Ph.D. in Philosophy L.M. Kochetova considers the opportunities and prospects for international trade cooperation within the Eurasian Economic Union through the development of exhibition activity. According to the scientist, today the exhibition business of the Eurasian Economic Union has a trend to unite the participating countries' efforts in holding expoevents and focus on narrow thematic solutions. The EEU forms expo-space, characterized by the promotion of trade collaboration in the context of world economy globalization and the exhibition market. The features of exhibition activity of the Union are the following: integration in different markets and inseparability from other sectors of the economy. For the EEU integration it

is important for the countries to interact in the process of preparation and holding of the world exhibition "EXPO-2017" in Astana.

Senior Research Associate of the Institute of Socio-Political Research RAS Ph.D. in Sociology, Associate Professor I.A. Selezneva analyzes the experience of social integration in Europe: lessons and prospects for the Eurasian Economic Union. According to the researcher, the following principles are in favor of the European social model: social justice, social security, social solidarity, competitive economy, economic progress, ecology favorable for society, democracy and human dignity. However, the European Union integration in the sphere of social policy lags behind economic and political convergence. This should be considered when building an integration model of social policy in the EEU countries, because the situation corresponds to the early stages of European integration development, when insufficient attention was paid to social policy. At the same time, the complex international situation, certain EEU member states are experiencing nowadays, dictates the need to increase social solidarity and reduce social tension.

The opportunities for social interaction of the EEU member countries in the interests of improving living standard of the population are described in the report of ISPR RAS Deputy Director for Science, Sector Head Doctor of Sociology, Professor G.I. Osadchei. In her opinion, the success of Eurasian integration is determined by the social formation of the Eurasian Economic Union and the effective social interaction of its member states. The scientist makes a conclusion about the necessity to realize the supranational social policy model, which is a system of interrelated social actions, carried out under the supranational integration association strategy. It stipulates the role of actors of supranational and national social policy, the nature of social and labor relations, principles of redistribution of national revenue, provision of decent living standards in the conditions of market economy, mitigation of risks to enhance the level and quality of life of population in integration associations. This model includes general elements of social policy characteristic of the EEU countries, but different from other integration associations. Its normative base sets minimum values of indicators, standards of social well-being and justice in the EEU. The author finds it fundamentally important to approve the normative notion at the EEU level that social policy that implements the principles of social justice and social alignment contributes to the achievement of the economic EEU goals.

ISEDT RAS Junior Research Associates T.S. Solov'eva and A.V. Popov study the demographic factor impact on the provision of Russia and Kazakhstan's economy with labor resources. They conclude that in Kazakhstan all regions are characterized by labor-surplus, mostly due to low skilled workers and acute shortage of highly qualified specialists. Russia lacks both low-and highly skilled workforce.

Russia and Kazakhstan, having different demands in staffing, can eliminate the shortage of personnel in some specialties but for barriers to employment. This problem can be solved in the framework of the Eurasian Economic Union by forming a common labor market at the expense of foreign labor force. In addition, it is possible to intensify the activities promoting academic and educational mobility among young people of Russia and Kazakhstan by enhancing the quality of educational programs and expanding education quotas for students from other countries.

Senior Research Associate of the Institute for Regional Economy Problems of RAS Ph.D. in Engineering N.N. Shestakova discusses the interstate migration of the EEU member states citizens with training purposes. This type of migration contributes to the integration of national education systems and private national educational institutions into the world educational space and the enhancement of their competitiveness through the training quality improvement. This provides the economy with the personnel having relevant modern skills and trained for innovative development and expanding scientific potential of the territories. Today in the EEU countries we observe both incoming and outgoing mobility; they mainly import English educational products, offering certain educational programs for young people from developing countries and neighboring countries. In this regard, it is relevant to develop interstate academic mobility.

The speech of ISEDT RAS Research Associate Ph.D. in Economics M.A. Golovchin is devoted to the formation of public-private partnership mechanisms in vocational education in the framework of the Eurasian Economic Union. Considering the experience of Russia and Kazakhstan, the speaker finds out significant differences in the implementation of public-private partnership in the professional education systems of 2 countries. If in Kazakhstan the cooperation of business and educational institutions has broad legislative, institutional and infrastructural support, in Russia the narrow interests of business in the cooperation with educational organizations under public-private partnerships makes this institution quite formal and ineffective.

The speaker proposes directions for Russia-Kazakhstan cooperation, such as methodological assistance in the formation of organizational basis of public-private partnership in the sphere of tertiary education. This direction of interaction can be identified as addendum to the Agreement between the Government of the Republic of Kazakhstan and the Government of the Russian Federation about cooperation in the field of culture, science and education of March 28, 1994. This cooperation can be provoked by the set up of the Council on Educational Collaboration at the Russian Center of Science and Culture in Kazakhstan. It can be responsible for the conduct of seminars and conferences to exchange experience of social partners in training skilled personnel for the economy (with participation of heads

of educational institutions and specialists of Kazakhstani centre of public-private partnership), hold exit sessions of the Board in Russian and Kazakh colleges and universities.

The education trends in the EEU countries are analyzed in the speech of ISEDT RAS Laboratory Head Ph.D. in Economics G.V. Leonidova and ISEDT RAS Research Associate Ph.D. in Economics K.A. Ustinova. It is advisable to use more deep cooperation forms, which will lead to the harmonization of national priorities in the scientific and technological sphere and the creation of institutional and financial mechanisms in the form of international foundations supporting research and innovative projects. The authors specify key directions for the EEU states cooperation in the educational sector, such as: improvement of the content, forms and methods of education at all levels of training; elaboration of agreed indicators for education quality monitoring; harmonization of educational programs to simplify the procedure for mutual recognition of certificates; organization of joint training, internships and further training of the personnel; conduct of joint studies; implementation of the mutual examination of scientific, scientific-methodical, educational products, normative documents in the field of education.

The interaction of integration and language processes in the post-Soviet space of Central Asia is covered in the speech of ISEDT RAS Senior Research Associate Ph.D. in History O.B. Molodov. He emphasizes that the integration dynamics correlates to ethnic and language processes in Central Asia. There is a general trend of gradual decline in the role of Russian in the region, mainly due to the decline in the share of Russian-speaking population. The gradual isolation of certain Asian countries from the achievements of Russian culture, education and scientific knowledge hinders the development of integration processes in the region, the legalization and obtainment of decent employment by labor migrants in Russia – a large labor market for immigrants from Kyrgyzstan, Tajikistan and Uzbekistan.

The deepening of integration relations and the Eurasian Economic Space stability involves both the development of ties at the interstate level and the participation of regions of the EEU states in this process.

Senior Research Associate of the Institute of Socio-Economic and Energy Problems of the North Komi Scientific Centre, Ural Branch of the Russian Academy of Sciences Ph.D. in Economics, Associate Professor T.Yu. Mikusheva discusses the state and prospects of interregional cooperation of the RF Northern region in the Eurasian Economic Space. She comes to the conclusion that the regions should focus on the use of all domestic resources for the development of infrastructure and education, the support of innovation and small businesses, the implementation of necessary structural transformation of the economy, the improvement of business climate and the rise of entrepreneurial

activity and local initiatives. On this basis higher quality foreign investment can be achieved; local entrepreneurs can take the lead in the search for and attraction of foreign investors or become decent partners or competitors. This will widen the participation of various business entities and the scale of the Eurasian Economic Union's activities in the integration process.

ISEDT RAS Research Associate Ph.D. in Economics E.V. Lukin considers the issues of interregional trade and economic cooperation within the Eurasian Economic Union, an essential resource for deepening economic integration, such as: creation of a single international informational portal in the field of interregional cooperation; allocation of funds for interregional projects implementation; establishment of interregional institutions focused on investment development; conduct of the measures to forge business contacts; formation of specialized structures in the system of state bodies, responsible for the development and coordination of interregional relations; organization of training seminars on interregional cooperation.

S.S. Balyuk, an external Ph.D. student of the Economic Theory Department at the Faculty of Economics of the Belarusian State University, having studied the issues of innovative clusters formation in the industrial complex of the Grodno Region of the Republic of Belarus, makes a conclusion about the possibility of creating international clusters to improve the competitiveness of the entire Eurasian Economic Space.

The significant number of reports is devoted to the topical issues of cross-border cooperation of the EEU countries.

Associate Professor at the Belgorod State University Ph.D. in Economics V.A. Sapryk discusses conceptual approaches to the study of regional cross-border cooperation and proposes to identify the cross-border interaction system as not linear, but as emergent, self-organizing and acquiring new quality and new features. The cross-border interaction system is not limited only to a border region or summation of socio-economic indicators of these regions; it acquires new essence in the social landscape of the bordering countries.

Chief Research Associate of the Institute for Regional Economy Problems of RAS Doctor of Economics, Professor N.M. Mezhevich analyzes the factors in the evolution of economic space and their influence on the development of agglomerative bonds at the Russian-Belarusian border. In the past two decades there emerged a new configuration of cross-border interactions at the Russian-Belarusian border. This economic space is characterized by its relative homogeneity; the economic development level is quite low there. Therefore, cross-border cooperation is not so strong and does not have such a variety of forms, as, for example, between Russia and the EU. In the practice of Eurasian integration it is unlikely to expect significant growth of small towns along the border (as happened, for example, in Lappeenranta, Finland). In this situation the key strategic

guidelines can be identified, such as increasing economic stability of the integration unit on the basis of production cooperation, improving competitiveness of products and expanding markets.

At the Russian-Belarusian border it is possible to form separate local integration zones. The scientist singles out agglomerations, located at the border area and having transboundary impact on the development of small towns there, such as Vitebsk and Gomel in Belarus and Smolensk in Russia. It can be promising to develop paired towns: Surazh – Kastsyukovichy, Rudnya – Liozna, Velizh – Surazh. The extension of the regions' involvement in the communication channels and the provision of appropriate transport infrastructure are critical problems. It can give an impetus to the economic development and improve the connectivity of economic space.

The role of the border position as a factor to increase competitiveness of Russia and Kazakhstan is disclosed in the speech of Department Head of Institute of Economics and Industrial Engineering of the Siberian Branch of the RAS Doctor of Economics, Professor A.S. Novoselov and IEIE SB RAS Leading Research Associate Ph.D. in Economics, Associate Professor A.S. Marshalova. According to the authors, the possibilities of Kazakhstan–Russia cooperation in the interests of the population living at the border are used insufficiently, despite the fact that the top leaders of 2 states take measures to strengthen comprehensive cooperation of these countries. Additional opportunities for the development of small and medium-sized business appear on these territories.

The most promising areas of cooperation are the following: innovation in agriculture; cooperation in the field of education and medical care; recreation and tourism (development of joint tours with the use of national color, historical monuments, equestrian tourism, etc.); establishment of regional modern transport and logistics centers; and cooperation in the field of culture and sport (days of culture and school tours exchange, regular sport competitions, exhibitions exchange, etc.).

It is necessary for local communities to understand that such cooperation is mutually beneficial and its development leads to the increased level and quality of life in these areas. The border with a friendly country is an additional factor of competitive advantage. Cross border collaboration should be systematically organized.

Master of the Russian Academy of National Economy and Public Administration under the President of RF (RANEPA) K.I. Serezhkina and Doctor of Political Science, Professor of the RANEPA V.V. Ogneva's speech "Cross-border ties as a key direction of the RF foreign policy (case study of the Bryansk Oblast)" arouses great interest. The development of cross-border cooperation requires the improved normative-legal base and the elaborated legal mechanism regulating

interaction of adjacent territories at the level of municipal formations and territorial corporations and the search for the ways to restore and strengthen new relations between the border regions. This can only be achieved by raising the role of cross-border cooperation and increasing attention to the problems of Russian border regions. To solve these problems, it is necessary to intensify activities of the public administration bodies responsible for cross-border ties. It is sensible to improve budgetary and other tools of regional policy and coordinate certain budgetary, tax, customs, border and other events that ensure the development of border areas. The stable and predictable political course and socio-economic development of the country should contribute to further development of cross-border cooperation.

Junior Research Associate of the Institute for Regional Economy Problems of RAS N.A. Roslyakova assesses economic effects of integration for the cities located at the Russian-Belarusian border. The researcher makes a conclusion about more active inclusion of the Republic of Belarus in the integration processes, managed to get some positive results. Having strengthened export specialization, the Mogilev and Gomel regions were able to enter new industries and markets not only in the immediate neighborhood. Institutional reorientation to meet new conditions occurred. Ultimately this resulted in the faster growth of wages in the region.

Associate Professor of V.N. Karazin Kharkiv National Ph.D. in Geography P.A. Chernomaz presents the experience and problems of cross-border cooperation on the EEU borders on the example of "Slobozhanschina" Euroregion. The conclusion highlights that over the last decade Ukraine and the Russian Federation formed the legal basis for the development of transboundary cooperation, including in the form of Euroregions, based on the provisions of the Outline Convention on Transfrontier Co-operation.

"Slobozhanschina" Euroregion acted as a catalyst of Ukrainian-Russian interregional cross-border cooperation processes aimed at improving living standard of people living in the border regions. Following the pattern, the border region of Ukraine and Russia has a compact territorial framework of Euroregions under the agreements signed by the territorial governments of both countries.

However, Ukrainian-Russian political contradictions led to the collapse of cross-border collaboration, rupture of humanitarian relations and economic cooperation of border regions. To cope with the crisis it is necessary for both sides to hold a dialogue, presupposing the creation of effective mechanisms for transboundary cooperation on the basis of existing best practices.

Summarizing, we can note that in the framework of the online conference the various aspects of international and interregional cooperation in the emerging Eurasian Economic Space are considered. It

appears that the conference proceedings will be interesting and useful for researchers and state bodies of the countries participating in the Eurasian integration process. Such events are planned to conduct on this platform in the future.

Information about the Author

Konstantin Anatol'evich Gulin – Doctor of Economics, Associate Professor, Deputy Director, Department Head, Federal State Budgetary Institution of Science Institute of Socio-Economic Development of Territories of Russian Academy of Science (56A, Gorky Street, Vologda, 160014, Russia, gil@vscc.ac.ru)

SOCIAL DEVELOPMENT

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Regional Sociological Research Experience

Mikhail Vladimirovich
MOREV
Ph.D. in Economics
Institute of Socio-Economic Development of Territories of RAS
56A, Gorky Street, Vologda, 160014, Russian Federation, 379post@mail.ru

Abstract. The article presents the experience of the Institute of Socio-Economic Development of Territories of RAS in conducting sociological research on the territory of the Vologda Oblast and the Northwestern Federal District. It describes the historical aspects of formation of the system for public opinion monitoring and examines its theoretical and methodological foundations. The author of the article analyzes the structure of monitoring indicators and provides a brief interpretation of research findings that reflect social well-being and social perception trends. In addition, the paper analyzes people's attitude toward the activities of federal and regional authorities, trends in social well-being, consumer sentiment and also the complex indicator – the index of public sentiment in the region – developed by ISEDT RAS researchers. The results of sociological studies carried out at ISEDT RAS correlate with the dynamics of the all-Russian public opinion polls conducted by the Institute of Sociology of the Russian Academy of Sciences, the Russian Public Opinion Research Center (VCIOM), Levada-Center, etc. They indicate that Russian society gradually adapts to new conditions of life after the collapse of the USSR. Besides, opinion polls show the most important features of the post-Soviet Russian history at its present stage; they are associated with the intensification of international political relations, the consequences of the "Crimean spring" and the new challenges Russia's economy is facing now. The article concludes that as global community, of which Russian society is part, is evolving, sociological knowledge begins to play an increasingly important role in administration and national security; this is associated with the greater importance attached to intangible development factors. Therefore, a necessary prerequisite for administration effectiveness in all its stages is to implement the results of sociological research on social transformation trends and factors in the system of managerial decision-making. Twenty-five years of ISEDT RAS experience clearly show that this principle is relevant, it enjoys great demand and brings actual practical results. It indicates that the system of feedback between society and government, a feedback based on sociological research, provides

extensive information on social well-being, economic situation, and political attitudes, helps evaluate the effectiveness of government economic and social policy more adequately, address the rights and interests of various population groups in the development and implementation of socially important managerial decisions.

Key words: society, sociology, public opinion monitoring, experience of regional studies, public administration efficiency.

The development of domestic sociology can be divided into 3 periods, substituting each other, following the principle of continuity, and, thus, ensuring the evolutionary development of science.

In the Soviet period, often regarded as a stage when science became an "institute of ideological support of the totalitarian regime" [6, p. 3], many important achievements[1] were made. It helped Russian sociology acquire considerable potential, even today playing a significant role "in social renewal of the country and transforming scientific knowledge to economy, policy and culture, adequate to the global trends of civilization development" [6, p. 8]. In the late 1980s – early 1990s the public and political situation required applied research to solve certain problems [6, p. 13]. At that time there was no systematic approach to addressing key development challenges of the country and coordinating sociological research. The pragmatic attitude presupposed allocation of funds to the studies, which results can be used right away [8, 20].

[1] For example, in the Soviet period the foundations of applied sociology were laid (A.K. Gastev, F.R. Dunaevskii, N.A. Vitke, O.A. Ermanskii, P.M. Kerzhentsev, T.I. Zaslavskaya); the first Faculty of Social Sciences with the Department of Sociology headed by P. Sorokin was opened (1919–1920); in the 1960s there was created the Department of Sociology (G.V. Osipov), the Laboratory of Sociological Studies (V.A. Yadov, Y.V. Arutyunyan, R.I. Kosolapov, G.M. Andreeva); in 1989, the Russian Society of Sociologists was established.

Nowadays science and government have largely similar objectives. The phenomena, such as a low level of trust in the authorities, social atomism, social fragmentation, political indifference of broad segments of the population and inertia of civic participation, are "inherited" from the period of "the dashing 1990s". These problems could have been avoided if the Russians had had the feeling that they could influence the situation in the country, had a voice and that voice could be heard in the highest echelons of power. Modern sociological science is to pursue this mission.

"The coming century, according to the forecasts and conclusions of futurology, should be a century of the scientific worldview triumph, it should present qualitatively new principles and approaches to the organization of the world community focused on unification, to the management of each individual state and society. As you know, the world scientific community regards the 21st century as a "century of social science" [13, p. 9].

Sociological knowledge, describing the relationship between social processes and phenomena, considers a subjective factor of social development, which, according to J.T. Toshchenko, "plays a significant and increasingly important role among the factors determining the content and vector of the changes in the

world and in our country" [19, p. 32]. It is no coincidence that in the modern world "information war plays a much greater role than military force" [18].

It is also evident that the official statistics used by the government to analyze the situation in the country does not give complete information about the second participant in the "dialogue" – society. There are neglected themes, such as people's mood, their attitude to various spheres of personal and social life and to activities of power structures, underlying causes and possible consequences of social phenomena. Such information can be provided only by sociological science.

Thus, the modern society development vector dictates the need for greater attention on the public opinion in the exercise of public administration. Today, sociology is interested not in the sale of goods and services (as it was in the 1990s), but in "the state and problems of public and group consciousness, readiness of actions (or activities) for the implementation of what is matured in the minds and hearts of people" [20, p. 7].

To obtain objective and profound information about society, it is necessary to carry out sociological monitoring. It is the only way to ensure the systemic nature of acquired information, reflecting the evolution of public opinion in different historical periods and the reaction of various social groups to changes in the country. Surely, only such information will be of real practical benefit for science and administration.

The relevance of monitoring was stressed by T.I. Zaslavskaya even in the early 1990s [7, p. 12], and today this principle remains one of the main conditions for obtaining objective results. Scientific publications should not be based on the so-called "instant photos" of society, social groups or any particular problem. It is repeatedly stated by J.T. Toshchenko, the chief editor of the Journal "Sociological Studies", perhaps one of the most authoritative Russian editions devoted to sociology [20, p. 6].

The Institute of Socio-Economic Development of Territories of the RAS is one of those scientific organizations that have practical experience of sociological monitoring of public opinion at the regional level. The leading Russian scientists (*G.V. Osipov, D.S. Lvov, N.M. Rimashevskaya*, etc.) were at the origins of the Institute. No doubt, its staff under the direct supervision of ISEDT RAS Director *V.A. Ilyin* has taken pains to create a system of obtaining operational and objective information on the social development dynamics in the Vologda Oblast.

The ISEDT RAS sociological studies have always been of regular and complex nature, which importance was emphasized by T.I. Zaslavskaya. They are not limited to the issues of political and socio-economic relations, but they disclose problems of population's health, territorial peculiarities of living conditions, opportunities and mechanisms of labor potential realization, prospects of civil society development, psychological well-being of population, etc. (*tab. 1*).

The public opinion research in the key challenges of socio-economic policy and the critical problems, the population is concerned with, has been conducted by ISEDT RAS since 1995. Every two months 1,500

Table 1. Brief description of sociological research, conducted by ISEDT RAS

Topics of research and main research projects	Year of the beginning of the study	Patent availability
Monitoring of economic situation and social well-being of the population		
Monitoring of economic position and social well-being of the population in the Vologda Oblast	1995	Database of the monitoring of economic situation and social well-being of the population in the Vologda Oblast, certificate of state registration of a database No. 2013620087. Database of the monitoring of economic situation and social well-being of the population in the regions of the Northwestern Federal District, certificate of state registration of a database No. 2012621290.
Monitoring of economic position and social well-being of the population in the Northwestern Federal District regions	2005	
Reproduction of the population of the territory: trends and reserves		
Conditions of healthy generation formation	1995	Database of the monitoring of conditions of healthy generation formation in the Vologda Oblast, 2012, certificate of state registration of a database No. 2012620788.
Monitoring of health of the population	1999	
Monitoring of socio-psychological climate and mental health of the population	2000	
Reproductive health and reproductive potential of the population	2004	
Suicidal behavior of the population	2004	
Social health of the population	2010	
Qualitative demographic changes in the population as an important feature of the demographic crisis	2013	
Management of human capital and innovative development of the territory		
Monitoring of the labor potential quality	1996	Database of the monitoring of the labor potential quality in the Vologda Oblast, 2012, certificate of state registration of a database No. 2012620757 No. 2011614700. Database of the monitoring of study of the conditions for newborn health formation in the Vologda Oblast No. 2015620146.
Labor behavior as a form of individual labor potential realization	2011	
Formation of scientific-education space	2009	
Formation of human capital of the territories	2010	
Institutional analysis of the regional labor market	2010	
Human potential of rural areas	2013	
Socio-cultural modernization in Russia, its state in the country's regions		
Economic behavior of the population (savings, financial, investment, etc.)	2001	Information-analytical system of monitoring of Russian regions modernization levels, certificate of state registration of a database No. 2012661285.
Socio-economic disparities of the region's population	2006	
Socio-cultural portrait of the Vologda Oblast	2008	
Monitoring of living conditions of the population in the city of Vologda	2003	–
Monitoring of the formation of small and medium business in the modern conditions	2002	Database of surveys of small and medium business in the Vologda Oblast, certificate of state registration of a database No. 2012620336 (04.01.2012).

adults are surveyed in 2 cities (Vologda, Cherepovets) and 8 municipal districts (Babaevsky, Velikoustyugsky, Vozhegodsky, Gryazovetsky, Kirillovsky, Nikolsky, Tarnogsky and Sheksninsky; the sampling error does not exceed 3%)[2].

The method of the survey is a questionnaire poll by place of residence of respondents. It helps receive authentic results, primarily due to created comfortable conditions for interviewers and respondents engaged in the direct interaction. The sample size of the study is significant (nearly 9 thousand residents of the region are polled annually), the surveys are frequent (6 times a year), and the range of thematic units we try to cover in each case is wide (the questionnaire includes over 100 questions, combined in more than 10 themes[3]).

The multilevel research structure of the collection, processing and analysis of data includes employees from the head center (ISEDT RAS), responsible for overall coordination of activities, organization of surveys in the regional center, processing and analysis of information; survey organizers in the districts, coordinating the activities of interviewers and conducting training; and interviewers at each survey point.

The monitoring considers the following issues:

1. Population's assessment of the political and economic situation in the country, the region.
2. Population's perception of the urgent problems of modern life.
3. Material situation of the population, socio-economic stratification.
4. Level of consumption and consumer sentiment index (CSI).
5. Social mood and life satisfaction.
6. People's attitude to the politics of power structures, assessment of their activity.
7. Level of social trust in political and social institutions.
8. Level of social tension and potential of social protest.
9. Social capital and potential of civil society development.
10. Assessment of personal security and rule of law.
11. People's attitude to the media.

We should stress that the cross-section of sociological information obtained in the study is analyzed by 14 socio-demographic categories of the population that provides food for scientific thought and important information for the authorities, making managerial decisions. The possibility of studying social well-being and social perception in certain social segments allows ISEDT RAS to supply the authorities with information about the most pressing issues, certain groups are concerned with, and their reactions to different events in the life of the country and the region.

The information-analytical bulletin "The effectiveness of state management in the estimates of population", a form of such representation, has been issued by ISEDT RAS

[2] The representativeness of the sample is ensured by the observance of the proportions between urban and rural population; the proportion between the inhabitants of settlements of different types (rural communities, small and medium-sized city); age and sex structure of the adult population.

[3] Every new "wave" of the survey brings certain changes to the questionnaire due to the fact that we try to keep our finger on the pulse of events in the country and the region. Therefore, it is rather difficult to provide exact figures on the number of questions and topics.

since 2013 after each new wave of the survey. The Bulletin contains the illustrative material setting out the monitoring stage results and the analysis of dynamics of the public opinion carried out by the Institute staff.

The experience of sociological researches on the territory of the Vologda Oblast received positive evaluation of the academic and governmental structures. In this regard, by the decision of the Section of Economics of the Bureau of the RAS Department for Social Sciences, since 2005 ISEDT RAS has been extending it to the territory of the Northwestern Federal District.

During the monitoring, more than 5,000 people are polled in 10 regions of the Northwestern Federal District (the Arkhangelsk, Vologda, Kaliningrad, Leningrad, Murmansk, Novgorod, Pskov oblasts, the Republic of Karelia, the Komi Republic, Saint-Petersburg)[4]. The sample size for each region is not less than 400 respondents.

The increase in the study area requires substantial organizational changes. So, to conduct surveys in the Northwestern Federal District we use a network of polling centers consisting of the head center (ISEDT RAS) and representative offices in oblasts and republics of the region. The polls are based on the same methodology; the representativeness of generalized (whole district) data and data on separate oblasts and republics is ensured.

The geographical coverage influences the subject matter of polls. For example, within the federal district the following problems of the Russian society are studied: social mobility, social and socio-cultural stratification, axiological basis of society, etc.

It would take several monographs to represent all the results of sociological research conducted by ISEDT RAS. This article focuses only on those that we consider most interesting and relevant in terms of social development. The selected themes, in our view, fully demonstrate the quality and depth of the scientific approach, ISEDT RAS uses to study society. They suggest that the long-term support of leading Russian scientists and representatives of regional public authorities was not in vain. After 25 years ISEDT RAS has become a major cell of Russian science at the regional level.

The mechanism to obtain information about the Russian society established in the Vologda Oblast is of systematic, complex, multidimensional nature. It touches upon different sides of social reality, most pressing concerns of the population and the representatives of specific socio-demographic groups. Therefore, J.T. Toshchenko also draws attention to such problems of modern sociological research [20, p. 6], as a "gap between sociological thought and real life" and a lack of "effective combination of theoretical thought with empirical data, an application side of the question". They are successfully solved in the Vologda Oblast,

[4] For each region the sample size, not less than 400 respondents, provides a high degree of authenticity (sampling error does not exceed 5% at 95% probability) of the information in a certain subject of the Northwestern Federal District and gives an opportunity to make interregional comparisons. The method of a survey is a questionnaire poll by place of residence of respondents. When determining the points of surveys we take into account their equal representativeness in federal election districts; when conducting the surveys in the settlements – their equal representativeness in election districts. The representativeness of the sample is ensured by the observance of the proportions between urban and rural population; the proportion between the inhabitants of settlements of different types (rural communities, small and medium-sized city); age and sex structure of the adult population.

as managers and representatives of public organizations refer to the ISEDT RAS sociological studies regularly.

The important role of ISEDT RAS in the strengthening of regional social science is vividly demonstrated in the conduct of the all-Russian research-to-practice conference **"Society and sociology in modern Russia"**, dedicated to the 20th anniversary of the day of sociologist in the Russian Federation (November 13–15, 2014). The leading representatives of Russian sociological science: **G.V. Osipov, M.K. Gorshkov, J.T. Toshchenko, V.V. Fedorov, V.V. Lokosov** and many others participated in the forum.

The system of indicators used in the ISEDT RAS monitoring includes dozens of indicators that reflect various aspects of social life. This article presents only key indicators, reflecting trends in social perception and social well-being most vividly.

Each indicator comprises a whole set of issues, more deeply revealing specific aspects of people's attitude to these phenomena of social reality. For example, assessing the performance of the RF President, we ask people, how successful the RF President is in coping with challenging issues (strengthening Russia's international standing, protecting democracy and strengthening the citizens' freedoms, increase in the citizens' welfare); how prioritized these directions are for the President, in their opinion; how they assess economic policy pursued by public authorities, etc.

Studying the population's attitude to the regional government, we identify not only the level of support, but also the opinion about the Governor's initiatives, his/her representation in the media and how well the head of region copes with the specific problems the population is concerned with, etc.

Most Monitoring indicators, including the key ones, remain unchanged throughout the study period (since 1995), some "secondary" indicators vary depending on the situation prevailing in the country and the region at the time of the survey.

So, to evaluate the dynamic changes in social wellbeing and social perception of the Vologda Oblast residents, ISEDT RAS uses 2 types of indicators: integral and (for our purpose let us call them as) "direct". They are divided by most common methodological feature: integral indicators combine information derived from different questions; "direct" include respondents' answers to specific questions, which are no less important in terms of reflecting the dynamics of public opinion. To disclose it, we will begin with the presentation of key indicators of the monitoring.

Assessment of authorities' performance. The evaluation of the authorities' activity is not just an attitude to one of the social institutions, including public organizations, the media, the Church, etc. It is the attitude to the chosen course of social development, with the President being the main initiator of trends and the Governor – their main "conductor" in the region. Therefore, of all federal, regional and municipal governments (which are also included in the Monitoring), we pay special attention to assessed activities of the RF President and the Vologda Oblast Governor.

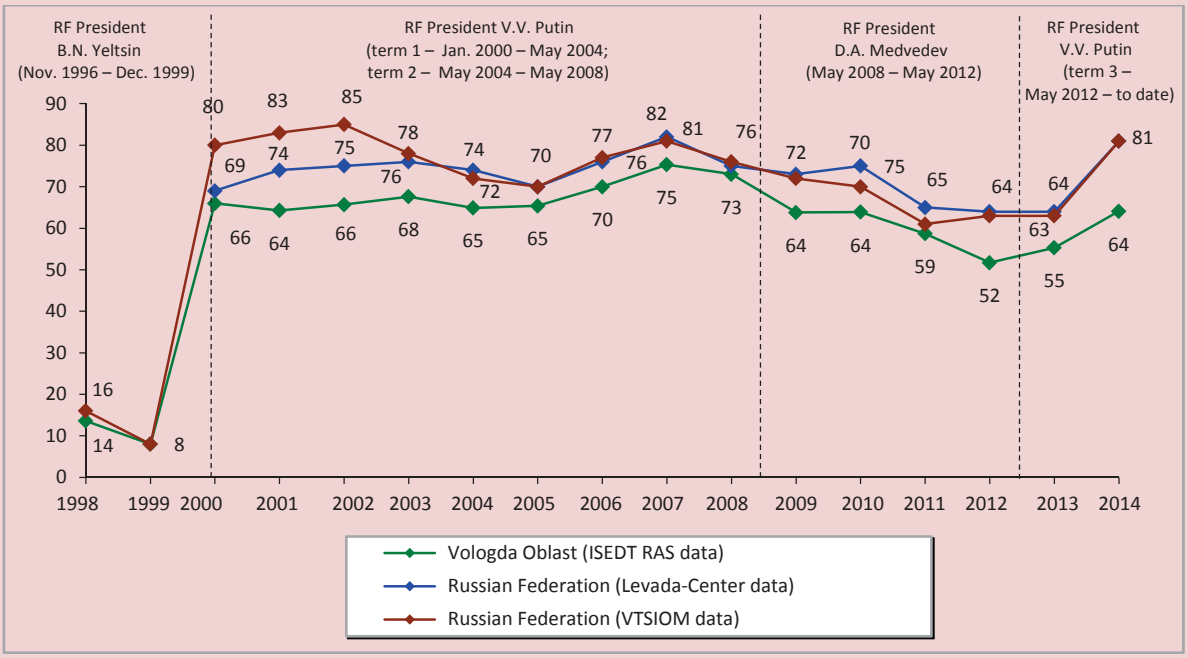
In the Russian society mentality the head of state (whatever this post has been called) has always had a special authority. All hopes

and expectations of the Russians have always been associated with this person, taking responsibility for the course of social development. What to say about the Russians' attitude to the personality of the current RF President V. Putin! The level of public trust, he achieved due his actions in the early 2000s and improved due to successful actions in 2013–2014, was and is out of reach for either of the political figures in the country.

The results of our and all-Russian studies clearly show how dramatic the jump in support of the head of state was in 2000, when V.V. Putin replaced B.N. Yeltsin; how significant the reduction in the level of approval of the President was, when this position was occupied by D.A. Medvedev, what hope the society placed on the return of V.V. Putin on the eve of his third presidential term; and how great his support was in the difficult geopolitical circumstances related to the events in Ukraine (*fig. 1*).

Today, the acting RF President has unshakable authority, which can be regarded in two ways: on the one hand, the concentration of the society expectations' on one personality, in our opinion, makes the whole political system of the country a bit vulnerable; but, on the other hand, it has significant potential for reviving consolidation processes, almost destroyed by the authorities' activity in the 1990s.

Figure 1. Level of approval of the RF President's performance, according to VCIOM, Levada-Center, ISEDT RAS (as a percentage of the number of respondents)



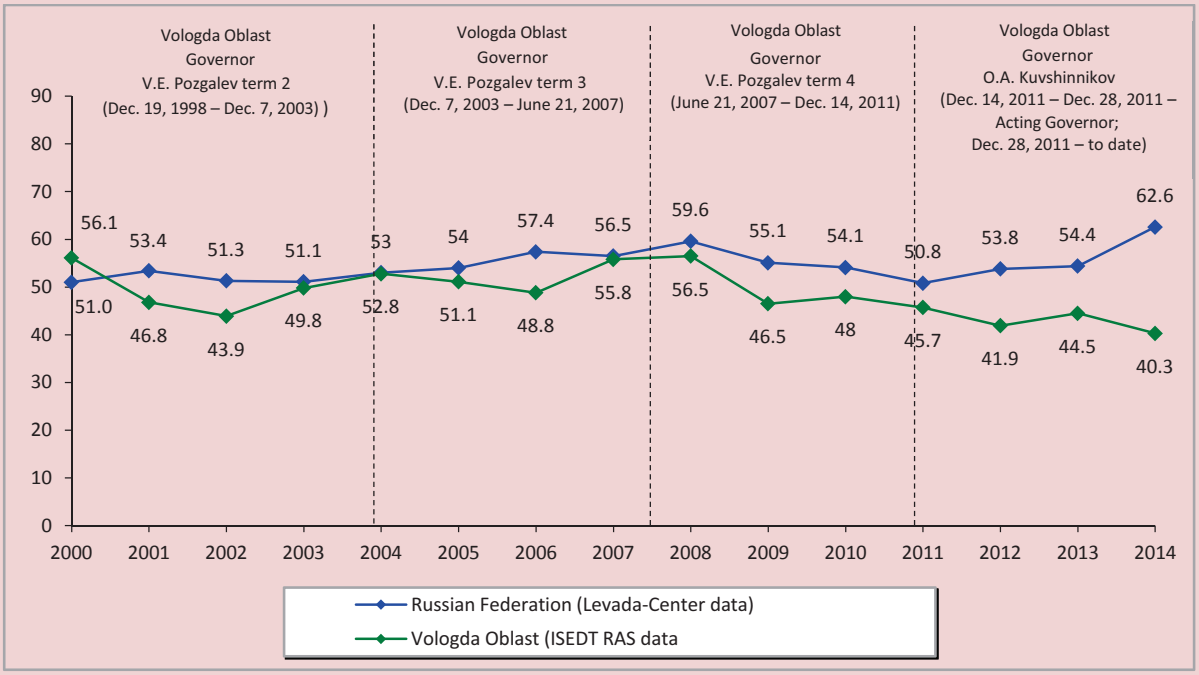
Source: data of the public opinion monitoring conducted by ISEDT RAS, VCIOM, Levada-Center.

As for the Vologda Oblast Governor, people's attitude to his activity is not so clear (*fig. 2*). The high level of trust in the President has an indirect impact on the assessment of local authorities' performance and the attitude to any other political figure. Concentrating their hopes on the personality of the head of state, people are projecting negative aspects of their experience on other institutions, and "every lower link of the power vertical is inferior to the level of approval of the upper. The highest level of public dissatisfaction focuses on local government, which is quite natural, given their familiarity with daily lives of citizens and the possibility to monitor their performance not only on TV" [17, p. 14].

We should not forget that the Vologda Oblast due to its strong dependence on the state of affairs at Severstal was among the first RF subjects that felt the impact of the global financial crisis in 2008. Perhaps, it was one of the main reasons that the ensuing budget crisis of regions affected the economic situation in the region more strongly than in other RF subjects. This cannot but influence the population's attitude to the activities of the Governor's team.

The level of approval of the authorities' performance reflects the population's support at the current time, taking into account certain administrative decisions taken by them. However, one can have different attitudes to the actions of state administration representatives

Figure 2. Level of approval of the performance of the Vologda Oblast Governor and the heads of RF subjects in the country on average according to Levada-Center and ISEDT RAS (as a percentage of the number of respondents)



and trust them in principle. Only successive unpopular social decisions can "dent" the level of trust. Therefore, a "deeper" attitude to the government's performance is reflected by the level of trust.

Without going into details of the dynamic changes in this index (in general, it relates to the trends in the approval level), we note only that in the Russian society the mental factor is still significant, though it, together with the value system, should have been transformed significantly since the 1990s. The state (primarily the President) and the Church are 2 traditional for the Russian society institutes that people trust the most. And if trust in the RF President can be explained by the role of an individual in history (attitude to V.V. Putin) in many respects, trust in the Church reveals the preservation of mental attitudes, which have been "in sleep mode" for the last 20–25 years [5, p. 10].

Hence, the assessment of the authorities' performance is considered as the most representative indicator reflecting people's perceptions of conditions of social reality and trends in social development. It only remains to add that we do not rely only on this indicator, analyzing social perception. The estimation of the economic and political situation, people's attitude to living conditions in a particular area of the municipality, party-political preferences, etc. are considered in the analysis of the public opinion monitoring results, disclosing not only people's attitude to life conditions, but also to their financial situation.

Consumer sentiment index (CSI). The consumer sentiment index indicates self-estimation of the financial situation; it reflects not so much people's perception of the current economic situation in the country and the region and their personal wealth, as their expectations regarding personal development prospects in the near future. The CSI dynamics provides subjective perception of what we have today and tomorrow; this feeling influences real behavior of people. It is this psychological aspect that makes CSI a unique macroeconomic indicator, used by scientists and researchers around the world. Therefore, we consider CSI as one of the key indicator in the public opinion monitoring.

To calculate the index we apply the method developed by the University of Michigan USA in the 1950s (today Levada-Center uses the method as well). It is based on data of the public opinion survey consisted of 5 questions; for each the partial index is calculated (*tab. 2*)[5]. The arithmetic average of partial indices gives the total value of the consumer sentiment index.

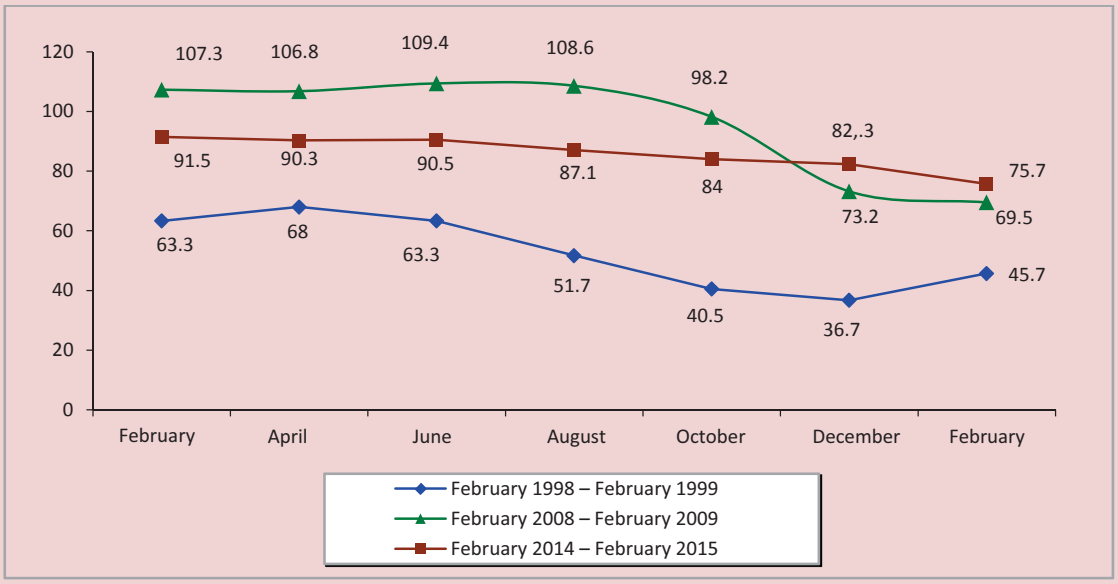
The specifics of the CSI construction lies in the fact that microeconomic information helps get a generalized indicator of changes occurring in the economy as a whole. This allows us to identify such relationships of socio-economic changes that are difficult to fix by means of conventional macroeconomic relationships. Hence, the index determines trends in the economic and social situation and reacts to possible changes, forecasting further development of the country and the region.

[5] To calculate partial indices we subtract the percentage of negative answers from positive, then add 100 to the acquired value not to have negative values. Therefore, fully negative answers would give a total index equal to 0, all positive – 200, their balance – 100, which is neutral, in fact.

Table 2. Questions used for the CSI calculation

No.	Index	Question wording
1.	Index of current personal financial situation	How would you asses your financial situation: is it better or worse than it was a year ago?
2.	Index of expectations of changes in personal welfare	In your opinion, will your financial situation be better or worse or about the same as now in a year?
3.	Index of short-term prospects for the development of the country's economy	In your opinion, will the next 12 months be a good, bad or other time?
4.	Index of long-term prospects for the development of the country's economy	Speaking about the next 5 years, will they be a good, bad or other time?
5.	Index of expediency of purchase of durable goods	Speaking of major purchases for the home, do you think that now is a good or a bad time to buy most of these things?

Figure 3. Dynamics of the consumer sentiment index (CSI) in 1998, 2008 and 2014 (in points)



Here is an example (*fig. 3*): the decrease in CSI preceded the August 1998 default and continued during the first months of the crisis. A similar index change occurred in August 2008, when the population faced the consequences of the global financial crisis. Since June 2014 we have observed a less pronounced, but still negative trend in CSI decline. Since June the index fell from 91 to 84 points, when the Russian economy experienced the effects of bilateral sanctions, the protracted problems of regional budgets came to a head, the unprecedented fluctuations of the national currency occurred and the fears of another economic crisis began to "force out" patriotic sentiments of social consciousness [2].

Not focusing on the dynamics of partial indices in the CSI structure, we will mention a crucial feature: in the Russian society one generation has faced several large-scale crises

affecting not only the material sphere, but also the deeper layers of social life, that is why the psychological sense of crisis is extremely sharp and affects social perception and social well-being no less than the real situation in the economy.

Thus, the assessment of the authorities' performance and the consumer sentiment index are 2 key indicators, we pay priority attention to, analyzing trends in social perception, dynamics of public opinion about life in the country, the region and the particular settlement. As in the case of evaluation of state administration bodies' performance, besides the consumer sentiment index we consider a number of other indicators: social identity (proportion of residents of the region, subjectively assigning themselves to the categories "poor", "extremely poor", "people with average income" and "rich"); subjective assessment of the actual and the desired level of income; assessment of the personal financial situation and the economic situation in the country and the region. These and many other indicators are measured on a regular basis, analyzed in long-term and short-term dynamics and provided to the authorities for taking into account in the preparation of managerial decisions.

Social mood. If we consider assessment of the authorities' performance as the main indicator of social perception, social mood is the key indicator of social well-being of the population.

Social mood is a critical element of social consciousness emerging as a reaction to the external influence of social objects, as the resulting or dominant feeling generated by these objects, conscious or unconscious [23]. Stressing the importance of this indicator, J.T. Toshchenko notes that it "is objectively a determining, integrating indicator of the level of welfare, social well-being or disorder, the degree of stability... Social mood as an important feature of social consciousness is involved in the regulation of individual acts, actions of people, social groups, and social institutions, and demonstrates their mindset and attitude, value orientation and paradigms" [19, p. 30].

There are many federal and regional approaches to the understanding of social mood measurement[6]. According to the ISEDT RAS method, respondents are encouraged to choose one of four options of answer to the question: How would you assess your mood in recent days?: "great mood", "usual condition, good mode", "I feel stress, anger", "I feel fear, depression". Efficiency, effectiveness and easy measurement of results along with the correlation with national trends in public opinion (see fig. 4) determine the validity of this approach as a representative express-method to study social condition.

The results of our and, and federal studies demonstrate the fact that social mood reflects a general trend of social development. The ups

[6] VCIOM, for example, constructs an integrated social mood index on the basis of two comprehensive indices: index of social well-being and index of assessment of the situation in the country. Each, in turn, consists of respondents' answers to 3 questions, more deeply revealing their essence. To calculate the index of social well-being the following questions are proposed: "To what extent are you satisfied with the life you lead?"; "What do you think, will you (your family) live better or worse than now in a year?"; "How do you assess the current financial situation in your family?" To calculate the index of assessment of the situation in the country the following questions are asked: "How would you assess the current economic situation in Russia in general?", "How would you evaluate the current political situation in Russia?", "How much do you agree with the fact that things in country are going in the right direction?". The integrated social mood index is the average of all six partial indices.

and downs of social well-being of the Russians almost correspond (with a small time lag) to the periods of stabilization and destabilization of the situation in the country and the world [16, p. 3]. They show that the Russian society is slowly but surely adapting to the social reality conditions changed after the USSR collapse and the stressful period of the 1990s. At the same time, it responds to major events in the life of the country and the region. Not accidentally, the positive dynamics of social mood was interrupted only in 2009, when the Vologda Oblast experienced the consequences of the global financial crisis (and this "collision" was more significant for the oblast than for many other RF subjects). However, the global financial crisis was not comparable to the 1991 and 1998 crises. Thus, the deterioration of social mood was short-term and since 2010 the percentage of people describing their mood as positive has continued to increase (*fig. 4*).

Certain events in the country affect social mood of all categories of the population, but within socio-demographic groups they manifest themselves in different ways. For example, in the period from February 2014 to August 2015 the history of Russia can be divided into 2 stages. The first stage is associated with the successful performance of the Russian team at the Olympics and the entry of Crimea and Sevastopol to the Russian Federation. The second stage is connected with the deterioration of the economic situation and material condition of the population, the bilateral sanctions, the fluctuations of the national currency and the aggravation of the protracted budget crisis of the regions.

It seems rather strange, but during this period (2014–2015) mood of "the poor" has improved and of relatively "rich" has worsened (*tab. 3*). The proportion of those who experience positive emotions has increased among 20% of the poorest by 13 p. p. (from 43 to 56%) and

Figure 4. Proportion of people positively describing their mood in the Russian Federation and the Vologda Oblast (as a percentage of the number of respondents)

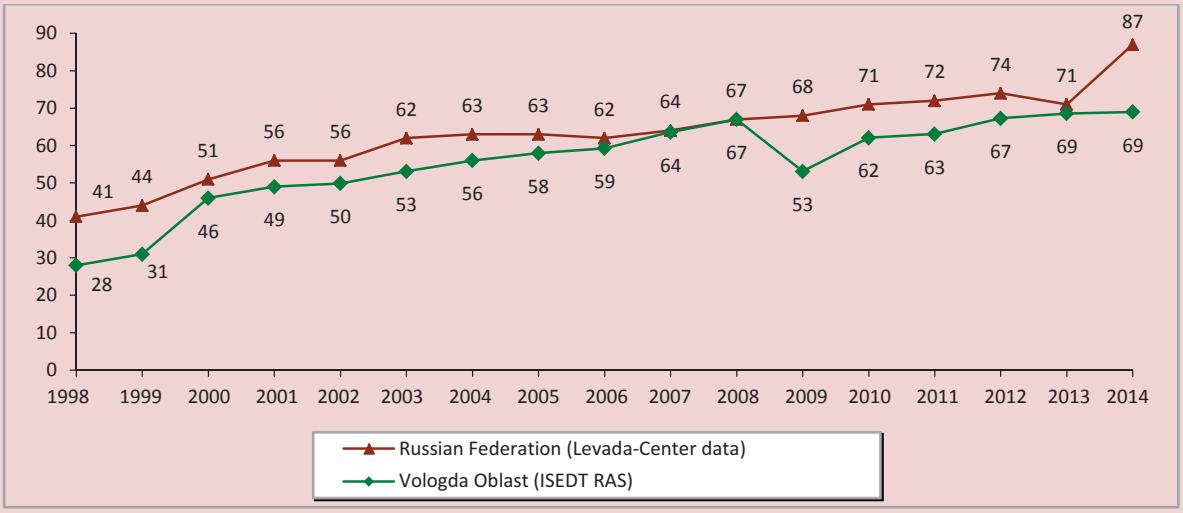


Table 3. How would you assess your mood in recent days? (answer option: "Great mood, normal, usual condition, as a percentage of the number of respondents)

Indicator	Feb. 2014	Apr. 2014	June 2014	Aug. 2014	Oct. 2014	Dec. 2014	Feb. 2015	Apr. 2015	June 2015	Aug. 2015	Dynamics (+/-)	
											Aug. 2015 to Feb. 2015	Aug. 2015 to Feb. 2014
Sex												
Men	65.8	68.5	71.3	69.5	68.8	69.7	61.7	67.4	72.7	75.2	+14	+9
Women	64.4	70.0	71.0	71.4	69.8	72.0	61.9	67.8	66.8	71.3	+9	+7
Age												
Under 30	71.8	70.8	76.1	79.1	76.6	76.4	71.3	73.5	79.4	78.9	+8	+7
30–55	66.4	70.0	71.8	70.3	68.3	69.8	58.3	67.9	67.6	72.1	+14	+6
Over 55	58.6	67.2	66.7	64.9	66.1	69.1	60.7	63.7	65.9	70.8	+10	+12
Education												
Incomplete secondary/ secondary	55.6	61.3	61.7	63.3	65.4	67.8	54.8	62.1	64.0	70.2	+15	+15
Secondary vocational	66.0	70.7	72.2	71.3	70.2	71.8	65.2	68.2	73.6	75.3	+10	+9
Incomplete higher/ higher	74.1	78.1	80.4	77.7	73.3	73.5	65.8	73.1	70.6	74.1	+8	0
Income groups												
20% of the poorest	43.2	47.4	54.9	54.1	50.2	55.1	38.3	55.6	57.1	55.7	+17	+13
60% of the people with the middle-sized income	68.6	72.6	72.7	71.5	73.5	75.0	65.2	69.2	71.3	77.7	+13	+9
20% of the most prosperous	87.1	82.7	89.0	89.6	79.0	81.6	80.3	78.1	82.5	85.1	+5	-2
Territories												
Vologda	72.3	75.6	78.6	80.7	75.5	75.6	66.4	72.5	75.6	77.9	+12	+6
Cherepovets	76.0	79.0	79.9	76.5	72.8	73.2	63.1	69.8	71.2	74.9	+12	-1
Districts	55.2	60.7	62.3	61.5	64.0	67.1	58.6	63.7	65.1	69.4	+11	+14
Oblast	65.1	69.3	71.1	70.5	69.3	70.9	61.8	67.6	69.5	73.1	+11	+8

declined among 20% of the wealthiest by 2 p.p. (from 87 to 85%). There is an obvious impact of intangible factors: growth in the intensity of consolidation processes, sense of patriotism and pride for the country and its leader and understanding that public opinion is the main indicator of public administration's efficiency, as the RF President stated.

What is social well-being of the Russians today? The answer to this question is presented in the recent report on the state of Russian society made by the scientists of the Institute of Sociology. We from the perspective of regional researchers can only confirm this characteristic: "Conflicting assessments, which the Russians give to social changes happening today, indicate the uncertainty of trends and prospects of the country's development in the mass consciousness... The social context of transformations

occurring in the country is reflected in the contradictory socio-psychological condition of the population. Slightly more than half of our citizens estimate their emotional state positively, and at the end of 2014 almost half of the Russians give negative assessment of their socio-psychological well-being (a quarter of them felt anxiety, one person in five experienced apathy, irritability, more seldom – anger)" [16, p. 3].

Winding up with our idea of social mood as one of the key indicators of the public opinion monitoring, we want to draw attention to the fact that, besides this indicator, we use other indicators, such as reserves of patience, protest potential, and results of special studies devoted to the public mental health, to analyze dynamic changes in social well-being. Not to "set of" the importance, which we attach to the indicator of social mood, we will not dwell on the analysis of their dynamics in this context. We only note that, in general, they confirm the trends in social well-being that are discussed above and observed not only at the regional, but also at the national level.

Public Sentiment Index (PSI). In 2008 the Institute developed a method to calculate the public sentiment index – a complex indicator, "including" elements of social perception and social well-being.

The public sentiment index consists of 2 sub-indices – index of the attitude to authorities and index of social well-being. Even their names largely reflect the specifics of the issues used to calculate PSI (12 questions are used for the calculation).

The measurement of the public sentiment index was tested on the data of the public opinion monitoring conducted by ISEDT RAS in 10 regions of the Northwestern Federal District in 2005–2010. According to the calculations, the NWFD-averaged indicator of the integrated index accounted for 108.2 points in 2010, indicating the preponderance of positive evaluations of social mood over negative (*tab. 4*).

Compared to 2005, in the North-West on average and all territories of the district there was a positive dynamics of the integral index. The most significant increase in PSI was recorded in the Arkhangelsk Oblast (by 24 p.p.), the Leningrad Oblast (by 15 p.p.), Saint Petersburg (by 14 p.p.) and the Komi Republic (by 20 p.p.). The first three subjects were characterized by the increase in the index of social well-being and in the Republic of Komi – by the index of attitude to the authorities.

The measurement of the public sentiment index on the territory of the Northwestern Federal District and the Vologda Oblast districts allowed us to get complex assessment of the efficiency of public administration, simultaneously reflecting the dynamics of public opinion about authorities' performance and the ultimate effectiveness of this activity in the form of self-assessed material situation and social mood.

Thus, the system of indicators used in ISEDT RAS monitoring studies has allowed us to identify the trends in social perception and social well-being of different socio-demographic groups of the Vologda Oblast population for almost 25 years. The obtained information is not only great support for the authorities to make management decisions, but also the reason for the debate in the media, at meetings of the Public Chamber and scientific events organized and participated by the ISEDT RAS staff.

Table 4. Public sentiment index (PSI)

Indices	Territories	2005	2006	2007	2008	2009	2010	2010 to 2005, +/-
Index of social health	Arkhangelsk Oblast	87.0	107.1	104.8	102.2	113.8	118.1	+31
	Pskov Oblast	–	108.1	114.1	107.6	97.8	117.4	–
	Saint Petersburg	99.0	121.2	123.8	110.1	102.6	117.1	+18
	Leningrad Oblast	96.5	111.8	109.8	114.4	102.0	114.9	+18
	Republic of Karelia	100.0	107.1	111.8	107.0	105.4	113.0	+13
	Novgorod Oblast	–	105.6	100.4	100.9	93.4	107.6	–
	Vologda Oblast	89.5	106.7	111.9	110.7	99.2	104.7	+15
	Murmansk Oblast	96.3	111.1	114.4	108.8	112.1	104.5	+8
	Komi Republic	89.1	102.8	108.4	105.8	95.8	103.7	+15
	Kaliningrad Oblast	90.0	108.0	105.8	110.0	86.2	101.8	+12
	Average for NWFD	**93.4**	**108.9**	**110.5**	**107.8**	**100.8**	**99.8**	**+6**
Index of attitude to the authorities	Pskov Oblast	–	83.6	102.7	122.8	98.6	118.4	–
	Komi Republic	84.0	95.5	102.3	118.2	97.4	110.4	+26
	Vologda Oblast	105.6	111.9	125.3	136.1	94.0	110.2	+5
	Arkhangelsk Oblast	93.2	95.6	97.4	107.7	99.2	109.7	+17
	Republic of Karelia	97.3	94.7	99.7	121.4	92.3	107.4	+10
	Saint Petersburg	97.0	111.7	109.6	130.4	109.3	107.0	+10
	Leningrad Oblast	92.5	103.4	101.4	132.9	110.6	103.7	+11
	Murmansk Oblast	97.6	107.9	114.9	128.4	98.5	99.9	+2
	Novgorod Oblast	–	97.2	94.6	114.7	93.5	97.2	–
	Kaliningrad Oblast	93.6	110.1	111.8	129.7	100.3	96.1	+3
	Average for NWFD	**95.1**	**101.2**	**105.9**	**124.2**	**99.4**	**106.0**	**+11**
Integral Public Sentiment Index (PSI)	Pskov Oblast	–	95.9	108.4	115.3	98.2	117.9	–
	Arkhangelsk Oblast	90.1	101.4	101.2	104.7	106.5	113.9	+24
	Saint Petersburg	97.7	116.5	116.7	120.3	106.0	112.1	+14
	Republic of Karelia	98.5	100.9	105.8	114.2	98.9	110.2	+12
	Leningrad Oblast	94.5	107.7	105.6	123.7	106.3	109.3	+15
	Vologda Oblast	97.6	109.3	118.6	123.5	96.6	107.5	+10
	Komi Republic	86.6	99.2	105.4	111.0	96.6	107.0	+20
	Novgorod Oblast	–	101.5	97.6	108.0	93.5	102.4	–
	Murmansk Oblast	96.9	109.5	114.7	118.6	105.3	102.2	+5
	Kaliningrad Oblast	91.6	109.1	108.8	119.9	93.3	99.0	+7
	Average for NWFD	94.2	105.1	108.3	115.9	100.1	108.2	+14

"Scientific understanding of individual and collective social behavior, leading to their control, probably is the most urgent challenge the humanity faces today. Hence, in the current situation only social sciences and humanities, focused on a person, his/her social actions and social reality created by man, can introduce scientific rationality into multidirectional, spontaneous and irresponsible actions of a person, bring them to a common denominator, eliminating and neutralizing global threats, like the sword of Damocles hanging over mankind" [13, p. 11].

Today, the solution of sociology problems greatly affects the quality of state-society relations at all levels of government and the management bodies' understanding of the real problems the population are concerned with. Therefore, it is very important to use available mechanisms to systematize sociological research. For example, a lot depends on the status of the Russian Academy of Sciences, which can play a role of an "independent institute that coordinates sociological studies, supports promising regional scientific schools and young scientists and seeks for new forms of Russian sociology's entry in the world science" [8, p. 30]. The federal law "On strategic planning in the Russian Federation" can become an important tool in the integration of sociological knowledge into public administration. It was welcomed by many scientists (E.V. Zhirnel, O.S. Sukharev, A. Wasserman, M. Delyagin, etc.). In fact, it is "a necessary step for the formation of a unified system of strategic planning, covering federal, regional and municipal level" [22, p. 64].

Modern sociological science does not claim to maintain the management system. It is about integration of sociological knowledge into the structure of the legislative process. As IS RAS Director M.K. Gorshkov noted in his speech, "we got used to a rather easy formula of "sociological maintenance"...but I think it is not enough, we need more a in-depth and serious look at the ways of this interaction. It is not about maintenance, but about real, meaningful inclusion. And not when we have to deal with the drawbacks of managerial decisions, but it is more desirable at the early stages, when the decision is only elaborating... It is about "sociological complicity", at least we have recently insisted on this term, and I think that in the future we will even need to strengthen it" [3]. Thus, the experience of regional sociological studies conducted by the Institute of Socio-Economic Development of Territories of the RAS shows that the system of feedback between the society and the state, expressed by the public opinion monitoring, gives a broad cross section of information on social well-being, the economic situation, and political attitudes of the population. It helps evaluate the effectiveness of state economic and social policy more adequately and consider the rights and interests of various population groups in the development and implementation of socially important managerial decisions.

Today the many-year experience of monitoring allows us to assess the stability of political and economic situation in the country, the level of support of current authorities and their decisions and understand the nature of attitudes. The high level of demand in monitoring results among the authorities and the representatives of science and society, and the informational, organizational, methodological and psychological support are a matter of pride for us and, perhaps, the main indicator of the work conducted for 25 years.

Information about the Author

Mikhail Vladimirovich Morev – Ph.D. in Economics, Laboratory Head, Federal State Budgetary Institution of Science Institute of Socio-Economic Development of Territories of Russian Academy of Science (56A, Gorky Street, Vologda, 160014, Russian Federation, 379post@mail.ru)

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Assessment of the Effectiveness of Public Investment in the Increase in Life Expectancy

Vadim Nikolaevich
KABANOV
Doctor of Economics, Professor
Volgograd Branch of the Academy of Labor and Social Relations
6b, Kim Street, Volgograd, 400001, Russian Federation, kabanovvn@yandex.ru

Abstract. The beginning of the 21st century was marked by the emergence of national projects in our country, which exactly correspond to the private integral indicators used by the UN in calculating the index of human capital development since 1996. The national project "Health care" is aimed at increasing life expectancy, "Education" – expanding the population's access to knowledge, "Doubling GDP" – raising people's income. Attaching equal importance to each indicator, the author of the article set a task to consider the economic efficiency of budgetary funds allocated to improve the nation's health. The author assumed a proportion as the main hypotheses about the nature of correlation between life expectancy (H) and expenditures on health care (G); the calculated coefficients of correlation (Pearson, r) of dependence H = f(G) for all RF subjects for 2003–2013 ($0.49 < r <$ or $= 0.97$) confirmed the existence of correlation. The author proposed to use the slope of the straight H = f(G) to x-axis as a quantitative value, indicating the economic efficiency of the transformation of budget expenditures to the increase in life expectancy. This indicator means that the achieved increase in life expectancy (Y axis motion) depending on changes in budget expenditures on health (axis motion). The proposed indicator to estimate the socio-economic effectiveness of state investments in domestic health care guarantees the most objective and clear assessment, conducted on the basis of standard methods of mathematical statistics, ensuring a high accuracy of the calculations. The rate of rise in life expectancy, depending on the volume of public investment in health care, can be used for the scientific justification, for example, of the degree of Federal budget participation in the regional programs to promote national health.

Key words: life expectancy, public spending on health care, budget investment, dependence of life expectancy on public expenditure on health care, effectiveness of budget investment in health care.

Relevance. The quantitative value of life expectancy registered by the state statistics agencies of the Russian Federation has a fairly wide field of practical application. This indicator is most famous in its application as an integral index for measuring the human development index (HDI). However, focused professionals (healthcare workers and demographic specialists) knew this indicator long before its inclusion in the formula to calculate the HDI.

The practical application of "life expectancy" values has become especially relevant in connection with the discussion about the need to increase the retirement age in our country. Proponents [1] and opponents [2] of retirement age revision used the quantitative value of life expectancy indicator as the evidence base.

If we put aside the discussion about the retirement age in Russia, the relevance of practical application of life expectancy indicator will not decrease. Its value is proposed to be used as an indicator that reflects the level of development of national economy [3], as well as the depth of social stratification (polarization) [4]. National health accounts[1] consider life expectancy to be an indicator that characterizes the efficiency of public health system.

Wide scope of application of the indicator of life expectancy (LE – H), and its close connection with public healthcare system suggests that the research into the methods for evaluating the effectiveness of investments (G) in healthcare through the increment of the calculated value of LE (H) should be considered as relevant scientific studies that involve current issues of national economic development. The dependence $\Delta H = f(G)$, proposed by the author, was compared with the accumulated experience; it relies on the standard measurement system (obtaining baseline information), involves simple mathematical processing of the initial data, and simple assessment of the reliability of the function obtained.

In order to eliminate the debate regarding the definition of the quantitative value of life expectancy (LE, H), it is reasonable to present the standard definition used by the state statistics bodies of the Russian Federation: "Life expectancy at birth is the average number of years that is likely to be lived by an individual from the given generation, provided that throughout the whole life of this generation the age-specific mortality rates remain at the level of the year, for which the indicator was computed"[2]. With regard to the fact that statistical yearbooks present quantitative values interpreted in this way, the present study considers the officially published quantitative values of LE to be accurate and does not take into account possible statistical errors.

It should be noted that from the viewpoint of domestic researchers, the value of LE depends on quite a few factors. If we omit those factors, the influence of which requires at least special knowledge in the field of medicine and healthcare, and focus instead on the issues of socio-economic development, then it will be useful to highlight some of the findings

1 The Order of the Federal State Statistics Service "On Approval of the Practical Methodological Guide to Health Statistics" of November 22, 2010 No. 409.

2 *Rossiiskii statisticheskii ezhegodnik. 2014: stat. sb.* [Russian Statistical Yearbook. 2014: Statistics Collection]. Rosstat. Moscow, 2014. 693 p. P. 98. R76.

that were published and which attracted the attention of the author of the present paper.

These research findings include a firm opinion concerning the need to increase federal budget expenses on healthcare [5], including those allocated for the national project "Health" [6, 7] and other federal target programs [8] aimed to increase life expectancy. However, the growth of budget expenditures does not find unanimous approval among researchers. As an alternative, it is proposed to take into account the increasing influence of state and non-state health insurance funds [9], and, which is considered particularly important, to make efforts to increase public spending efficiency [10].

The increase in the efficiency of public spending on health in most of the cases is associated with the modernization of fixed assets in the sector [11], which leads to the increase in the amount of high-tech medical services [12] provided to the population. A perceptible increase in life expectancy, although it cannot satisfy the Russians [13], confirms the conclusions of the World Health Organization [14] (WHO) concerning the existence of a close correlation between the level of funding and the value of LE – one of the main indicators of the quality of public healthcare system [15]. It is necessary to consider the fact that the experience of foreign countries, on the one hand, confirms [16] and, on the other hand, refutes [17] the above findings of the WHO. The above-mentioned authors acknowledge the dependence of life expectancy on state financing; nevertheless, they conclude that it is necessary to increase the efficiency of using financial resources in healthcare.

The scientific hypothesis. When studying the statistical indicators that describe the dynamics of change in life expectancy and volume of public resources annually allocated for healthcare, it is important to use a system of quantitative values that is traditionally used in domestic and foreign practice. Such a system of indicators exists in the form of the National Health Accounts recommended by the Organization for Economic Cooperation and Development and the WHO [18]. In order to perform practical calculations, three indicators were considered as the input data: these indicators describe the Russian Federation and its constituent entities for the period from 2003 to 2013. Such indicators are:

– life expectancy[3] (H);

– consolidated budget expenditures on healthcare[4] (G);

– population of each of the subjects of the Russian Federation[5] (N).

We adopted as the main hypothesis an assumption that the nature of the relationship between LE (H) and budget expenditures on healthcare (G) is proportion. This approach is somewhat different from the mathematical set of tools used to test the hypotheses of exponential functions [19], but it makes it possible to compare the calculation results with the data obtained in the current [20]

[3] *Regiony Rossii. Sotsial'no-ekonomicheskie pokazateli. 2014: stat. sb.* [Regions of Russia. Socio-Economic Indicators. 2014: Statistics Collection]. Rosstat. Moscow, 2014. 900 p. R32. (Pp. 54-55. Tab. 2.9.)

[4] Regiony Rossii. *Sotsial'no-ekonomicheskie pokazateli. 2014: stat. sb.* [Regions of Russia. Socio-Economic Indicators. 2014: Statistics Collection]. Rosstat. Moscow, 2014. 900 p. R32. (Pp. 744-753. Tab. 22.2–22.3.)

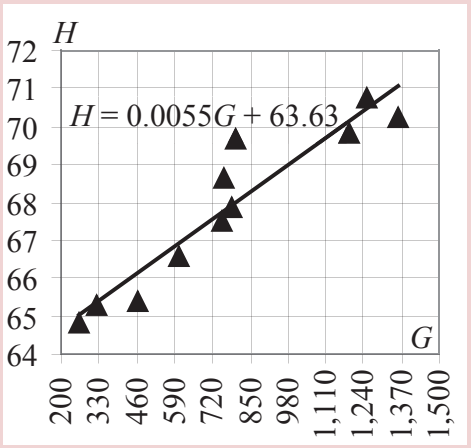
[5] *Regiony Rossii. Sotsial'no-ekonomicheskie pokazateli. 2014: stat. sb.* [Regions of Russia. Socio-Economic Indicators. 2014: Statistics Collection]. Rosstat. Moscow, 2014. 900 p. R32. (Pp. 37-38. Tab. 2.1.)

and the precious century [21]. In this regard, at the first stage, the correlation coefficients (Pearson coefficient, r) were calculated for all the subjects of the Russian Federation for 2003–2013 ($0.49 < r < 0.97$). An incorrect result was obtained only for the Tyumen Oblast ($r = -0.01$), and low values of the Pearson coefficient ($r < 0.5$) were obtained for the Chechen Republic ($r = 0.34$) and Ingushetia ($r = 0.4$).

The results of the study. The value of the correlation coefficient ($r = 0.94$) for the Russian Federation as a whole indicates the high reliability ($R^2 = 0.881$) of application of the linear function ($H = 0.0055G + 63.629$) to describe the dependence of life expectancy (N) on the consolidated budget expenditures on healthcare (G) *(fig. 1)*. It is necessary to pay attention to the fact that the calculations involved the actual values of healthcare expenditures of consolidated budgets of Russia's constituent entities. This approach is often criticized due to the fact that in this case the real cost of financial resources is not taken into account. An attempt to adjust the array of initial values with the help of standard tools that are used to determine the actual value of money, did not change the nature of the distribution in any significant way.

Several researchers [14, 15, 18] note a more precise dependence of LE on budget expenditures per inhabitant (G_N). Consolidated budget expenditures per inhabitant of the Russian Federation and corresponding subject of the Russian Federation were calculated in order to verify this statement. The replacement of G by G_N has not changed the indicators of validity with regard to the linear function

Figure 1. Dependence of LE (H, years) on the budget expenditures on healthcare (G, billion rubles)



Source: author's calculations based on: *Regiony Rossii. Sotsial'no-ekonomicheskie pokazateli. 2014: stat. sb.* [Regions of Russia. Socio-Economic Indicators. 2014: Statistics Collection]. Rosstat. Moscow, 2014. 900 p. R32. (Pp. 54-56. Tab. 2.9; Pp. 744-754. Tab. 22.2–22.3.)

used to describe the dependence. The values of the parameters traditionally used to assess the dynamics of changes in the set of values (growth rates) did not change. This is due to minor changes in the number of population, including that in each RF subject, for 2003–2013. Therefore, further presentation of the results is given relative to the total budget expenditures on healthcare (G).

In the past few years the author [22, 23] successfully applies the value of the slope of the straight to the x-axis for assessing investments effectiveness. Indeed, the value of the tangent can show the extent to which an increase in public expenditure on healthcare (movement along the x-axis to the right) will

increase (of reduce) the value of the function (will provide the movement along the y-axis upward, in this case – will lead to the growth of LE). It is obvious that the increase in the value of the tangent will correspond to the increase in the efficiency of budget spending (investment in the quality of life – increase in life expectancy). A graphic image of such assessment is shown in figure 1.

The proposed evaluation of public investment effectiveness (budget expenditures on healthcare) suggests that the increase in life expectancy by one year requires the increase of the annual investment volume by at least 180 billion rubles. It should be noted that the study of the values of life expectancy depending on budget expenditures on healthcare has shown that many RF subjects have a higher level of efficiency than the country as a whole. However, before we substantiate this assertion, it is appropriate to consider the nature of distribution of the values of LE and budget expenditures on healthcare in RF subjects as calculated per inhabitant. In order to avoid placing too many tables in the text of the paper, the author present the results of the study as distributions of respective initial values (*fig. 2a, b*).

Without dwelling on the obvious conclusions derived from a rather simple analysis of distributions of initial values (*H, G*), we present the characteristics that confirm the high level of validity when linear functions are used for describing the dependence $H = f(G)$ when applied to the overwhelming majority of RF subjects. In order to show all the regions of Russia, we present the Pearson coeff icient (r) and the mean root square deviation (R^2) in the form of histograms (*fig. 3a, b*).

Graphical representation of the values of the correlation coefficient (see fig. 3a) shows that the Pearson coefficient assumes the values less than 0.7 only for four RF subjects. When assessing the adequacy of linear approximation of statistical values, the mean root square deviation takes values sufficient to claim that the accuracy of the calculations is able to meet the requirements for the reliability of mathematical calculations. Thus, it can be argued that the methods of mathematical statistics applied in the present research can be used for scientific substantiation of the conclusions about the effectiveness of state investments in healthcare.

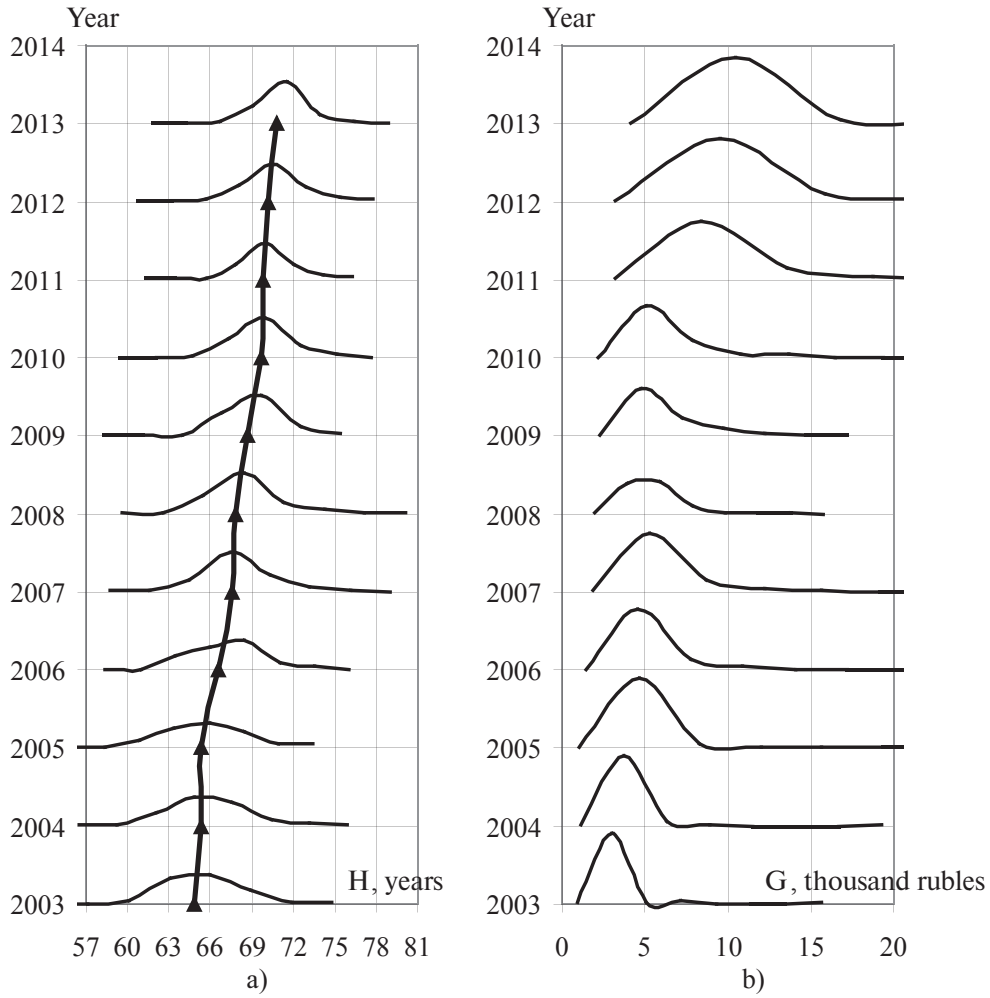
It is important to note that in 2003–2013, the different levels of healthcare financing in RF subjects both in absolute terms (*see fig. 2b*) and calculated per resident provided the positive dynamics of the value of life expectancy. The increment of this indicator in Russia's regions took place in different ways: in some subjects there was an annual increment of this indicator, in others – variations relative to the values achieved. Without dwelling on the causes of this situation, we present the graphical result of the changes that Russia achieved in 11 years *(fig. 4)*.

When analyzing the distribution of LE values in RF regions, it is necessary to pay attention to the following changes that the author considers to be positive:

– first, the distance between the minimum and maximum values of LE decreased (see fig. 4);

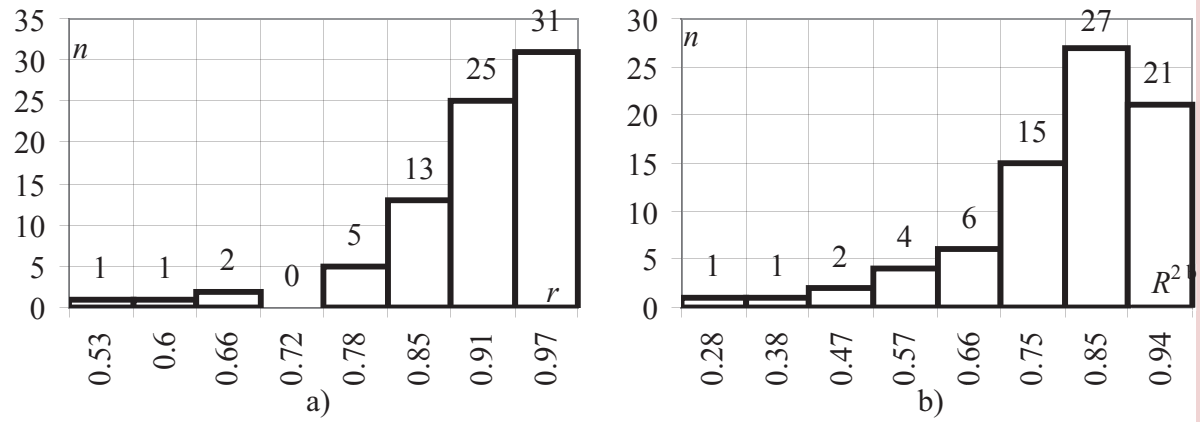
– second, it is obvious that according to LE indicator, the majority of the regions moved closer to the maximum value on the interval from H_{min} to H_{max};

Figure 2. Distribution of values in the arrays of initial data: a) life expectancy (vertical – LE for Russian Federation); b) RF budgets expenditures on healthcare per inhabitant



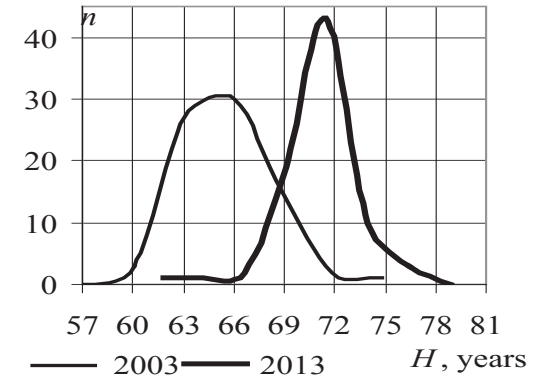
Source: *Regiony Rossii. Sotsial'no-ekonomicheskie pokazateli. 2014: stat. sb.* [Regions of Russia. Socio-Economic Indicators. 2014: Statistics Collection]. Rosstat. Moscow, 2014. 900 p. R32. (a) Pp. 54-56. Tab. 2.9; b) Pp. 744-754. Tab. 22.2–22.3.).

Figure 3. Distribution of values of the indicators for assessing validity: a) correlation coefficient (Pearson, *r*); b) mean root square deviation of the linear functions (R^2)



Source: author's calculation based on the standard method of pair correlation analysis.

Figure 4. Distribution of LE (*H*) in the subjects of the Russian Federation in 2003 and 2013



Source: *Regiony Rossii. Sotsial'no-ekonomicheskie pokazateli. 2014: stat. sb.* [Regions of Russia. Socio-Economic Indicators. 2014: Statistics Collection]. Rosstat. Moscow, 2014. 900 p. R32. (Pp. 54-56. Tab. 2.9).

– third, there was an increase in the number of RF subjects with relatively equal values of LE (the peak of the graph for 2013 in fig. 4);

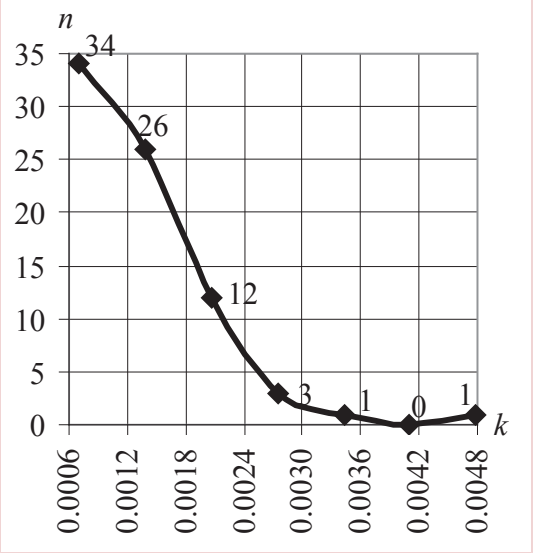
– fourth, the movement of distribution of LE values in RF regions can be used to solve problems associated with increasing efficient public investment in healthcare (for example, the provision of such health investments in RF subjects, which will provide the greatest movement of the whole distribution along the x-axis to the right).

From the viewpoint of the author, each RF subject can be regarded as a constituent of the state socio-economic system of the Russian Federation. Each elementary part has its rate of increase in its LE value measured by value of the slope of the straight to the x-axis. A linear function for each RF subject is determined by the mathematical statistics methods described above. The accuracy of

such function is very high (see fig. 3a, b). It is necessary and sufficient to determine the slope of each straight that describes the situation in the relevant region of Russia in order to measure the rate of LE increase depending on state investments. Such computations can be performed for at least a three-year period (i.e. at least by three points). The present work presents the values of the slopes *(fig. 5)*, which, according to the author, characterize the efficiency of using public investment in healthcare for 2003–2013.

Obviously, the intrigue that arises when considering the graphical representation of the research findings is to identify regions that are leaders in the effective use of public investment in healthcare (3 + 1 + 1 = 5 RF subjects, see the points in fig. 5 that are most remote from the origin of the axis system along the x-axis). It is highly important to compare the result obtained by the author to the traditional rating assessment of regions on the two most common criteria: life expectancy (H) and the amount of budget funding per inhabitant (G_N). To ensure the reliability rating of the assessment in relation to some initial position (in this case, it is the situation in RF subjects in 2003), the absolute and relative criteria of the values (H and G_N) are subjected to comparison. Since it is impossible to present the results of the rating assessment in full within the framework of the present paper, only five RF subjects are shown. The number of the subjects is determined by the number of the subjects that are leaders by the author's criterion of public investment efficiency (the slope of the approximating straight line).

Figure 5. Distribution of the slope (k) of the linear functions constructed for RF subjects



Source: author's calculations based on the results of the pairwise correlation analysis

Conclusions. The results of the ranking of the initial data *(see tab. 1)* suggest that the maximum increase in the calculated value of life expectancy over the past 10 years was observed in the Chita Oblast (tab. 1A). At the same time, the Chita Oblast ranked 48th in Russia in terms of increase in budget financing per capita for 2003–2013 by the absolute index (in rubles); and relative to the base year (2003), it ranked only 76th. Thus, it is necessary to pay attention to very interesting conclusions [24] (see tab. 2), which can be used for this phenomenon.

Probably, it is worth considering the arguments about the growth of budget expenditures on healthcare in RF subjects (see tab. 1b). The leaders of such growth are

Table 1. Ranking estimate of the increase in the initial data (life expectancy and the volume of budget investment per capita) in RF subjects for 2003–2013

RF subject	Absolute growth rate		Relative growth rate	
	value	position	value, %	position
A. Increase in the value of life expectancy in 2003–2013				
Chita Oblast	10.65	1	17.85	1
Perm Oblast	9.54	2	15.39	2
Kaliningrad Oblast	9.16	3	14.93	3
Leningrad Oblast	8.92	4	14.52	4
Irkutsk Oblast	8.67	5	14.36	5
Republic of Khakassia	8.02	8	13.25	9
Altai Republic	7.30	17	12.16	14
Saint Petersburg	7.21	18	10.76	25
Sakhalin Oblast	6.41	29	10.46	27
Moscow	6.39	30	9.13	33
Republic of Kalmykia	5.55	40	8.43	43
Primorsky Krai	5.20	50	8.28	46
Krasnoyarsk Krai	4.46	65	7.12	61
Jewish Autonomous Oblast	4.30	68	7.09	63
Magadan Oblast	4.00	72	6.34	69
Chechen Republic	3.98	73	5.75	73
Chukotka Autonomous Okrug	3.08	79	5.22	77
B. Increase in budget investment in healthcare per capita in 2003–2013				
Krasnoyarsk Krai	24.33	3	9.73	2
Primorsky Krai	19.37	5	12.06	1
Moscow	14.72	6	5.85	4
Sakhalin Oblast	21.30	4	5.56	6
Jewish Autonomous Oblast	14.63	7	6.93	3
Magadan Oblast	30.45	2	5.29	10
Saint Petersburg	8.71	12	5.15	12
Republic of Khakassia	6.85	21	4.74	19
Leningrad Oblast	6.75	22	4.48	21
Kaliningrad Oblast	5.93	31	4.59	20
Chechen Republic	5.15	47	5.82	5
Chukotka Autonomous Okrug	32.59	1	2.09	78
Altai Republic	6.69	23	2.65	66
Irkutsk Oblast	5.41	40	2.99	60
Chita Oblast	5.11	48	2.24	76
Republic of Kalmykia	4.63	60	2.57	68
Perm Oblast	4.68	59	2.56	69

Source: compiled by the author on the basis of: *Regiony Rossii. Sotsial'no-ekonomicheskie pokazateli. 2014: stat. sb*. [Regions of Russia. Socio-Economic Indicators. 2014: Statistics Collection]. Rosstat. Moscow, 2014. 900 p. R32. (Pp. 54-56. Tab. 2.9)

Table 2. Ranking of RF subjects in terms of growth in life expectancy (H) on a unit volume of public investment in healthcare (G)

RF subject	Value	Position	RF subject	Value	Position
Altai Republic	0.004783	1	Perm Oblast	0.000895	30
Republic of Kalmykia	0.002963	2	Leningrad Oblast	0.000689	44
Jewish Autonomous Oblast	0.002256	3	Sakhalin Oblast	0.000625	46
Republic of Khakassia	0.002103	5	Primorsky Krai	0.000535	48
Chukotka Autonomous Okrug	0.001664	11	Irkutsk Oblast	0.000503	50
Kaliningrad Oblast	0.001568	12	Krasnoyarsk Krai	0.000189	69
Chita Oblast	0.001306	17	Saint Petersburg	0.000097	75
Magadan Oblast	0.000899	29	Moscow	0.000027	77

Source: author's calculations based on the results of the pairwise (N = f(G)) correlation analysis (calculation of the slope of the straight to the x-axis using the least squares method).

Krasnoyarsk Krai and Primorsky Krai, but in terms of LE increase, they rank, 65th and 50th by absolute growth, respectively; and they rank 61st and 46th by the increase in relation to 2003 (tab. 1A).

From the author's point of view, the Altai Republic has the highest growth rate of LE per unit budget expenditures on healthcare *(tab. 2)*. Note that this RF subject ranks 17th in Russia in terms of increase in life expectancy in the absolute value and 14th – in the relative value (see tab. 1A). But as for the growth of healthcare financing relative to 2003, the Altai Republic ranks 23rd in the absolute values and, which is also important, it ranks 66th – in the relative values (see tab. 1B).

The criterion proposed for assessing socio-economic effectiveness of state investment in national healthcare provides the most objective and clear assessment, which is performed with the help of standard techniques of mathematical statistics that ensure high accuracy of the calculations. It is important to emphasize that traditional approaches to evaluating the effectiveness of investments, based on the ranking of the initial values (life expectancy and budget spending on healthcare, including that as calculated per resident) cannot ensure that unambiguous results will be obtained (see tab. 1).

The rate of LE increase depending on the volume of public investments in healthcare can be used, for example, for the scientific substantiation of the extent to which the federal budget funds participate in regional programs that aim to increase the efficiency of national healthcare (the model in fig. 4 can be used as the basis in this case). From the point of view of the author the best result can be obtained when applying the linear approximation of the current dependencies to municipalities (urban districts and municipal districts). This conclusion is based on the fact that the decisions taken by regional authorities are to a lesser extent influenced by the current political situation.

Information about the Author

Vadim Nikolaevich Kabanov – Doctor of Economics, Professor, Research Associate, Volgograd Branch of the Academy of Labor and Social Relations (6b, Kim Street, Volgograd, 400001, Russian Federation, kabanovvn@yandex.ru)

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Classification of Region's Municipalities by Structure and Level of Incomes and Consumer Spending

Vladislav Yakovlevich FOKIN
Ph.D. in Economics, Associate Professor
Perm National Research Polytechnic University, Chaykovsky Branch
73, Lenin Street, Chaykovsky, Perm Krai, 617760, Russian Federation,
vlad-f62@yandex.ru

Abstract. The paper presents a classification of region's municipalities that differ according to two criteria – the structure and level of incomes, and the level of consumer spending. The author investigated the combination of income sources (wages, pensions and unemployment benefits) that form in the aggregate the amount of disposable money income of the people who live in the administrative-territorial units of Perm Krai. The author also analyzed the influence of people's incomes on retail trade turnover in the region's municipalities. The data were collected, grouped and analyzed; they show that the level of people's income in large and medium cities, which are industrial centers, exceeds considerably the values of these indicators registered in rural municipalities, single-industry settlements and depressed areas. The reason for this lies in low wages of working population, a large proportion of retirees and the unemployed in the rural areas, single-industry settlements and depressed areas. The article defines nine types of territorial entities in the region that differ in level and structure of income and consumer spending in the municipalities. The author concludes that the territorial differentiation of municipal formations influences the formation of stratified population groups distinguished by the level of income and consumption. The solution to this problem requires joint efforts by the regional administration and municipal authorities to develop management actions with regard to specific features of each municipality.

Key words: municipality, territorial differentiation, city, single-industry settlement, rural municipal district, income, wage, the unemployed, pensioners, consumption, social stratification.

According to Article 15 of the Constitution of the USSR of 1977, the most complete satisfaction of the growing material and spiritual needs of the people was the supreme goal of social production under socialism. It is known that that the satisfaction of needs is based on the consumption of material and spiritual goods. Therefore, an increase in the level of consumption was one of the prime tasks of the state under the conditions of planned economy.

The Constitution of the Russian Federation adopted through nationwide vote on December 12, 1993, declares the implementation of state policy aimed at creating conditions for a decent life and free development of man. The concept of "decent life" can be regarded in the context of assessment of the quality of life, a component of which, along with health, life expectancy, environment conditions, is the level of consumption of material and spiritual goods. The level of consumption is derived from people's income level. Given the fact that all citizens in the social state must have an opportunity to live a decent life, the alignment of people's income and consumption should be a current priority task for the government. And this requires analyzing different aspects of the issue of social inequality in the country.

Differentiation by place of residence is a factor that influences social stratification in Russia; it creates different opportunities for gaining income and making consumer spending among people who live in different types of municipalities. Therefore, socio-economic heterogeneity in the development of rural and urban settlements, cities with diversified industry and depressed areas affects stratification of the population by level of income and consumption and leads to negative demographic and migration processes; therefore, it is a priority issue that requires theoretical research and practical solutions at the national, regional and municipal levels.

In order to work out solutions aimed at maintaining the necessary balance in the development of region's administrative-territorial entities, to prevent their excessive differentiation in terms of socio-economic development and quality of life, it is necessary to classify municipalities into homogeneous groups through inter-municipal comparison.

It should be noted that Russian scholars have been recently paying more attention to the issues of deepening social inequality in terms of standard of living and its individual components nationwide and at the municipal level.

For example, B.V. Tokarskii points out the importance of research into this aspect of social administration; he writes that the standard of living – an important component of the quality of life – is largely determined by the availability of goods and services and by the level of their consumption [10, pp. 160-161].

Social significance and urgency of the issue of deepening people's income differentiation in the period of market transformations and consequences of this differentiation allowed I.Yu. Il'ina to prepare her doctoral dissertation in which she investigated the specifics of formation of consumer strategies in different socio-demographic groups [3].

It should be noted a multidimensional nature of the issue of territorial differentiation of income and the issue of population stratification by level of consumption. Several scientific works are devoted to

the issues of continuum – insufficient – excessive consumption. For example, V.A. Shamlikashvili points out the increasing importance of consumption that is used "as a tool of social identification of individuals and their integration into society on the basis of social and consumer status" [13, p. 45].

In pursuit of raising this status, the consumption of various goods by certain groups of people becomes excessive. Overconsumption is most widely prevalent in metropolitan and regional centers and in major cities. It is capital cities and regional centers that have a high concentration of "insatiable consumers", as A.A. Ovsyannikov puts it. He writes: "An insatiable consumer is the center of any policy of consumer society, the society that is managed not by Durkheim's values of political ideals, but by a system of virtual signs and symbols of social identity with power and success" [6, p. 230].

A separate area of scientific research is represented by the works that analyze the depth of differentiation of people's incomes, their level of consumption corresponding to these incomes and related trends in socio-economic development of different types of territorial units of the country and its regions.

According to Z.I. Kalugina, income inequalities cause inequalities in the level, structure and quality of consumption. Z.I. Kalugina writes that the structure of consumption expenditure of rural residents is dominated by a high proportion of expenditure on food; as for expenditures on recreational and cultural activities and on education, their share is small compared to that of urban residents. Thus, it follows that Russia has a combination of income inequality and inequality of opportunities; peasant labor is underestimated, which results in the dominance of extremely poor and poor population in rural areas [4, pp. 125-127].

L.V. Kostyleva used the Vologda Oblast as an example and analyzed the impact of income on the lifestyle and stratification of urban and rural population with the use of the following indicators: volume and structure of expenditure; food consumption; comfortable housing; endowment with property; consumption of services; spending leisure time and opportunities for recreation [5].

Several research papers analyze statistical data and findings of sociological surveys that prove the presence of considerable negative effects resulting from the fact that socio-economic development of rural areas in different regions of the Russian Federation is lagging behind that in urban areas.

T.V. Uskova considers that these negative effects are manifest in the degradation and reduction in size of the structure of settlement network in the Vologda Oblast, and in the decrease in the amount of labor resources in the Oblast's peripheral areas that have no urban settlements [12].

A team of scientists from the Ural Federal District study the differentiation of municipalities in the Sverdlovsk Oblast and consider the level of wages in the Oblast's territorial entities to be the most important socio-economic indicator. I.D. Turgel' and her associates point out that the level of wages has an impact on "the attractiveness of a territorial unit as a prospective place of residence, determines the orientation of migration flows, the capacity of the consumer market and, consequently, the growth rate and structure of

industries such as retail trade and services that support this market..." [7, pp. 31-32].

Small towns and rural areas have a high proportion of the poor – a social class that experiences deprivation because they cannot afford normal consumption. According to the results of research carried out by N.E. Tikhonova, and E.D. Slobodenyuk, poverty as a social phenomenon is concentrated in rural areas and small towns. In oblast centers, the share of people who experienced poverty is several times lower [9, p. 45].

Review of the scientific literature covering the influence of people's income levels on the amount of final consumption gives grounds to make a conclusion about the importance of taking into account the territorial aspect – the place of life activities in the definition of the subject area of the research devoted to this subject.

In one of the author's previously published articles, a research on the influence of income on the difference in the level of consumption of rural and urban population has already been conducted [14]. This work is fundamentally different from the above-mentioned article by the author and from research papers on this topic published by other scientists. The difference lies in the fact that the author carried out a multifactor analysis of the conditions under which the territories are developing, and of how these conditions affect the structure and level of incomes and consumer spending in the population living in administrative-territorial formations of Perm Krai. On this basis, the single-type administrative-territorial formations were selected, and the author proposed their classification based on the common regularities of formation of their socio-economic potential and its influence on the stratification of the region's population living in different types of territorial entities.

It is known that people's money incomes consist of components such as wages, pensions, allowances and other social transfers. Besides, the structure of money income includes the income from entrepreneurial activity, interest from deposits, securities, etc. According to Permstat (Regional Office of the Federal State Statistics Service of the Russian Federation in Perm Krai), in 2013, the total income of the population in Perm Krai reached 823,932.8 million rubles. The greatest share in the structure of incomes was represented by labor remuneration. It was equal to 273,192.1 million rubles, which accounted for 33.2%. The second place in the structure of incomes in 2013 was occupied by social payments (pensions, benefits) – 145,122.3 million rubles or 17.6%. Then, in decreasing order: income from entrepreneurial activity – 86,916.8 million rubles or 10.5%, and income from property – 34,278.2 million rubles or 4.2%. All other revenues accounted for the total of 34.5% of the aggregate volume of incomes in Perm Krai [8, p. 90].

Income from entrepreneurial activity and income from property occupy a minor place in the structure of incomes due to the fact that entrepreneurship as a phenomenon is currently still in the development stage, and property is in the stage of accumulation; besides, the mechanism of obtaining income from owning property is still in the process of formation. Moreover, in rural areas, due to the allocation of land shares, rural population can earn income from business activity connected with land exploitation or from the lease of the

land. But for the majority of rural residents, according to P.P. Velikii, and S.T. Zakirova, "... the cultivation of land using one's own efforts is a very challenging task taking into account one's own resources (excluding a relatively small group of constructive orientation)" [1, p. 14].

It should be noted that the rent that agricultural enterprises are willing to pay to land owners is negligible due to the excess of supply of farmland and the small demand for them. For example, the rent in Perm Krai is from 100 rubles a year per hectare of farmland plus the payment of land tax.

In order to assess the extent of territorial disparities of income and consumption of the perm Krai population that lives in different types of municipalities, the author developed the research algorithm, defined the indicators to be studied, and collected, structured and analyzed the relevant statistical data. The analysis and further aggregation of the data allowed the author to highlight nine types of municipal entities of Perm Krai that are differentiated by income level and, consequently, by purchasing power of the population, to analyze the impact of these factors on the level of people's consumption in the areas under consideration *(tab. 1)*.

At the first stage of research, the author analyzed the influence of average monthly nominal accrued wage (because its share in the structure of income is the highest) on retail trade turnover per capita for the population living in nine types of territories of Perm Krai, taking into account the importance of the consumption indicator. The significance is due to the fact that household spending on food purchases, alcoholic beverages, and non-food products in the structure of consumer spending is about 60%.

The author points out the fact that the municipal districts in table 1 are arranged in such a way that the administrative-territorial formations in each group of territories take their places in the order of decreasing values of retail trade turnover per capita and, consequently, the rating values of this indicator in the whole region.

The data in table 1 show that in 2013 the average monthly salary in 13 administrative-territorial formations that top the ranking list was from 32,801.1 to 22,869.0 rubles, which corresponds to the first – sixteenth place in descending order. These municipal entities are among the five most successful groups of territories highlighted by the author. In 2013, all these areas characterized by high level of urbanization, including Permsky and Solikamsky districts that are considered to be rural areas, had the highest wages relative to other municipalities. The high ranking of Permsky district by level of wages is explained by the fact that its lands around the city of Perm, which is the regional center, contain large production facilities. A significant part of the Permsky district population is employed at these industrial enterprises that provide a high level of wages. The fact that Usolsky municipal district ranks first and Solikamsky municipal district ranks fifteenth is due to similar circumstances – a significant proportion of the working-age population living in these territories work at potassium salt deposits developed by JSC Uralkali, which pays its workers decently.

The sixth group of territorial entities includes municipal areas that are old industrial

Table 1. Influence of wages on retail trade turnover in different types of municipal entities of Perm Krai in 2013

Ranking position	Administrative-territorial formations	Average monthly nominal accrued wages, rubles	Ranking position	Retail trade turnover per capita, rubles per year	Ranking position	Disparity of values of the 4th and 6th columns, in points	Urban/rural population ratio, %
1. Urban districts that consist of cities and towns which are industrial centers							
1.	City of Perm	32,801.1	2	298,887	1	1	100/0
2.	City of Berezniki	29,005.4	4	151,582	3	1	100/0
3.	Town of Kungur	24,195.4	12	131,047	4	8	100/0
4.	Town of Solikamsk	25,301.1	8	121,077	7	1	100/0
5.	Town of Kudymkar	22,869.0	16	100,361	11	4	100/0
2. Municipal districts and settlements included in the Perm agglomeration							
6.	Krasnokamsky	25,209.9	10	156,282	2	8	80.7/19.3
7.	Dobryansky	30,337.0	3	107,441	10	7	81.6/18.4
3. Municipal districts immediately adjacent to major cities that deployed industrial enterprises on the territory of these districts							
8.	Permsky	25,236.6	9	83,971	13	4	0/100
9.	Usolsky	33,151.2	1	54,795	27	26	40.2/59.8
10.	Solikamsky	22,911.2	15	15,336	47	32	0/100
4. Municipal districts with diversified industry							
11.	Chaikovsky	26,556.3	6	116,280	9	3	79.8/20.2
5. Municipal districts with a high share of enterprises specializing in oil production							
12.	Chernushinsky	24,242.8	11	130,842	5	6	65.5/34.58
13.	Osinsky	26,879.0	5	68,916	18	13	71.7/28.3
6. Municipal and urban districts – old industrial areas with a high proportion of the population that lives in single-industry settlements							
14.	Lysvensky Urban District	20,139.9	29	116,586	8	21	84.4/15.6
15.	Chusovskoy	21,950.8	20	84,569	12	8	77.8/22.2
16.	Ochersky	22,152.2	18	78,694	14	4	76.2/23.8
17.	Kizelovsky	19,492.6	33	73,929	15	18	77.6/22.4
18.	Nytvensky	19,809.7	30	71,638	16	14	70.4/29.6
19.	Gubakhinsky Urban District	23,048.4	14	65,920	20	6	94.4/5.6
20.	Aleksandrovsky	20,645.2	25	63,868	21	4	88.2/11.8
21.	Gornozavodsky	23,586.0	13	51,707	30	17	94.5/5.5
22.	Krasnovishersky	19,783.8	31	50,932	31	-	72.7/17.3
23.	Gremyachinsky	22,079.9	19	47,135	37	18	81.4/18.6
7. Municipal districts, the administrative centers of which are small towns, a significant part of the population of these districts lives in rural settlements							
24.	Vereshchaginsky	20,248.7	28	121,852	6	22	53.7/46.3
25.	Suksunsky	18,251.4	38	59,598	23	15	39.9/60.1
26.	Ilyinsky	18,515.3	37	56,044	25	12	19.4/80.6
27.	Okhansky	16,306.9	44	51,891	28	16	44.2/65.8
28.	Oktyabrsky	20,292.9	27	49,425	35	8	50/50

End of the table 1

8. Rural municipal districts specializing in agricultural production							
29.	Berezovsky	21,599.7	22	71,328	17	5	0/100
30.	Kuyedinsky	17,408.2	41	66,088	19	22	0/100
31.	Bolshesosnovsky	18,661.4	36	60,382	22	14	0/100
32.	Sivinsky	16,199.9	45	57,437	24	21	0/100
33.	Chastinsky	21,132.3	23	56,032	26	3	0/100
34.	Yelovsky	18,960.9	35	51,738	29	6	0/100
35.	Karagaysky	19,287.5	34	50,671	32	2	0/100
36.	Kochevsky	25,373.4	7	50,079	33	26	0/100
37.	Uinsky	18,050.4	39	49,702	34	5	0/100
38.	Cherdynsky	20,415.1	26	48,424	36	10	0/100
39.	Bardymsky	21,610.1	21	46,596	38	17	0/100
40.	Yusvinsky	15,059.9	46	41,944	39	7	0/100
41.	Ordinsky	19,751.8	32	41,666	40	8	0/100
42.	Gaynsky	22,680.0	17	40,342	41	24	0/100
43.	Yurlinsky	17,161.3	42	39,315	42	-	0/100
44.	Kosinsky	20,986.5	24	38,339	43	19	0/100
45.	Kishertsky	17,772.1	40	37,767	44	4	0/100
9. Rural municipal districts without industry, geographically covering the urban districts that are economically independent from them							
46.	Kudymkarsky	14,462.2	47	32,792	45	2	0/100
47.	Kungursky	17,023.5	43	28,490	46	3	0/100
Note. The data was collected, structured and the calculations made by the author with the use of reference source 8.							

territories. They have a significant proportion of urban population. But this population lives in single-industry towns, the problem of which, according to V.V. Gusev, "is a kind of white spot, archaism of modern economy, since single-industry towns are currently... centers of stagnation, spatially and economically remote, largely incapable of independent economic development and not fitting in the current social and urban standards" [2, p. 23].

Average monthly wage in the municipalities belonging to the sixth group of territories ranges from 23,586.0 to 19,492.6 rubles. In all the 11 municipalities belonging to this group of territories, average wages are much lower than in the five groups of territories that are higher on the list under consideration. The relatively high level of wages in the leaders of the list among the municipalities arranged in this group can be explained by several circumstances. On the territory of Gornozavodskoy District there operates a large plant for cement production, enjoying strong demand in the construction materials market. A machine building plant is located in Ochersky District, it supplies its products to oil-producing companies. In the town of Gubakha, a significant contribution to the increase in average wages of the population is made by JSC Metafrax – the leading chemical industrial enterprise in this district.

Kizelovsky Municipal District is the last in the group in terms of wages; Kizel coal basin that was closed in the 1990s is located there.

A.I. Treivish writes: "As a result of the sudden and manmade death of the basin, which was followed by the decline of coal production and decrease in wages, all other industries have also collapsed in this depressed territory without making any attempt to turn from auxiliary into town-forming branches... People have found themselves trapped in a depressing "rusty bowl" [11, pp. 271-272].

The situation is even worse concerning the wages in the majority of municipalities, the administrative centers of which are small towns and in which a significant share of the population lives in rural settlements (7th group) and completely rural municipal districts (8th group). The exception is Kochevsky Municipal District that occupies the seventh place in the ranking in terms of wages. This is because it is located in the forest zone in the north of Perm Krai and it has 17 enterprises for timber harvesting and processing, the level of wages at these enterprises is rather high. This district almost completely lacks the agricultural component. The ninth group includes rural municipal districts that contain the towns of Kudymkar and Kungur – independent municipal formations – urban districts that are economically artificially cut off from their surrounding districts. Therefore, the replenishment of budgets in Kungur and Kudymkar districts is low, and the majority of the population is engaged in low-wage rural labor. This leads to the aggravation of the issue of territorial differentiation of wages that differ significantly in these territories compared to the regional center. In Kudymkarsky Municipal District, which occupies the last place in the ranking, the wage level in 2013 was only 44% relative to that in the city of Perm.

The analysis of the influence of the average level of wages in the municipality on retail trade turnover per capita of the population living in its territory to a certain extent confirms the dependence between these indicators. The data in table 1 show that all the administrative-territorial units referred to the first five groups, except for Usolsky and Solikamsky municipal districts, occupy high positions in the ranking by level of consumption. The fact that these territories occupy low positions in the rating list by level of retail trade turnover is explained by the small size of these areas so that their residents make the bulk of their purchases in the nearby larger settlements – the city of Berezniki and the town of Solikamsk.

In comparison to the above five groups of territories, the rating values of the indicator of retail trade turnover per capita are lower in almost all the territorial units that belong to the group of old industrial territories, in municipal districts, the administrative centers of which are small towns, and in rural municipal districts. The exceptions are Lysvensky Urban District and Vereshchaginsky Municipal District, their administrative centers – the towns of Lysva and Vereshchagino – are located at the intersection of transport railroads and motor roads; these towns are local logistic centers with well-developed trade and the services sector.

The data in table 1 show there is a huge gap in the level of consumption of food and non-food goods between the Perm Krai areas under consideration. In the majority of municipalities dominated by rural population, retail trade turnover per capita is five and more times lower than that in the city of Perm. In the 12 regions that are outsiders in terms of retail

trade turnover per capita, the values of this indicator in 2013 were below 50 thousand rubles – almost six times lower than in the regional center. Even considering the fact that the residents of peripheral areas make some of their purchases in the regional center and nearby towns, we can say with confidence that there exists an inter-municipal stratification of the Perm Krai population by level of consumption.

The mismatch between the values of the fourth and sixth columns for 27 municipalities out of 47 does not exceed 10 points. A greater mismatch for other territories is explained by the fact that the territories differ in the proportion of pensioners and the unemployed – the social groups with lower incomes.

The author points out the fact that currently, in Russia and most of its regions, the number of pensioners per worker increases due to the demographic issues associated with low birth rates that linger from the late 1980s. In rural areas, depressed areas, in the settlements that have enterprises with a high share of workplaces characterized by harmful working conditions (mining, chemical industry, etc.), the percentage ratio of pensioners to working population is even higher. This is due, first, to the migration outflow of able-bodied population from the depressed territorial entities, and second, to the fact that according to the labor legislation of the Russian Federation, employees of enterprises with harmful working conditions retire earlier by five or ten years according to the list of occupations that grant the right to earlier retirement. Therefore, the average income and consumption per capita within the borders of such territories where a significant part of the population lives on pensions are lower than in other municipalities.

A high proportion of the unemployed is one more factor influencing the decline in per capita incomes and consumption in the territory, because the unemployed live on unemployment benefits, in case of their successful registration at the employment service. If the registration procedure of the individual as the unemployed was not completed, or if those who had no job and applied to the employment service did not receive the status of the unemployed, they actually live on odd jobs, gain income from private subsidiary plots and sometimes from the gathering. Perm Krai has a pronounced territorial heterogeneity in the distribution of the number of pensioners per 1,000 population and the unemployed in the nine groups under consideration *(tab. 2)*.

The data in table 2 show that, according to the statistics, with rare exceptions, the smallest number of pensioners per 1,000 population and the registered unemployed is observed in the types of Perm Krai territories that are formed by large and medium-sized cities and towns, municipal districts that are suburban areas of these cities and towns and in Chaikovsky Municipal District, which has a diversified production facilities. A small amount of the population with low income has a positive effect on the formation of consumer demand, and, accordingly, on the level of retail trade turnover in these territories. Let us consider an opposite example. Osinsky Municipal District is a center of oil production in Perm Krai. It ranks fifth by wage level, but a

Table 2. Comparative table of rating values of the proportion of pensioners and the unemployed and the level of consumption in different types of territories in Perm Krai in 2013

Ranking position	Territorial units	Number of pensioners per 1,000 population	Ranking position	Unemployment level, %	Ranking position	Position in the ranking in terms of wages*	Mean value in the ranking for the three values	Place in the ranking by retail trade turnover per capita, rubles per year
1. Urban districts that consist of cities and towns which are industrial centers								
1.	City of Perm	275	5	0.50	2	2	**3**	**1**
2.	City of Berezniki	329	33	0.46	1	4	**13**	**3**
3.	Town of Kungur	286	11	1.27	6	12	**10**	**4**
4.	Town of Solikamsk	282	8	1.43	12	8	**10**	**7**
5.	Town of Kudymkar	278	6	2.39	19	16	**14**	**11**
2. Municipal districts and settlements included in the Perm agglomeration								
6.	Krasnokamsky	288	13	1.19	8	10	**10**	**2**
7.	Dobryansky	296	16	1.86	16	3	**12**	**10**
3. Municipal districts immediately adjacent to major cities that deployed industrial enterprises on the territory of these districts								
8.	Permsky	236	1	0.84	4	9	**5**	**13**
9.	Usolsky	258	2	1.48	14	1	6	27
10.	Solikamsky	286	12	1.46	13	15	13	47
4. Municipal districts with diversified industry								
11.	Chaikovsky	289	14	0.92	5	6	**8**	**9**
5. Municipal districts with a high share of enterprises specializing in oil production								
12.	Chernushinsky	272	4	0.78	3	11	**6**	**5**
13.	Osinsky	309	20	3.21	31	5	**19**	**18**
6. Municipal and urban districts – old industrial areas with a high proportion of the population that lives in single-industry settlements								
14.	Lysvensky Urban District	349	39	1.36	9	29	26	8
15.	Chusovskoy	313	27	1.64	15	20	**21**	**12**
16.	Ochersky	310	22	3.80	36	18	25	14
17.	Kizelovsky	466	46	3.18	29	33	36	15
18.	Nytvensky	318	28	2.92	24	30	27	16
19.	Gubakhinsky Urban District	373	43	1.05	7	14	**21**	**20**
20.	Aleksandrovsky	346	37	2.33	18	25	**27**	**21**
21.	Gornozavodsky	347	35	1.96	17	13	**22**	**30**
22.	Krasnovishersky	350	40	8.25	47	31	**39**	**31**
23.	Gremyachinsky	502	47	3.71	35	19	**34**	**37**
7. Municipal districts, the administrative centers of which are small towns, a significant part of the population of these districts lives in rural settlements								
24.	Vereshchaginsky	266	3	0.99	6	28	**12**	**6**
25.	Suksunsky	316	30	3.05	26	38	**31**	**23**
26.	Ilyinsky	316	31	3.17	28	**37**	**32**	**25**
27.	Okhansky	297	17	2.70	22	44	**28**	**28**
28.	Oktyabrsky	312	24	3.38	32	27	**28**	**35**

End of the table 2

8. Rural municipal districts specializing in agricultural production								
29.	Berezovsky	314	21	3.94	37	22	**27**	**17**
30.	Kuyedinsky	303	19	2.56	21	41	**27**	**19**
31.	Bolshesosnovsky	312	23	4.99	42	36	34	22
32.	Sivinsky	290	15	3.00	25	45	**28**	**24**
33.	Chastinsky	280	7	3.21	30	23	**20**	**26**
34.	Yelovsky	372	42	4.78	39	35	**38**	**29**
35.	Karagaysky	297	18	2.74	23	34	**25**	**32**
36.	Kochevsky	333	34	6.10	43	7	**28**	**33**
37.	Uinsky	390	38	3.15	27	39	**35**	**34**
38.	Cherdynsky	285	10	4.87	41	36	**29**	**36**
39.	Bardymsky	316	32	3.48	33	21	**29**	**38**
40.	Yusvinsky	342	36	5.18	43	46	**42**	**39**
41.	Ordinsky	319	29	4.29	38	32	**33**	**40**
42.	Gaynsky	376	44	5.19	44	17	**35**	**41**
43.	Yurlinsky	319	26	4.79	40	42	**36**	**42**
44.	Kosinsky	407	45	6.24	46	24	**38**	**43**
45.	Kishertsky	365	41	3.64	34	40	**38**	**44**
9. Rural municipal districts without industry, geographically covering the urban districts that are economically independent from them								
46.	Kudymkarsky	309	21	2.46	20	47	**29**	**45**
47.	Kungursky	284	9	1.39	11	43	**21**	**46**

Note. The data was collected, structured and the calculations made by the author with the use of reference source 8.
* Position in the ranking by indicator "average monthly nominal accrued wages" was transferred from table 1.

significant number of low-income population groups live there. The District ranks 21nd in terms of the number of pensioners per 1,000 population, and 33rd – by level of unemployment in Perm Krai. Accordingly, taking into account the influence of these factors, Osinsky District occupies a rather low fifteenth position in the ranking in terms of retail trade turnover per capita per year.

The data in table 2 also shows that in all municipalities that are old industrial areas with a high proportion of urban population living in single-industry settlements and in most rural areas of the region, the share of pensioners and the unemployed in the total population is much larger than in the first five groups of territories. As for the extent of differentiation, it can be judged by the variation of values of the factors under consideration. In the nine municipal districts – the outsiders of the rating – the number of persons who receive pensions per 1,000 population living in these territories exceeds 350, which is 1.5 times more than in Permsky Municipal District. Due to the fact that the local city-forming enterprise – pulp and paper mill – was shut down, the unemployment rate in Krasnovishersky District is 16.5 times higher than in the center of Perm Krai. If we compare the mean value of the rating positions of municipal entities

of Perm Krai in terms of the three examined indicators and their place in the ranking in terms of retail trade turnover per capita, we can see that in 38 cases out of 47 (in bold), the discrepancy between these values does not exceed 10 points. In other cases, a greater interval between the values under comparison is caused by the presence of additional factors that influence the specifics of spending of the population in some municipalities. For example, a developed transport infrastructure allows the residents of some rural municipal districts to shop in nearby towns, this fact contributes to the decline in turnover in these regions, but increases it in towns (Kungursky and Kudymkarsky municipal districts and the towns of Kungur and Kudymkar, respectively).

It is possible to draw a number of conclusions and proposals based on the above material.

The combination of all three total sources of income (wages, pensions and unemployment benefits) differentiated by their amount and forming in the aggregate the amount of disposable money income of the population of the administrative-territorial unit forms the potential of its costs, including the potential of retail trade turnover in the territory.

Taking into account the specifics of Perm Krai, the groups of territories arranged in descending order of their socio-economic potential and the consequent reduction in income, purchasing power and consumption level are as follows:

1. Urban districts that consist of cities and towns which are industrial centers.

2. Municipal districts and settlements included in the Perm agglomeration.

3. Municipal districts immediately adjacent to major cities, the industrial area of which is partially located on the territory of these districts.

4. Tchaikovsky Municipal District that has a diversified industrial structure.

5. Municipal districts with a high share of companies specializing in oil production.

6. Municipal districts – old industrial areas with a high proportion of the population that lives in single-industry settlements.

7. Municipal districts, the administrative centers of which are small towns, a significant part of the population of these districts lives in rural settlements.

8. Rural municipal districts specializing in agricultural production with the rural settlement as their administrative center.

9. Rural municipal districts without industry that geographically cover the urban districts that are economically independent from them.

The last five groups of territories are the most "problematic" from the viewpoint of social justice concerning incomes and consumer spending. The Perm Krai authorities are taking measures to reduce the degree of differentiation between incomes and consumer spending of the population of the Krai. For this purpose, Perm Krai is working out programs for development of "problematic" territories such as single-industry towns, rural areas, depressed areas of Kizel coal basin; besides, steps are being undertaken to implement these programs aimed at strengthening the security of employment, creation of jobs, increase in wages in the budgetary sphere, etc. Despite this, the situation concerning the stratification

of the population living in the territories that differ in the levels of socio-economic development, income and consumption remains grave, especially in rural municipal districts. Stratification of the residents by level of income and consumption leads to their outflow from urban depressed areas and rural municipalities, and it is, first of all, the working age population that leaves these territories. As a consequence, these areas experience progressive decline characterized by the reduction of production, loss of production capacities at the areas that are peripheral in relation to major cities and towns. For example, the fact that rural areas of Perm Krai are in a state of decline can be substantiated by a single generalized fact. In 1990–2013, cultivated area in Perm Krai decreased from 1850.3 to 736.0 thousand hectares, or by 60%. Due to the fact that agricultural lands in Perm Krai are located in natural forest area and are characterized by small outlines of the fields, the lands that were no longer used for agricultural purposes have quickly returned to forest. Given the impossibility of melioration on the former fields, we can point out that 60% of agricultural land – the main means of agricultural production – was lost. This influenced the reduction of the region's potential in general, and led to the increase in intra-regional development contradictions.

Current conditions make it necessary to increase the implementation efficiency of programs for social development in Perm Krai, to work out additional management decisions aimed at enhancing the effectiveness of regulation of territorial differentiation. In view of the above, there emerged the necessity to address this issue by combining the efforts of Perm Krai administration and municipal authorities; it is also necessary to develop relevant management programs that would take into account the specifics of each municipality on the basis of application of social management methods.

Information about the Author

Vladislav Yakovlevich Fokin – Ph.D. in Economics, Associate Professor, Federal State-Financed Educational Institution of Higher Professional Education "Perm National Research Polytechnic University", Chaykovsky Branch (73, Lenin Street, Chaykovsky, Perm Krai, 617760, Russian Federation, vlad-f62@yandex.ru)

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Potential of Technogenic Mineral Raw Materials in Russia and the Issues of Its Rational Use

Larisa Ivanovna
GONCHAROVA
G.P. Luzin Institute of Economic Problems of Kola Scientific Centre of RAS
24A, Fersman Street, Apatity, 184209, Russian Federation,
goncharova@iep.kolasc.net.ru

Fedor Dmitrievich
LARICHKIN
Doctor of Economics, Professor
G.P. Luzin Institute of Economic Problems of Kola Scientific Centre of RAS
24A, Fersman Street, Apatity, 184209, Russian Federation, lfd@iep.kolasc.net.ru

Vladimir Nikolaevich
PEREIN
JSC Murmansk Geological Exploration Expedition
26, Fersman Street, Apatity, 184209, Russian Federation, mgrexp@com.mels.ru

Abstract. The increasing negative impact of mining waste on natural ecosystems often leads to their irreversible destruction, a trend that is gradually becoming global. The particular relevance of the research is explained, on the one hand, by the possibilities of minimization of specific volumes of formation of mining waste in all types of industries; on the other hand, by the possibilities of maximization of comprehensive use of their valuable components as secondary material resources on an economically rational basis and the possibilities of restoring the disturbed natural environment. The rational use of

natural and technogenic mineral raw materials is greatly facilitated by the geological exploration and geological-economic evaluation of the resources, which requires the development of specific methodological approaches to the economic justification of resource estimation parameters for outlining and calculating the multicomponent commercial reserves of raw materials and separate valuable components in them. Analysis shows that researchers' opinions on a number of methodological principles of sustainable mining, complex processing of multicomponent materials are often contradictory. Scientific publications do not consider the issue of the price valuation of mining waste as secondary material resources. Mining waste processing should be considered as an important part of the overall socio-ecological-economic system for rational nature management. The analysis of the existing practice of using the mining waste should be based on the system approach and take into consideration geological, technological, economic, environmental and social characteristics throughout the cycle of production, combined processing and treatment of secondary waste according to the principle "from the earth to the earth". The article identifies the main barriers to the recycling of mining wastes, proposes several methodological guidelines for the sustainable mining and comprehensive processing of multicomponent raw materials. The authors also substantiate the methodology for economic efficiency assessment of complex utilization of technogenic raw materials. This technique has been used in practical calculations to assess various options to improve the efficiency of waste recycling at JSC Kovdorsky GOK and other facilities.

Key words: mining waste, organizational and economic mechanism for waste management, price valuation methods, evaluation of economic effectiveness, rational nature management, integrated use of raw materials.

Global production of minerals during the latest century is increasing by nearly 10% per year, and is now about 500 billion tons; at that, more than 800 billion tons of host rock is removed from the depths each year. Due to the priority development of the most accessible and richest deposits and since there is a need to use raw materials of worse quality, the rate of accumulation of mining waste (MW) tends to exceed the growth rate of industrial production.

The growing negative impact of MW on natural ecosystems often leads to their irreversible destruction and this trend is gradually becoming global. This explains the particular relevance of the search for opportunities to minimize specific volumes of formation of mining waste in all types of industries, the search for opportunities to maximize the comprehensive use of their valuable components as secondary material resources (SMR) on an economically rational basis, and the possibilities of restoring the disturbed natural environment.

Developed countries of the world and Europe have achieved high levels of using mining waste as SMR, and in the short term they plan to abandon the practice of waste burial completely. There is a transition from the concept of safe handling of the MW to the concept of the so-called "industrial metabolism". This concept is based on the comprehensive assessment of economic effectiveness of measures to protect the environment at all the stages of production and consumption of products, from mining operations up to the liquidation of the manufactured materials and products after their life cycle has expired.

The use of any kind of SMR is a multifaceted issue that covers all sectors of material production, services sector, exports and imports, resource consumption, resource conservation, protection and restoration of the environment.

In Russia, the low level of using mining waste as secondary material resources proceeds not from the lack of technological developments, but from flaws in the organizational and economic mechanism of waste management, inefficient methods of their cost estimate, and methodology for assessing the economic effectiveness of the comprehensive utilization of their valuable components, and also from the fact that enterprises have no real economic incentives for the processing of mining waste.

The scientific basis for exploration, technology, economics of rational comprehensive development and utilization of natural and technogenic resources was developed by the following domestic scientists and experts: M.I. Agoshkov, A.S. Astakhov, N.P. Bannyi, A.Kh. Benuni, S.N. Bobylev, A.M. Bybochkin, V.I. Vernadskii, A.D. Verkhoturov, V.N. Vinogradov, T.A. Gatov, E.V. Girusov, I.M. Gratsershtein, V.T. Kalinnikov, Yu.A. Kiperman, M.A. Komarov, G.D. Kuznetsov, V.N. Leksin, N.V. Mel'nikov, B.K. Mikhailov, S.A. Pervushin, V.A. Reznichenko, A.M. Sechevitsa, K.N. Trubetskoi, V.A. Fedoseev, A.E. Fersman, V.A. Chanturiya and others [1].

Foreign researchers C. Drury, Hahn Dietger, C. Fontain, H. Court, H. Culmann, M. De Narbonn, L. Lawrence, C. Schlatter, K. Slater, C. Wootton and others [2] virtually do not use the terminology and concept of integrated use of raw materials, they examine only the distribution of the total costs of integrated production between the primary (targeted) product and the so-called byproducts (incidental, attendant products/components).

The fundamental theory of noosphere developed by Academician. V. I. Vernadskii [3] is of key importance for the socio-ecological-economic effectiveness of rational nature management. The aim of the theory is rational scientific transformation of biosphere into "noosphere" – the sphere of reason – in accordance with the laws of conservation and maintenance of life for the harmonious coexistence of society and nature. Academician A.E. Fersman's theory of the integrated use of all the valuable components of mineral raw materials on the principles of environmental and economic efficiency [4] forms the basis of the majority of concrete projects in the field of subsoil use.

Various types of mining waste, as well as natural mineral raw materials, have a complicated multicomponent structure; the issues of their sustainable use are considered as part of comprehensive subsoil use and nature management (M.I. Agoshkov, A.Kh. Benuni, V.I. Vernadskii, I.M. Gratsershtein, V.T. Kalinnikov, Yu.A. Kiperman, M.A. Komarov, G.D. Kuznetsov, V.N. Leksin, N.V. Mel'nikov, B.K. Mikhailov, V.A. Reznichenko, V.A. Fedoseev, A.E. Fersman [1, 5]).

The modern concept of rational nature management attaches special importance to environmental issues; due to this fact, it is necessary to take into account the environmental effects that are achieved as a result of a more full use of integrated natural and technogenic raw materials.

The rational use of natural and technogenic mineral raw materials is greatly facilitated by the geological exploration and geological-economic evaluation of the resources, which requires the development of specific methodological approaches to the economic justification of resource estimation parameters for outlining and calculating the multicomponent commercial reserves of raw materials and separate valuable components in them [6, 7].

The analysis shows that researchers often have contradictory opinions on many methodological principles for sustainable mining, and integrated processing of multicomponent materials. The most important theoretical issues of assessing the economic efficiency of obtaining each of the valuable components of technogenic materials are studied insufficiently. Therefore, they require further development when applied to current economic conditions. The issues of valuation of mining waste as a secondary material resources are not developed and are given virtually no attention in scientific literature.

The problem of secondary material resources processing is regarded as an important part of the overall socio-ecological-economic system for rational nature management. The analysis of the existing practice of mining waste usage should be based on the system approach and take into consideration geological, technological, economic, environmental and social characteristics throughout the cycle of production, combined processing and treatment of secondary waste according to the principle "from the earth to the earth".

In the last decades, due to the systematic growth of R&D, developed countries, in particular, the EU, were able to increase significantly the cost-effective use of waste in economic turnover and obtain mineral raw materials, generate heat and electric energy, reduce the volume of waste burial at landfills, and thus reduce their negative impact on the environment and human health.

The expediency of including production and consumption waste in economic circulation as secondary raw materials is proven by a long-term experience in many countries. For example, the proportion of waste is 26% in the balance of source materials in the USA and Japan; this indicator ranges from 16 to 20% in the majority of developed countries; it was 15% in the USSR, and it is about 10% in modern Russia.

It will be useful to consider the development of legislation, practical achievements and positive experience of waste management in the European Union (EU). The EU takes comprehensive measures to promote three interrelated areas: a) prevention or reduction of waste generation and their hazardous properties; b) involvement of waste in economic circulation; c) reduction of waste intended for final disposal.

Since 1973, the EU has adopted six medium-term programs for environmental protection, each of which is a political and legal document that defines specific goals, objectives and priority actions for the near future. For example, the main targets of the Sixth Program provide for the reduction of waste disposal by 20% by 2010 and by 50% by 2050 as compared to the 2000 level; the same can be said about the volume of hazardous waste generation in the EU [5].

Directive 96/61/EU introduced the concept of "best available techniques" (BAT) in the European law. Since 1996, 33 European BAT reference documents (BREFs) on various industries were prepared, every 5–7 years they are revised. The copyright of the BREFs allow their free translation into other languages and use [5].

The annual global volume of mineral production is approaching 500 billion tons, and the volume of simultaneously extracted host rocks is over 800 billion tons. Thus, the annual volume of mining waste in the world already exceeds 1,000 billion tons.

To date, according to various estimates, Russia has accumulated approximately from 40 to 100 billion tons of mining waste and more.

In order to streamline the scope of production and consumption waste disposal in Russia, it is necessary to identify the main barriers to the large-scale comprehensive utilization of mining waste. The main ones are as follows: flaws in the legal framework; absence of economic mechanisms to encourage the collection, recycling and disposal of waste; limitations of traditional methods for economic evaluation and rational justification of prices of different (especially multi-component) waste; lack of economic incentives for enterprises. It is also necessary to clarify the scope of authority of the Russian Federation subjects and local self-government authorities in the field of waste management.

The problem of production and consumption waste disposal is one of the most pressing environmental and economic problems in the regions of the North and the Arctic, in particular, in the Murmansk Oblast. Over 80 years of intensive subsoil resource use have significantly changed the topography of the region: there emerged manmade mountains of mining waste up to 60 m high, which, according to experts and statistics as of January 01, 2011 have accumulated more than 8 billion tons; there are open pits more than 500 m deep; 50-meters-high tailing and sludge dumps that cover several thousand hectares; besides, several mountains, lakes and rivers have disappeared from the face of the earth. The average annual volume of production and consumption waste generation in the oblast is about 100 million tons.

An effective way to solve the mining waste issue is to reduce its output and volume on all the stages and operations of production. In this regard, a methodology for pre-mining engineering-geological and geomechanical investigation of rock mass during the exploitation of deep open pits with the maximum angles of stable edges was developed in collaboration with the Kola Scientific Center of RAS and Inter-Industry Scientific Center VNIMI; this methodology helps minimize the risks of collapse of the edges and reduce the amount of overburden rock and the output of mining waste *(fig. 1)*.

In particular, for the open pits of JSC Kovdorsky GOK the increase in the slope of the end edge from 40 to 50° (depends on the parameters of specific rock type) reduces the amount of overburden rock and the output of mining waste by 40% (about 4% per 1° of increase in the angle), while preserving the previous size of its area on the surface and its depth.

A specific feature of using multicomponent mining raw materials is that the economic efficiency of using natural and technogenic

Figure 1. Model for the development of deep horizons:
D – option of the deep open pit with the maximum angles of stable edges

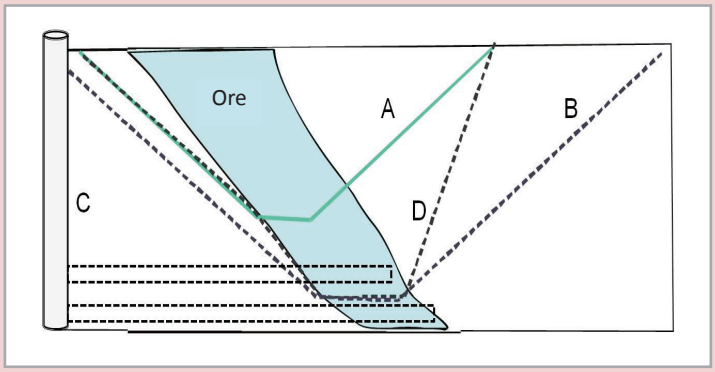
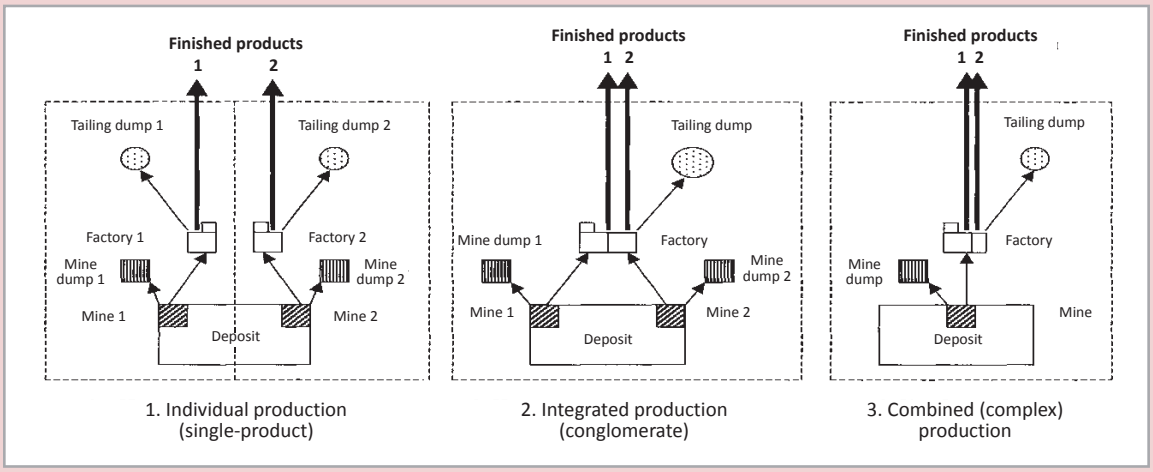


Figure 2. Varieties of production models when using the fields of multicomponent mining waste [1]



materials in general does not guarantee the efficiency of production of each of its valuable components and vice versa.

The existing methodological approach to assessing the efficiency of the development of multicomponent materials is based on the full reimbursement of production costs of the component at single-product enterprises. In practice, this leads to the increase in the cost of production of each individual component, and consequently, to the unjustifiable narrowing of the boundaries of cost-effective complex utilization of mining waste.

Environmental and economic advantages of the integrated use of raw materials and the emergence of synergetic effect are clearly represented in a comparative analysis of the models of individual (single-product), integrated and comprehensive productions that are organized on the basis of the same technogenic field of multicomponent industrial waste *(fig. 2)*.

It is necessary to note an important feature of mining waste usage: in comparison with the use of natural mineral raw materials, the relative volume of the total indirect costs of exploration and preparation of technogenic raw materials (washery refuse, in particular) for complex utilization is significantly lower.

In this regard, the methodology for assessing the economic effectiveness of integrated use of technogenic raw materials – mineral waste – is substantiated; it consists of two stages:

1) preliminary economic evaluation of extraction of each of the valuable components of the raw material, which is determined proceeding from the condition of reimbursement of only direct production costs related to the organization of extraction of the estimated component, excluding indirect costs;

2) final economic evaluation of integrated utilization of technogenic raw materials on the whole, which is determined proceeding from the condition of reimbursement of the total amount of direct and indirect costs of extraction and complex processing of raw materials taking into account only those components, the extraction of which is economically justified in accordance with the principle of stage 1.

These principles for the recommended methodology applied to multicomponent mining waste, taking into account the main provisions of the current methodological recommendations on the assessment of investment projects' effectiveness are represented by the following system of inequations [9]:

$$\begin{cases} \sum_{t=0}^{T} (Ц_{it} - З_{nit} - K_{nit} \pm Э_{it})(1+E)^{-t} \geq 0 \quad (1) \\ ЧДД = \sum_{t=0}^{T} (Ц_t - З_t - K_t \pm Э_t)(1+E)^{-t} \geq 0 \quad (2) \end{cases}$$

where P_{it} – the price of the i-th component in the finished product in year t;

C_{nit}, L_{nit} – direct current and direct lump-sum costs of production of the i-th component in the finished product in year t;

E_{it} – environmental component (taking into account benefits and costs) of extracting the i-th component from mining waste in year t (can be positive or negative);

R_t - economic result (total cost of sold products taking into account all the valuable components, the extraction of which satisfies the condition (1) in the t-th year;

C_t – total operating costs of extraction and complex processing of mining waste in the t-th year (excluding depreciation);

I_t – capital investments in the t-th year;

E_t – total environmental result of the integrated processing of mining waste in year t;

F – discount factor, the value of which is recommended to be taken on the basis of a bank's interest rate (Russia's National Reserves Committee recommends it to be 10–15% with regard to the development of deposits [11]);

$t = 0$ – year in which the exploitation (project) was launched;

T – year of completion of the investment project (exploitation of the field, total planning horizon does not exceed 20 years).

This method of economic valuation of the use of technogenic raw materials compared to a traditional one significantly expands the opportunities for the integrated use of mining waste.

The following was done as a practical example: the works on the study and use of industrial waste (tailings) and rock refuse at JSC Kovdorsky GOK were summarized and systematized; the work of the enterprise was analyzed, as well as the efforts of R&D organizations to develop and implement the technology for extraction and processing of the richest part of the mine tailings accumulated at the first field of the tailing dump; the exploration, technological and geological-economic assessment of the poorer tailings of the second field of the tailing dump were carried out; methodological approaches to the substantiation of condition parameters for outlining and calculating commercial reserves of multicomponent technogenic raw materials.

Magnetite and apatite ore processing waste at the Kovdor Deposit are stored in the tailing dump: in first field – in 1962–1981, in the second field – from 1982 and up to the present. The main volume of the first field of the tailing dump was formed before the apatite-baddeleyite washing plant had been launched in 1975, and is represented by the tailings of wet magnetic separation, enriched in apatite and baddeleyite.

The extraction and transportation of raw materials of the technogenic deposit is carried out since 1995 with the help of the enterprise's standard equipment. The results of the processing of mature tailings are presented in the *table*. As can be seen from the table, the content of valuable components in the tailings

Indicators of processing of mature tailings at the first field of the tailing dump at JSC Kovdorsky GOK

Indicators	1995	1996	1997	1998	1999	2000	2001	2002	2003	2006	2007	2008	2009	2010	2011	2012
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Processing of tailings, million tons	0.364	3.06	3.21	3.96	3.41	3.83	3.28	2.99	1.19	1.09	5.00	5.45	5.70	4.68	4.56	3.44
Content of P_2O_5, %	10.43	10.37	10.40	10.62	11.36	10.90	11.03	11.16	11.20	12.14	10.75	10.95	9.98	10.88	11.3	11.3
ZrO_2, %	0.258	0.38	0.36	0.36	0.36	0.35	0.32	0.33	0.29	0.30	0.26	0.30	0.27	0.28	0.286	0.277
Cl. – 0.071 mm, %	13.5	14.0	19.2	17.0	21.0	25.9	29.8									
Moisture, % in tailings	7.2	7.2	7.5	7.6	8.4	9.4	9.7	10.25	10.12	8.88	11.34	14.71	14.48	16.43	17.1	19.0
Volume of apatite concentrate produced, thousand tons	29.0	489.6	491.3	644.1	579.3	598.8	524.6	467.3	179.6	168.5	552.6	577.6	598.2	516.5	461.8	236.4
P_2O_5 content in the concentrate, %	38.3	38.2	38.0	38.1	38.1	38.2	38.2	38.2	38.1	38.0	37.88	37.74	37.79	37.72	37.26	37.27
P_2O_5 extraction in the concentrate, %	56.3	62.7	60.1	62.5	61.6	60.0	60.7	58.9	56.6	50.7	49.0	48.5	48.5	45.2	39.9	27.68
Volume of baddeleyite concentrate produced, thousand tons	0.148	2.236	2.528	3.265	2.612	2.779	2.233	2.095	0.786	0.81	1.114	0.296	1.321	1.881	2.07	1.29
ZrO_2 content in the concentrate, %	98.3	98.1	98.0	98.3	98.2	98.4	98.5	98.6	98.53	98.58	98.56	98.41	98.58	98.54	98.55	98.46
ZrO_2 extraction in the concentrate, %	18.0	20.2	23.4	24.4	25.3	25.5	25.4	25.6	24.8	26.3	25.76	23.71	26.39	16.82	18.9	16.42

is higher than in the primary ore from the main open pit (in 2007–2008, the content of P_2O_5 was 7.12–7.19%, ZrO_2 – 0.15–0.16%). Qualitative indicators of enrichment of mature tailings, except for the extraction of P_2O_5, in the initial period were practically at the same level as the processing indicators of the ores from the primary deposit; and the extraction of P_2O_5 in phosphate rock reduces significantly with the involvement of larger volumes of fine-grained tailings of the bottom levels in the processing.

When a new tailings processing plant was commissioned at JSC Kovdorsky GOK in 2007, there emerged an issue of supplying it with raw materials. Therefore, the decision was made to carry out a geological exploration of the tailings in the second field of the tailing dump for a feasibility study aimed at assessing the effectiveness of their industrial use.

After executing the complex of works described above, the assessment of the resources suitable for recycling was made and appropriate technical and technological solutions were developed; accordingly, it became possible to obtain saleable apatite, baddeleyite and iron ore concentrates from low-grade raw material containing on average 4.6% of P_2O_5, 4.26% of $Fe_{val.}$ and 0.21% of ZrO_2, when extracting, respectively, 27, 30 and 19%.

The current Methodological Recommendations of Russia's National Reserves Committee [10, 11] were considered for the purpose of outlining (within identified resources) and assessing the commercial reserves of technogenic deposits and valuable components in them. In addition, several methodological approaches to the definition of resource estimation parameters for multicomponent raw materials of natural and technogenic origin were considered from the viewpoint of comprehensive utilization for the production of not one, but several valuable components on an economically rational basis.

At the same time, significant shortcomings of existing methodological guidelines for the substantiation of grade parameters of multicomponent natural and technogenic mineral raw materials were revealed; in practice, these shortcomings significantly limit, narrow, and in some cases completely exclude the possibility of integrated use of these raw materials.

In this regard, it is proved that the outlining and assessment of industrial reserves of multicomponent technogenic raw materials should be done on the basis of the marginal (rejection) content of each of the "primary" and "incidental" components that correspond to their cut-off grades, and a minimum industrial grade of a conditional component (in terms of all valuable components in the main target component) [6, 7].

A methodology for analytical determination of the limit (rejection, cut-off) content of each valuable component of mining waste is proposed for the purpose of substantiating the validity of the outlining and assessment of industrial reserves of multicomponent technogenic raw materials.

It is recommended to determine the limit (rejection, cut-off) contents under the condition of reimbursement of only direct production costs emerging in organizing the production of the component; and

when determining the minimal industrial content of the conditional component, it is proposed to take into account only the valuable components, the content of which is higher than the corresponding limit (cut-off).

Thus, a scientifically grounded methodology for the quantitative calculation of the main parameters of condition for the outlining and calculation of industrial reserves of technogenic mineral raw materials is proposed for the first time. The methodology makes it possible to provide maximum economic efficiency of the integrated use of mining waste.

Current methodological approaches to the valuation of mining waste as secondary material resources were summarized; the methodology and technique for the substantiation and approval of a rational mutually acceptable level of contract prices for mining waste was developed [12], it ensures economic efficiency of acceptance and transfer for potential recyclers and enterprises that own mining waste.

The technique for determining future prices for products derived from technogenic raw materials [13, 14] was substantiated, as well as the technique for determining direct costs of producing each valuable component from industrial waste at JSC Kovdorsky GOK. The parameters of acceptable grades were estimated, and commercial reserves of mining waste were assessed in the second field of the tailing dump; technical and economic calculations of the efficiency of their industrial development were made.

There are many problems associated with mining waste utilization. Cost estimates and price negotiation concerning semi-finished products and intermediate products (sludge, slag, effluents, dust, sublimations, tailings and other types of current and accumulated waste from different production stages) are among the most acute issues and subjects of fierce disputes between producers and processors. This situation is manifest most clearly in the organization of recycling (disposal) of accumulated (mature) mining waste.

The analysis of waste management experience shows that along with the development of mining waste utilization technology and improvement of recycling process the quality of the resulting product increases: from a surrogate inferior substitute to a high-quality competitive product. Thus, the worthless waste that previously did not have any value becomes a valuable raw material and should be priced accordingly.

From the point of view of economic theory, non-recoverable losses and unused wastes are not subject to valuation because at the time of their formation they do not have value in use, therefore, they cannot have value in exchange.

However, since the beginning of industrial processing, mining waste becomes usable, it is included in the nomenclature of mineral raw materials suitable for complex processing, and it must be evaluated on the basis of general principles of pricing. Therefore, the exchange value (price) of a certain amount of mining waste must correspond to its value in use.

Such a qualitative transition of mining waste from the category of worthless unused waste at the time of its formation to the category of useful products after an effective

technology for the utilization of mining waste was developed complicates its productive use. The problem is that the enterprises that own mining waste try to get considerable profit from its sales, and even the cheapest price of the waste that was useless not long ago would be a psychological disincentive for consumers.

Therefore, the basis for economic incentives and interest of potential recyclers and enterprises that own mining waste is a scientifically substantiated and mutually acceptable level of prices of mining waste, which ensures the profitability of the operations of reception and transfer of mining waste for each of the counterparties.

The solution to this problem, on the one hand, is to develop a scientifically based methodology for economic valuation of mining waste utilization that pays more attention to the accounting of all additional effects and costs of the enterprises-owners of mining waste and potential consumers; on the other hand, the solution is to develop a methodology for cost estimate of waste and the formation of mutually beneficial prices on a contractual basis through the coordination of opinions. In particular, the final contract price of mining waste should be determined from an agreed distribution of the general economic effect of a particular disposal project between the participants on the basis of assessing the contribution of each participant in the joint project [12, 13, 14].

It is proposed to set the prospective prices for the products produced from technogenic materials on the basis of the analysis of trends in the global situation. In particular, in relation to JSC Kovdorsky GOK, it is necessary to analyze these trends concerning phosphate raw materials and fertilizers, the prices of which, in turn, depend largely on the situation on the global agricultural market.

Thus, after the substantiation of the prices and direct costs of the production of each of the concentrates, the limit (rejection, cut-off) content of each of the valuable components and minimal industrial content of the conditional component (in terms of P_2O_5) was defined, and the calculation of industrial reserves and inferred resources (at the site near the sedimentation pond of existing tailing dump is not available for exploration).

On the basis of the calculations it is recommended to process the first and second grades together as the main option for treating the previously estimated and calculated reserves of waste (tailings) of the second field of the tailing dump; this will ensure the profitability of production [9]: a positive NPV, an acceptable profitability index, but a high payback period of investment and a small margin of safety (IRR slightly exceeds the minimum standard of the adopted discount rate).

Therefore, it is recommended to evaluate the following options for improvement of the efficiency of processing of waste (tailings) of the second field of the tailing dump:

1. To separate the richer part from the total reserves of mining waste on the basis of condition parameters of cut-off (rejected) content of useful components.

2. To determine the effectiveness of the use of dredges for recycling loose waste of the second field of the tailing dump, taking into

account the complexity of hydrogeological conditions for refining mining waste of the first and especially the second field, and also considerable expenses for the dewatering of the existing open pit at the first field. If a dredger is used, it is unnecessary to drain the deposit; a considerable part of the sludge can be discharged on the spot without its transportation to the beneficiation plant.

In general, the mining waste at the second field of the tailing dump is an additional resource base, which is considered in the long-term development strategy of JSC Kovdorsky GOK.

Information about the Authors

Larisa Ivanovna Goncharova – Research Associate, Federal State-Financed Scientific Institution G.P. Luzin Institute of Economic Problems of Kola Scientific Centre of RAS (24A, Fersman Street, Apatity, 184209, Russian Federation, goncharova@iep.kolasc.net.ru)

Fedor Dmitrievich Larichkin – Doctor of Economics, Professor, Director, G.P. Luzin Institute of Economic Problems of Kola Scientific Centre of RAS (24A, Fersman Street, Apatity, 184209, Russian Federation, lfd@iep.kolasc.net.ru)

Vladimir Nikolaevich Perein – Director General, JSC Murmansk Geological Exploration Expedition (26, Fersman Street, Apatity, 184209, Russian Federation, mgrexp@com.mels.ru)

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State Regulation of the Regional Agricultural Complex Development: Assessment and Rationalization Issues

Natal'ya Viktorovna MIRONENKO
Vologda State University
81A, Gagarin Street, Vologda, 160002, Russian Federation, mironenkon@mail.ru

Abstract. The article discusses the current state and the main trends in the development of agriculture (on the example of agricultural enterprises in the Vologda Oblast). Nowadays there is a trend of decline in the production of basic agricultural products. The insufficient financing of agricultural enterprises is one of the key reasons for this situation. Internal and external sources of funding can be such tools. As world practice shows, the largest share in the funds, which are at the disposal of agricultural enterprises, accounts for direct budgetary financing. However, in the Russian Federation there is another trend: over the last decades there is noticeable reduction in direct state support of agricultural producers. In addition, in the framework of Russia's accession to the WTO there will be further decline in such support and simultaneous transfer of financial burden onto agricultural enterprises. Therefore, the government faces an acute problem of planning and forecasting volumes of state support and earnings of agricultural enterprises. In this regard, this work makes a forecast calculation of the amount of public support and the revenue size of agricultural enterprises. To make forecasts the author uses methods of econometric modeling and forecasting (in particular, the method of correlation and regression analysis). The forecasts are presented in 3 scenarios: most realistic, optimistic and pessimistic. The article offers recommendations on determining the actual needs of regional agricultural enterprises in the amount of state support.

Key words: Vologda Oblast, an agriculture branch, state regulation, modeling and forecasting, financial support, revenues of agricultural enterprises, identification of agricultural enterprises' needs in public assistance.

Transition to market economy has resulted in significant deterioration of Russia's agriculture. A typical pattern of decline in production and financial performance of agricultural producers can be observed in agriculture of the Vologda Oblast as well. The results of the studies [12, 19, 21] show that agricultural enterprises and households are the main agricultural producers in the Oblast. The structure of the cost of agricultural production in the last 13 years experienced significant changes: the share of agricultural products output increased from 50% in 2000 to 69% in 2013. Accordingly, the share of products of private subsidiary farming reduced by the amount specified. In addition, during this period, there was a noticeable fluctuation in the cost structure of the production: the linear coefficient of absolute structural shifts was about 1% per year. This indicates the presence of crisis phenomena in the Vologda Oblast agriculture.

At present, enterprises are main producers of grain (94%), eggs (97% in 2013), milk (91%), meat (80%) and flax (77%). In 2000–2013, the number of agricultural enterprises decreased from 467 to 214, that is, by 253 units or 54%. The decline is also observed in other indicators that characterize the scale of agricultural production in the region *(tab. 1)*.

These indicators help assess the extent of agricultural production in the Vologda Oblast in the 13 years under consideration. The reduction affected every production factor: land, means and tools of labor, and human factor. If the number of agricultural enterprises decreased by 54%, then the number of workers employed there – in 2.6 times. The past 13 years witnessed a significant decline in the area of agricultural land used by agricultural enterprises: it decreased by 540.8 thousand hectares, i.e. by 53.6%. The area under crops also decreased, it was caused by the reduction in cattle stock and shutdown of several agricultural organizations. Approximately the same changes occurred in relation to the number of livestock in agricultural enterprises: in 2013, the cattle population was 56.5% from the number of livestock in 2000, the number of cows was 60.2%, pigs – 57.4%. However, despite the reduction in all the agricultural production factors, the decline has not affected all types of agricultural products: there was a reduction in the production of grain (28.5%), potatoes (21%), vegetables (7.5%) and meat (11.9%). The volume of production of milk and flax fiber, on the contrary, increased: milk yield increased by 43.2 thousand tons (by 12.8%), and the increase in flax production amounted to 1.5 thousand tons or 41.7%. Also there is a tendency toward the increase in egg production: in 2000–2013, the increase amounted to 88.4 million units or 18.4%.

We can point out the increase in the productivity of livestock and yield of agricultural crops [12, p. 58] as positive aspects of the activity of agricultural enterprises in the Vologda Oblast. Milk yield per cow increased especially significantly – in more than 1.8 times in the period of 13 years. Other indicators of livestock productivity increased, too. Crop yield increased by 2.3 centners per hectare or in 1.2 times.

As for the provision of agricultural enterprises of the region with basic tools and manpower, we can point out that in the period under consideration, the value of fixed assets

Table 1. Indicators of the scale of agricultural production in agricultural enterprises of the Vologda Oblast in 2000–2013

Indicators	Value of indicators by years									Growth rate, 2013 to 2000, %
	2000	2002	2004	2006	2008	2010	2011	2012	2013	
Number of agricultural enterprises, units	467	465	365	348	291	250	239	233	214	45.8
Average annual number of employees of agricultural enterprises, thousand people	47	41	35	30	24	22	21	20	18	38.3
Area of agricultural land, thousand hectares	1009.8	993.6	972.7	923.3	738.2	603.8	578.4	554.2	469.0	46.4
Area under crops, thousand ha	628.5	590.1	531	476.4	444.2	382.1	386.6	370.5	323.8	51.5
Cattle population at the end of the year, thousand head	253.6	232.5	198	193.8	186.8	165.3	158.3	156.6	143.3	56.5
including cows	110.5	103.3	92.2	89.3	87.4	78.0	74.8	74.1	66.6	60.2
Pig population, thousand head	150	144.3	118.1	106.5	113.5	122.1	78.8	81.1	86.1	57.4
Production of agricultural products, thousand tons:										
grain	212.5	199.5	173.7	186.8	230.8	145.7	234.2	198.3	151.9	71.5
flax fiber	3.6	0.9	2.4	0.7	1.5	2.6	2.1	5.5	5.1	141.7
potatoes	40.5	32.5	29.3	35.3	36.3	27.0	44.0	36.5	32.0	79.0
vegetables	16.0	15	15	12.3	12.8	11.9	16.2	14.2	14.8	92.5
meat (in live weight)	55.3	58.5	65.2	61.9	64.3	66.8	64.2	57.6	48.7	88.1
milk	338.8	410.7	390.7	401.3	420.8	380.7	398.7	418.4	382.0	112.8
eggs, million pieces	480.2	494.3	546.5	599.8	490.2	569.7	583.2	670.5	568.6	118.4
Value of gross output at comparable prices of 1994, million rubles	317.2	329.0	345.3	351.7	353.0	343.3	362.7	356	307	96.8
Gross output produced, in comparable prices of 1994 per 100 hectares of agricultural land, thousand rubles	34	37	42	47	53	57	63	64	68	2-fold

Source: Vologda Oblast Department of Agriculture and Food Resources data.

per unit area increased 7-fold, the real volume of capital equipment per unit of labor increased 8-fold, labor productivity in comparable prices per employee increased 2.5-fold. However, the increase in these indicators was actually caused by the decrease in the number of people employed in the agricultural sector and by the decrease in a more than twofold decrease in the area of farmland. Meanwhile, the research conducted by Vologdastat (Regional Office of the Federal State Statistics Service of the Russian Federation in the Vologda Oblast) forecasts that in 2014–2016 the cow population in farms of all categories will decrease by 7,379 head or 4.9%, and, as a result, total milk yield will also decrease [22, p. 14].

The nationwide situation is similar with regard to several key indicators that characterize the state of the industry. Thus, during the analyzed period, the share of agriculture in gross value added decreased from 6.6 to 3.9% (by 2.7 percentage points), the number of employed population decreased by 4.5 percentage points (from 13.9 to 9.4%) in value of fixed assets – 4.7 percentage points (from 7.1 to 2.4%). The area under crops decreased by 6,613 million ha or 7.8%, the number of energy facilities decreased in 2.4 times (from 240 to 98.9 million HP) [2, 5, 20].

Considering the issue of agricultural production efficiency, it should be noted that efficiency is measured by a set of indicators, and the increase in crop yield, milk production and average daily gain do not prove that agricultural performance is effective. Despite the presence of some positive trends in the Vologda Oblast agriculture, it is necessary to mention a significant share of unprofitable agricultural enterprises *(tab. 2)*.

Compared to 2000, their share has declined, but by the end of 2013, 38% of agricultural enterprises were unprofitable. We recall that

Table 2. Indicators of performance of agricultural enterprises in the Vologda Oblast in 2000–2013

Indicators	Value of indicators by years										Growth rate, 2013 to 2000, p.p.
	2000	2002	2004	2006	2008	2009	2010	2011	2012	2013	
1. Financial performance for all activities, million rubles	516.9	167.7	372.7	196.3	1111	328.2	780.4	653.9	-30.4	-3517	-
2. Proportion of unprofitable enterprises, %	47	53	35	42	23	45	35	33	37	38	-9
3. Level of profitability (unprofitability) for all activities (excluding subsidies), %	0.84	-3.1	-2.5	-6.0	-3.5	-8.1	-5.2	-2.8	-5.7	-34.7	-35.5
4. Level of profitability for all activities (including subsidies), %	23	3.5	5.8	2.5	9.9	3.0	6.5	4.5	-0.2	-24.4	-47.4
5. Profitability (unprofitability) of crop production (excluding subsidies) as a whole, % including:	32	20	12	15	11.2	4.7	5.9	10.0	-1.9	4.6	-27.4
grains and grain legumes	42	2	4	1	11.7	1.2	-4.9	4.8	7.7	18.9	-23.1
potatoes	95	60	41	76	52.5	47.7	51.1	97.8	5.6	21.2	-73.8
rotted straw	-39	-61	-59	-68	-80.1	-86.7	-89.0	-88.8	-88.6	-87.7	-48.7
6. Profitability (unprofitability) of the livestock industry (excluding subsidies and grants), total, % including:	-1	4	0	6	7.5	5.1	10.2	5.0	6.2	-2.1	-1.1
milk	23	17	17	18	26.9	11.2	21.5	20.1	15.5	15.3	-7.7
cattle meat	-31	-23	-34	-27	-33.1	-32.6	-32.5	-29.6	-30.2	-36.7	-5.7
pork	-9	11	1	5	-6.4	8.4	13.0	-8.1	16.5	-5.4	3.6
poultry	-23	-21	-10	9	2.6	13.4	18.2	4.8	1.4	-24.6	-1.6
eggs	20	28	16	24	9.6	35.1	20.6	21.1	25.6	3.0	-17.0

Source: Vologda Oblast Department of Agriculture and Food Resources data.

the share of unprofitable agricultural enterprises in the region in 1990 was only 2%, and their profitability without subsidies was at the level of 38%. The effects of the global financial crisis with its peak in 2009 affected the functioning of agricultural enterprises in the Oblast. Thus, the share of unprofitable enterprises in 2009 compared to 2008 increased by 22 percentage points; profit (including subsidies) decreased 3.4-fold; the level of profitability (excluding subsidies) decreased by 4.6 percentage points, respectively. Research conducted at ISEDT RAS shows that "despite the implementation of many federal and regional programs in 2007–2010, it was impossible to stabilize the situation in agriculture in the Vologda Oblast... the return to pre-crisis positions alone will take at least 2–3 years, with the situation being exacerbated by a number of problems, most of which are systemic in nature..." [16]. Beef and rotted straw are among the most unprofitable agricultural products in the recent decade. On the contrary, it is most profitable to produce potatoes, milk and eggs.

Returning to the issue of agricultural production profitability in the Vologda Oblast (see tab. 2), we can point out its overall significant reduction: in 2000–2013, this ratio decreased from 0.84 to -34.7% (by 35.5 p.p.). At that, as a final result, we consider profitability without taking into account budget subsidies. Here we share an opinion expressed by experts at Vereshchagin Vologda State Dairy Farming Academy. They note that if subsidies and profits (losses) are combined, this will not provide reliable estimates concerning the situation in the industry as a whole, because these subsidies are in fact used for the purpose of increasing (saving) the level of intensification of production and production volumes. It means that the activity of agricultural enterprises in the Oblast during the period under consideration is characterized as unprofitable. It is a negative aspect and it evaluates the activities of agricultural enterprises in the Oblast as ineffective.

The indicators of financial situation at agricultural enterprises in the Vologda Oblast demonstrate the impossibility of timely repayment of debts and the presence of debt load in the agricultural sector [8]. The research carried out at ISEDT RAS shows that "the financial performance of agricultural enterprises in the Vologda Oblast in general are far from those required for the organization of expanded reproduction at the expense of own sources. And many households lack sources even for simple reproduction..." [19, p. 72].

This raises the question of the ratio of the volume of internal to external funding sources. Direct funding is still the main external source for agricultural producers in the Vologda Oblast and in the Russian Federation as a whole. On the one hand, enterprises are in critical need of financial support from the state, and on the other hand, after Russia's accession to the WTO, the RF Government aimed its policy at reducing direct state support of agricultural producers. Amid these conflicting interests there emerges a particularly relevant issue of modeling and forecasting both internal sources of funding economic activity of enterprises and external sources – amounts of state financial support from budgets of all levels in relation to agricultural enterprises. This information helps agricultural producers make

decisions in assessing their opportunities of functioning and development; it is also useful to the RF Government in analyzing its budget obligations.

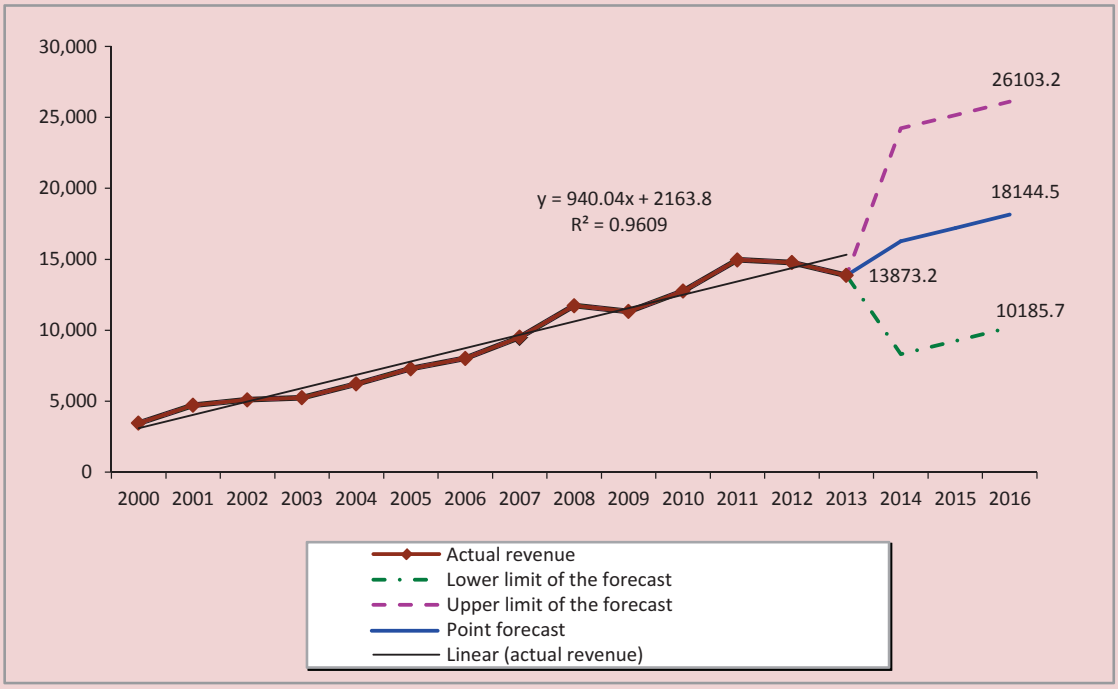
Revenue from the sales of agricultural products is the main domestic source of agricultural enterprises' funding. Modern economic science has many methods of modeling and forecasting of indicators for assessing the economic performance of objects at the meso- and macrolevel (such objects include agricultural enterprises of the Vologda Oblast, Northwestern Federal District and Russia as a whole). The most common among these methods are statistical and econometric modeling and forecasting.

Statistical methods of forecasting help reveal past trends in the indicator under consideration and extend them into the future. The basic method of statistical modeling is the method of analytical alignment of levels of the rows of dynamics by equation of the curve selected. For this purpose we used the data of the Vologda Oblast Department of Agriculture and Food Resources on the amount of the revenue of agricultural enterprises for 2000–2013. In the course of the simulation, we chose one equation of the trend that from a mathematical point of view describes most adequately the change in the revenues of agricultural enterprises in the retrospective period: $y_t = 2163.80 + 940.04 \cdot t$. The accuracy of this equation is 96.1%. According to the equation, the revenues increased by 940.04 million rubles on average for each year during these thirteen years. Therefore, starting in 2013 (13,873.2 million rubles), by the end of 2016, its forecast value will have reaches 18,144.5 billion rubles.

Forecasting that uses statistical methods implies that the researcher plugs $y_t = 2163.80 + 940.04 \cdot t$ the promising time periods t in the equation of the linear trend and estimates the amount of agricultural enterprises' revenue for each year out of these years (y_t). However, in this case, the researcher obtains only a point and specific value of the parameter under consideration [29]. The forecasting of economic indicators of functioning of meso- and macro-objects involves the obligatory construction of interval forecasts that take into account one or another probability of their execution. The most common is a 95% probability of the forecasts reliability. Taking it into consideration, one obtains the probable forecast error and, consequently, the lower and upper limits of the forecast of the index under consideration. Economic literature often calls these limits the "fork" of the forecast or an optimistic and pessimistic option of the forecast. In our case, the forecasted lower limit of the amount of revenue of agricultural enterprises in 2016 was 10,185.7 million rubles, and the upper limit – 26,103.2 million rubles *(fig. 1)*.

Point and interval forecasts for the amount of external source of funding the activities of agricultural enterprises – the amount of government aid to the Oblast's agricultural enterprises – were constructed similarly. The amount of financial assistance provided to the region's agricultural enterprises in 2000–2013 was chosen as the initial data. The following trend equations were originally chosen: the equation of straight line, parabola, hyperbola and the exponential trend equation. The analysis of indicators of the quality of each of these equations revealed the

Figure 1. Point and interval forecasts of the revenue of the Vologda Oblast agricultural enterprises in 2014–2016 constructed by the method of analytical alignment of the row of dynamics by the linear trend equation

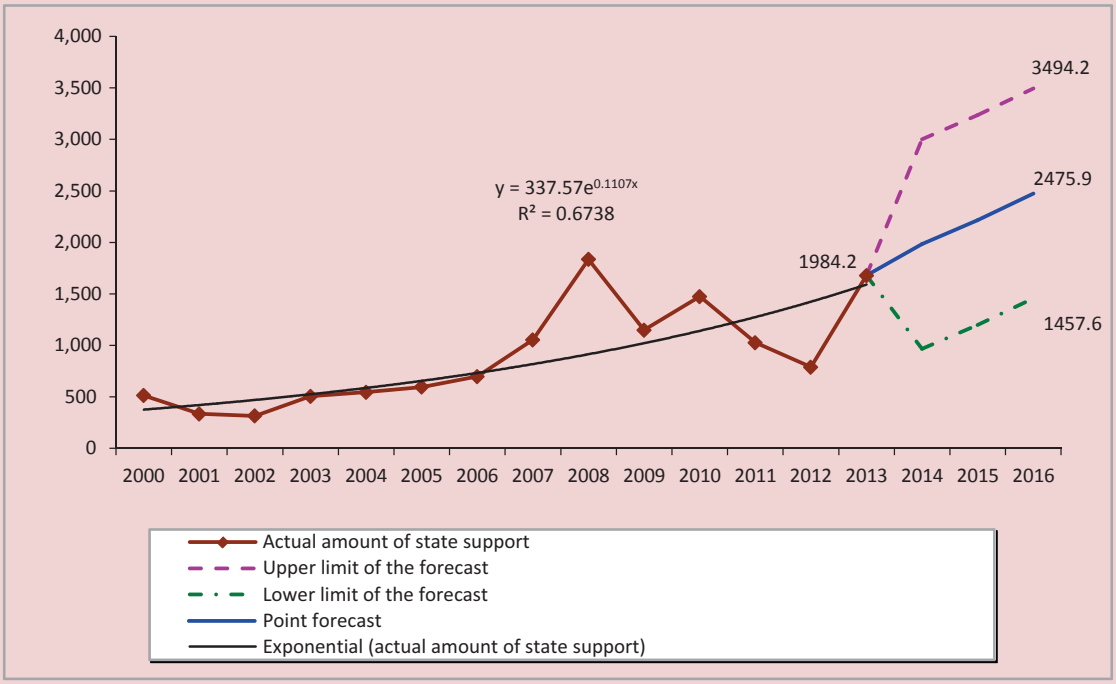


curve that described most adequately the dynamics of the amount of state support in the retrospective period. Such a curve was represented by the exponential trend equation $y_t = 337.57 \cdot e^{0.1107t}$ *(fig. 2)*.

The determination coefficient of this equation reached 67.4%. This means that the statistical modeling helped describe mathematically about 70% of the dynamics of the amount of aid to agricultural enterprises. The quality of the equation can be assessed as satisfactory and suitable top be used in econometric forecasts. Accordingly, the point forecasted value of the amount of state support in 2016 should be 2,475.9 million rubles, the lower limit of the amount of state aid that agricultural enterprises are to get in 2016, according to the forecasts, was 1,457.6 million rubles, and the upper limit was 3,494.2 million rubles.

As we can see, the limits of the interval forecasts of both economic indicators – the revenue of agricultural enterprises and the amount of state support – are wide: the numerical values of optimistic and pessimistic forecasts differ almost 2.5-fold. This discrepancy is explained by flaws in the forecasting methodology applied hereto. The analytical method of aligning the row of dynamics by the equation of the curve selected suggests that both financial indicators are not linked logically and they

Figure 2. Point and interval forecasts of the amount of state assistance to agricultural enterprises of the Vologda Oblast in 2014–2016 constructed by the method of analytical alignment of the row of dynamics according to the exponential trend equation



are developing in the retrospective period of time independently from each other. This assumption is fundamentally wrong, because the amount of state aid affects the amount of enterprises' revenue. This method cannot be an independent forecasting tool, but it can act as a separate stage in more sophisticated forecasting methods.

It is possible to overcome the disadvantages of the above mentioned modeling and forecasting statistical method by using econometric analysis methods. This class of methods, among other things, helps select and assess the factor properties that have a significant impact on economic indicators of object's performance; it also helps forecast the behavior of factor properties in the future and evaluate the corresponding change in economic indicators of object's functioning in the coming period of time [28, 29].

Thus, at the first stage of correlation and regression analysis, we revealed a strong direct connection between the two economic indicators. At the second stage of the research, we built the equation that shows the dependence of the amount of revenues of the Vologda Oblast agricultural enterprises on the amount of direct state aid provided to them. Among the set of initial regression equations, the following equation of linear relation was most appropriate: $y_x = 3724.711 + 6.138 \cdot x$. According to the regression coefficient, each

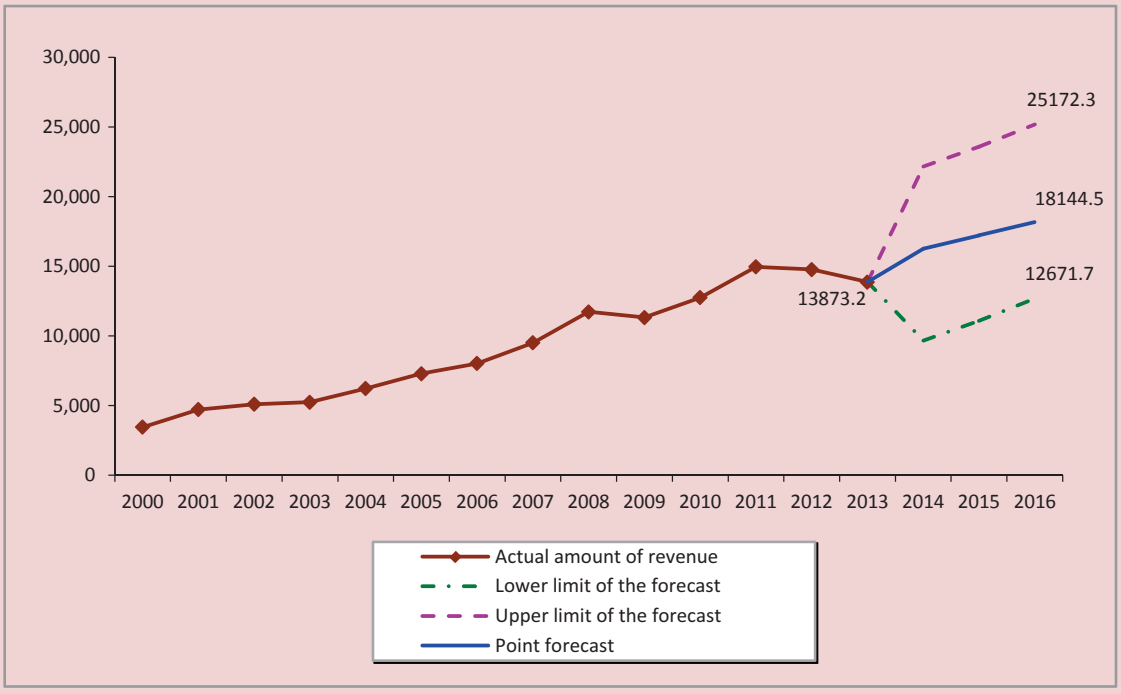
ruble of budgetary funds leads to an increase in the revenues of the region's agricultural producers by 6 rubles 14 kopecks (or a 1% increase in state funding, ceteris paribus, leads to a 0.6% increase in the revenues of agricultural enterprises). The correlation index of this equation was 0.752 ($R = 0.752$), indicating the strong relationship between the amount of state aid and revenues of agricultural enterprises. Therefore, direct government regulation is an effective tool to stimulate the development of the industry.

The next stage of the correlation analysis is to make an independent forecast of the identified factor property – the amount of state financial support for 2014–2016 In this case we can use a forecast previously constructed with the help of statistical methods, in particular, the method of analytic alignment of state support by the equation of the exponential curve.

By substituting the forecasted values of the amount of direct state support in the regression equation, we can determine the expected amount of revenue of agricultural enterprises *(fig. 3)*.

According to the figure, it can be argued with a 95% probability that by the end of 2016, the revenue of agricultural enterprises will be from 12,671.7 to 25,172.3 million rubles. We emphasize that these figures are achievable only if the government grants financial assistance in the amount of 1,457.6–3,494.2 million rubles. However, by the end of this period, we

Figure 3. Point and interval forecasts of revenues of agricultural enterprises of the Vologda Oblast in 2014–2016, made according to the linear regression equation



can most likely expect the realization of the pessimistic scenario for allocations from the budget – the reduction in the amount of state support to the lower limit of the forecast (due to Russia's accession to the WTO), which is an adverse factor and is viewed as being very negative by domestic experts [3, 7, 10, 26, 27].

Research findings indicate that under the inertial scenario of development of the agro-industrial complex in the Vologda Oblast its long-term sustainable development will not be promoted [25, p. 109]. The results of the surveys conducted by ISEDT RAS specialists among the heads of agricultural enterprises show that insufficient budgetary support was most frequently named as a factor preventing their stable functioning. Thus, this factor was named by 72% of respondents in 2005, and in 2011 this figure increased to 98% [4, p. 125].

In this regard, government authorities in Russia need to develop measures to minimize negative consequences of Russia's accession to the WTO and maximize the potential winnings. According to the Minister of Agriculture, a way out of this situation consists in introducing amendments to the law "On agriculture" for the purpose of determining criteria to classify regions as unsuitable for agricultural activities, because support for these regions will be related to the "green basket" and payments to farmers will not be subject to limitations. In Russia there are quite a few of such regions [9, 24].

The amount of subsidies in areas with unfavorable natural and economic conditions can be increased considerably. According to preliminary estimates, such areas account for half the territory of Russia. The share of such areas in the EU constitutes 57% of farmland. The vast majority of farmers' and other agricultural enterprises located in these territories get extra subsidies from the budget under WTO conditions. Thus, Russian agricultural producers have opportunities to get more support without violating WTO rules [1, 6].

February 2015, the Resolution of the RF Government "On approval of the Rules for classifying territories as unsuitable for agribusiness areas" of January 27, 2015 No. 51 entered into force [13]. The document established the following criteria for classifying the territories as unfavorable: condition of soil of agricultural land; natural and climatic conditions; integral indicator of socio-economic development of rural territories of a Russian Federation subject. The Ministry of Agriculture of the Russian Federation makes the list of Russian Federation subjects that are unsuitable for agricultural production; the RF Government reviews the list when necessary, but not less than once in three years. Federal Agency for Scientific Organizations, Federal Service for Hydrometeorology and Environmental Monitoring, and Federal State Statistics Service provide the necessary data for calculating the indicators in order to form the list by August 1 of the relevant year. The author of the present paper is not given an opportunity to determine whether the Vologda Oblast belongs to such territories. However, we referred to scientific research on this issue that was carried out previously.

The study [1, p. 19] notes that out of the 10 criteria of the preliminary list of the regions with the right to receive additional subsidies,

the Vologda Oblast meets six criteria such as: 1) bonitet of agricultural land; 2) cadastral value of agricultural land; 3) bioclimatic potential; 4) normative yield of crops; 5) differentiated rental income; 6) risk of denudation of areas.

Experts [6] carried out an integrated assessment of differentiation of RF subjects by level of socio-economic development of rural areas that was formed in 2013. This system included 10 indicators for the last 5 years of research (2009–2013). Partial indicators were as follows: 1) average annual agricultural production index, %; 2) the share of profitable entities in agriculture, hunting and forestry, on average for the period under consideration; 3) the average annual index of rural population; 4) the level of employment of the rural population of economically active age; 5) the ratio of disposable resources on average per member of rural household to the regional value of subsistence level for the last reporting year; 6) endowment of rural population with the total area of housing with full amenities for the last reporting year, square meters per inhabitant; 7) the level of gasification of houses (apartments) with pipeline gas in rural areas for the last reporting year; 8) the share of rural population provided with pathogen-free drinking water from all sources for the last reporting year; 9) the number of feldsher-midwife stations per 100 rural settlements for the last reporting year; 10) the coverage of children aged 1–6 by rural pre-school facilities for the last reporting year. The integral coefficient was defined as the sum of deviations of particular indicators from the national average. The upward deviation of a particular indicator from the average RF value is a positive value, and the larger it is, the better the situation in the region; the downward deviation is a negative value, and the larger it is, the worse the situation. For those RF subjects in which the integral indicator was below average, the number of negative deviations was additionally determined; the regions with a large number of such deviations of partial indicators (7–8) were classified as **critical**, the **Vologda Oblast** is one of them.

According to the document [13], an area is classified as unfavorable, if the integral indicator of socio-economic development of rural areas is below national average. The research [6] proves that there is a high probability of the Vologda Oblast entering the list of such territories. Consequently, there is a need to develop a methodology for granting additional subsidies to these territories. A variant of such a technique proposed by the author [see 11] includes guaranteed prices for livestock products, and livestock insurance. The minimum amount of additional funds from the budget, given the standard level of profitability that ensures simple reproduction, was about 2.0 billion rubles per year in the prices of 2013, and it will require about 3.0 billion rubles to ensure expanded reproduction. According to the research conducted by specialists at ISEDT RAS [19, p. 86], if we look at the amount of state support for rural areas in developed countries, it turns out that the Vologda Oblast requires annual allocations of about 4–5 billion rubles of budget resources compared to 1.5 billion rubles allocated at present. Our estimates are also close to the figure specified.

In conclusion, we would like to point out the role of macroeconomic environment in the development of the agricultural sector. A positive aspect of support provided to agricultural producers in the Vologda Oblast and Russia as a whole was the introduction in 2014 of food embargo on certain agricultural products, raw materials and foodstuffs and its extension to the middle of 2016 [14, 15]. In 2014, according to N.I. Anishchenko, Head of the Vologda Oblast Department of Agriculture and Food Resources, a significant part of regional producers successfully increases production of products that fall under the sanctions; the projected pre-tax profit of agricultural enterprises is about 1.5 billion rubles in 2014 against a loss of 3.5 billion rubles in 2013. Budget support to the industry also increased. If in 2013 it was 1.7 billion rubles, then in 2014 and 2015, the total amount of subsidies exceeded 2.5 billion rubles [17, 18].

Thus, the research allows us to make the following conclusions:

1. The analyzed period (2000–2013) experienced a decrease in the volume of agricultural production produced by the enterprises of the Vologda Oblast, the decline involved all production factors: land, tools and objects of labor, and the human factor; the activity of agricultural enterprises of the Oblast during the period under consideration is characterized as unprofitable. It is a negative aspect, which shows that the activities of agricultural enterprises in the Vologda Oblast are ineffective.

2. State support still remains the major source of funding for agricultural enterprises of the Vologda Oblast. Under the conditions of a market economy, the issue of determining and forecasting the amount of this support is particularly acute.

Modern science has many methods for assessing and forecasting economic indicators. The basic methods are statistical forecasting (in particular, the method of analytical alignment of the row of dynamics by equation of the curve selected). However, these methods have significant drawbacks:

– they are designed to extend the retrospective trends of the indicator under consideration into the future; they assume either the absence of its noticeable variations in the past (which is especially not typical for the financial indicators) or the presence of a clear tendency toward increase or decrease in most of the numerical values of the indicator under consideration in the retrospective period;

– they do not consider the interaction between the indicator under consideration and other economic indicators that show the functioning of the objects at the meso- and macrolevel.

Such drawbacks can be eliminated with the help of several econometric methods of modeling and forecasting of economic indicators (in particular, the method of correlation and regression analysis). Among other things, they help, with a certain degree of probability, to build optimistic and pessimistic and the most probable scenarios of the forecasts of economic indicators of functioning and development of a region, industry and the country as a whole (at that, statistical forecasting methods can be individual stages of correlation and regression analysis).

3. The research described in this article was based on economic methods of modeling and forecasting, and it obtained the forecasted amount of state support to agricultural enterprises of the Vologda Oblast and the amount of revenue that they can obtain. According to the forecast, by the end of 2016, the forecasted value of the volume of public support will be 1.5–3.5 billion rubles (the most likely value will be 2.5 billion rubles), while the revenue of agricultural enterprises of the Vologda Oblast (if the trends in the financing remain) will be 10.2–26.1 billion rubles (at a median value of 18.1 billion rubles).

4. The forecast of the volume of state support to agricultural enterprises of the Vologda Oblast is "growing": from 0.5 billion rubles in 2000 to 2.5 billion rubles in 2016. This trend corresponds to the actual need of the industry in financial support from the state. However, in connection with Russia's accession to the WTO, the government of the Russian Federation reduced amounts of direct financial assistance to agriculture. This contradiction between the fact that agriculture needs more resources for its functioning and development, and the efforts of the government to decrease its budget commitments is the main problem when reaching the most probable values of the forecast (2.5 billion rubles). If the amount of state assistance decreases to the pessimistic scenario (1.5 billion rubles), then the crisis phenomena in this economic sector will aggravate.

We think that if the Vologda Oblast is acknowledge to be a depressive territory (according to [13]), this can be the way to improve the situation. This provides an opportunity to increase state support to the extent relevant to the actual needs of agriculture concerning financial assets. A mechanism for additional allocation of funds can be developed according to the methodology previously proposed by the author of the present article [see 11]. The purpose of this technique also lies in the elimination of territorial differentiation that exists in the Vologda Oblast. Payments can be made in the framework of green box subsidies in the crop production sector and as an additional payment per liter (kg) of milk sold.

5. The sanctions on the imports of certain types of food products in Russia have had a positive effect on the functioning of the Vologda Oblast agricultural enterprises and led to the increase in production and financial performance. In addition, the volume of budget support to the Oblast's agriculture also increased – from 1.7 billion rubles in 2013 to 2.5 billion rubles overall in 2014 and 2015.

Information about the Author

Natal'ya Viktorovna Mironenko – Senior Lecturer, Vologda State University (81A, Gagarin Street, Vologda, 160002, Russian Federation, mironenkon@mail.ru)

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ISSUES OF ADMINISTRATION IN TERRITORIAL SYSTEMS

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Sustainable Development and Project Management: Objectives and Integration Results

Yuliya Sergeevna
VERBA
Graduate Student
State University of Management
99, Ryazansky Avenue, Moscow, 109542, Russian Federation, verbaulia@yandex.ru

Igor' Nikolaevich
IVANOV
Doctor of Economics, Professor
State University of Management
99, Ryazansky Avenue, Moscow, 109542, Russian Federation, ivanov-igor-nik@mail.ru

Abstract. Integration of sustainable development principles in project management is a tool to implement a values-based strategy. The main goal of this paper is to determine key issues for creating a consistent methodological basis that includes tools and techniques of project management taking into account sustainable development approaches. This paper analyses key aspects in which the conception and project management theory have interconnections. This aspect is, firstly, realization of projects initiated to reach goals in sustainable development area. And the second aspect is realization of various projects taking into consideration sustainable development approaches. The authors analyze contradictions between project management and a concept for sustainable development. The most critical contradictions deal with goals and priorities of the project, period and geography of its valuation, analysis of its impact zones. The authors define the tasks that need to be settled in order to resolve contradictions and integrate the principles of corporate social responsibility. Besides, the paper summarizes academic results in the area of integration of the concept and project management. In order to solve this problem, the authors analyze current project management standards and the integration of sustainable development principles in them. The authors

conclude that this task has not been elaborated thoroughly in current methodologies and in widespread standards such as ICB, PMBook, P2M and others. The most interesting one is PRiSM methodology, which was created for resolving integration problems. Furthermore, in making an overview of the current methodological framework, the authors present research findings on the subject. On the basis of the analysis carried out, the article defines prospective directions for further research oriented toward creating the tools and techniques of project management taking into account social and environmental aspects. These directions include the development of methodological tools (methodology of scope, resources and terms of the project) and the formation of main approaches to basic elements in project management including project resources valuation.

Key words: sustainable development, project management, social and environmental principles of management, strategy, corporate social responsibility.

Introduction

Sustainable development is one of the most important current concepts that must be implemented at all levels of management. The most important challenges that managers around the world have to deal with are as follows: achievement of well-being without compromising that of future generations; conservation of resources and preservation of the environment; support and development of social and cultural capacity within the managed territory.

Nowadays, the concept of sustainable development (CSD) in enterprise management is implemented at all levels of management: when developing the strategy and setting strategic goals, when developing the system of indicators for functions or business processes, and when implementing the tasks of operational management.

Implementation of the relevant principles and objectives in project management (PM) havs recently come to the fore. Shifting to project-oriented management approach is a general trend among industrial enterprises. PM as part of the strategy implementation cannot ignore general values and goals of a company. Given the autonomous nature of project activities' tasks, it is necessary to form a methodology that would establish clear and measurable requirements to project management in order to achieve sustainable development goals.

The aim of the research conducted in this paper is to identify the areas that require scientific study to create project management tools and techniques taking sustainable development concept into consideration. Objectives of the study are reflected in the structure of the present paper in the following logical blocks:

1) Comparison of CSD and PM theory for the purpose of finding contradictions between them.

2) Formulation of problems to be solved in order to create the tools and techniques of project management based on SD principles.

3) Analysis of existing methodologies (standards) for PM from the viewpoint of inclusion of CSD provisions and solution of the tasks.

4) Review of scientific views on solving the tasks at hand.

The intersection of theories of SD and project management can be considered from two perspectives. The first one, which can be encountered in scientific literature most frequently, is the management of SD within the framework of a project. This trend was developed significantly in foreign research in recent years. Moreover, the issue of implementing SD principles in standards of project management at the level of methodology is being discussed.

The second position is the management of SD through projects, i.e., projects are considered as the subject of SD [3]. For the purposes of the company it is important to implement the program in both perspectives. The paper examines only the first one: the integration of social, environmental and economic aspects in project management.

Despite the fact that this research area began to be developed only at the end of the 2010s, several Western scientists have been studying it. Gilbert Silvius carries out his annual review of the literature [2] devoted to the integration of SD in PM; the review for 2014 covered about 200 publications, including 16 books, 72 articles, 13 dissertations, chapters in books, white papers, essays, and other publications in this area. In the first place, among the publications on the subject, we must mention works by A. Silvius [16, 17], R. Gareis [10-13] and A. Brent. Russian scientists also showed interest in the topic in the current decade. Major works on the subject were written by V.M. An'shin [4, 5, 6], E.Yu. Pertseva [3], E.S. Manaikina [2], etc.

In general, Russian experts in the field of project management almost never use SD principles. According to a survey [5], only 10% of experts confirmed that they know the term "sustainable development" in PM context; in this case the majority of respondents (53%) were aware of CSD. The key reasons for insufficient use of CSD in project management are the low level of awareness and the absence of the relevant request from interested parties. However, upon analyzing the survey results, we can assume that there is a favorable climate and the importance of SD standards implementation in SD practice: 95% believe that the introduction of SD will help increase the value of project management for business and society, and more than 80% of respondents believe that the ability to apply the principles of SD in PM is a mandatory competence of the modern manager. Thus, it is evident that there is a lack of and the need for a transparent and applicable methodology and a set of tools for project management that takes into consideration SD principles.

Comparison of CSD and PM theory for the purpose of identifying the tasks of integration

Project management experts [8] note the following contradictions in incorporating the principles of CSD in PM *(tab. 1)*.

Objectives in the area of integration of CSD in project management

Having analyzed the contradictions and existing methodologies, the authors formulate the following problems that, when solved, will help create tools and methods for integration:

1. Extension and clarification of project's performance indicators.

Change in the project's objectives and reassessment of its success criteria in two aspects. On the one hand, it is necessary to increase the period of evaluation of project's indicators and include long-term indicators of

Table 1. Main contradictions between CSD and PM

Aspect	Sustainable development	Project management
Goal-setting period	Long-term orientation of goals	Short-term orientation of goals
Interested parties	In the interests of present and future generations, this implies constant dialogue with a wide range of stakeholders for decision-making	In the interests of the customer and stakeholders (interested parties or stakeholders include: project sponsor, customers, users, agents, suppliers and contractors, business partners, organizational groups within the company, functional heads, etc. [1])
Orientation of tasks	Focus on product life cycle	Focus on the results/product
Basic values/ priorities	People, Planet, Profit. The concept of the triple criterion [15], according to which the business is built on "three pillars of sustainable development": people, planet and profit.	Scope, Time, Budget. The formula of the triple constraint that describes three aspects of project management that should be balanced: the scope of the project, its cost and time*.
Consequences for initiator and participants	Creates barriers to the adoption of initiated projects; increases the complexity of the activity; brings benefits in the long term.	Creates barriers to the adoption of initiated projects; reduces the complexity of the activity; brings benefits upon completion of the project.
Geographic landmarks of management	Aims to achieve local, regional, national and global effects.	Focuses on the effect within the territory of the project.
* The classic formula consists of three components. Currently, the formula includes the fourth component – "quality".		

project's efficiency. Another aspect is aimed at including additional indicators to evaluate the project effectiveness, including environmental and social factors.

2. Incorporation of SD in the stages and knowledge areas of project management.

It is necessary to develop a methodology for setting objectives and monitoring their execution at various phases of the project life cycle, as well as in various fields of knowledge related to the project.

3. Determination of the relationship between the life cycle of the product, project, and resources for setting out the objectives of SD.

Due to the fact that from the viewpoint of sustainable development a company is responsible for the entire cycle of its activity that includes the quality and sustainability of its products and assets, it is necessary to find a solution to the issue of revaluation of the project life cycle.

4. Regulation and organization of work with interested parties.

At various stages of project management it is necessary to attract stakeholders from various areas of project influence, organization of additional methods for development and decision-making (for example, the Foresight or Delphi methods).

5. Clarification and expansion of requirements for project manager and additional roles in project management.

On the one hand, it is obvious that the importance of behavioral competencies (values, ethics) of a project manager and key participants is increasing. On the other hand, it is necessary to set out specific targets in the sphere of SD for project team members.

6. Development of a methodology for prioritization of project tasks, including the tasks of SD, in accordance with the triple constraints of the project scenario development.

In the management of project constraints the importance of project's resources may increase (in the framework of the tasks to increase energy efficiency, to use renewable materials and energy sources, to implement human development).

7. Definition of requirements for reporting materials at all stages of the project.

8. Development of a system for assessing the impact of the project on regional, national and global level.

In the implementation of sustainable development goals it is necessary to track their effectiveness at the regional, national and global level, not only in the form of budgetary efficiency of the project for the region, but also other non-financial indicators.

Inclusion of SD principles in existing standards pack

Project management today is based on the PMBok standards of the International Project Management Association (IPMA) and the Project Management Institute (PMI). A more complete list and a comparative characteristic are shown in *table 2*.

Current standards of PM do not cover or cover only partially the issues concerning the inclusion of additional indicators of project success related to their long-term efficiency, environmental and social impact, and also the recommendations for the assessment of regional and country effects. Besides, current guidelines do not consider the issue of organizing the target-setting for SD,

Table 2. Methodologies and standards applied in PM in the world

Name of PM methodology	Type (standard/certification)	Organization, country	Inclusion of CSD principles
ICB	Certification system	International Project Management Association, IMPA (Switzerland)	At the level of competence of project manager. An international group of experts was created to develop a list of sustainability aspects for inclusion in the next version of the standard [2].
PMBok	Body of knowledge. American national standard (PMP, CAPM, etc.)	Project Management Institute, PMI (international organization, located in the USA)	A number of sustainability indicators are included in the processes of initiation and planning.
P2M	Standard. Guidebook	Project Management Association of Japan (Japan)	The project as the creation of the value of the end product, which is determined by social and corporate ethics, and also by sustainable growth that contributes to the care of the environment [5].
PRINCE2	Methodology. British standard on PM in the social sphere	AXELOS Limited (UK)	Describes the processes and stages of work on the project, excluding the criteria upon which management decisions are made.
PRiSM	Methodology. GPM standard	Green Project Management (GPM Global) (headquarters in the USA)	Principles of green management are most important in decision-making.

implementation of these targets, monitoring and submission of reports. Positive aspects include a well-elaborated issue concerning the relations with stakeholders, the presence of a separate methodology for incorporating green management principles.

Review of scientific views on the objectives of integration of CSD in project management

Researchers to date have presented their developments on aspects in which contradictions arise between CSD and PM. The research findings on the problems that have to be solved in order to remove contradictions are given below.

Task 1. Extension and clarification of project's performance indicators

Elaboration of sustainable development criteria and indicators is one of the main tasks that have to be solved by researchers. For the purpose of selecting the projects for a portfolio, Russian scientists in their paper [4] propose to apply the quantitative comparison of projects according to the amount of their prospective contribution to bridging the gap between the target level and the actual level of company sustainability using the method of scoring.

Scoring is used at the stage of selection of projects in the portfolio and includes the evaluation of classical factors that reflect project's investment attractiveness and economic, environmental and sociological characteristics of the project. The latter are represented in the form of indicators such as the share of procurement from local suppliers, the use of recycled materials, the proportion of returned products, the improvement of socio-economic level of development of the territory, the creation of new jobs, the level of training costs and others. After the indicators are evaluated, the outcome level of the project is assessed taking into account the weights and scores of each aspect; at that, the target (standard) values are compared.

Task 2. Incorporation of SD in the stages and knowledge areas of project management.

The second task determines what stages, phases, areas of knowledge within the project require the implementation of components related to SD.

In general, the existing project management methodologies propose to split the planned works into stages: initiation, planning, execution, monitoring, completion. It is clear that the main setting of goals, and target indicators of the project is carried out on the initial stages of project's implementation. Achievement of indicators must be monitored; it means it is necessary to regulate the monitoring of implementation of the tasks in the field of SD. The question remains open as to the steps that should be performed on the main stages of project's implementation so that the targets in the field of SD were not ignored.

British researchers conducted a survey [9] in order to obtain expert opinions on the subject. Some of the questions were devoted to the definition of the place of SD in different aspects of PM. Thus, the questions were raised about what stages should take into account the principles of SD, the components of processes (based on the list of components contained in PMBok), and the areas of the knowledge of project management.

As for the aspect of inclusion of SD principles in specific stages of the project, the majority of respondents believe that the stage of project initiation should elaborate the content of the project, the planning stage should modify its objectives, the implementation stage should work out the main processes of the project. According to the respondents, integration of SD principles is not significant at the stages of monitoring and completion.

The results of the second section of the survey aimed at identifying the most important components for the integration of SD in PM are presented in *table 3*.

To determine the third question, the answers to the second question were presented in the context of knowledge areas of project management. The following areas: management of project implementation, content management, resource management, quality management, risk management are most significant from the viewpoint of integration of SD principles. Thus, the respondents and the author of the research survey came to the conclusion that the sooner SD principles are implemented in the project, the more value this will have later. A change in the process of initiation and project planning that leads to its greater sustainability will change all subsequent processes.

Russian scientists in their article [4] believe that the introduction of CSD principles in PM should cover all stages of PM including initiation, planning, execution, monitoring and completion. It is proposed to incorporate these principles at the stages of the project with the help of Sustainable Stage-Gate Process developed by Robert Cooper [7], within the framework of the Process each project is divided into phases (stages) with clearly defined results, at the end of each stage the project must pass through a checkpoint (gate) – a formal meeting to assess the situation and make decisions on the transition to the next stage. By the end of each stage, the project must meet the target values that include sustainable development indicators. Otherwise, the participants of the meeting make a decision to suspend the project or return it to the beginning of the respective stage.

Table 3. Components of PM that require adaptation to the tasks of SD

Stage of project management	Components
Initiation	Initiation
Planning	Development of project plan Development of structural plan Description of tasks Resource planning Quality planning Risk management plan Description of risks
Execution	Execution of project plan Quality insurance Team formation and development
Monitoring	Integrated monitoring of changes
Completion	-

Task 3. Determination of the relationship between the life cycle of the product, project, and resources for setting out the objectives of SD

Due to the fact that producer's responsibility applies not only to the indicators of project's life cycle, but also to the sustainability of the product, the resources that the project uses and the assets that are used and generated, it is necessary to revise the duration of project's life cycle. In particular, it is proposed [13] to use an approach that takes into consideration the accounting of the full life cycle, in which along with the implementation of the project an asset is created within its life cycle, i.e., one cycle generates another one within itself. At the stage when the assets are put into operation, a product emerges and its life cycle starts. The work [17] proposes approaches to improving economic sustainability of the assets used in the project and the products produced from them. Additional research task is to form the approaches to environmental and social responsibility in relation to the assets included in project's life cycle, and also the development of techniques that improve sustainability of the resources used and the products produced in the project from the viewpoint of environment, economy and social impact.

4. Regulation and organization of work with interested parties.

The majority of studies propose to involve stakeholders at different stages of work on the project. For example, in the study [10] the participation of stakeholders helps outline the structural project plan, schedule, resource plan and budget, conduct risk analysis, and ensure the objectivity of project assumptions and the transparency of reporting. The incorporation of CSD principles in PM when identifying the risks involves the grouping of economic, environmental and social risks, as well as local, regional and global risks, this will help determine what minimization measures should be undertaken.

5. Clarification and expansion of requirements for project manager and additional roles in project management.

The work [10] examines the role of project manager in the integration of SD principles in PM. When the respective values are included in various aspects of the project, it is necessary to understand the boundaries of the project and its environment in accordance with the timing, content and amount of human resources involved in the project. Project manager is responsible for a reasonable exclusion of those aspects which are no longer part of the area of influence of the project.

Besides, a key element of organizational design is the identification of roles responsible for project's sustainability. It is possible to fulfill CSD principles only when SD tasks are integrated directly into specific project roles. Also the project can include a special role that is responsible for SD, similarly to that of a quality expert assigned to the project.

6. Development of a methodology for prioritization of project tasks, including the tasks of SD, in accordance with the triple constraints of the project scenario development.

When the additional criteria of project's success that are not related to economic efficiency are included, it is necessary to

understand the degree of their importance in decision-making. Given the triple constraint in project management, the task of finding the balance between scope, time and cost is crucial when making decisions. At that, it is obvious that SD tasks increase the importance of the resource aspect of the project, i.e., they affect its value to a greater extent. The measures included in the content of the project within SD objectives can either increase or reduce the cost of the project; they can have similar impact on project's timeline. Thus, the isolated setting of target indicators of project's SD is inexpedient. A model is required that provides for a comprehensive development of target indicators in accordance with project limitations and the significance of these limitations.

7. Definition of requirements for reporting materials at all stages of the project.

An additional research objective is to define the requirements for reporting materials at all stages of the project. When developing the original package of project documents including structural, resource plan, risk analysis, assessment of environmental and social impacts, it is necessary to provide a clear regulation of the requirements for the inclusion of SD tasks. At the stage of project implementation it is necessary to control the tasks at each stage of the project. The final reporting on the project must also have a clear correlation with the sections of project's business plan in terms of criteria and indicators that were set out.

8. Development of a system for assessing the impact of the project on regional, national and global level.

The most universal research task is to track the impact of the project on the level of regional, national and global sustainability. The solution of SD problems is clearly linked to the Millennium Development Goals (until 2015) and Sustainable Development Goals after 2015 that were set out at the 68th session of the UN General Assembly in 2014. Obviously, the solution of large infrastructure projects has a direct impact on sustainable development of regions and the entire country. Less complex projects implemented within an industrial enterprise also influence the achievement of the overall level of SD on the territory of presence. Assessing the impact of such projects on the achievement of company's strategic tasks in the field of SD will help their effectiveness in implementing the regional SD strategy. Development of a system for accounting and monitoring the relevant relations is one of the most promising global challenges.

Conclusion

Thus, researchers face a number of open tasks for the integration of SD principles in project management. The article reveals the main contradictions between CSD and PM, and on the basis of these contradictions the authors formulate the tasks to resolve these contradictions and establish a methodological basis of project management, aimed at mainstreaming company's sustainability objectives. Having analyzed the inclusion of SD provisions in the existing PM methodologies, we can make a conclusion about their insufficient elaboration in the field under consideration.

The analysis and generalization of scientific approaches on the research tasks shows that at present the following tasks are least studied and require urgent scientific consideration:

– the task of extending the time frame and geography in the target indicators of project efficiency, as well as creating the possibility of tracking the impact of the project on the existing indicators of regional, national and global sustainability,

– formation of approaches to environmental and social responsibility in relation to the assets included in the life cycle of the project, and the development of techniques that will improve the sustainability of the resources used and the products produced in the framework of the project from the viewpoint of environment, economy and social impact,

– development of a methodology for prioritization of project tasks, resources and timelines, including SD tasks, in accordance with the triple constraint in the development of project scenario,

– definition of requirements for reporting materials at all stages of the project.

When these tasks have been solved, it will be possible to realize the value-oriented business strategy to the fullest extent and to improve the general level of region's socio-economic well-being without producing a negative impact on the environment and on the lives of future generations.

Information about the Authors

Yuliya Sergeevna Verba – Graduate Student, Federal State-Financed Educational Institution of Higher Professional Education "State University of Management" (99, Ryazansky Avenue, Moscow, 109542, Russian Federation, verbaulia@yandex.ru)

Igor' Nikolaevich Ivanov – Doctor of Economics, Professor, Department Head, Federal State-Financed Educational Institution of Higher Professional Education "State University of Management" (99, Ryazansky Avenue, Moscow, 109542, Russian Federation, ivanov-igor-nik@mail.ru)

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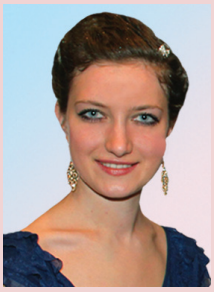
Research in the Functioning of the Regional Budgetary System



Mariya Aleksandrovna
PECHENSKAYA
Ph.D. in Economics
Institute of Socio-Economic Development of Territories of RAS
56A, Gorky Street, Vologda, 160014, Russian Federation, marileen@bk.ru

Abstract. The state regulation conducted in accordance with the current economic policy plays a leading role in the formation and development of the economic structure of modern society. The financial system carries out control activities in the market economy through financial mechanisms by means of financial levers and incentives to achieve financial objectives. Regional public finance, as a major part of the RF financial system, is of great importance for the reproductive process during the transfer to effective market organization of the economy. The state budget is the main link of the financial system. It is an incomparable by its amount monetary fund, winch has huge investment potential and can quantitatively and qualitatively affect the efficiency of social production. The use of this potential to a great extent will determine a development direction and regional economy sustainability. The stability of the budget system is seen in the concept of long term socio-economic development of Russia until 2020 as a vital condition for the solution of strategic economic and social objectives of financial provision of innovative development of the economy. Despite recent reforms, the negative trends persist in the sphere of public finance. The proportion in the distribution of tax revenues between the Federation and its subjects changed from 44–56 in 1997 to 54–46 in 2014 that led to the serious deficit and the debt of regional budgets. The most critical situation is observed in the field of municipal finance. The budgets of even large Russian cities depend on regional subsidies by 25–35%. The regional and district levels were formed during the 2003 local government reform in isolation from the financial-economic base of their functioning. So, as a result, the revenue base of the Vologda Oblast municipal districts decreased by 3.3 times and their transfer dependence from higher levels increased by almost 5 times. About 95% of the settlements in the region function by 90–98% due to subsidized investments from budgets of other levels. In addition, the monostructural nature of the regional economy leads to the dependence of its budget potential on the financial situation of the key metallurgical enterprise – PAO Severstal. The share of its tax payments in the total tax revenues of the Vologda Oblast

consolidated budget amounted to about 40%, before the 2009 pre-crisis year; in 2014 it fell to 10.8%. All this indicates the need for careful consideration of science-based management decisions and prioritization in the implementation of budgetary policy. Therefore, the research in this basic aspect of public administration occupies a key place in the work of the Institute of Socio-Economic Development of Territories of RAS.

Key words: public finance in the region, budget policy, budget, inter-budgetary relations, budgetary security, problems of public administration efficiency, market reforms trends, budgetary system crisis, role of private capital.

This publication is part of a series of articles devoted to the 25th anniversary since the foundation of the Institute of Socio-Economic Development of Territories of RAS.

The adoption of the RF Budget and Tax codes in 1998 and the legislative consolidation of multi-tiered budget and tax systems required scientific solution of key objectives, such as **redistribution of powers between levels of government**. In this regard, in 1999–2001 the Institute of Socio-Economic Development of Territories of RAS performed the research in the problems of formation of regional and local budgets and allocation of expenditure and revenue powers and authority between levels of the budgetary system (E.A. Prokof'ev, S.N. Dubov). Based on the 1999–2000 data the research associates estimated the tax potential of municipal entities and considered the options of financial aid distribution to the Vologda Oblast districts, aimed at leveling the fiscal capacity of population in the region and encouraging the local governments to improve the efficiency of the available revenue base use. The research results sent to the Vologda Oblast Department of Finance were taken into account when drafting the regional budget for 2002.

The extensive scientific work was conducted by the Institute together with the Foundation for Enterprise Restructuring and Financial Institutions Development (Moscow) under "Regional Fiscal Technical Assistance Project" initiated by the International Bank for Reconstruction and Development. Some findings of this study were disclosed the monograph "Regional Public Finance: Conditions, Factors and Prospects" (V.A. Ilyin, M.F. Sychev, S.N. Dubov, E.A. Durnova, L.V. Kostyleva) in 2001. It presented the results of estimated state of public finance in the Vologda Oblast in 1997–2000, the analysis of influence of various factors and proposes directions for future development of the system of budget resources and extra budgetary funds of the region. The research team was focused on the identification of state of public finance in the region.

The year of 2003 witnessed a new phase of the municipal governance level reform enshrined in the federal law "On general principles of local government organization in the Russian Federation" No. 131-FZ of October 6, 2003. In this regard, ISEDT RAS initiated the research in the **local self-government system** in terms of the new

law implementation (T.V. Uskova, E.D. Amelin, A.A. Kol'ev, S.N. Dubov). The researchers analyzed severe shocks in local self-government the country had been experiencing since 1991. First, the local government system was changed radically due to the adoption of the 1991 RSFSR law "On local self-government in RSFSR", namely the changes in competence of local councils and the substitution of the collegial control body (the Executive Committee) by the head of local administration, acting according to the principle of unity of command. Second, the local authorities underwent radical restructuring in autumn of 1993: the "presidential reform" of local self-government involved the cease of local councils' activity and the construction of a new system of local self-government on the basis of the Presidential decrees. Some provisions were not consistent with the Constitution. Third, in 1995 with the adoption and the entry into force of the federal law "On general principles of local self-government organization in the Russian Federation" there was a new phase of local government reorganization.

Since January 1, 2006 a number of Russian regions, including the Vologda Oblast, has been creating a two-tier model of local self-government in a pilot mode. In the region there are 372 municipal formations, of which 2 – urban districts, 26 – municipal districts and 344 – urban and rural settlements. The reform of municipalities was aimed at transforming their spatial boundaries, streamlining the budgetary organization, changing the principles of exercising the powers and the conditions of forming the local budgets revenue and expenditure and developing the new methods of the budget process. According to the reforms, the local authorities were to obtain clear boundaries and an independent revenue base. In this regard, it was very relevant to carry out the comprehensive assessment of reform processes at the local level and current state of municipal finances. The ISEDT RAS research was focused on the analysis of changes in the fiscal autonomy of local self-governments in revenues and expenditures due to the municipal reform and the reform of interbudgetary relations, as well as the assessment of compliance of the results with the stated principles (M.A. Pechenskaya). The evaluation of state of municipal finance of the Vologda Oblast in 2003–2010 showed that the fiscal autonomy of municipalities had decreased. The deterioration in the financial condition of municipalities was manifested in the following:

- reduction in the proportion of local budgets' own revenues in gross regional product (up to 3% in 2006 against 6% in 2004);
- significant redistribution of tax revenues from the local budget in favor of the regional one (71% in 2010 against 34% in 2004);
- only 4% of the local taxes are allocated to territorial budgets
- significant increase in the importance of the intergovernmental transfers system (from 25.9% in revenues in 2003 to 64.2% in 2010);
- increase in the differentiation according to the degree of fiscal autonomy of 3 types of municipal entities: urban districts, municipal districts and settlements;

• increase in the dependence of local governments' power execution on financial assistance, but not on quality of management activities (more than 95% of the municipalities receive subsidies to equalize fiscal capacity and budget balance).

To strengthen research in the fiscal direction, in 2009 ISEDT RAS created a **sector of public finance** in the structure of the Department of Socio-Economic Development and Governance in Territorial Systems and the graduate school had a new **specialty – 08.00.10 "Finance, monetary circulation and credit"**.

Due to the crisis phenomena in the economy since the end of 2008 the sector has been focused on identifying threats to the formation of territorial budgets and the development of methods to **raise the level of budgetary security of territories**. It is the question of sustainable development of Russian regions in the context of their budget provision has grown particularly acute in the period when the formation and the execution of subnational budgets occurred in conditions of severe imbalance.

To assess the level of budgetary security of the region the sector elaborated the method including 4 directions of evaluation (fiscal position, debt load, inter-budgetary relations and budget management quality). On its basis the researchers estimated the level of budgetary security of the Northwestern Federal District subjects. The calculation results are presented in *Table* 1.

Table 1. Integral estimation of the budgetary security level of the Northwestern Federal District subjects in 2006–2010, calculated by ISEDT RAS

Subject	2006		2007		2008		2009		2010	
	Point	Level assessment	Point	Level assessment	Point	Level assessment	Point	Level assessment	Point	Level assessment
Saint Petersburg	35.2	high	35.5	high	36.0	high	28.0	average	33.1	high
Murmansk Oblast	26.5	average	27.3	average	25.7	average	23.5	average	30.0	average
Leningrad Oblast	30.2	high	31.2	high	30.5	high	26.9	average	30.0	average
Komi Republic	31.1	high	27.4	average	30.2	high	24.1	average	27.0	average
Pskov Oblast	30.1	high	29.7	average	30.8	high	26.7	average	26.7	average
Arkhangelsk Oblast	29.2	average	27.6	average	26.4	average	16.6	low	26.3	average
Vologda Oblast	32.7	high	31.0	high	32.6	high	14.9	low	26.0	average
Novgorod Oblast	28.4	average	31.7	high	29.6	average	27.8	average	24.8	average
Kaliningrad Oblast	33.2	high	31.3	high	33.3	high	24.4	average	24.5	average
Republic of Karelia	23.3	average	26.5	average	27.8	average	15.6	low	24.2	average

Istochniki: Povarova A.I., Pechenskaya M.A. *Metody povysheniya byudzhetnoi obespechennosti regiona : zaklyuchitel'nyi otchet o NIR* [Methods to Improve Budget Sufficiency of the Region : Final Research Reports]. Vologda, 2010. 130 p.; Povarova A.I. *Metody povysheniya byudzhetnoi obespechennosti regiona* [Methods to Improve Budget Sufficiency of the Region]. Vologda: ISERT RAN, 2011. 39 p.

According to the assessment, Saint Petersburg was in the lead by level of fiscal capacity. Before the crisis, the Kaliningrad Oblast (the second leader in the district in 2006–2008), the Vologda Oblast and the Leningrad Oblast demonstrated a high level persistently. The Komi Republic can be also considered as a self-sufficient region. These results were due to the high growth rate of consolidated budge revenues, the prudent debt policy of regional authorities, the minimization of accounts payable and interest costs and the improved quality of management of certain stages of the budget process.

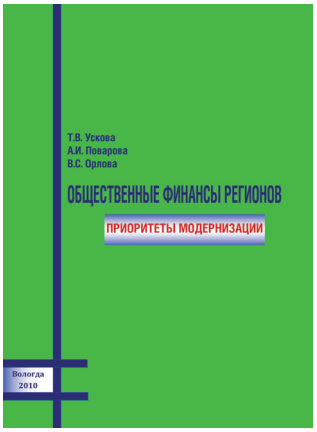
However, the reduction in the integral assessment of the fiscal capacity level in 2009 caused by the drop in own revenues of consolidated budgets with all the special effects, which include: high budget deficit, reduced provision of the Oblasts with budgetary resources, increasing amount of receivables on payments to the budget and debt liabilities and increased dependence on allocations from the federal government. In these circumstances even Saint Petersburg failed to maintain the status of a wealthy Oblast. The Vologda Oblast, the Arkhangelsk Oblast and the Republic of Karelia that suffered most from the crisis moved into the category of regions with low fiscal capacity.

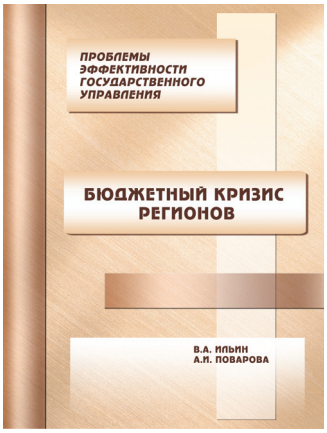
The regions dependent on transfers, such as the Novgorod Oblast and the Pskov Oblast, were unexpectedly characterized by a high budgetary provision level. However, this can not be assessed unambiguously. The significant inflow of financial assistance led to the positive development of certain components of the budget systems of these subjects. However, both areas are little dependent on a limited circle of taxpayers, characterized by a low level of interest expenses and payables. The regions have an apparent advantage, such as higher realism of budget planning in comparison with, for example, the Vologda Oblast.

It should be noted that since 2010 the Institute has annually prepared an expert opinion on the Vologda Oblast draft laws "On regional budget" and sent them to the Government and the Legislative Assembly of the region, together with a detailed analysis of the project and proposals for improving the budget process.

In the same year, relying on the monitoring of the status of regional budget systems, the public finance sector prepared a monograph "Public Finance of the regions: Modernization Priorities" (T.V. Uskova, A.I. Povarova, V.S. Orlova), analyzing the efficiency of the measures taken by the NWFD subjects to adapt regional finances to the crisis consequences.

The financial and economic crisis affected export-resource regions and regions of iron and steel and engineering industries most severely, particularly the Vologda Oblast, the Murmansk Oblast, the Kaliningrad Oblast and the Republic of Karelia. This initiated the research in **the influence of metallurgical corporation owners' interests on the socio-economic development of regions and the study of the budgetary crisis causes.** The work was performed under the supervision of ISEDT RAS Director Doctor of Economics, Professor V.A. Ilyin. The comprehensive analysis of activities of the leading Russian ferrous metallurgy enterprises, which are the main taxpayers in the Vologda, Lipetsk





and Chelyabinsk oblasts revealed the ineffectiveness of the country's fiscal policy. The authors proposed the options for changes in its paradigm. One of the basic postulates of the research is the following: the actual problems associated with the decrease in the metallurgical corporations' contribution to socio-economic development of the Russian Federation and its regions lie in the principles of modern tax policy.

The preprint "Influence of Metallurgical Corporation Owners' Interests on Socio-Economic Development" (V.A. Ilyin, A.I. Povarova, M.F. Sychev) published in 2012 tried to address a number of pressing issues. Why is the use of the largest production capacities of ferrous metallurgy of the country not accompanied by the significant acceleration of socio-economic development of the Russian regions, where these facilities are located? Why do budgets not grow as much as incomes of metallurgical corporation owners? How do the interests of corporation owners and territorial communities differ? How is it possible to harmonize interests of the society and the owners?

The results of the further study were reflected in the monograph "Budgetary Crisis of the regions" (V.A. Ilyin, A.I. Povarova) in 2013. The authors' calculations, based on the results of analytical developments of the famous domestic experts and the ISEDT RAS research, indicated the potential to increase the revenues of the country's consolidated budget in the upcoming 2–3 years by 14–18 trillion rubles, or 45–70% (*tab. 2*).

The next book to continue the research on this topic – "Problems of Public Administration Efficiency. Trend of Market Transformation. Crisis of the Budgetary System. Role of Private Capital. Strategy 2020: Problems of Realization" (2014; V.A. Ilyin, A.I. Povarova) – aroused interest not only among scholars but also among practitioners. The letter ISEDT RAS Director V.A. Ilyin received from Deputy of the State Duma of the Federal Assembly of the Russian Federation, Member of the State Duma Committee on Defense, Member of the State Council, Chairman of the Liberal Democratic Party of Russia V.V. Zhirinovsky, thanked the monograph authors for a clear civic position, based on

Table 2. Possible increase in budget revenue calculated by ISEDT RAS, trillion rubles per year

Source	Factual value	Proposed option	RF consolidated budget	Budgets of state non-budgetary funds	Federal budget	Budgets of RF subjects
Abolition of export VAT refund	18%	0[1)]	1.1		1.1	
Abolition of exemptions on VAT for the financial sector of the economy	0%	18%[2)]	3.0–5.0		3.0–5.0	
Abolition of privileges on property tax for natural monopolies	0%	2.2%[2)]	0.2			0.2
Increase in tax rates on dividends	5–9%	13–15%[1)]	0.2–0.5			0.2–0.5
Introduction of a progressive scale of income tax	13%**	13–50%[3)]	2.0–4.5			2.0–4.5
Introduction of hard currency repatriation tax	–	20%[4)]	0.5		0.5	
Abolition of the annual income margin above which insurance premiums are not paid	568 thousand rubles	0[5)]	0.6	0.6		
Introduction of luxury tax, with subsequent redistribution between RF subjects	–		0.2[6)]			0.2
Abolition of the budget rule, the use of all oil and gas revenues for economical development	25%	0[7)]	5.7		5.7	
Total			13.5–18.3	0.6	10.3–12.3	2.6–5.4

[1)] Academician S.Yu. Glazyev, Doctor of Economics N.A. Krichevskii, ISEDT RAS.
[2)] ISEDT RAS.
[3)] RAS Academician R.I. Nigmatulin, Doctor of Economics V.L. Inozemtsev, Doctor of Economics N.A. Krichevskii, A.V. Bagaryakov, political parties "A Just Russia", the Communist party.
[4)] Party "A Just Russia", Chairman of the Chamber of tax advisers Dmitry Chernik.
[5)] Doctor of Economics V.L. Inozemtsev, Economic Expert Group.
[6)] Assessment conducted by Doctor of Economics O.G. Dmitrieva.
[7)] Party "A Just Russia", many Russian experts and scientists.
Sources: Ilyin V.A., Povarova A.I. *Byudzhetnyi krizis regionov: monografiya* [Budgetary Crisis of the Regions": Monograph]. Vologda: ISERT RAN, 2013. 128 p.

the serious economic analysis. "The topic of your research is constantly kept in sight of the Liberal Democratic Party... The idea to consolidate the state and strengthen its role in the economical management becomes critically important during the sanctions," – said Vladimir Zhirinovsky.

The special place in the ISEDT RAS works is taken by the research in **the regulation of inter-budgetary relations of the territories** as an integral part of budgetary policy of the federal state. There are such research works, as "Federation Subject and Federal Center: Problems and Ways to Improve Budgetary Relations" (2012), "Improvement of Methods of regional Budgets Formation" (2013; M.A. Pechenskaya).

The evaluation of the impact of inter-budgetary relations management is based on the dissertation research of the article author, one of the first graduates of the ISEDT RAS Scientific and Education Center. The PhD

thesis, meeting the requirements of the specialty "Finance, monetary circulation and credit" for the first time in ISEDT RAS, was defended at the Institute of Economics RAS Dissertation Council (Moscow) in 2014. The hypothesis of the dissertation research is as follows: the effective regulation of inter-budgetary relations in the Oblast can be achieved through the expansion of organizational and economic tools for its implementation and strengthening the stimulating function of inter-budgetary relations.

In terms of the fiscal policy orientation on the outcome and the conduct of large-scale administrative reforms the issue to estimate state and municipal regulation becomes particularly urgent. The thesis presents the method to evaluate the degree of compliance of the objectives set by the state in the sphere of inter-budgetary regulation in the region to the acquired results. On the basis of this method ISEDT RAS carried out the first stage of the monitoring devoted to the effectiveness of inter-budgetary regulation on the example of the Vologda Oblast (*figure*).

The evaluation of financial autonomy of local budgets of the region showed that since 2006 the independence of municipal authorities in addressing budget issues had increased by 15%, however in 2012 it accounted for only 52%. It is primarily caused by the centralization of revenues, especially tax, at higher levels.

Assessment of the degree of inter-budgetary regulation effectiveness in the Vologda Oblast (calculated by the author's method)

Sources: Pechenskaya M.A. *Otsenka rezul'tativnosti regulirovaniya mezhbyudzhetnykh otnoshenii (na primere Vologodskoi oblasti): dissertatsiya na soiskanie uch. st. kand. ekon. nauk* [Assessment of the Inter-Budgetary Relations Regulation Efficiency (Case Study of the Vologda Oblast) : Ph.D. in Economics Dissertation]. Moskow, 2014. 168 p.

The assessment of adequacy of budgetary resources shows that the municipalities lack funds to finance current expenditures and stimulate the formation of innovative development budgets. Own revenues cover only 40% of the operating costs. Moreover, the powers and authorities are distributed between budgetary system levels at the expense of local budgets: up to 5% of the expenditure commitments not provided with relevant revenue sources are transferred to the lower level.

The quality and the efficiency of planning in the region in the period under analysis remained not enough high, therefore, were evaluated by 66%in 2012, largely due to the prevailing practice of under-funding of the approved budget allocations to local budgets.

The evaluation revealed problems in the Oblastal system of fiscal equalization of the municipalities. Thus, the gap in budgetary provision amounted to 4.2 times. After the provided donations it decreased slightly – to 3.4 times. However, the implementation of subsidiary support promoted differe ntiation of the local municipalities – to 4.3 times, indicating the preference to co-finance investment projects of the developed, but not developing municipalities. Thus, in 2006–2012 the evaluation of inter-budgetary regulation in the Vologda Oblast disclosed a low and medium degree of its efficiency. In 2012 the regulation results were consistent with the objectives only by 69%.

The loss of balance between the centralization of financial resources and the federalization of budgetary relations in Russia indicates rather ineffective inter-budgetary regulation. Own budgetary resources necessary for the execution of powers and the enhancement of low potential are withdrawn from the region. This makes the subnational governments more vulnerable in terms of financial autonomy; they have to seek for additional budget resources to execute their powers and authorities and promote the formation of development budgets that are able to create and develop economic growth points.

The wide range of problems associated with various aspects to improve the efficiency of state regulation of the inter-budgetary relations are discussed in the monograph "Inter-Budgetary Relations: State, Regulation, Performance Assessment" (2015; M.A Pechenskaya).

The budget crisis of regions encouraged the research in the problems of budget risks management. The public finance sector employees classified the factors influencing the formation of public finance risks of the territories in the research work "Improving the System to Manage Budget Risks in the Territorial Budget Systems" (2014; A.I. Povarova, A.V. Galukhin, A.A. Toropilov). According to the method of fiscal risks identification revised by the authors, they studied the formation and the execution of the

federal budget and the Vologda Oblast budget in 2014–2017, the management decisions on minimization of public finance risks in Russia and the region and formulated a set of measures to enhance the management of fiscal risks in the region.

The direction to study public finance is developing. A.V. Galukhin is completing the dissertation devoted to financial sustainability of a profitable part of regional budgets. The elaboration of the issue to regulate inter-budgetary relations will be continued in the doctoral dissertation of the article author (there already is a work plan for 2015–2017 and a "road" map).

To continue the research in the effectiveness of public administration the sector has prepared a monograph "Systemic Problems of regional Budgets" (M.A. Pechenskaya, A.I. Povarova), which will address the transformation processes in tax competence of the territorial authorities and the system of intergovernmental transfers and their impact on the systemic crisis of territorial budgets.

Moreover, the research in the impact of economic sectors on the budget has moved from the steel industry to the oil and gas corporations. Nowadays V.A. Ilyin supervises the analysis of the impact of largest Russian oil and gas enterprises on the socio-economic development of territories. The role of the government's monetary policy in the economy is considered.

In conclusion we note that the search for reserves to enhance the country's economic dynamics always remains relevant. Fiscal capacity of Russian territories, ISEDT RAS has been studying for the past 17 years, is one of the most important reserves of this kind.

Information about the Author

Mariya Aleksandrovna Pechenskaya – Ph.D. in Economics, Research Associate, Institute of Socio-Economic Development of Territories of RAS (56A, Gorky Street, Vologda, 160014, Russian Federation, marileen@bk.ru)

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DISCUSSION PLATFORM

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Ranking of Scholarly Journals of Economic Institutes of the Russian Academy of Sciences

Ol'ga Valentinovna
TRET'YAKOVA
Ph.D. in Philology
Institute of Socio-Economic Development of Territories of RAS
56A, Gorky Street, Vologda, 160014, Russian Federation, olga.tretyackova@yandex.ru

Abstract. The paper presents the results of comparative ranking of the journals in economics and related disciplines issued by economic institutes of the Russian Academy of Sciences. The ranking is based on the analysis of the bibliometric data of the Russian Science Citation Index. The author substantiated the composition of indicators that, in the author's opinion, provide the most objective approach to evaluating the importance of the title in the scientific community, are the most transparent and make it easy to verify the results obtained. The ranking is based on an integral index calculated by the method of multidimensional comparative analysis. The index was calculated with the use of standardized coefficients, by normalizing the bibliometric indicators relative to the maximum values of the indicators under comparison. The data thus obtained helped distinguish the core consisting of ten leading journals in economics and related disciplines among those published by economic institutes of the Russian Academy of Sciences. These journals include publications with significant citation metrics and a wide range of contributors and readers. The degree of correlation between the final list and other rankings of economics journals proves that the composition of criteria proposed by the author and the method of aggregation makes it possible to obtain sufficiently accurate data suitable for ranking scientific journals.

Key words: scientific journals ranking, economic journal, economic institutions of RAS, bibliometric indicator, journal's impact factor, Russian Science Citation Index (RSCI).

Today there are some hundreds of economic journals in Russia. Over a hundred are included in the List of peer-reviewed scientific editions of the Higher Attestation Commission. About 300 publications are indexed in the Russian Science Citation Index in the category "Economics. Economic sciences", where they can be ranked by impact factor value and other parameters. However, scientists believe that neither the list of VAK nor the impact factor of the Russian Science Citation Index [2, 8] can measure the quality of a scientific journal.

Leading experts are trying to solve the problem of journals to differentiate and select by ranging them according to various indicators. So, the Russian journals in economics are assessed by several ratings, with Murav'ev's rating (2013) [7, 8], the rating conducted by the HSE Office of Academic Expertise (2015) [11] and Balatskii-Ekimova's rating (2015) [2] being most famous. The formation of the above classifications is based on different methodological approaches –use of bibliometric indicators, expert judgement or both of them. However, none of these approaches is perfect.

In our opinion, the ranking of journals in economics and related disciplines, compiled by A.A. Murav'ev, is most profound [7, 8]. It includes analyzed bibliometric information. This classification outstands with its use, besides standard criteria, such as an impact factor, of the indicators, specially calculated by the author on the basis of references published in journals. Fourteen indicators are considered; they are divided in five generalized grades by means of standardization and aggregation. The conducted work results in the selection of 24 leading journals in economics and related disciplines, of which the ten are attributed to the "A" conventional category (most important) and the rest to the "B" category (journals of a good level). Weaknesses of the proposed method, according to its author, is manifested in the imperfection of bibliometric indicators used to reflect scientific merit of journals and the neglect of multidisciplinary journals. We believe there is another disadvantage of this approach: the greater part of analyzed statistical information is not available in the RSCI and the significant resources are required for its generation. It hinders constant updating of the rating and assessment of the ranking results by a broad audience.

The project implemented by the HSE Office of Academic Expertise involves expert assessments as well [11]. Having filled in the questionnaire, 630 experts assessed the scientific quality of journals in 13 areas of science, including economics. Aggregation of individual assessments helped identify 3 conditional groups of journals: A1 – high level, "wide profile", A2 – high level, "narrow profile", B – average level. Two journals of group A2 in economics and 17 journals of group B are only singled out. It is interesting to note that "Foresight" and "The HSE Economic Journal" are the journals included in the category A2, i.e. the publications affiliated with the organization, composing the rating, are the best among economic journals. It is noteworthy that in other lists of journals and the RSCI rating these publications do not occupy the first position. Thus, the use of expert analysis

in journal ranking requires primarily the exclusion of subjective evaluation factors and the selection of experts. Obviously the independent organizations, not affiliated with ranked journals, should make such ratings, to achieve the objectivity of final data.

Given the fact that the methods based solely on bibliometric information, or expert assessments, have certain drawbacks, experts try to combine both approaches to eliminate possible surges in the final rankings. Balatskii-Ekimova's rating is an example of combination of assessment models used in the two previous ratings (2015) [2]. The list of 50 journals formed by 4 parameters is estimated by 5 quality parameters by 3 experts. It results in the list of journals put in order by the integral indicator. The choice of bibliometric indicators for the selection of publications is, in our opinion, a shortcoming of the proposed method. Hence, low-cited journals are included in the list. In particular, in the rating there are several editions, whose 5-year impact factor without self-citation is equal to 0.1 and below.

Thus, current ratings of scientific economic journals have certain drawbacks. Their elimination requires further research in the selection of criteria for ranking publications and improvement of their analytical methods.

The present study makes an attempt to classify journals of the RAS economic institutes by ranking the integral index, obtained by the method of multidimensional comparative analysis of bibliometric data.

Journal's affiliation with the Russian Academy of Sciences is a kind of indicator of the publication quality. No wonder, experts believe that today the scientific success of a journal largely depends on its relationship with the RAS and the pursuit of academic traditions and standards, important in the formation of the leading journals of the country [2, pp. 111-112]. Scientists claim that the Academy's primary mission to publish fundamental scientific results is projected on the activity of the RAS journals, playing an increasingly important role in the development of the Academy as a whole, the formation of key research priorities in the Russian space, the training of highly qualified personnel and the continuity of RAS generations [13, p. 182; 6, p. 172]. As RAS Corresponding Member G.B. Kleiner rightly stated, on the pages of these publications "first of all, fundamental knowledge should find a place – the result of fundamental academic research, and the fact of publication should be a step on the way from information as raw material for science to knowledge as its final socially recognized result" [6, p. 172]. According to experts, the academic journals "fulfil a certain pattern-forming function", "scientific publications in such journals should serve as a model for authors and publishers by their structure, clarity of expression and preciseness of thought" [6, p. 173].

The above theses allow us to single out the RAS journals into a separate group of periodicals.

For the study we select all journals in economics published by the RAS economic institutions, subordinate to FANO. Before the RAS reform, these institutions were included in the Economy Section for the RAS Department of Social Sciences, i.e. were a single reference group. For the analysis we use publications

only in economic and related sciences, not considering multidisciplinary journals and the ones, which have no indicators in the RSCI. Therefore, we analyze 18 publications.

The ranking of journals is based on the integral index obtained by rationing some bibliometric indicators (data of the Russian Scientific Citation Index). As the RSCI provides a number of different indicators, including minor, it is methodologically important to choose the indicators, which, first, ensure objective assessment of the publication's importance in the academic circles and, second, are transparent and available for obtained results verification. At this stage we do not use expert judgment, because, as stated above, they introduce a certain percentage of subjectivity to final results. While not denying the importance of expert opinion, we believe that nowadays this issue requires certain methodological understanding in terms of rating Russian scientific journals.

In our opinion, citation metrics are key bibliometric indicators of scientific journal importance. It is reasonable to emphasize that the quantitative data on publication citation reflect the "impact of scientific publications on scientific community, its usefulness for other scientists" [5, p. 43]. We do not refer to the quality of publications of a journal. Nevertheless, when considering bibliometric indicators of periodicals, we can rely on citation metrics to prove that the work can be very significant with a high degree of probability.

The impact factor of a scientific journal is one of the basic scientometric indicators. It is introduced by E. Garfield and first used as a term in his article in the journal Science in 1955 [18, 1955]. Today the impact factor is the most common indicator of citation. C. Hoeffel, summarizing numerous opinions about feasibility of using impact factors, notes that, although the impact factor has not become an ideal indicator to measure the article quality, at the present time there is no other objective tool for scientific evaluation. Experience shows that in each specialty the best journals are the ones characterized by very strict requirements for the authors to get published and typically by a higher impact factor. Its wide spread as an indicator of quality and influence is caused, in Hoeffel's opinion, by the fact that it correlates with the opinion, the scientists have about best journals in their disciplines [20, p. 1225].

Disclosing influence of articles, this index measures a number of links to one article included in a given set of publications for a certain fixed time period [17]. The time taken for publication of articles under analysis is called a "publication window", and the time taken for publication of articles, links to which are considered in the impact factor calculation – a "citation window" [10, p. 82]. To determine the impact factor of a journal, a two-year publication window and a one-year citation window are traditionally used, i.e. the impact factor describes the average number of citations received per paper published in the journal during the two preceding years [10, p. 83]. The two-year period used is intended to make the statistic indicator relevant. According to Garfield, highly cited articles that reach the greatest "impact" are

usually cited for months from the date of publication and certainly within a year after publication. Two years is enough to identify the so-called "hot papers" that have had the greatest impact in a particular field of scientific knowledge [16, 2005]. Hence, the use of a two-year citation window in the impact factor calculation is caused by the desire to identify periodicals publishing articles highly cited since publication and having the greatest impact in their field in the process of ranking journals relative to each other.

Experts believe that it is a two-year impact factor that is most often mentioned when comparing the level of journals nowadays [9, p. 131]. However, in some scientific disciplines, particularly in humanities and social sciences, the professional community can not accept new knowledge for a short two-year period of time. In this case, to calculate the impact factor it is advisable to use a wider publication window. So, in addition to a two-year impact factor researchers calculate a five-year impact factor, which characterizes the average number of links received per paper published in the journal during the five preceding years. Therefore, in fields, where the impact of published research should be considered for a long period of time, the five-year publication window helps measure the impact factor of journals more efficiently. Having the advantage over the two-year impact factor, such as an opportunity to align "surges" of certain articles with anomalous citation, according to experts, the five-year impact factor lacks responsiveness [19], as it lags behind in the reflection of new journals in the rating, whatever recognition the latter have won [3, p. 23]. Thus, in our view, when ranking journals by impact factor it is advisable to consider the values of both two-year and five-year indicators to neutralize their disadvantages and get a more objective result.

The impact factor value can be sufficient for ranking journals included in authoritative databases, comprised according to the strict criteria filtering out inferior publications. The data of the Science Citation Index are considered authoritative around the world. The Index is used as a tool to measure a level of scientific productivity due to a by-product – a database of the Journal Citation Report (JCR) and ranking of scientific journals by impact factor [19, pp. 63-64]. It is difficult to use this tool in relation to Russian scientific journals, particularly in economics, due to their weak representation in the international database Web of Science. Therefore, ranking of Russian economic journals is limited to the use of the Russian Scientific Citation Index data. As the RSCI does not select journals, the impact factor of a journal is not sufficient to rank scientific publications in the Russian realities. Experts note that the RSCI data are vulnerable to potential manipulation of impact factors by journal editorial boards. As a result, its high value does not guarantee the quality of a journal, as this value can be artificially inflated by self-and cross-citation of journals [8, p. 133]. Thus, when ranking Russian scientific journals by impact factor, the RSCI should apply additional quantitative characteristics of journals, in particular indicators, taking into account self-citations, and Herfindahl index values, calculated by citing journals and organizations of authors.

As noted above, citations received by the journal due to its own articles have a definite influence on the impact factor, as its standard definition includes self-citation. According to experts, such as R. Rousseau, the high level of self-citation indicates bad publicity of a journal [21, p. 425]. To neutralize the effect of self-citation on ranking of journals, it is necessary to consider the indicators characterizing self-citation, particularly a self-citation coefficient, which shows the proportion of links to the journal made by the journal itself of all the citations. In the RSCI the problem to separate self-citation is solved by calculating impact factors that take into account only links from other journals.

The Herfindahl index for citing journals is defined as the sum of the squares of the percentage shares of the number of articles citing this journal in relation to the total number of citations. The greater number of citing journals and the more even links to the journal are distributed, the smaller the value of this indicator. The Herfindahl index by organizations of authors is calculated as the sum of the squares of the percentage share of the number of articles published by different organizations in relation to the total number of articles in the journal in the current year, the organization is identified in. The more different organizations, the authors of which are published in the journal and the more even the publications are distributed between them, the smaller the value of this indicator. The maximum index value is equal to 10,000 and is achieved when all links are made from one journal or when a journal publishes authors from only one organization. Normalization in view of the Herfindahl index increases indices of the journals widely known in the scientific community, and decreases ratings of the journals with high self-citation or the ones using mutual citation to artificially improve their performance. According to A.A. Murav'ev, the Herfindahl indices "characterize the narrowness of authors' circle and readership of a journal, acting as a specific measure of its "parochial mentality". High values of these indices indicate that a journal is demanded and appreciated only by a small number of organizations and journals, which is hardly compatible with the status of a national edition" [8, pp. 137-138].

Thus, to overcome shortcomings of the impact factor as a traditional indicator of scientific importance of journals we use 4 bibliometric indicators to rank publications:

1. RSCI two-year impact factor without self-citation (IF_2).
2. RSCI five-year impact factor without self-citation (IF_5).
3. Herfindahl index for citing journals (HI_J).
4. Herfindahl index for organizations of authors (Ne_o).

The self-citation coefficient is not considered for normalization, since we use values of the impact factor without self-citation. The matrix of initial indices is presented in *table 1*. The journals in the list are arranged in the alphabetical order of their names. For each publication we specify the institute, it is affiliated with.

Table 1. Initial data matrix: bibliometric indicators of scientific journals of the RAS economic institutes in the RSCI (the NEL data as of December 1, 2015)

No.	Journal	RAS institute	IF_2	IF_5	HI_J	HI_0
1.	Vestnik of the Institute of Economics of the Russian Academy of Sciences	Institute of Economics of RAS	0.479	0.243	531	3390
2.	Economical Issues	Institute of Economics of RAS	1.957	1.508	125	1375
3.	Journal of the New Economic Association	A number of institutions, including Central Economic Mathematical Institute of RAS, Institute of Economics of RAS	0.746	0.707	251	1198
4.	Russian Journal of the Economic Theory	Institute of Economics, Ural Branch of RAS	0.574	0.440	703	414
5.	Population	Institute of Social and Economic Studies of Population of RAS	0.387	0.302	514	3309
6.	Applied Econometrics	Central Economic Mathematical Institute of RAS	0.429	0.625	810	3333
7.	Studies on Russian Economic Development	Institute of Economic Forecasting of RAS	1.341	1.308	187	1700
8.	Problems of Territory's Development	Institute of Socio-Economic Development of Territories of RAS	0.533	0.348	1099	5652
9.	Spatial Economics	Economic Research Institute, Far Eastern Branch of RAS	0.886	0.688	490	3495
10.	Regional Agrosystems: Economics and Sociology (E-journal)	Institute of Agrarian Problems of RAS	0.067	0.064	1936	5838
11.	Regional Problems of Transforming the Economy	Institute for Social and Economic Research, Dagestan Scientific Center of RAS	0.264	0.234	3048	1071
12.	Region: Economics and Sociology	Institute of Economics and Industrial Engineering, Siberian Branch of RAS	0.432	0.385	276	2196
13.	North and Market	G.P. Luzin Institute of Economic Problems of Kola Scientific Centre of RAS	0.130	0.131	2402	3675
14.	ECO: All-Russian Economic Journal	Institute of Economics and Industrial Engineering, Siberian Branch of RAS	0.431	0.374	420	1318
15.	Economics and Mathematical Methods	Central Economic Mathematical Institute of RAS	0.483	0.670	319	1598
16.	Regional Economics	Institute of Economics, Ural Branch of RAS	0.800	0.548	230	879
17.	Economic Science of Modern Russia	Central Economic Mathematical Institute of RAS	1.036*	0.707	208	1243
18.	Economic and Social Changes: Facts, Trends, Forecast	Institute of Socio-Economic Development of Territories of RAS	0.915	0.592	545	2165

* As the index value for 2014 is not calculated in the RSCI, we consider the index for the previous year.

The classification of journals is based on the multidimensional comparative analysis method, which is widely used in economic research, in particular for comprehensive generalizing comparative assessment of enterprise performance [12, pp. 74-76]. The method of multidimensional comparative analysis is founded on the method of Euclidean distances helps take into account not only absolute index values of each journal, but also a degree of their proximity to the standard. For it the comparing indices of journals are expressed in fractions of the relevant standards, taken as a unit.

Thus, in the initial data table the maximum, taken as a unit, is defined for each index. The coefficients of other journals are calculated by dividing their initial indices by the maximum value of the standard. The obtained standardized coefficients are presented in *table 2*.

The integral index for each journal is obtained by squaring standardized coefficients and adding up obtained results. The final ranking of journals includes ranking of integral indices (*tab. 3*).

The obtained data allow us to single out the core consisting of 10 leading journals in

Table 2. Matrix of the standardized coefficients of scientific journals of the RAS economic institutes

No.	Journal	Index number			
		1	2	3	4
1.	Vestnik of the Institute of Economics of the Russian Academy of Sciences	0.245	0.161	0.235	0.122
2.	Economical Issues	1.000	1.000	1.000	0.301
3.	Journal of the New Economic Association	0.381	0.469	0.498	0.346
4.	Russian Journal of the Economic Theory	0.293	0.292	0.178	1.000
5.	Population	0.198	0.200	0.243	0.125
6.	Applied Econometrics	0.219	0.414	0.154	0.124
7.	Studies on Russian Economic Development	0.685	0.867	0.668	0.244
8.	Problems of Territory's Development	0.272	0.231	0.114	0.073
9.	Spatial Economics	0.453	0.456	0.255	0.118
10.	Regional Agrosystems: Economics and Sociology (E-journal)	0.034	0.042	0.065	0.071
11.	Regional Problems of Transforming the Economy	0.135	0.155	0.041	0.387
12.	Region: Economics and Sociology	0.221	0.255	0.453	0.189
13.	North and Market	0.066	0.087	0.052	0.113
14.	ECO: All-Russian Economic Journal	0.220	0.248	0.298	0.314
15.	Economics and Mathematical Methods	0.247	0.444	0.392	0.259
16.	Regional Economics	0.409	0.363	0.543	0.471
17.	Economic Science of Modern Russia	0.529	0.469	0.601	0.333
18.	Economic and Social Changes: Facts, Trends, Forecast	0.468	0.393	0.229	0.191

Table 3. Results of the comparative rating evaluation of scientific journals of the RAS economic institutes

Journal	Index number				Overall coefficient	Integral index, R	Rank
	1	2	3	4			
Economical Issues	1.000	1.000	1.000	0.091	**3.091**	**1.758**	**1**
Studies on Russian Economic Development	0.470	0.752	0.447	0.059	1.728	**1.315**	**2**
Russian Journal of the Economic Theory	0.086	0.085	0.032	1.000	1.203	**1.097**	**3**
Economic Science of Modern Russia	0.280	0.220	0.361	0.111	0.972	**0.986**	**4**
Regional Economics	0.167	0.132	0.295	0.222	0.816	**0.904**	**5**
Journal of the New Economic Association	0.145	0.220	0.248	0.119	0.733	**0.856**	**6**
Spatial Economics	0.205	0.208	0.065	0.014	0.492	**0.702**	**7**
Economics and Mathematical Methods	0.061	0.197	0.154	0.067	0.479	**0.692**	**8**
Economic and Social Changes: Facts, Trends, Forecast	0.219	0.154	0.053	0.037	0.462	**0.680**	**9**
Region: Economics and Sociology	0.049	0.065	0.205	0.036	0.355	**0.595**	**10**
ECO: All-Russian Economic Journal	0.049	0.062	0.089	0.099	0.297	**0.545**	**11**
Applied Econometrics	0.048	0.172	0.024	0.015	0.259	**0.509**	**12**
Regional Problems of Transforming the Economy	0.018	0.024	0.002	0.149	0.193	**0.440**	**13**
Vestnik of the Institute of Economics of the Russian Academy of Sciences	0.060	0.026	0.055	0.015	0.156	**0.395**	**14**
Population	0.039	0.040	0.059	0.016	0.154	**0.392**	**15**
Problems of Territory's Development	0.074	0.053	0.013	0.005	0.146	**0.382**	**16**
North and Market	0.004	0.008	0.003	0.013	0.027	**0.165**	**17**
Regional Agrosystems: Economics and Sociology (E-journal)	0.001	0.002	0.004	0.005	0.012	**0.110**	**18**

economics and related disciplines of the RAS economic institutes (highlighted in table 2). These journals have significant citation metrics (impact factor) and a low self-citation level (values of the impact factor without self-citation are considered). In addition, they can claim the status of all-Russian publications, as main citation to them is provided through links in a number of scientific publications and they are characterized by a fairly wide range of authors affiliated with different organizations.

It should be particularly noted that the final rating corresponds to the system of measurement parameters adopted in this study, i.e., the set of applied indicators and the method of their aggregation, and also depends on the quality of the RSCI data.

Table 4. Rating of scientific economic journals published by RAS institutes

Journal	R	Rank 1	IF_2*	Rank 2	SI_r	Rank 3
Economical Issues	1.758	**1**	2.068	**1**	5.261	**1**
Studies on Russian Economic Development	1.315	**2**	1.450	**2**	3.211	**2**
Russian Journal of the Economic Theory	1.097	**3**	0.830	**7**	0.342	**10**
Economic Science of Modern Russia	0.986	**4**	1.036**	**4**	1.522	**3**
Regional Economics	0.904	**5**	0.933	**6**	1.103	**5**
Journal of the New Economic Association	0.856	**6**	0.781	**8**	1.231	**4**
Spatial Economics	0.702	**7**	0.986	**5**	0.651	**7**
Economics and Mathematical Methods	0.692	**8**	0.540	**13**	0.896	**6**
Economic and Social Changes: Facts, Trends, Forecast	0.680	**9**	1.090	**3**	0.556	**9**
Region: Economics and Sociology	0.595	**10**	0.446	**15-16**	0.594	**8**
ECO: All-Russian Economic Journal	0.545	**11**	0.560	**12**	0.294	**13**
Applied Econometrics	0.509	**12**	0.446	**15-16**	0.307	**11**
Regional Problems of Transforming the Economy	0.440	**13**	0.579	**10**	0.069	**16**
Vestnik of the Institute of Economics of the Russian Academy of Sciences	0.395	**14**	0.577	**11**	0.219	14
Population	0.392	**15**	0.509	**14**	0.297	**12**
Problems of Territory's Development	0.382	**16**	0.715	**9**	0.175	**15**
North and Market	0.165	**17**	0.320	**17**	0.044	**17**
Regional Agrosystems: Economics and Sociology (E-journal)	0.110	**18**	0.152	**18**	0.023	**18**

* Values of the two-year impact factor (including self-citations) are presented.
** As the index value for 2014 is not calculated in the RSCI, we consider the index for the previous year.

The drawback of the proposed method to rank journals consists in the impact of high values of certain indices on the end result. So, "Russian Journal of the Economic Theory" ranks the 3d only due to the highest coefficient of the latter parameter in the reference group, i.e. the best values of the Herfindahl index by organizations of authors. At the same time, other values, characterizing citation, are average. Although it is a single situation, we can see that the proposed method to rank journals can be improved in the future.

As the international practice has no recognized methods to validate the rating data, we compare the received data with the lists of economic journals, based on the RSCI bibliometric indicators (Murav'ev's rating [7, 8] and Balatskii-Ekimova's rating [2]) to verify the final results.

Of the first ten journals of our list 4 publications are presented in Murav'ev's rating (2013) in the A category. This is "Economical Issues", "Journal of the New Economic Association", "Economics and Mathematical Methods", and "Economic Science of Modern Russia". This category includes the journal "Applied Econometrics" (in our list –position 12). Two other journals "Spatial Economics" and "Studies on Russian Economic Development" belong to the B category, which comprises 14 publications, also having rather high private ranks. The journals "Economic and Social Changes: Facts, Trends, Forecast" and "Regional Economics" find themselves in the C category (includes 24 books). Three categories include 55 journals, which the author characterizes as the most influential Russian publications in economics and related disciplines. The journals of the A and B categories are defined as the most significant publications and the ones of the A category – as the leading national economic journals.

In Balatskii-Ekimova's ranking (2015) 7 publications from our list belong to the group of the best national journals in economics, called as a "Diamond" list of journals (DLJ) by analogy with foreign tradition. This is "Economical Issues", "Economics and Mathematical Methods", "Applied Econometrics", "Journal of the New Economic Association", "Studies on Russian Economic Development", "Spatial Economics", and "Economic Science of Modern Russia". E.V. Balatskii notes that of 13 DLJ publications a half is anyhow connected with the Russian Academy of Sciences. In his opinion, it proves an important role of academic standards and traditions in the formation of leading journals of the country [2, p. 112].

Given the substantial number of concurrences with other lists, we can conclude that the presented ranking does not contradict previous research fundamentally. Therefore, the proposed composition of criteria and method of their aggregation can be used to rank scientific journals.

We should mention weak correlation of our integral rating and the RSCI journal ranking by impact factor and the Science Index rating, calculated in the RSCI by the special method, taking into account several criteria (*tab. 4*).

As judged by rank comparison, the ranks matching in all classifications are observed only among the journals with rather high indices. Thus, our results also show that the RSCI rating can not be used as an ultimate criterion for ranking scientific journals.

To sum it up, we should note that the acquired results help address the question to select criteria, in particular bibliometric, for assessing scientific journals. The proposed composition of criteria and method of their aggregation is quite suitable for ranking scientific journals, which is supported by sufficient correlation with other rankings. The shortcomings of the proposed method revealed at this stage determine the prospects of research in the clarification of these criteria and their aggregation.

In general, we can say that the integral values, obtained by the method of multidimensional comparative analysis of several significant bibliometric indicators of the publications in the RSCI, has allowed us to rank them and identify the core of ten leading journals in economics and related disciplines of the RAS economic institutes. The results of the comparative rating evaluation of scientific journals can be considered by these institutions, when working out strategies to promote their publications. The improved performance by a number of positions is directly associated with activities of an editorial board, whose efforts can be directed on increasing the requirements to quality of publications and their peer review, monitoring self-citation and expanding the geography of authors.

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Information about the Author

Ol'ga Valentinovna Tret'yakova - Ph.D. in Philology, Department Head, Federal State Budgetary Institution of Science Institute of Socio-Economic Development of Territories of Russian Academy of Science (56A, Gorky Street, Vologda, 160014, Russian Federation, olga.tretyackova@yandex.ru)

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Case Study of Integration of Economy and Ecology in Jiangxi: an Approach to Regional Sustainable Development

Zhang Yihong
Assistant Researcher, Master
Institute of Industrial Economics, Jiangxi Academy of Social Sciences
Nanchang, China

I. Problem introduction: theoretical and realistic background

At a stage of rapid industrialization and urbanization, China has been unavoidably confronted with a major problem in achieving sustainable development, i.e. how to coordinate the relationship between economic development and environmental protection with an increasingly prominent contradiction.

(1) Theoretical basis

The economic and ecological systems, with their own circulation channels, are both independent and interdependent of each other, as economic development is based on ecology while the ecological protection and construction are also dependent on economic development. Only one-sided pursuit of economic development will utterly break the ecological balance of nature and cause revenge from the nature, such as the sequela of "Treatment after Pollution" in western countries and the haze arising in some more developed provinces of China. The simple ecological construction and protection cannot either rapidly develop the economy or continuously improve people's living standards, even causing a vicious circle from poverty, development at the expense of environment to poverty. Thus it is imperative to make an organic unification of economic and ecological systems to advance the integration of economy and ecology, finally achieving sustainable development.

(2) Realistic choice

Globally speaking, the western developed countries have realized that it has been a trend

to pursue the economic and ecological integration, and the industrial civilization values are not fit any more for the current economic and social development trend. And in China, it is also clearly recognized that a simple pursuit of economic development is not advisable, and instead it starts to transform to the sustainable development path, gradually forming such development modes as ecological economy, low carbon economy and circular economy and so on. In Jiangxi province, its economic development is to a great extent overly dependent on the extensive consumption of natural resources. With the vanishing of comparative advantage of traditional production elements and an obvious contradiction among sustainable development of economy, environmental capacity and resource bearing capacity, the province is faced with a double pressure of insufficient development and economic transformation. Therefore, it is necessary to push the economic and ecological integration development and support a long-term and high-quality development at a minimum cost of resources and environment, which is the realistic choice for Jiangxi province to achieve its sustainable development.

II. The basic advantages and constraints of Jiangxi economic and ecological integrative development

Sustainability is an important indicator that is used to measure the integrative development of regional economy and ecology. From the five systems of sustainability, the basic advantages and constraints of integrative development of regional economy and ecology can be concluded *(table 1)*.

From table 1, we can see that the basic advantage of Jiangxi economic and ecological integrative development is its good living environment, while the constraint is insufficient development. It can be specified as follows:

(1) Basic advantages

1. Prominent ecological advantage

In 2013, the forest coverage rate in Jiangxi reached 63.1%, ranking the first of China. The province conducted an in-depth campaign of clearance, clean water and unpolluted land, with the water quality compliance rate of surface water monitoring section in Jiangxi province at 80.8%, which was nearly 10% higher than the national average, as well as the monitoring sections in Wuhe and Dongjiang source reserves being in II-class water quality and the urban centralized drinking water quality compliance rate at 100%. Therefore, Jiangxi ecological environment quality remains in the front rank of the country. According to the "Beautiful China" provincial standard of construction (2013) research report" and "Beautiful China" provincial capitals and sub-provincial city level building (2013) research report", the air quality, the total water resources indicators volume and water quality, wetlands, biodiversity, etc. are in the top 5 in Jiangxi Province and Nanchang.

2. Good basis of ecological industry

Firstly, the ecological agriculture is in the lead of the country. By the end of 2013, the total of three products and one indication in

Table 1. The rank of sustainability in thirty-one provinces of China

Region	1. Living support system		2. Development support system		3. Environment support system		4. Social support system		5. Intelligence support system		6. Sustainable development capacity	
	Index	Rank	Index	Rank	Index	Rank	Index	Rank	Index	Rank	Index	Rank
China	106		116.3		102.2		111.3		111.8		109.5	
Beijing	106.6	14	126.1	3	104.1	6	117.6	1	116.8	1	114.3	1
Tianjin	104.3	25	129.2	1	102.9	12	115.5	3	115.3	3	113.4	3
Hebei	103.9	26	117.1	11	101.2	21	111.8	13	107.8	27	108.4	22
Shanxi	102.1	29	114	23	99.4	27	111.4	16	109.6	17	107.3	24
Neimenggu	107.2	11	114.6	19	100.7	25	113.1	9	109.2	20	108.9	18
Liaoning	107.7	9	119.9	9	101.9	18	113.9	6	111.5	10	111.0	8
Jilin	107.8	6	116.2	12	101.1	22	112.8	10	110.4	14	109.6	12
Heilongjiang	109.5	2	115	16	102	17	113.5	7	111.6	9	110.3	11
Shanghai	102.6	28	127.6	2	105.8	3	116.3	2	115.5	2	113.5	2
Jiangsu	106.4	15	123.2	5	105.3	4	114.7	4	112.7	5	112.4	4
Zhejiang	106.8	12	123.2	6	106	2	114.5	5	111.3	11	112.4	5
Anhui	105.2	23	114.2	22	103.8	9	109.3	27	110.9	13	108.7	20
Fujian	107.8	7	121.6	7	103.5	11	111.4	17	112.2	7	111.3	7
Jiangxi	**108.2**	**4**	**114.6**	**20**	**105.3**	**5**	**110.2**	**24**	**108.2**	**23**	**109.3**	**16**
Shandong	106	17	121.2	8	102.5	14	113.3	8	110.4	15	110.7	10
Henan	105.4	20	115.3	15	101.6	20	111.5	14	108.2	24	108.4	21
Hubei	106.1	16	115	17	104.1	7	111.2	19	111.3	12	109.6	13
Hunan	108.4	3	114.5	21	103.7	10	110.3	22	109.5	18	109.3	17
Guangdong	105.4	21	124	4	104	8	112	12	112.2	8	111.5	6
Guangxi	107.5	10	113.4	24	102.5	15	108.7	28	108	25	108.0	23
Hainan	110.3	1	117.9	10	106.3	1	110.3	23	110.1	16	111.0	9
Chongqing	105.9	18	116.2	13	102.4	16	110	25	112.6	6	109.4	15
Sichuan	107.8	8	114.9	18	101.9	19	110.5	20	109.3	19	108.9	19
Guizhou	102.7	27	109.9	28	101.1	23	108.7	29	107.9	26	106.1	28
Yunnan	105.1	24	110.6	26	102.6	13	108.3	30	107.3	28	106.8	26
Xizang	108	5	97.8	31	97.2	31	105.2	31	98.7	31	101.4	31
Shanxi	105.3	22	116.1	14	100.9	24	112.3	11	113.2	4	109.5	14
Gansu	102	30	107.8	29	99.6	26	109.4	26	109.2	21	105.6	29
Qinghai	105.7	19	106.9	30	98.9	29	110.4	21	105.6	30	105.5	30
Ningxia	102.0	31	110.5	27	99.1	28	111.3	18	109.1	22	106.4	27
Xinjiang	106.8	13	111.1	25	98.8	30	111.5	15	106.9	29	107.0	25

Data resource: China Sustainable Development Report 2014

Jiangxi reached 2,100, of which pollution-free agricultural products came to 1,115, green food reaching 480, organic food reaching 445 and geographical indications of agricultural products reaching 60, which ranked the first 10th in the country. Secondly, it quickens the tempo of new industrialization. In 2013, the ten strategic emerging industries have attained the mainly operating income of 181.9 billion US dollars, with year-on-year growth of 17%, and also fueled the provincial industry income growth by 6.2% with contribution rate of 37.5%. Thirdly, modern service develops rapidly. In 2013, the provincial modern service got an added value of 37.1 billion US dollars, whose proportion in the provincial GDP increased by 0.69% from 15.34% in 2012 to 16.03%.

3. Rich experience in ecological practice

The Provincial Party Committee and Provincial Government have always paid high attention to the ecological environmental protection and ecological civilization construction. Since the early 1980s, Jiangxi province started the implementation of Mountain-River-Lake project. After entering the new century, it clearly comes up with a development concept that not only gold mountains and silver mountains are needed, but clear waters and green mountains are much more desirable. After the 17th National Congress of the Communist Party of China, the development strategy of ecological province and green development was put forward. On the 13th Jiangxi Provincial Congress of Party Representatives, it set a grand goal of constructing a rich, harmonic and beautiful Jiangxi. And on the first meeting of the 12th session of the National People's Congress, the Provincial Government also put up with a higher goal that Jiangxi ecological civilization construction would be in the lead of the country in the next five years. Such a series of strategic measures have brought helpful exploration and practice to the in-depth ecological and economic integrative development, and gained rich ecological practical experience.

(2) Constraints

1. The insufficient economic development is the economic constraint of Jiangxi economic and ecological integration development.

In 2013, GDP per person in Jiangxi was 5119.69 US dollars, equivalent to only 75.8% of the national average, and its most economic indicators were on the latter rank in the central regions and the country. Therefore, we must make it clear that there is no fundamental change that Jiangxi is still an undeveloped province with insufficient economic development, and its weak economic foundation cannot provide financial support for ecological construction by transforming large amounts of funds. For more details, please see *table 1.*

2. The low urbanization level is the social constraint of Jiangxi economic and ecological integration.

The urbanization level is an important indicator of social support system, and also greatly affects Jiangxi economic and ecological integrative development. In 2013, the urbanization rate of Jiangxi province was 48.87%, nearly 5% lower than that of the

Table 2. The rank of GDP per person of each province, municipality and autonomous region in 2013

Region	GDP per person (dollar)	Rank	Region	GDP per person (dollar)	Rank
Tianjin	15760.74	1	Heilongjiang	6057.3	17
Beijing	14888.93	2	Xinjiang	6003.48	18
Shanghai	14442.33	3	Hunan	5913.11	19
Jiangsu	12031.87	4	Qinghai	5871.43	20
Zhejiang	11033.26	5	Hainan	5674.77	21
Neimenggu	10881.93	6	Shanxi	5605.63	22
Liaoning	9959.38	7	Henan	5515.91	23
Guangdong	9430.15	8	Sichuan	5230.37	24
Fujian	9309.68	9	**Jiangxi**	**5119.69**	**25**
Shandong	9071.59	10	Anhui	5098.28	26
Jilin	7618.57	11	Guangxi	4919.64	27
Shanxi	6883.59	12	Xizang	4234.33	28
Chongqing	6880.95	13	Yunnan	4062.13	29
Hubei	6868.7	14	Gansu	3919.47	30
Ningxia	6331.19	15	Guizhou	3691.47	31
Hebei	6232.1	16	China	6750.1	–

Table 3. The rank of urbanization rate of each province, municipality and autonomous region in 2013

Region	Urbanization rate(%)	Rank	Region	Urbanization rate(%)	Rank
Shanghai	88.02%	1	Shanxi	51.31%	17
Beijing	86.30%	2	Hainan	51.10%	18
Tianjin	78.28%	3	Jiangxi	48.87%	19
Guangdong	67.76%	4	Qinghai	48.51%	20
Liaoning	66.45%	5	Hunan	47.96%	21
Zhejiang	62.96%	6	Anhui	47.86%	22
Jiangsu	62.85%	7	Hebei	46.51%	23
Fujian	60.76%	8	Sichuan	44.90%	24
Neimenggu	58.71%	9	Guangxi	44.82%	25
Chongqing	58.34%	10	Xinjiang	44.47%	26
Heilongjiang	56.90%	11	Henan	42.40%	27
Hubei	54.51%	12	Gansu	40.13%	28
Jilin	54.20%	13	Yunnan	39.31%	29
Shanxi	52.56%	14	Guizhou	37.83%	30
Shandong	52.17%	15	Xizang	22.75%	31
Ningxia	52.02%	16	China	53.70%	–

Table 4. The rank of regional innovation capacity of each province, municipality and autonomous region in 2013

Region	Composite index of regional innovation	Rank	Region	Composite index of regional innovation	Rank
Jiangsu	57.58	1	Hainan	24.10	17
Guangdong	53.00	2	Neimenggu	23.73	18
Beijing	50.73	3	Heilongjiang	23.55	19
Shanghai	47.18	4	Jiangxi	23.53	20
Zhejiang	42.40	5	Guangxi	23.06	21
Shandong	37.73	6	Hebei	23.02	22
Tianjin	36.13	7	Jilin	22.64	23
Chongqing	33.88	8	Guizhou	22.60	24
Anhui	29.75	9	Gansu	22.20	25
Fujian	29.33	10	Shanxi	21.68	26
Liaoning	28.85	11	Yunnan	21.32	27
Hubei	28.71	12	Xinjiang	20.39	28
Hunan	28.25	13	Ningxia	20.32	29
Shanxi	27.68	14	Qinghai	17.65	30
Sichuan	27.16	15	Xizang	17.39	31
Henan	26.21	16	–	–	–

country, and ranked 19th in the country. More details can be seen in *table 3*.

3. Insufficient capacity for independent innovation is the intelligence constraint of Jiangxi economic and ecological integration development.

Since the reform and opening up, the independent innovation ability is growing, but has been hovering at a low level in Jiangxi. As shown in *2013 China's Regional Innovation Energy Report*, Jiangxi's regional innovation capacity ranked 20th in 2013, is lagging behind in the country. For more details, please see *table 4*.

4. The government performance appraisal emphasizing GDP indicators is the biggest constraint of Jiangxi economic and ecological integration development.

For more than 30 years of reform and opening up, Jiangxi province has made remarkable progress in its economic power. However, the provincial environmental protection administration mostly just applies sanctions to extreme serious polluting enterprises and their pollution behavior, which will not directly restrain economic growth. The problem comes from nothing more than overly pursuing economic growth, particularly the GDP growth appraisal.

III. The way of achieving Jiangxi economic and ecological integration development

To achieve the economic and ecological integration development, Jiangxi province needs to focus on the improvement of economic benefits and grasp the construction of the national ecological civilization demonst-

ration province, transforming ecological resources advantages into market competition advantages, seizing and developing new marketplaces and finally achieving Jiangxi's sustainable development.

(1) Insist on ecological priority and construct a harmonious and beautiful green ecological system

Firstly, it needs to vigorously implement the engineer operation of *Forest in Urban and Rural Areas, the Green Channel*, continuously improve the urban and rural greening level, and thus construct a green ecological barrier for the beautiful Jiangxi. Secondly, it needs to speed up the progress of ecological restoration, put more emphasis on the construction of river source conservation ecological function areas in Poyang Lake nature reserve and Dongjiangyuan, concentrate on the construction and protection of ecologically fragile function areas such as two provincial ecological function reserves of Zhang river source and Gong river source in the source area of Ganjiang river, Wuyi mountains and Luoxiao mountains etc., and strengthen the restoration and protection of wetland ecosystems such as Poyang Lake and Fairy Lake. Thirdly, it needs to strengthen the prevention and control of key areas, focus on the implementation of the environmental disposal engineering on five mines including Gannan rare earth mine concentrated area, Gannan tungsten mine concentrated area, copper and gold mine concentrated area of northeast Jiangxi, Jiurui copper and gold mine concentrated area and iron mine concentrated area of central Jiangxi, reinforce the control of air pollution, rural non-point source pollution and industrial point source pollution, and enforce the water pollution control of Wuhe and Dongjiang river, etc.

(2) Insist on green development and construct an efficient, low consumption ecological economic system

Ecological economy is the best juncture to promote economic and ecological integration. Firstly, it needs to develop strategic emerging industries, give impetus to strategic emerging industries scale and then form some new pillar industries to support the future development. Secondly, it needs to rebuild and upgrade traditional competitive industry, actively push its circular economy and rebuild traditional competitive industry as high-end, environmental protection and high-tech advanced manufacturing industry. Thirdly, it needs to give full play to green, patina and red tourism resource advantages and vigorously develop tourism. Fourthly, it needs to boost efficient ecological agriculture, promote agricultural standardized production and management, enforce to construct the production bases of pollution-free agricultural products, green food and organic food, and build a series of green ecological brands known at home and abroad.

(3) Insist on urbanization and expand development space of economic and ecological integration

It needs to take the human-oriented urbanization as the core to promote new-type urbanization construction, in which farmers

can easily come in, stay and live a better life. Firstly, it needs to strengthen the employment and entrepreneurship trainings for transferred labor force. It is necessary to establish a targeted rural transferred labor training system, thus educating laborers with knowledge, technology and expertise, improving their employability skills and increasing their labor remuneration. Secondly, it needs to deepen the reform of the household registration system. It is necessary to relax the condition of being settled in the town, transform rural population with legal and stable occupation and residence in the town into urban residents, and gradually phase out dual household registration system. Thirdly, it needs to perfect social security system. It is necessary to implement a policy of identical treatment that farmers who move to the city will be given the same access to employment, health care, housing and pension for the aged as people who already live there. Thus, it will guarantee that children of migrant workers can enjoy the rights to compulsory education and are treated equally as local urban students in some aspects like entrance requirements. Fourthly, it needs to improve the rural land transfer policy, having farmers be real citizens. The government should provide them information, policies and legal services and conduct them that the transfer of land use rights must occur on a compensated, voluntary basis and in accordance with the law, so as to free them from worries for daily necessities after moving to the town.

(4) Promote the innovation of government performance appraisal system and improve government performance evaluation system

According to the decision of the 3rd Plenary Session of the 18th CPC Central Committee, it needs to perfect and promote the evaluation system for measuring economic performance, rectify the bias for simply evaluating the government performance with economic growth rate, without merely focusing on GDP and its amount. It is necessary to put more emphasis on some indicators such as resource consumption, environmental damage, ecological benefits, excess production capacity, technological innovation, safety production and new debts etc. Meanwhile, it should establish different evaluation goals on ecological civilization construction by putting emphasis, limitation and prohibition on developing different areas, refine and do research on regional standards and form a goal and task evaluation system with shared responsibilities but not the same, and also enhance the formulation and implementation of specific supporting policy and measures.

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Information about the Author

Zhang Yihong – Assistant Researcher, Master, Institute of Industrial Economics, Jiangxi Academy of Social Sciences (Nanchang, China)

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Influence of Reproductive Behavior of the Population of the Komi Republic on the Functioning of the Institute of Parenthood*

Mariya Aleksandrovna SHISHKINA
Graduate Student
Institute of Socio-Economic and Energy Problems of the North Komi Science Centre, Ural Branch of the RAS
26, Kommunisticheskaya Street, Syktyvkar, 167982, Russian Federation,
shishkina@iespn.komisc.ru

Abstract. The paper studies the peculiarities of reproductive behavior of the Komi Republic residents. It describes the dynamics of quantitative indicators of fertility, analyzes the qualitative characteristics of reproductive behavior of the Komi Republic residents and determines the nature of their influence on the state of the institute of parenthood. The article gives the definitions of "reproductive behavior", "parenthood" and establishes their relationship. The aim of the research is to identify the processes and phenomena that characterize the qualitative aspects of reproductive behavior, which could have an adverse impact on the functioning of the institute of parenthood; the study also aims to develop recommendations for the minimization of the negative phenomena. To achieve the objectives of the study based on statistical data, the author analyzes the demographic processes and phenomena that are characteristic of the Komi Republic and that have an adverse effect on the functioning of the institute of parenthood, and makes an attempt to establish cause-effect relations between these phenomena. The study has found that the number of children born to teenage mothers is decreasing; however, the level of underage motherhood in Russia remains above the national average. The paper points out hypothetical reasons why underage girls become

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mothers. An adverse impact on the functioning of the institute of parenthood is provided by a significant number of incomplete, mainly maternal, families with underage children. Their share increases due to a high level of out-of-wedlock births, divorce rates of families in the early stages of marriage, significant mortality in working age men. The author raises the issues of paternal deprivation, division of biological and de facto parenthood, describes the phenomenon of the spreading of common-law marriages. The paper analyzes the potential of out-of-wedlock births based on the data on the proportion of births registered at the request of both parents or the mother only. The research findings show that, despite the improvement in the quantitative indicators of fertility in recent years, some qualitative characteristics of reproductive behavior of the population of the Komi Republic require optimization. Taking into account regional specifics, the author proposes the measures necessary to reduce the level and prevalence of demographic processes and phenomena that can negatively affect the functioning of the institute of parenthood.

Key words: reproductive behavior; underage motherhood; out-of-wedlock births; divorce rate; gender imbalance; institute of parenthood; demographic policy objectives.

Since the beginning of the 2000s the fertility processes in the Komi Republic have been characterized by the upward trend. On the one hand, the positive changes were caused by the improved age structure of childbearing populations. Numerous generations born in 1980–1986 and having relatively high reproductive standards are of active reproductive age nowadays. On the other hand, there was the following reason: stabilization of the socio-economic situation in the country, strongly contrasting with the crisis, which lasted during the 1990s. Since the mid 2000 we can observe another factor, crucial for improving the demographic situation in the country and in the Komi Republic. Within the framework of the state demographic policy it is introduction of birth rate incentives, that is provision of families with 2 children with maternity (family) capital certificates at the federal level and with 3 or more children – at the regional level since 2011.

The intensification of political initiatives led to significant changes in the calendar of births: the postponed childbearing intentions of women of older reproductive age were realized and the number of births among younger generations increased. As a result, in the republic in 2011 natural population decline was replaced by natural growth. Already in 2012 there were 14 births per 1,000 population, whereas under the Concept for demographic development of the Komi Republic the increase in the birth rate should be not less than the 13.2 births per 1,000 population by 2015 [10]. However, the main indicators of fertility in the Komi Republic are above the national average. So, in 2013 the total fertility rate amounted to 14.2‰, which was by 7.6% higher than the national average. The differentiation of the total fertility rate between the republican and all-Russian level has been also growing since 2011 in favor of the republic. In 2013 in Russia 1.71 children

accounted for 1 woman of reproductive age throughout the childbearing period, in Komi – 1.97, i.e., the difference amounted to 15.2%. Of course, the quantitative increase in the birth rate, its intensity and the realization of postponed childbearing intentions occupy an important place in solving the problem of preservation of the Northern territories.

However, the deeper look at fertility as a process of new generation reproduction involves the analysis of qualitative aspects of fertility. In a narrow sense reproductive behavior means "a system of actions, relations and mental states of a personality connected with the birth or non-birth of children of any order, in or out of wedlock" [14, pp. 384-386], in a broad sense – this concept includes "care of children, their upbringing and training and adults' acquisition of new social and psychological characteristics" [5, p. 369]. In other words, the letter definition of the term "reproductive behavior" focuses on parenthood as well. This reveals not only the importance of reproduction of new generations, expressed in the quantitative aspects of fertility, but also parents' involvement in the upbringing and development of children as their natural obligation after the child's birth.

In a broad sense parenting is a "complex social formation, a structural element of society, fulfilling specific functions and interacting with society as a whole and its individual elements. Parenthood can be described as a set of subjects, diverse, multifaceted relations, events, processes and social practices, which is formed and supported by society and constantly renewed in life activities of people adopting social norms and integrating into society. In the framework of parenthood they realize roles of fathers, mothers, parents, children, sons, daughters, etc., each role has its own social, legal and economic status" [15, p. 43].

According to E.M. Lushchenko and S.I. Nekrasov, "parenting is a complex social phenomenon, unique both for an individual and society as a whole. Being, on the one hand, a necessary condition for the reproduction of its future generations and, on the other hand, an element of the personality sphere, parenthood is one of the most important values of culture. In communication with parents, joint activity with them a child learns the first concepts about world, society, becomes familiar with human culture and acquires individual traits that gradually form a unique personality. Sociality is mainly presented by parents" [12, p. 124]. Becoming parents, spouses acquire a number of responsibilities in relation to it. The country's main document, regulating family relationships – the Family Code of the Russian Federation – stipulates that "parents have the right and the obligation to raise their children. Parents are responsible for the upbringing and the development of their children. They are obliged to care about health, physical, mental, spiritual and moral development of their children" [18].

Under broad definition of reproductive behavior, this article is focused on identifying

the processes and phenomena that characterize the qualitative aspects of reproductive behavior of the population (they can have an adverse affect on the operation of parenthood in the Komi Republic) and elaborating practical recommendations. The achievement of this goal requires implementation of the tasks, such as analysis of dynamics of the processes and phenomena that characterize the qualitative aspect of implementation of reproductive behavior of the population, determination of impact of these demographic processes on parenthood functioning and study of researchers' views and opinions on this topic.

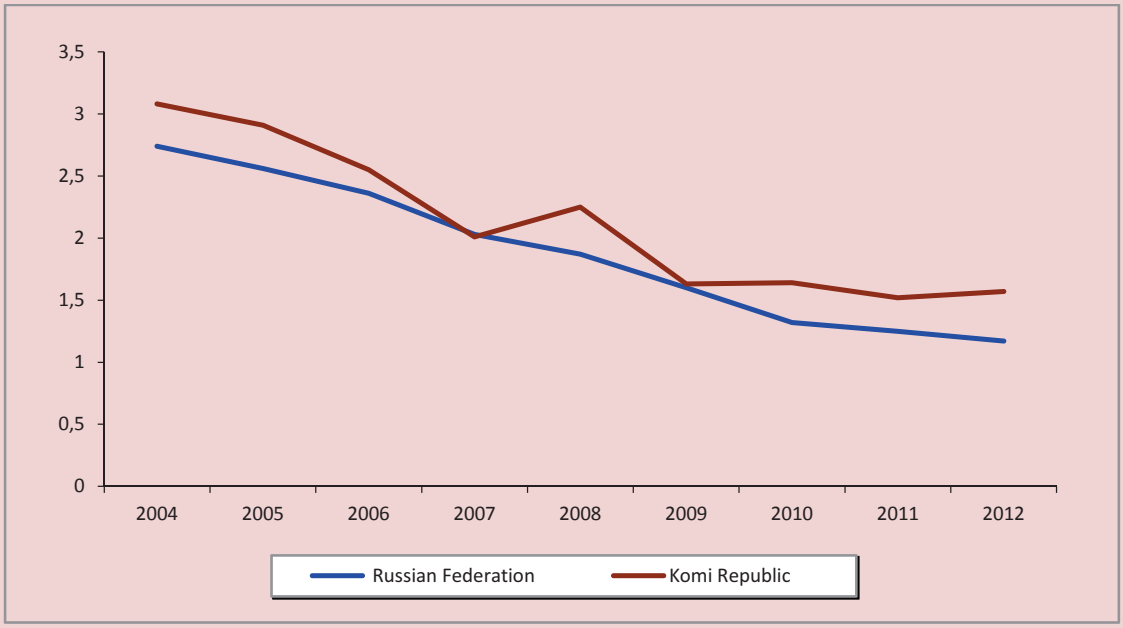
It is difficult to overestimate the relevance of such research, as the federal laws aimed at improving pro-family and demographic policy lay emphasis on the implementation of measures to "create conditions for family well-being, responsible parenting, raise parental authority in family and society and maintain social stability of every family" [9], "strengthen the institution of the family, revive and preserve spiritual and moral traditions of family relations" [11]. The Concept for RF state family policy up to 2025 proclaims the following traditional family values: value of marriage, understood as a union of a man and a woman, based on state registration in the civil registry office, aimed at creating a family, birth and (or) joint upbringing of children, based on care and respect for each other, children and parents, characterized by voluntariness, stability and joint life, associated with mutual desire of spouses and all family members for its preservation" [9].

The analysis of statistical data concerning the qualitative aspects of reproductive behavior indicates the presence of a number of problematic phenomena in this area. Thus, according to the available data, despite the recent positive trend in underage motherhood, pregnancy of girls under 17 years remains above the national average (*fig. 1*).

We can distinguish several hypothetical causes of childbearing among girls under age. First, pregnancy of girls of junior and senior teenage age is a result of irresponsible attitude of adults. Teenager's parents form the perception of childbearing as a step that requires full responsibility and awareness, primarily by their own example and conversations on the subject. If both components are satisfied, there is practically no risk of young motherhood. Second, early sexual activity among adolescents can be caused by the desire to experience feeling of love. The longing to be grown-up and loved can be very obtrusive in the mind of a teenage girl; in such circumstances the denial of sexual relations becomes difficult and even undesirable, as a minor girl shows interest in this aspect of human relationships. As a result, due to regular sexual activity an adolescent girl has welcome or unwanted, unplanned pregnancy.

Third, due to sexual permissiveness and emancipation promoted in the media early, sexual relationships are often perceived as an ideal, a norm among teenagers and young people, and the broadcasted slogan "to try everything as early as possible" often does not imply any responsibility for the

Figure 1. Share of live births to mothers aged 17 and younger
in the general structure of births in the Russian Federation and the Komi Republic,
2004–2012, in % to the total number of births



Calculated by: *Demograficheskii ezhegodnik Rossii. 2005–2013* [Demographic Yearbook of Russia. 2005–2013]. Available at: http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/publications/catalog/doc_1137674209312.

consequences. A number of authors also express the significance of mass media impact on the formation of norms of reproductive behavior of the younger generation. So, E.I. Zritneva notes that in modern conditions "mass media products has sexual content on purpose, forms casual attitude to sexual relations. As a result, every year thousands of underage girls give birth to children out of wedlock and join the ranks of incomplete, often dysfunctional families" [7, p. 150]. In the framework of the sociological analysis of the birth rate in Russia E.S. Smetanina writes that "children, especially teenagers, absorb values represented in the media on a subconscious level and perceive them as a norm. That is why parents, and to some extent the society should protect the younger generation from harmful effects" [20, p. 111]. It should be emphasized that, despite the list of hypothetical reasons that contribute to the dynamics of underage motherhood, it is necessary study this phenomenon more deeply, using sociological methods to obtain more complete knowledge about cause-effect relationships in this sphere.

Analyzing underage motherhood in terms of its impact on parenthood, we should

emphasize that young mothers, especially those who have become pregnant in early adolescence, often face many diverse problems. First, a young mother is challenged to provide a baby with all necessary things for its life and development. Now not only a young mother, but also her child is dependent either on her parents – if the child is born in the family, or the state – if the child was born to a teen without parental care. Second, a teenage girl, expecting a child, can experience psychological pressure and discomfort because of the misunderstanding and condemnation of her parents, peers and teachers. Thus, a girl can conceal her pregnancy or find it difficult to carry a child.

Third, the socialization aspect of young mothers is also at a low level. As a child, who has not passed all stages of her own socialization, an adolescent mother often does not have necessary social and intrapersonal experiences, knowledge, abilities and skills that she could inculcate in a growing child. Often a minor mother has to raise a child without a husband. The problem arises not due to the fact that about 80% of the pregnant girls are not married – this can be changed in the future, if a father recognizes a child, but due to the fact that babies born to young mothers are registered at the request of one mother. So, in 2013 these births accounted for 60% of the births to adolescents out of wedlock, or 46.4% of the total number of births to young mothers [6, p. 18]. However, despite the above reasons of young pregnancy and the factors affecting juvenile motherhood, the decision of a young girl to continue her pregnancy is very valuable. She can succeed in her role of a mother due to the help of her parents, close environment and public services, especially in the early stages after the baby is born.

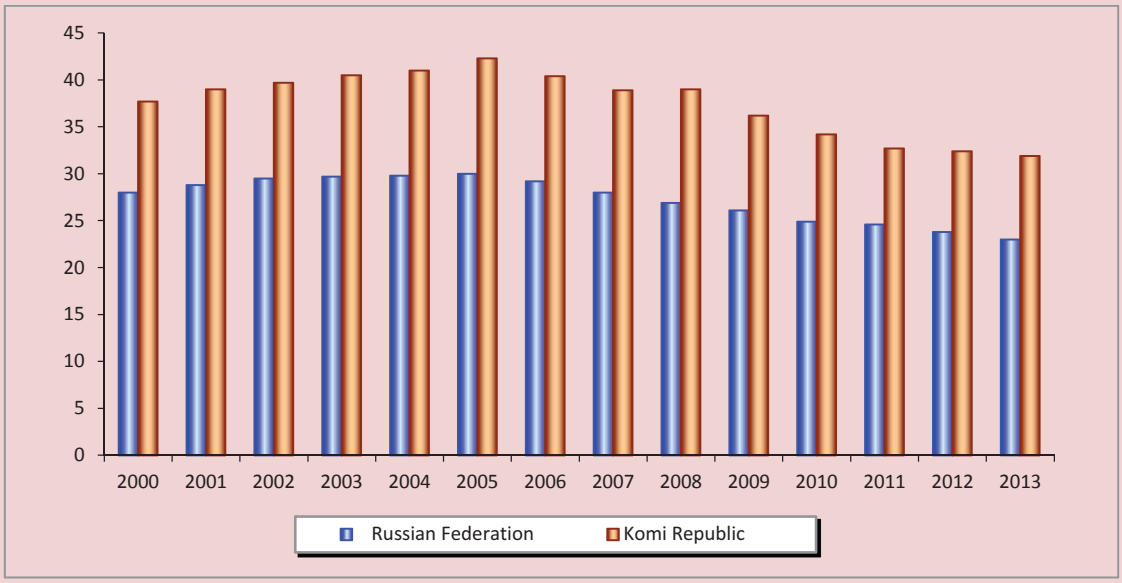
The significant proportion of single-parent, mostly maternal families in the overall family structure of the Komi Republic entails distribution of paternal deprivation among children and separation of biological and factual paternity. There are several causes of the spread of single-parent families in the Komi Republic. The first is a high illegitimate birth rate. The estimated dynamics of the illegitimate birth rate shows its growth since the first half of the 1980s. Only since the second half of the 2000s the rate has begun to decrease gradually. In comparison with the maximum value of the illegitimate birth rate, observed in the Komi Republic in 2005, by 2013 the share of illegitimate births had decreased from 42.3% to 31.9% in the republic as a whole, from 38.7 to 27.6% among urban population and from 53.5 to 42.9% among rural. The fact that the peak of illegitimate births occurred in the first half of the 2000s can be associated with the beginning of birth rate growth. The population, constraining the realization of their reproductive plans in the difficult 1990s, started active implementation of childbearing intentions, including out of wedlock.

However, positive developments in this indicator do not downgrade the relevance of the illegitimate birth problem in the republic,

especially if we compare its level with the all-Russian. Of course, this problem is critical not only in the Komi Republic, but in the country as a whole, if we consider it in the long-term dynamics. The share of non-marital births in the overall fertility structure both in Russia and the Komi Republic reached its maximum in 2005 in comparison with 1990: at the national level – by 2.05 times (from 14.6 to 30.0%) and in the Komi Republic – by 2.55 times (from 16.6 to 42.3%) [16, p. 12; 4; 17, p. 7; 2, p. 46]. Since 2005 this indicator had gradually decreasing and in 2013 the percentage of non-marital births in the Russian Federation amounted to 23.0, in the Komi Republic – 31.9. As you can see, despite the general downward trend, the problem of illegitimate births in the Komi Republic is acute in the 21st century: since the 2000s the illegitimate birth rate in the republic has been annually exceeding the national average by 1.4 times (*fig. 2*).

The 2002 and 2010 All-Russian census data also indicate a significant rise in the proportion of unregistered marriages during the intercensal period. So, if in 2002 of the total number of families only 14.1% had not registered their marriage officially, in 2010 this figure

Figure 2. Dynamics of the illegitimate birth share in the total birth structure in the Russian Federation and in the Komi Republic, in 2000–2013, %



Sources: *Demograficheskii ezhegodnik Rossii*. 2002–2014 [Demographic Yearbook of Russia. 2002–2014]. Available at: http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/publications/catalog/doc_1137674209312; Demograficheskii ezhegodnik Respubliki Komi. 2014: stat. sbornik [Demographic Yearbook of the Komi Republic. 2014: Statistics Collection]. *Komistat* [Regional Office of the Federal State Statistics Service of the Russian Federation in the Komi Republic]. Syktyvkar, 2014, p. 46.

increased to 19.8%; in other words, almost every fifth family in the republic did not register their marriage [8, p. 49]. The spread of non-marital unions in the Komi Republic was another factor hindering the achievement of the national level by illegitimate births indicator.

The analysis of the illegitimate birth structure by birth order shows that in the republic in 2013 of 3972 children born out of wedlock the first births (52%) and the second (34%) make up the majority. Women of active marriage and reproductive ages make the main contribution to the age structure of illegitimate births. So, in 2013 of all children born out of wedlock 27.0% were born to women aged 20–24, 29.2% – women aged 25–29, 19.1% – aged 30–34. E.S. Mitrofanova interprets the fact that the illegitimate birth structure is dominated by births of low order, realized mainly by women of active marriage and reproductive ages as follows: "Since the last decades of the 20th century accidental pregnancy has ceased to serve as a sufficient reason for marriage, and the attitude to premarital sexual behavior has changed [13, p. 522]. S.I. Golod also believes that "the consistency with which to a relatively greater extent the maternal model is reproduced, undoubtedly, points to the liberalization of public opinion towards a having a child out of wedlock" [1, p. 118].

In terms of the wide distribution of illegitimate births the identification of socializing potential of the families with these children through the analysis of the share of births registered by both parents or a single mother becomes extremely important. It is favorable that the Komi Republic in 1995–2013 was characterized by illegitimate births registered at the request of both parents. Their share is even higher than in Russia, where since the 1970s births registered at the request of a mother have been dominating. So, at the national level in 2012 of all the illegitimate births 47.5% were registered at the request of both parents, in 2013 – 50.2%. At the same time, in the Komi Republic the share of jointly registered illegitimate births amounted to 56.7% in 2012 and 59.2 % in 2013.

The prevalence of births registered by both parents, of course, is a positive characteristic of illegitimate births in the Komi Republic, as in this case a "father officially recognizes a child and assumes certain parental responsibilities. Most of these births can be interpreted either as ones in de facto marital unions with both parents, with some of them being registered later, or as ones in visiting families where a child will experience a father's influence to some degree during the process of his/her socialization" [17, p. 57]. In terms of socializing potential births registered at the request of a mother are most unfavorable. In the Komi Republic its rate had been characterized by the upward trend since 2003 and the downward trend since 2008, reaching 1621 birth or 13% of all births in 2013. The problem is that a father does not recognize a baby or he does not know about a child. However, the absence of a male parent

in child's life can either be eliminated if a woman marries, or extended throughout the entire period of child's personality formation if a woman lives alone.

The structure of family patterns in the Komi Republic is also being transformed due to the gender imbalance of the population structure caused by the high mortality of men of working age. At the beginning of 2014 in the Komi Republic 47.3% of men accounted for 52.8% of women. Until 2009 the preponderance of women over men started with the age group 40–44, since 2010 – the age group 35–39. Up to a certain age men prevail in the total population due to the predominance of boys in the birth structure, which in principle is a biologically determined fact. In 2000–2013 in the Komi Republic the number of boys born exceeded the number of girls born by 2–8%.

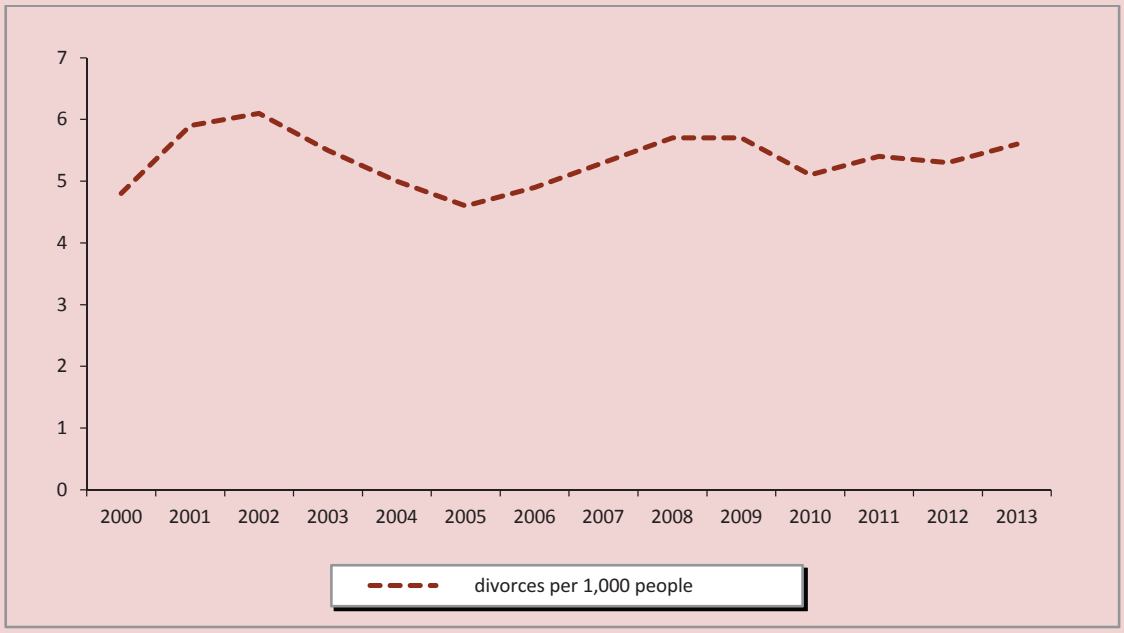
However, immediately after birth the share of boys begins to decrease steadily, since almost in all ages the male mortality rate is higher than the female. The indicators of mortality of men of working age are particularly significant; hence, the age group 35–39 experiences transformation of gender proportions. So, in 2013 "of all the deaths 35% accounted for people of working ages (2012 – 37%), of them 81% – for men" [6, p. 35]. This is, in general, coincides with the national situation: in 2013 the death rate of men of working age comprised 79.6%. In the same year, in the Komi Republic in comparison with Russia as a whole the structure of death causes has a "lower mortality rate from diseases of the circulatory system, respiratory system, neoplasms, certain infectious and parasitic diseases and a higher rate from diseases of the digestive system and external causes" [6, p. 35].

It should be noted that in the republic, unlike the country as a whole, only in 2011 the external causes naturally ranged the third in the structure of death causes. The abuse of alcohol and its surrogates in the Komi Republic still has a much more significant impact on the overall mortality rate than in Russia as a whole. In 2013 accidental alcohol poisoning in the structure of external death causes amounted to 17% in the republic and 6% in Russia [6, p. 36]. The fact that the significant share in the structure of mortality of working age men belongs to external causes, means that to reduce mortality in this population group it is necessary to promote a healthy lifestyle.

The share of incomplete families is increasing in the Komi Republic due to divorces. In general, in 2000–2013 their rate was fairly stable, except for a slight increase in one direction or another in different years (*fig. 3*).

However, the divorce rate structure by marriage duration is very alarming. People divorce at an early stage of family formation. In 2013, of all the dissolved marriages "42% accounted for marriages that had not survived the difficult period of family development (up to 5 years)" [6, p. 67]. Unfortunately, it is statistically impossible to measure the break-off of officially unregistered marriages.

Figure 3. Dynamics of the general divorce rate in the Komi Republic, 2000–2013



Source: Demograficheskii ezhegodnik Respubliki Komi. 2014: stat. sbornik [Demographic Yearbook of the Komi Republic. 2014: Statistics Collection]. *Komistat* [Regional Office of the Federal State Statistics Service of the Russian Federation in the Komi Republic]. Syktyvkar, 2014, p. 107.

Surely, their rate is higher than the rate of termination of officially registered ones. First, the very form of cohabitation without marriage initially involves a low level of personal responsibility for strengthening and preserving families. Second, it is quite simple to split up, as there is no necessity to apply for public services. It also contributes to the realization of a hasty decision to discontinue a relationship.

The collapse of almost half of couples in the period of family formation suggests that young people at the time of marriage are "not ready for serious relations, difficulties of an adaptation period in the marriage and construction of a lasting harmonious relationship, not focused on preservation of a family, its strengthening and resolution of conflicts through compromise. The psychologists say that today the youth has no will and ability to perform duties of a family person, is characterized by a poorly developed sense of responsibility, but a highly developed desire for getting pleasure. Hence, there is a hedonistic attitude to marriage when people expect it to be pleasant and split up easily when addressing problems" [7, p. 149]. Undoubtedly, early divorces affect the functioning of parenthood, as during the first years of family formation children

are born and after divorce they grow up in the family with one biological parent, in the overwhelming number of cases – with the mother.

Of course, in the future the functions of a father can be fulfilled by a non-biological father, as, according to the statistics, about one-third of the marriages recorded in the Komi Republic in recent years are remarriages. There is another widespread form of cohabitation, such as an unregistered union. However, remarriages also have some difficulties, namely accepting family members (including children from a previous marriage) by new spouses; transfer of past unsuccessful experience to a newly created relationship; formation of relations with children of a new spouse (usually by a stepfather), which are not always happy and confidential.

However, the value of having a father involved in the child's life is difficult to overestimate. In addition to the traditional role of a "breadwinner" and a family protector from external threats, a father, actively participating in the child's life, performs a number of important socio-psychological functions: formation of pro-social behavior in the child; ensuring the state of psychological comfort; discipline and social control; formation of responsibility and autonomy; effect on the child's sexual identity. The lack of a father involved in the life and development of the child has a negative impact both on the formation of his/her personality and attitudes in the sphere of demographic behavior. In conditions when in the family the child is brought up by a mother and the social institutions of upbringing and education also wear a female face, it often becomes very difficult to gain sufficient experience for the formation of a responsible attitude to parenthood.

Thus, we can conclude that a number of phenomena and processes characterizing qualitative aspects of reproductive behavior of the population in the Komi Republic have a negative impact on the functioning of parenthood and are detrimental to the preservation of traditional family values, enshrined at the state level in the Concept of family policy of the Russian Federation for the period up to 2025. Due to the high level of illegitimate births in the Komi Republic, especially in the rural areas, the gender imbalance in the population structure due to the high mortality of men of working age and the spread of divorces among couples in the early stages of family formation, children, as a rule, are forced to grow up with a single mother, experiencing paternally deprivation, or in full families, but not with a biological father. The family or social services should pay special attention to young mothers performing their parent roles. Their number in the Komi Republic exceeds the national average. The causes of pregnancy among adolescent girls require a separate study. The analysis of features of reproductive behavior of the republic's population shows that children cease to be a deterrent to family preservation, the importance of officially registered marriages is declining, as evidenced

by the fact that pregnancy is not always a sufficient basis for marriage, the gap between matrimonial and reproductive behavior is growing and the link between biological and actual parenthood is breaking.

The identified problems serve as an urge to step up measures of family and demographic policy, directed on their solution, such as.

1. Increasing contraceptive culture and literacy of sexual behavior of population to reduce risks of unwanted pregnancy. It possible to implement these measures by means of production of booklets on the topic and their distribution in places of concentration of the youth and among women from the social risk group; advising women on how to avoid an unwanted pregnancy in antenatal clinics.

2. Promoting a healthy lifestyle and preventing smoking, alcohol and drug abuse as factors negatively influencing the health of population and born generations and the mortality rate of men, including of able-bodied age, in the media, medical and educational institutions, enterprises, in the framework of social responsibility of managers.

3. Constant monitoring of the causes of irresponsible parenting, divorce rates of the population, births to unmarried and teenage mothers in the region to build a clearly defined and methodologically sound program, offering measures to address the identified problems and meeting the challenges of modern time and taking into account regional specificities.

4. Raising the share of TV programs with the participation of specialists-theorists, researchers of the institution of the family, other professionals interacting with families and strong families, ready to share information about traditional family values, parental functions and importance to involve both family members in the education of their children, so that the letter can develop and socialize successfully.

5. Expanding the practice of wide-scale cultural and creative activities to increase significance of family values and parenthood. There is a vivid example of this direction – the all-Russian short film festival "Family of Russia: conducted in Russia since 2004. The great attention is paid there to "poetization of the institution of the family; strengthening of traditional family values; creation of an online resource of films and photographs devoted to family wellbeing and parent success" [19]. Such events should be held throughout Russia and the short films-participants of the festival – broadcasted on central Russian TV channels, in educational institutions, analyzed and discussed among young people; psychologists (specialists in social work) should be invited to such meetings.

6. Since the Komi Republic is a subject characterized by a large number of institutions of secondary and higher professional education, the conduct of annual events aimed at discussing the functioning of the institution of the family and parenthood among the youth can become a vector of this direction implementation (for example, the Forum "Conscious parenthood").

7. Carrying out guidance work with residents on strengthening the conviction that

marital conflicts and crises are part of the family relationship development, but not a reason for divorce (except for extreme cases: alcoholism, drug addiction of one of the spouses, child abuse, various forms of discrimination and violence).

8. Dissemination of the information among young people that when married a mother and her child are to the greatest degree protected by the state.

9. Expanding the practice of letters of gratitude for merits in the upbringing of children: for good grades, creative achievements, development of various forms of family leisure, etc. in pre-school, school and higher educational institutions, creative, children and work teams.

10. Although the process to promote traditional family values is actively supported by the state and the media, the family certainly remains an initial institute to transfer values. The family should teach children the basic purpose of a woman (birth and upbringing of children, maintaining the home) and a man (be responsible for his family, morally strong in life circumstances, be able to make decisions that will have the best impact on the lives of families and children).

Information about the Author

Mariya Aleksandrovna Shishkina – Graduate Student, Federal State-Financed Scientific Institution the Institute of Socio-Economic and Energy Problems of the North Komi Science Centre, Ural Branch of the Russian Academy of Sciences (26, Kommunisticheskaya Street, Syktyvkar, 167982, Russian Federation, shishkina@iespn.komisc.ru)

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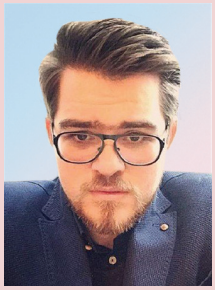
Comparative Analysis of Regional Differences in Healthcare, Environment, and Public Health



Petr Aleksandrovich LAVRINENKO
Institute of Economic Forecasting, RAS
47, Nakhimovsky Avenue, Moscow, 117418, Russian Federation, petr@lavr.cc

Dar'ya Aleksandrovna RYBAKOVA
Master's Degree Student
International Institute of Economics and Law; Journal "Roznichnye Finansy"
1Gk2, Minskaya Street, office 22, Moscow, 121108, Russian Federation,
Rybakova.daria@gmail.com

Abstract. The article compares Russia's regions on the basis of the current state of affairs in healthcare, environment and public health. The comparison was performed using econometric techniques, namely, cluster analysis. The authors used the statistics obtained from Rosstat's official publications as initial data. The first parameter – "public health" – uses indicators of life expectancy and the total morbidity rate due to all causes. The second parameter – "environment" – analyzes the indicators of emissions of harmful substances into the atmosphere and discharge of contaminated water into waste water. The sphere of healthcare was analyzed with the help of four indicators such as the number of beds per 100,000 population, the number of hospitals, the number of doctors per 10,000 population and the capacity of hospitals. After the analysis, the authors created a scatter plot for each group of indicators, and compiled a table that shows the structural and qualitative developments in the regions during the 2000s. The main research findings are as follows: in 2010 there was a 90% decrease in the number of regions that in 2000 were included in the cluster with the "poor level of development" of people's health, and the number of regions with the "low level of development" declined by 63%. Most of them moved to the cluster of regions with the "medium

level of development". Many regions (70%) belong to the cluster with the "high level of development" of environmental security and have a cleaner environment in comparison with other regions. Regarding the healthcare sector, its dynamics is bipolar in nature, as in 10 years the number of regions in the clusters with the "good" and "bad" level of development reduced 6–7-fold; and the clusters with the "high" and "low" level of development increased by 2.3 and 1.5 times, respectively.

Key words: health care, public health, environment, human capital, cluster analysis, regional analysis, econometric analysis, regional development.

Modern science considers the quality of human capital to be one of the main driving forces of competitiveness of regional economy. This factor depends on many other parameters: the level of education, social welfare, average wages, and so on[1]. The present paper studies regional characteristics of the following parameters of human capital: physical health, healthcare system, and environmental situation.

It should be noted that the improvement of the public health situation and environmental conservation is a goal of various government programs, for which large funds are allocated. At the same time, there is a need to assess the effectiveness of the use of public funds allocated to healthcare and environmental protection. Effectiveness analysis helps to relate any changes in the expenditures on healthcare and environment to the changes in public health. This analysis can be performed in different ways. One of them is to carry out public opinion surveys on a regular basis. In the framework of the surveys, the respondents evaluate the results of various activities in the social sphere using, for instance, a five-point system with the ratings ranging from "very poor" to "very good". This method has not only significant advantages, but also certain significant drawbacks. The high level of information noise is a disadvantage of this method. Information noise in this case denotes the fact that people usually cannot abstract away from emotions, from the influence of the media or public opinion, etc., and give an objective assessment of the change.

That is why it is so important to create an effective econometric assessment model based on independent statistical data. It was decided to use cluster analysis at the first stage of the study. The method of k-means was chosen for this purpose. The essence of this method consists in arranging the m-number of available observations into the k-number of clusters, with each observation belonging to the cluster to which center (centroid) it is closest. This approach helps classify all of the Russian regions according to their degree of development into three groups: public health, the level of environment and the level of healthcare; it also helps identify "leaders" and "outsiders" and shows the scale of differentiation of the regions. The identification of "outsiders" will help the government to provide targeted support more accurately.

[1] The "Human capital index" of the World Economic Forum, for example, uses parameters such as the quality and accessibility of education for citizens, physical and psychological well-being of the people, employment opportunities and the provision of employment for the population, and also the level of infrastructure development in the country. http://reports.weforum.org/human-capital-index-2013/

The number of gradations of development was determined by creating scatter plots, which used the data on all the regions of Russia for 10 years (thus, the scatter plots contain more than 800 points). The axes were represented by the initial main indicators for the first two groups (health and environment) and the main components for the third group (healthcare). The graphs showed that the regions did not form any specific groups. Therefore, in order to make a better structuring of the regions, five gradations were selected. Such gradations are relative, it means that the best region is the best in relation to less developed ones, but not in general. These gradations had the following characteristics:

– high level of development;

– good level of development (above average);

– average level of development;

– poor level of development (below average);

– low level of development.

A classification based on these gradations makes it possible to compare all the regions not only among themselves but also each one with itself, in other words, the analysis helps understand how the level of environmental development correlates with the level of health. Furthermore, the dynamics of changes in the parameters (from 2000 to 2010 – for group 1, from 2001 to 2011 – for group 2, and from 1997 to 2011 – for group 3) was analyzed.

The simulation using the statistical package Stata produces a column, in which each region in each year is assigned its own cluster number (from 1 to 5). These numbers are not increasing or decreasing, they simply unite the regions under a single cluster name (a digit – in this case). In the future it is determined what number the appropriate gradation belongs to out of the previously proposed ones.

The above statistics are taken from official publications of Rosstat. For those years for which data were missing, a formal request was made to Rosstat.

The indicators such as life expectancy and general morbidity rate due to all causes were used for the first parameter – "public health". The emissions of harmful substances into the atmosphere and the discharge of contaminated water in waste water were analyzed for the second parameter – "environment". The third parameter consists of four indicators: the number of beds per 100,000 population, the number of hospitals, the number of doctors per 10,000 population and the capacity of hospitals.

These very indicators were chosen because of the problem of data availability for the 2000–2005 period. The data for all the years under review are available only for the indicators chosen for the purposes of the present research.

For obvious reasons, the basic data are not given in the article, since they represent huge tables. It is necessary to do the initial analysis prior to the econometric analysis. It is a visual analysis of the statistics.

1. *Life expectancy (LE).* In the first place it is necessary to point out the positive dynamics of growth. For the past 12 years (1999–2011), LE in Russia grew by almost four years – from 66 to 70. In some regions of the country the growth was somewhat greater: for example, the index increased by 6 years in Moscow, and in the republics of Ingushetia and Tyva. The lowest growth is observed

in the Far Eastern Federal District, where, LE grew by 2.58 years (and in Chukotka Autonomous Okrug it even dropped by 0.02 years). The highest growth rate is observed in the Northwestern Federal District, where it was 4.6 years. Ingushetia has the maximum absolute value of 76.3 years, and the minimum value is 61.3 years (surprisingly, it is observed in Tuva, which demonstrated the greatest growth – from 55 to 61.39 years).

2. *Morbidity rate in the regions of the Russian Federation*. This indicator is calculated per 1,000 population. During 16 years there was a 16% increase in the number of registered patients with a diagnosis set for the first time in their life. There can be several reasons for such growth. First, it can be that population morbidity just increases due to various reasons (or the general aging of the population). Second, it may be caused by the growth of public trust in the healthcare system. If earlier people preferred self-treatment, then nowadays more and more patients choose qualified professional medical aid.

3. *Emissions of atmospheric pollutants from stationary sources*. In Russia as a whole, the volume of harmful emissions decreased by 10%. However, we can observe the opposite trend in its regions. In some regions the volume decreased by 50–60%, sometimes – by 70%. In others the increase amounted to 100–130%. The regions of the Ural Federal Districts are leaders both in absolute values and in the rate of growth (which is obviously linked to the development of the processing industry in this area). Abrupt changes in different regions may be explained by the shutdown or relocation of enterprises, changes in the conditions of counting, etc.

4. *Emission of polluted wastewater into surface water bodies*. In general on the territory of the Russian Federation, emissions of contaminated water in surface reservoirs reduced by 35%. There are no regions in which a significant growth is observed. The statistical data actually shows positive trends in this indicator. The reasons may lie in the improvement of the technological process of industrial production, and the strengthening of legislative measures.

5. *Number of hospital beds per 10,000 population*. The number of hospital beds decreased by 25% in all the regions of the Russian Federation. The indicator demonstrates positive dynamics only in one region – the Murmansk Oblast (the growth amounted to 15%). Taking into account the increase in the capacity of hospitals and the growth of investments in healthcare, we can assume that the decrease in the number of beds was caused by the optimization of the system and by improving the quality of healthcare.

6. *Number of doctors per 10,000 population*. The number of doctors nationwide increased by 10% in 17 years. A positive trend in this respect is observed practically in all regions. Such a picture seems logical given the growth of investment in healthcare, growth of average wages, reduction in the number of hospitals and increase in the capacity of hospitals.

7. *Number of hospitals*. Number of hospitals in Russia decreased by 49% in 17 years. It is difficult to judge about the reasons for such dynamics. There is a program for "modernization of the healthcare system", which led to this result.

8. *Capacity of medical outpatient clinics per 10,000 population*. The capacity of hospitals

increased by 12% on average for all the regions of the Russian Federation. Most likely this is a consequence of the reduction in the number of hospitals; and since the growth rate of morbidity was 16% in the same period, the number of visits to the remaining hospitals is growing.

Indicator of the level of public health

This indicator is based on the indicators of life expectancy *(le_uni)* and total morbidity due to all causes *(mp_uni)*[2].

The following results were obtained after analyzing the scatter plot (*fig. 1*).

The most pronounced outsiders are Nenets Autonomous Okrug (number 25 corresponds to the region number in the source statistical data), Tuva Republic (72), Chukotka Autonomous Okrug (91) and, to a lesser extent, the Jewish Autonomous Oblast (90) and Zabaikalsky Krai (75).

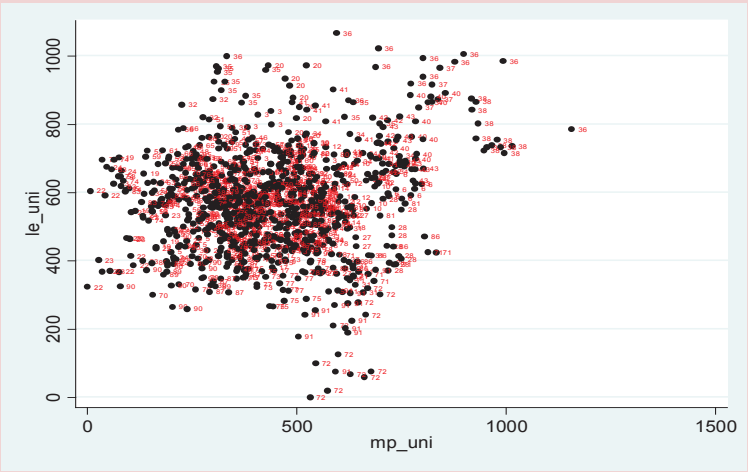
Alcohol addiction, the low levels of healthcare and social security are possible reasons for such a low life expectancy and high morbidity in the regions-outsiders.

The leaders in the level of people's health are as follows: the Republic of Ingushetia (36), the city of Moscow (20), the Chechen Republic (37), the Karachay-Cherkess Republic (40), the Republic of North Ossetia-Alania (41), and the Kabardino-Balkar Republic (38).

This circumstance reflects the fact that people who live in the Caucasian republics usually fall ill more seldom and live longer in comparison with the inhabitants of other regions of Russia.

The full results of the cluster analysis are shown *in table 1*.

Figure 1. Scatter plot of the regions by indicators of life expectancy (le_uni) and level of total morbidity (mp_uni)



[2] Since these two indicators have different directions od growth (the larger the value of the variable le, the better; and the more the value of the variable mp, the worse), first it was necessary to unify these variables. For more information, see: Aivazyan S.A. Analiz kachestva i obraza zhizni naseleniya. Ekonometricheskii podkhod [Analysis of the Quality of Life and the Lifestyle of the Population. Econometric Approach].

Table 1. Cluster analysis of the Russian regions according to the integrated indicator of health level

Region/year	2000	2010	Region/year	2000	2010
Voronezh Oblast	high	high	Belgorod Oblast	good	good
Kursk Oblast	good	high	Kaliningrad Oblast	poor	medium
City of Moscow	medium	high	Murmansk Oblast	low	medium
Leningrad Oblast	poor	high	City of Saint Petersburg	good	medium
Chechen Republic	-	high	Republic of Dagestan	high	medium
Kabardino-Balkar Republic	high	high	Vologda Oblast	low	medium
Karachay-Cherkess Republic	high	high	Rostov Oblast	good	medium
Republic of South Ossetia-Alania	high	high	Republic of Bashkortostan	medium	medium
Krasnodar Krai	high	high	Mari El Republic	low	medium
Stavropol Krai	high	high	Republic of Tatarstan	good	medium
Republic Ingushetia	high	high	Udmurtia Republic	medium	medium
Kaluga Oblast	low	good	Chuvash Republic	good	medium
Lipetsk Oblast	good	good	Kirov Oblast	good	medium
Moscow Oblast	good	good	Nizhny Novgorod Oblast	good	medium
Ryazan Oblast	good	good	Orenburg Oblast	low	medium
Smolensk Oblast	poor	good	Perm Oblast	low	medium
Tambov Oblast	good	good	Samara Oblast	low	medium
Tula Oblast	poor	good	Ulyanovsk Oblast	good	medium
Pskov Oblast	poor	good	Kurgan Oblast	low	medium
Republic of Adygea	high	good	Tyumen Oblast	medium	medium
Republic of Kalmykia	good	good	Khanty-Mansi Autonomous Okrug – Yugra	medium	medium
Astrakhan Oblast	good	good	Chelyabinsk Oblast	low	medium
Volgograd Oblast	good	good	Altai Republic	low	medium
Republic of Mordovia	good	good	Republic of Khakassia	poor	medium
Penza Oblast	good	good	Altai Krai	medium	medium
Saratov Oblast	good	good	Krasnoyarsk Krai	low	medium
Sverdlovsk Oblast	poor	good	Novosibirsk Oblast	good	medium
Republic of Buryatia	poor	good	Republic of Sakha (Yakutia)	low	medium
Kemerovo Oblast	poor	good	Tyva Republic	poor	poor
Omsk Oblast	good	good	Chukotka Autonomous Okrug	poor	poor
Tomsk Oblast	poor	good	Novgorod Oblast	low	low
Kamchatka Krai	poor	good	Zabaykalsky Krai	poor	low
Primorsky Krai	good	good	Irkutsk Oblast	poor	low
Khabarovsk Krai	poor	good	Amur Oblast	poor	low
Bryansk Oblast	good	medium	Sakhalin Oblast	low	low
Vladimir Oblast	low	medium	Jewish Autonomous Oblast	low	low
Ivanovo Oblast	low	medium	Nenets Autonomous Okrug		
Kostroma Oblast	poor	medium	Yamalo-Nenets Autonomous Okrug		
Oryol Oblast	low	medium	Magadan Oblast	low	
Tver Oblast	poor	medium	**High (number of regions)**	**9**	**10 (grew by 11%)**
Yaroslavl Oblast	medium	medium	**Good (number of regions)**	**23**	**24 (grew by 4%)**
Republic of Karelia	low	medium	**Medium (number of regions)**	**7**	**38 (grew 5-fold)**
Komi Republic	low	medium	**Poor (number of regions)**	**19**	**2 (decreased by 90%)**
Arkhangelsk Oblast	low	medium	**Low (number of regions)**	**22**	**6 (decreased by 63%)**

The analysis shows that the dynamics of the situation is clearly positive. In 2010, the number of regions that in 2000 were included in the cluster with the "poor level of development" decreased by 90%, and the number of regions with the "low level of development" decreased by 63%. Most of them moved to the cluster of regions with the "medium level of development".

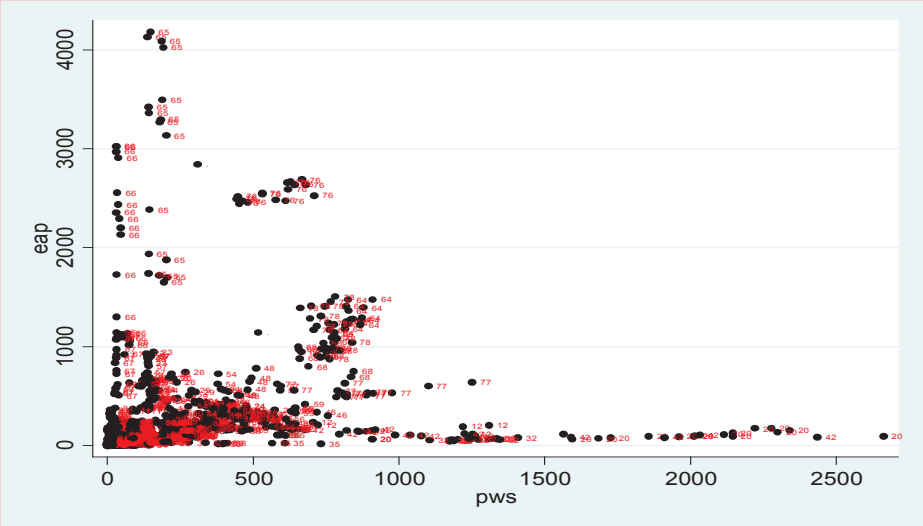
Indicator of the level of ecological cleanliness of the region

The value of this indicator includes the statistics on the emissions of harmful substances into the atmosphere and emissions of contaminated water in waste water[3].

The analysis of these data has revealed that the situation concerning environmental security is the worst in the following regions: Krasnoyarsk Krai (76), the Tumen Oblast (65), Khanty-Mansi Autonomous Okrug (66), the Irkutsk Oblast (77), Krasnodar Krai (42), the Sverdlovsk Oblast (64). The environmental situation is more favorable in the rest of the regions *(fig. 2 and tab. 2)*.

Many regions (70%) belong to the cluster with the "high level of development" of environmental security and they are characterized by a cleaner environment compared with other regions. Primarily this is due to the fact that the majority of Russia's large industrial enterprises are concentrated in the regions-outsiders mentioned above. And many regions do not have a developed industrial sector at all. Only 9 out of 83 regions were included in the clusters with the level of development lower than good. The dynamics of change in 10 years was very moderate, because the manufacturing specialization of regions as a whole remains what it was.

Figure 2. Scatter plot of the regions in terms of emissions of contaminated water (pws) and polluted air (eap)



[3] In the course of the analysis of the panel data, these very indicators showed the greatest impact on the environmental situation among all the indicators of environmental condition.

Table 2. Cluster analysis of the Russian regions according to the index of environmental cleanliness

Region/year	2000	2010	Region/year	2000	2010
Belgorod Oblast	high	high	Republic of Khakassia	high	high
Bryansk Oblast	high	high	Altai Krai	high	high
Vladimir Oblast	high	high	Zabaykalsky Krai	high	high
Voronezh Oblast	high	high	Novosibirsk Oblast	high	high
Ivanovo Oblast	high	high	Omsk Oblast	high	high
Kaluga Oblast	high	high	Tomsk Oblast	high	high
Kostroma Oblast	high	high	Republic of Sakha (Yakutia)	high	high
Kursk Oblast	high	high	Kamchatka Krai	high	high
Lipetsk Oblast	good	high	Khabarovsk Krai	high	high
Oryol Oblast	high	high	Amur Oblast	high	high
Ryazan Oblast	high	high	Magadan Oblast	high	high
Smolensk Oblast	high	high	Sakhalin Oblast	high	high
Tambov Oblast	high	high	Jewish Autonomous Oblast	high	high
Tver Oblast	high	high	Chukotka Autonomous Okrug	high	high
Tula Oblast	good	high	Komi Republic	good	good
Yaroslavl Oblast	high	high	Arkhangelsk Oblast	good	good
Republic of Karelia	high	high	Vologda Oblast	good	good
Nenets Autonomous Okrug	high	high	Leningrad Oblast	good	good
Kaliningrad Oblast	high	high	Murmansk Oblast	good	good
Novgorod Oblast	high	high	Krasnodar Krai	medium	good
Pskov Oblast	high	high	Republic of Bashkortostan	good	good
Republic Adygea	high	high	Republic of Tatarstan	good	good
Republic Dagestan	high	high	Kirov Oblast	good	good
Republic Ingushetia	high	high	Orenburg Oblast	good	good
Chechen Republic	high	high	Penza Oblast	good	good
Kabardino-Balkar Republic	high	high	Samara Oblast	good	good
Republic Kalmykia	high	high	Irkutsk Oblast	good	good
Karachay-Cherkess Republic	high	high	Primorsky Krai	good	good
Stavropol Krai	high	high	City of Moscow	medium	good
Astrakhan Oblast	high	high	Moscow Oblast	good	medium
Volgograd Oblast	good	high	City of Saint Petersburg	medium	medium
Rostov Oblast	good	high	Sverdlovsk Oblast	poor	poor
Mari El Republic	high	high	Yamalo-Nenets Autonomous Okrug	good	poor
Republic of Mordovia	high	high	Chelyabinsk Oblast	poor	poor
Udmurtia Republic	high	high	Kemerovo Oblast	poor	poor
Chuvash Republic	high	high	Tyumen Oblast	poor	low
Nizhny Novgorod Oblast	high	high	Khanty-Mansi Autonomous Okrug – Yugra	poor	low
Perm Oblast	high	high	Krasnoyarsk Krai	low	low
Saratov Oblast	high	high	Republic of South Ossetia-Alania		
Ulyanovsk Oblast	high	high	**High (number of regions)**	**54**	**58 (grew by 7%)**
Kurgan Oblast	high	high	**Good (number of regions)**	**19**	**15 (decreased by 21%)**
Republic of Altai	high	high	**Medium (number of regions)**	**3**	**2 (decreased by 33%)**
Republic Buryatia	high	high	**Poor (number of regions)**	**5**	**4 (decreased by 20%)**
Tyva Republic	high	high	**Low (number of regions)**	**1**	**3 (grew 3-fold)**

Indicator of the level of healthcare

This indicator is constructed on the basis of four indicators: the number of hospital beds per 100,000 population, the number of hospitals, the number of doctors per 10,000 population and the capacity of hospitals. We did not include the monetary indicators such as average wages and the investment in the healthcare industry because they do not show the current level of development, correlate strongly with other indicators and make a lot of noise when included in the indicator, that is why the clustering process does not distribute the indicators adequately.

In this case, we used the principal component method (PCM) in order to construct the two principal components that afterwards were used for creating a scatter plot and clustering the regions.

The city of Moscow (20), Chukotka Autonomous Okrug (91), the Republic of Sakha (83), Saint Petersburg (32), the Novosibirsk Oblast (79), the Amur Oblast (87), Krasnoyarsk Krai (76) were the leaders in providing the population with healthcare services.

These results need to be commented on. The Republic of Sakha and Chukotka Autonomous Okrug are among the leading regions by the level of development of healthcare; earlier in the course of our analysis, these regions were included in the clusters with the low level of development of public health. This is a purely statistical phenomenon that is explained, on the one hand, by the small population of these regions, and, on the other hand, by the method of calculation of healthcare indicators (per 100,000 people).

Figure 3. Scatter plot of the regions in terms of the number of hospital beds per 100,000 population, the number of hospitals, the number of doctors per 10,000 population and the capacity of hospitals

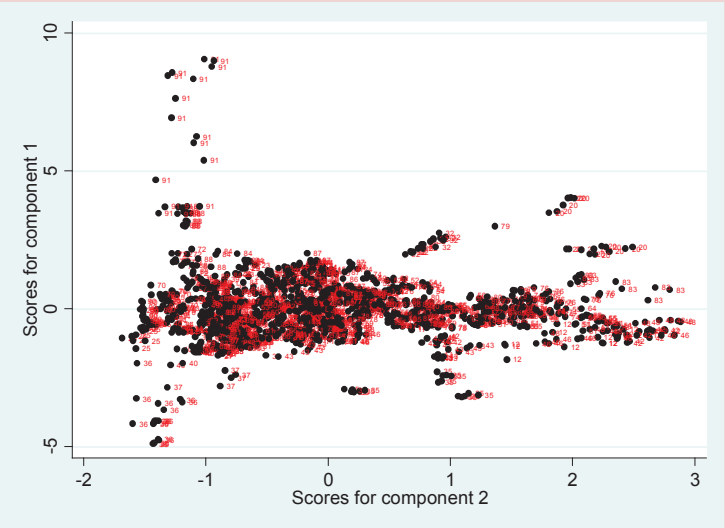


Table 3. Cluster analysis in terms of the level of healthcare development

Region/year	1997	2011	Region/year	1997	2011
Vladimir Oblast	medium	high	Novosibirsk Oblast	good	medium
Lipetsk Oblast	medium	high	Omsk Oblast	poor	medium
Yaroslavl Oblast	medium	high	Primorsky Krai	poor	medium
Komi Republic	medium	high	Khabarovsk Krai	medium	medium
Arkhangelsk Oblast	medium	high	Republic Dagestan	poor	poor
Vologda Oblast	medium	high	Krasnodar Krai	good	poor
Murmansk Oblast	low	high	Belgorod Oblast	medium	low
Novgorod Oblast	low	high	Bryansk Oblast	medium	low
City of Saint Petersburg	high	high	Ivanovo Oblast	poor	low
Astrakhan Oblast	medium	high	Kaluga Oblast	low	low
Mari El Republic	medium	high	Kostroma Oblast	low	low
Chuvash Republic	medium	high	Kursk Oblast	medium	low
Republic of Altai	high	high	Oryol Oblast	low	low
Tyva Republic	high	high	Ryazan Oblast	medium	low
Republic Khakassia	high	high	Smolensk Oblast	medium	low
Republic of Sakha (Yakutia)	good	high	Tambov Oblast	poor	low
Kamchatka Krai	low	high	Republic of Karelia	low	low
Amur Oblast	medium	high	Nenets Autonomous Okrug	low	low
Magadan Oblast	high	high	Kaliningrad Oblast	low	low
Chukotka Autonomous Okrug	high	high	Leningrad Oblast	medium	low
Moscow Oblast	good	good	Pskov Oblast	low	low
City of Moscow	good	good	Republic Adygea	low	low
Chelyabinsk Oblast	good	good	Republic Ingushetia	low	low
Voronezh Oblast	poor	medium	Chechen Republic		low
Tver Oblast	poor	medium	Kabardino-Balkar Republic	low	low
Tula Oblast	medium	medium	Republic Kalmykia	low	low
Volgograd Oblast	good	medium	Karachay-Cherkess Republic	low	low
Rostov Oblast	good	medium	Republic of South Ossetia-Alania	low	low
Republic of Bashkortostan	good	medium	Stavropol Krai	poor	low
Republic of Tatarstan	good	medium	Republic Mordovia	low	low
Udmurtia Republic	medium	medium	Perm Oblast	poor	low
Kirov Oblast	poor	medium	Ulyanovsk Oblast	medium	low
Nizhny Novgorod Oblast	good	medium	Kurgan Oblast	low	low
Orenburg Oblast	good	medium	Yamalo-Nenets Autonomous Okrug	low	low
Penza Oblast	poor	medium	Republic Buryatia	poor	low
Samara Oblast	medium	medium	ZabaykalskyKrai	poor	low
Saratov Oblast	poor	medium	Tomsk Oblast	low	low
Sverdlovsk Oblast	good	medium	Sakhalin Oblast	low	low
TyumenOblast	good	medium	Jewish Autonomous Oblast	low	low
Khanty-Mansi Autonomous Okrug – Yugra	medium	medium	High (number of regions)	6	20 (grew by 230%)
Of Altai Krai	good	medium	Good (number of regions)	17	3 (decreased by 80%)
Krasnoyarsk Krai	good	medium	Medium (number of regions)	22	25 (grew by 13%)
Irkutsk Oblast	good	medium	Poor (number of regions)	15	2 (decreased by 86%)
Kemerovo Oblast	poor	medium	Low (number of regions)	22	33 (grew by 50%)

It is noteworthy that the level of healthcare development in the Republic of Ingushetia is low (36). It looks very paradoxical, given the fact that life expectancy in Ingushetia is one of the highest in Russia. Other regions with a low level of public health include the Chechen Republic (37), the Karachay-Cherkess Republic (40), and Nenets Autonomous Okrug (25).

The analysis of the healthcare situation in the Russian regions allows the following conclusions to be made. First, it is necessary to note the ambiguous dynamics of the situation. In 10 years there was a 6–7-fold reduction in the number of the regions in the clusters with the "good" and "poor" level of development; at the same time, the clusters with the "high" and "low" levels of development increased by 2.3 and 1.5 times, respectively. The uniform dynamics in Russia is absent, because the growth is bipolar. Let us explain the possible reasons for such bipolar dynamics. One of the probable reasons is the closing of many hospitals in some regions and the establishment of health centers in others. The second possible reason lies in the method of calculating healthcare indicators. Since they are calculated per 100,000 people, then as the quantitative composition of the population changes, so do these indicators.

Conclusions

According to the analysis, the level of health in Russia is growing, and the level of morbidity remains virtually stable. The environmental situation is also stable. The allocation of significant funds to the development of medicine has produced positive results. Life expectancy – the main indicator of efficiency of investments in healthcare – is increasing. One of the biggest healthcare challenges is the increase in the regions that are not covered by medical care, because the centralization of this sector is convenient and favorable for the budget, but extremely unfavorable for the population.

Information about the Authors

Petr Aleksandrovich Lavrinenko – Junior Research Associate, Institute of Economic Forecasting, RAS (47, Nakhimovsky Avenue, Moscow, 117418, Russian Federation, petr@lavr.cc)

Dar'ya Aleksandrovna Rybakova – Master's Degree Student, International Institute of Economics and Law; Department Head, Journal "Roznichnye Finansy" (1Gk2, Minskaya Street, office 22, Moscow, 121108, Russian Federation, Rybakova.daria@gmail.com)

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Scientific Life: Rresearch in Socio-Cultural Modernization of Russian Regions*

Mariya Aleksandrovna
LASTOCHKINA
Ph.D. in Economics
Institute of Socio-Economic Development of Territories of RAS
56A, Gorky Street, Vologda, 160014, Russian Federation, mashkop@mail.ru

Abstract. The article makes an attempt to concisely and constructively describe the research under the program "Socio-cultural evolution of Russia and its regions" (initiated by the Centre for the Study of Social and Cultural Change at the Institute of Philosophy RAS, 2005), carried out in the Vologda Oblast since 2008. The sociological monitoring results correspond to the data of the RF modernization processes study. The article describes the experience and work results of the research teams from 25 regions of the country. The big contribution to the elaboration and development of tools was made by RAS Corresponding Member Nikolai Ivanovich Lapin. The developed methodology underlined the large-scale sociological research conducted for more than 10 years. The current program, annually mastering new aspects of knowledge of modern society, demonstrates the effectiveness of the socio-cultural approach to the study of the dynamics of socio-economic development of the society.

Key words: socio-cultural portrait, modernization, region, population, values.

The last two decades in Russia are characterized by significant changes in socio-economic, political and cultural processes. The modern stage of evolution of the Russian society as a socio-cultural system is accompanied by deep changes in all spheres of public life. This situation requires theoretical understanding and empirical analysis of new categories selection, thus, the study of socio-cultural development of regions is very important for Russia's future.

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To present regions in terms of socio-cultural territorial communities in their integrity, originality and in the context of socio-cultural space of the country as a differentiated unity the scientists elaborated the program "Socio-Cultural Evolution of Russia and its Regions" in 2005. Head of the Centre for the Study of Social and Cultural Change at the Institute of Philosophy of RAS, RAS Corresponding Member Nikolai Ivanovich Lapin initiated it. Every year the project involved more and more participants, so at the moment 25 RF subjects take part in it (the Republic of Bashkortostan, the Republic of Buryatia, the Republic of Kalmykia, the Republic of Karelia, the Republic of Tatarstan, the Chechen Republic, the Chuvash Republic, Krasnodar Krai, Krasnoyarsk Krai and Perm Krai, the Astrakhan Oblast, the Bryansk Oblast, the Vladimir Oblast, the Volgograd Oblast, the Vologda Oblast, the Kursk Oblast, the Novosibirsk Oblast, the Omsk Oblast, the Samara Oblast, the Sverdlovsk Oblast, the Smolensk Oblast, the Tyumen Oblast, the Tula Oblast, the Ulyanovsk Oblast, the Chelyabinsk Oblast, the city of Moscow). The scientists and research groups from scientific institutions and universities work on a common theme, meet annually at conferences, presenting their researches and sharing their opinion. There have already been 10 conferences in Moscow (2005), Tyumen (2006), Kursk (2007), Cheboksary (2008), Smolensk (2009), Ulyanovsk (2010), Kazan (2011), Ufa (2012), Vologda (2013) and Perm (2014). Omsk will host the conference in 2015. It should be noted that their conduct is constantly supported by the Russian Humanitarian Science Foundation (RHF). The 11-year study "Socio-Cultural Portrait of Russia" has become a tool to identify the factors in stability and instability of the societal system at the regional level. N.A. Lapin and L.A. Belyaeva have developed the program and standard tools, presented by a "portrait" prospect program and a complex of sociological and statistical methods of obtaining information, including population's assessment of the basic parameters of their life[1]. So, the portraits of about 25 different regions of the RF federal districts were created in 2006–2010 (2012). These works were published in two dozen monographs and hundreds of articles, conference proceedings and the collective monograph "Regions in Russia: Socio-Cultural Portraits of Regions in All-Russian Context"[2].

ISEDT RAS, becoming a member, began the study of the Vologda Oblast and the construction of its portrait on the basis of the socio-cultural approach in 2008. The 2008–2012 studies revealed the regularities and features of transformation of the social and cultural image of the region against the background of economic and social instability and provided a comprehensive picture of the region. There was research in the main economic indicators describing the living conditions of population and the spheres of society, such as health care, education, innovative development, cultural activity,

[1] Lapin N.I., Belyaeva L.A. *Programma i tipovoi instrumentarii "Sotsiokul'turnyi portret regiona Rossii" (Modifikatsiya – 2010)* [Program and Standard Tools "Socio-Cultural Portrait of Russia" (Modification – 2010)]. Moscow : IF RAN, 2010. 111 p.

[2] *Regiony v Rossii: sotsiokul'turnye portrety regionov v obshcherossiiskom kontekste* [Regions in Russia: Socio-Cultural Portraits of Regions in the All-Russian Context]. Compiled and edited by N.I. Lapin, L.A. Belyaeva. Moscow: Academia, 2009.

people's way and style of life. Cultural potential of the region was also considered at this stage. The analysis of cultural development indicated the situation, assessing the level of cultural potential and the degree of its convertibility into cultural capital. The Vologda Oblast has considerable cultural and historical heritage, but its cultural potential is significantly reduced by low cultural activity of the population[3]. Its priority vectors helped clearly define the hierarchy of values for people. Their major interests are the following: values of family and home (65% of the respondents in 2012). The interests related to education and spiritual development at the bottom of the value hierarchy (3%). More than a third of the population (24%) considers a lack of free time and financial constraints as the most common causes of low cultural activity. Innovative activity, being already underdeveloped in the region, reduced even greater in the 2008 crisis period. However, the percentage of innovators slightly increased mainly due to the regional policies to support small and medium-sized businesses. Of the key problems-hazards we can single out crime and poverty. They are paramount not only for the Vologda Oblast, but for Russia as a whole. Despite the gradual socio-economic development of the region, it is characterized by internal asynchrony and inconsistency of an urban center (cities of Vologda and Cherepovets) and regional periphery. It is reflected in the socio-cultural development. Socio-cultural potential of the region has a good basis, which should be preserved, maintained and developed. The following spheres are of special importance: demography, ecology and civic, cultural and innovative activity of the population.

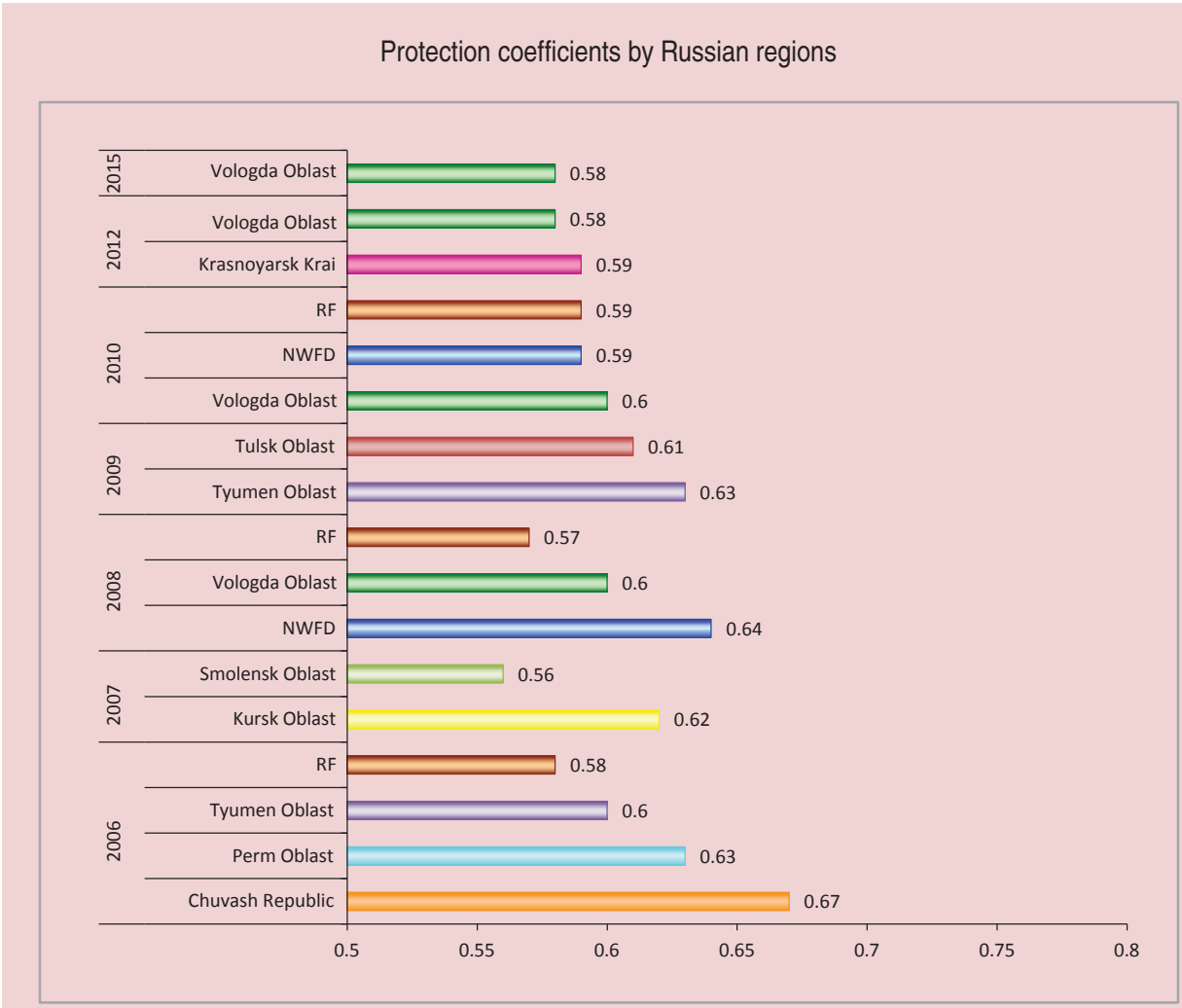
The indicator of social protection of the population is one of the key indicators reflecting the country's economic viability, the level of citizens' rights protection, quality of life and social security. Social security in the subjective sense is a feeling of social security assessed in terms of psychological state of an individual[4]. The level of self-esteemed security is disclosed in the answers to the question: "To what extent do you personally feel protected from various dangers?" The list of 10 dangerous problems, included in the national monitoring, is proposed[5]. The calculated ratio of social security shows the degree of community's stability[6]. For the analyzed period from 2006 to 2015, the coefficients of social security have differed slightly around the country (*figure*). There have been no values close to a critical level (0.5). In the Vologda Oblast for the past four years, its value has been equal to 0.58 and lower than in 2008 and 2010. There changes are caused by the growing anxiety of residents because of their ethnicity, religious beliefs and persecution for their political beliefs. According to the conducted

[3] Antonova M.A. Kul'turnyi kapital naseleniya Vologodskoi oblasti [Cultural Capital of the Vologda Oblast Population]. *Problemy razvitiya territorii* [Problems of Territory's Development], Vologda: ISERT RAN, 2012, no. 2 (58), pp. 62-69.

[4] Lastochkina M.A. Sotsial'naya zashchishchennost' naseleniya Rossii: obzor issledovanii poslednikh let [Social Security of Russia's Population: an Overview of the Past Years Studies]. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz* [Economic and Social Changes: Facts, Trends, Forecast], 2013, no. 2 (26), pp. 171-179.

[5] Lapin N.I., Belyaeva L.A. *Programma i tipovoi instrumentarii "Sotsiokul'turnyi portret regiona Rossii" (Modifikatsiya – 2010)* [Program and Standard Tools "Socio-Cultural Portrait of Russia" (Modification – 2010)]. Moscow : IF RAN, 2010. 111 p.

[6] The measurement range is from 0 to 1, the values over 0.51 can be considered as a sufficient protection level and below 0.5 – insufficient.



Source: *Regiony v Rossii: sotsiokul'turnye portrety regionov v obshcherossiiskom kontekste* [Regions in Russia: Socio-Cultural Portraits of Regions in the All-Russian Context]. Compiled and edited by N.I. Lapin, L.A. Belyaeva. Moscow: Academia, 2009. 808 p.; Results of the fifth wave of the all-Russian monitoring "Values and Interests of the Russian Population" received by IPh RAS SSCC in 2006; Results of regional studies "Socio-Cultural Portrait of the Region".

study, the population of Russian regions is least protected from crime, poverty, arbitrariness of officials and environmental threats (protection coefficients by these indicators equal to less than 0.5). Thus, the data show that in the country there is no stability and sense of security against criminal attacks, and also there is little hope for protection of law enforcement. This is evidenced by the current threat of arbitrariness on their part, which closes the list of critical problems. So, the Russian society is characterized by social disunity and uncertainty in their future and dealing with people.

Let us consider another indicator, used to evaluate the socio-cultural environment, – an index of social well-being of the population. As can be seen from *table 1*, in 2010 the value of the social well-being index in the Vologda Oblast was lower than for Russia as a whole. If the values of the coefficients of protection from hazards and social optimism in the oblast are roughly equal to the nationwide, the level of life satisfaction lags behind the all-Russian. The 2012 and 2015 studies indicate that life satisfaction among the region's population increased significantly, but 2 other ratio decreased. The decline in the coefficient of optimism is alarming. For 8 years it has decreased by 0.11 p. from 0.66 to 0.55. Unless the situation stabilizes, we can expect a further drop to a critical level by 2020. There are social consequences of the economic downturn, recurrent in recent years.

Social wellbeing of the population is associated with the values that shape the lifestyle and behavior of an individual. The detailed study of this issue includes methodical tools of the "Socio-Cultural Portrait of Russia". So, in most cases the Vologda Oblast residents share a hierarchy of values characteristic of the Russians (*tab. 2*). However, the division of values into 4 functional layers in 2010 coincided only in the last group – conflict-prone periphery. The scoring values in the region are lower than in Russia as a whole. For the region's inhabitants human life is the supreme value. The values, such as family, order, sociability, comprise the integrating core. The region's population ranges "freedom" the 9th, though it takes 7th place in the national ranking). Let us note that in many RF regions the value "tradition" is sharply weakening in the minds of population. In the Vologda Oblast, unlike in Russia, morality, sacrifice and initiative find themselves in the opposing differential. Authority and arbitrariness are not considered as significant values for most area residents. These values are denied by the overwhelming part of the Russian population. In 2015 the values hierarchy of the Vologda Oblast population has not undergone any substantial changes; we will only note that a significantly greater number of people have begun to appreciate freedom and sacrifice more, and work less.

During the second research stage initiated in 2011 the Program participants' attention was focused on the study of the processes of socio-cultural modernization in the regions. Using the tools of the China Center for Modernization Research of the Chinese Academy of Sciences (since 2000 it has been monitoring stages of modernization, their phases and levels in 131 countries, including Russia) and the data of the Federal State

Table 1. Index of social well-being and its coefficients

Index	2006		2008	2010			2012	2015
	RF	NWFD	VO	RF	NWFD	VO	VO	VO
Index of social well-being	0.60	0.65	0.62	0.62	0.64	0.61	0.62	0.61
Coefficients that comprise the index of social well-being								
Protection from dangers (SC)	0.57	0.64	0.6	0.59	0.59	0.6	0.58	0.58
Satisfaction with life in general (Ku)	0.66	0.69	0.61	0.68	0.71	0.61	0.71	0.71
Optimizm (Co)	0.58	0.62	0.66	0.58	0.61	0.61	0.58	0.55

Table 2. Values and preferences of the population (weighted average scores on a 5-point scale)

Vologda Oblast, 2010 (2015)			Russia, 2010		
Values	Points	Place	Values	Points	Place
Integrating core					
Person's life	4.64 (4.63)	1 (1)	Person's life	4.80	1
Family	4.53 (4.60)	2 (2)	Family	4.80	2
Order	4.49 (4.56)	3 (3)	Sociability	4.73	3
Sociability	4.48 (4.51)	4 (4)	Order	4.72	4
			Welfare	4.59	5
			Independence	4.47	6
			Freedom	4.44	7
			Tradition	4.40	8
Integrating reserves					
Welfare	4.38 (4.39)	5 (5)	Work	4.29	9
Independence	4.29 (4.32)	6 (6)	Initiative	4.13	10
Tradition	4.19 (4.18)	7 (8)	Morality	4.10	11
Work	4.11 (3.94)	8 (9)	Sacrifice	4.07	12
Freedom	4.08 (4.19)	9 (7)			
Opposing differential					
Morality	3.80 (3.72)	10 (12)			
Initiative	3.74 (3.81)	11 (10)			
Sacrifice	3.66 (3.80)	12 (11)			
Conflict-prone periphery					
Authority	2.49 (2.55)	13 (13)	Authority	2.76	13
Arbitrariness	2.42 (2.51)	14 (14)	Arbitrariness	2.49	14

* Method to determine values by N.I. Lapin (Lapin N.I., Belyaeva L.A. *Programma i tipovoi instrumentarii "Sotsiokul'turnyi portret regiona Rossii" (Modifikatsiya – 2010)* [Program and Standard Tools "Socio-Cultural Portrait of Russia" (Modification – 2010)]. Moscow : IF RAN, 2010. 111 p.).
Source: data of the survey "Socio-Cultural Portrait of the Region" carried out by ISEDT RAS in 2010, 2015 (Vologda Oblast), Institute of Philosophy in 2010 (Russia).

Statistics Service of the Russian Federation the scientists calculated indices of the state of modernization in all 83 subjects and 8 federal districts of the Russian Federation (the Chinese method was adapted to Russian statistics by N.I. Lapin)[7]. The more detailed research in the modernization level measurement in the world, in Russia and certain regions of the country was promoted by the Russian-Chinese conference "Civilization and modernization" conducted in 2012 by the Institute of Philosophy. The acquired experience was used in the development of the information-analytical system "Modernization" (ISEDT RAS, http://mod.vscc.ac.ru/), designed for automation of calculations and visualization of data by RF regions and federal districts. The substantial analysis of modernization processes involved the use of the results of socio-cultural portraits of regions. Due to this approach we have socio-cultural-modernization understanding of the region, the international comparability of modernization processes is provided. The results of Russian research were presented at

[7] Lapin N.I. Sotsiokul'turnye faktory rossiiskoi stagnatsii i modernizatsii [Sociocultural Factors of Russian Stagnation and Modernization]. *Sotsiologicheskie issledovaniya* [Sociological Studies], 2011, no. 9, pp. 3-18.

the 1st international forum on modernization "Modernization and Global Change" (Beijing, August 8–9, 2013)[8].

The first achievements of regional working group are published in the collective monograph "Problems of Socio-Cultural Modernization of Russian Regions"[9]. Six types (states) of Russian regions' modernization are identified; socio-cultural modernization in 18 regions is analyzed in detail. It is found out that socio-cultural potential is being implemented insufficiently, and, thus, it is necessary to increase the level and quality of life of the population. The factors in this situation are singled out; the directions of the regional modernization strategy are developed in view of the increase in the level of socio-cultural development and competitiveness.

Under the RAS Presidium Program of Fundamental Research the "Role of space in modernization of Russia: natural and socio-economic potential" (Head – Academician V.M. Kotlyakov)[10] Centre for the Study of Social and Cultural Change at the Institute of Philosophy of RAS is to publish the monograph "Atlas of Socio-Cultural Modernization of Russia". Socio-cultural space of Russia will be presented in the Atlas by three levels: country as a whole, federal district, regions. There have been already taken attempts to analyze the state of modernization of Russian territories, and define the next phases of the modernization strategy implementation[11].

So, the assessment of secondary modernization[12] (SM) reveals the uneven level of modernization in the RF federal districts – the difference in the SM indices was 25 p.p. By index value federal districts can be divided into 3 groups: the level of the SM index is low (31–51), average (52–80), and high (81–120). The high level corresponds to only the Central Federal District, all other areas account for the average level (*tab. 3*). The calculations show that due to the financial and economic crisis the rate of index annual growth decreased and in 2 federal districts the index values were even characterized by a downward trend. The year of 2012 was positive: the situation stabilized in all districts, the positive changes were observed there.

Let us consider the dynamics of SM development in the Northwestern Federal District. The highest level of modernization can be observed in the city of Saint Petersburg, some Northern regions with developed mining and processing industry (the Murmansk Oblast, Nenets Autonomous Okrug, the Komi Republic), including major cities or

[8] Lastochkina M. Socio-Cultural Modernization of Vologda Region. *Global Modernization Review: New Discoveries and Theories Revisited*. Edited by Alberto Martinelli and Chuanqi He. 2015, pp. 269-276.

[9] *Problemy sotsiokul'turnoi modernizatsii regionov Rossii* [Problems of Socio-Cultural Modernization of Russian Regions]. Compiled and edited by L.A. Belyaeva, N.I. Lapin. Moscow : Academia, 2013. 416 p.

[10] *Fundamental'nye problemy prostranstvennogo razvitiya Rossiiskoi Federatsii: mezhdistsiplinarnyi sintez* [Fundamental Problems of Spatial Development of the Russian Federation: Interdisciplinary Synthesis]. Executive Editor Academician M.V. Kotlyakov. Moscow: Media-Press, 2013. 664 p.

[11] The work by RF federal districts is performed: in CFD – by N.I. Lapin, E.A. Kogai, N.A. Kasavina, A.A. Kogai; NFWD – V.A. Ilyin, A.A. Shabunova, M.A. Lastochkina; SFD – N.V. Dulina, E.V. Kargapolova; VFD – T.V. Tarasov, I.I. Boiko, V.G. Kharitonova; UFD – G.F. Romashkina; SFD – V.G. Nemirovskii, V.S. Polovinko; FEFD – A.V. Nemirovskaya.

[12] Secondary modernization is a type of modernization, when the transition of the socio-economic system into the information society occurs and innovation, knowledge, manufacturing of high-tech products become priorities. Four areas are assessed: knowledge translation, quality of life, innovation in knowledge, quality of economy.

Table 3. Dynamics of secondary modernization indices by RF federal districts*

Federal district	Year					Average growth rate		
	2000	2005	2008	2010	2012	2000–2008	2008–2010	2010–2012
Central	*Average*		*High*			1.7	0.6	1.3
	68.9	76.7	82.8	84.1	86.6			
Northwestern	66.7	72.6	*Average*			1.3	0.8	0.8
			77.4	79	80.6			
Russia	**61**	**66.2**	**69.8**	**72**	**78.4**	**1.1**	**1.1**	**3.2**
Ural	56.2	63.1	67.4	66.1	69.1	1.4	-0.7	1.5
Siberian	52.6	59.2	62.8	63.2	63.9	1.3	0.2	0.3
Volga	55	61	63.4	64.4	68.3	1.1	0.5	2.0
Far Eastern	*Pre-developed*	58.6	62.4	62.1	65.9	1.4	-0.1	1.9
	51.4							
Southern	50.3	55.6	58.3	59.1	61.8	1.0	0.4	1.4
North Caucasian	44.2	*Pre-developed*	51.7	53.6	63.7	0.9	0.9	5.1
		49.6						

* SM levels: high – 81 and more; average – 52–80; pre-developed – 31–51.
Source: IS "Modernization".

Table 4. Dynamics of secondary modernization indices by RF federal districts*

Federal district	Year					Average growth rate		
	2000	2005	2008	2010	2012	2000–2008	2008–2010	2010–2012
Saint Petersburg	*Average*	*High*				14.5	0.7	4.9
	77.7	86.7	92.2	92.9	97.8			
Murmansk Oblast	58.5	*Average*				10.7	1.5	2.6
		64.5	69.2	70.7	73.3			
Nenets Autonomous Okrug	54.1	59	64.6	65.1	71.9	10.5	0.5	6.8
Komi Republic	53.6	60.2	66.1	65.8	69.7	12.5	-0.3	3.9
Leningrad Oblast	54.4	56.8	61.3	62.9	67.3	6.9	1.6	4.4
Republic of Karelia	*Pre-developed*	55.2	61.9	64.6	65.7	12	2.7	1.1
	49.9							
Arkhangelsk Oblast	49.3	56.3	62.4	60.6	65.1	13.1	-1.8	4.5
Kaliningrad Oblast	52.9	57.1	61.4	61.9	64.6	8.5	0.5	2.7
Novgorod Oblast	49	53.8	57.7	59.9	63.9	8.7	2.2	4
Pskov Oblast	45.8	*Pre-developed*	55.5	56.7	61.1	9.7	1.2	4.4
		51.1						
Vologda Oblast	46	51.9	56.7	56	59.9	10.7	-0.7	3.9

* SM levels: high – 81 and more; average – 52–80; pre-developed – 31–51.
Source: IS "Modernization".

the ones adjacent to them. The lowest level of modernization is characteristic of the Vologda, Pskov and Novgorod oblasts. In the period under review the positive dynamics of the SM was observed. So, if in 2000 4 regions corresponded to the low level, in 2005 there were only 2, and in 2012 – no such regions (*tab. 4*). A greater number of territories

(10 of 11 in 2012) belonged to the average SM level; the group with a high development level included the city of Saint Petersburg and the Northwestern Federal District. We should note the uneven process of regional modernization in the district and asynchrony in the development of even neighboring geographical territories. Saint Petersburg is a striking example: it gets ahead of the Leningrad Oblast by more than 30 p. p. by SM index.

ISEDT RAS' participation in the "Socio-Cultural Evolution of Russia and its Regions" has allowed us to the process of socio-cultural modernization in the Vologda Oblast and the Northwestern Federal District in more detail.

The results are presented in 3 ISEDT RAS monographs ("Socio-Cultural Aspects of Territorial Development"[13], "Modernization of the Region's Economy: Socio-Cultural Aspects"[14], "Social Structure and Mobility in the Russian Society"[15]), more than four dozen articles and conference proceedings[16], and speeches at the 1st international forum on Modernization in Beijing[17].

[13] Shabunova A.A., Gulin K.A., Okulova N.A., Solov'eva T.S. *Sotsiokul'turnye aspekty razvitiya territorii: monografiya* [Socio-Cultural Aspects of Territorial Development: Monograph]. Vologda: ISERT RAN, 2009. 131 p.

[14] Shabunova A.A., Gulin K.A., Lastochkina M.A., Solov'eva T.S. *Modernizatsiya ekonomiki regiona: sotsiokul'turnye aspekty: monografiya* [Modernization of the Region's Economy: Socio-Cultural Aspects: Monograph]. Vologda: ISERT RAN, 2012. 158 p.

[15] Shabunova A.A., Solov'eva T.S., Lastochkina M.A. *Sotsial'naya struktura i mobil'nost' v rossiiskom obshchestve: monografiya* [Social Structure and Mobility in the Russian Society: Monograph]. Under scientific supervision of Doctor of Economics, Professor V.A. Ilyin. Vologda: ISERT RAN, 2015. 172 p.

[16] *Evolyutsiya regionov Rossii i strategii ikh sotsiokul'turnoi modernizatsii: materialy IX Vseros. nauch.-prakt. konf. po progr. "Sotsiokul'turnaya evolyutsiya Rossii i ee regionov", g. Vologda, 23–26 oktyabrya 2013 g. : v 3-kh chastyakh* [Evolution of Russian Regions and Strategy for Socio-Cultural Modernization: Materials of the 9th All-Russian Research-to-Practice Conference according to the Program "Socio-Cultural Evolution of Russia and Its Regions", Vologda, October 23–26, 2013 : in 3 Parts]. Vologda : ISERT RAN, 2013.

[17] Ilyin V., Shabunova A. Socio-Cultural Modernization of Vologda Region. *Global modernization review : new discoveries and theories revisited*. Edited by Alberto Martinelli and Chuanqi He. 2015, pp. 277-284.

The ISEDT RAS research has received grant support several times: RFBR (project "Assessment of the impact of income inequality on the level and pace of socio-economic modernization of regions", 2013); RAS Presidium Program of Fundamental Research No. 31 under Project 4.9 "Challenges of modernization: socio-cultural stratification and mobility in the regions"; RFH (project "Determinants of socio-cultural modernization of Russia's development: methods of measurement and analysis of causal dependencies", 2015). In 2013 ISEDT RAS organized the 9th all-Russian research-to-practice conference "Evolution of Russian regions and strategies of their socio-cultural modernization" under the program "Socio-cultural evolution of Russia and its regions" (supported by RFH) and the Russian research-to-practice conference of young scientists "Socio-cultural potential of territories in the context of global challenges: methodological aspects" (supported by RFBR).

According to the research of the program participants in the aspects of social and cultural change in the Russian regions, the modernization processes, having become global, are a competitive challenge to every country. Russia demands research in the actual indicators of this challenge, the use of mathematical methods of forecasting and the elaboration of the strategy to safety and soundness of the country's development and the increase in human potential and living standard of its population.

The results of studies carried out in almost 30 constituent entities of the Russian Federation by the specialists of scientific research institutes and leading universities indicate that the basic principles of competitive modernization of most Russian regions in the coming years should be the following: accelerated neo-industrialization and balanced socio-cultural transition from the primary stage of industrial modernization to the secondary information stage. The government should ensure the growth of investment in the creation of new knowledge, its translation to younger generations (i.e. in science and education) and the implementation of still significant human and socio-cultural potential of the country and its regions, its transformation into efficient human and cultural capital. This policy should fixed in the coherent legislative practices encouraging business (corporations, companies, enterprises, banks) to widely use the achievements of science and technology in order to raise the share of innovative products and services in the total volume of products shipped significantly, and providing adequate contribution of business to the federal and regional budgets.

It is necessary to develop regional and inter-regional cooperation of universities and research institutes in the study of the processes and problems of modernization. It is desirable to supplement the used tools by modernization parameters and indicators important for Russia. In the Russian regions it is advisable to develop a long-term strategy including a set of regional programs and municipal projects that reduce factors in inertia and resistance to modernization, and increase factors in neoindustrialization support and regions' transition to the information stage of modernization. Experience shows that modernization is more effective, when both

the ability of domestic innovative capacity and advanced foreign achievements are used. Different terms for transition to the information modernization stage can be required due to the significant differences in conditions of even nearby areas.

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Information about the Author

Mariya Aleksandrovna Lastochkina – Ph.D. in Economics, Senior Research Associate, Federal State Budgetary Institution of Science Institute of Socio-Economic Development of Territories of Russian Academy of Science (56A, Gorky Street, Vologda, 160014, Russian Federation, mashkop@mail.ru)

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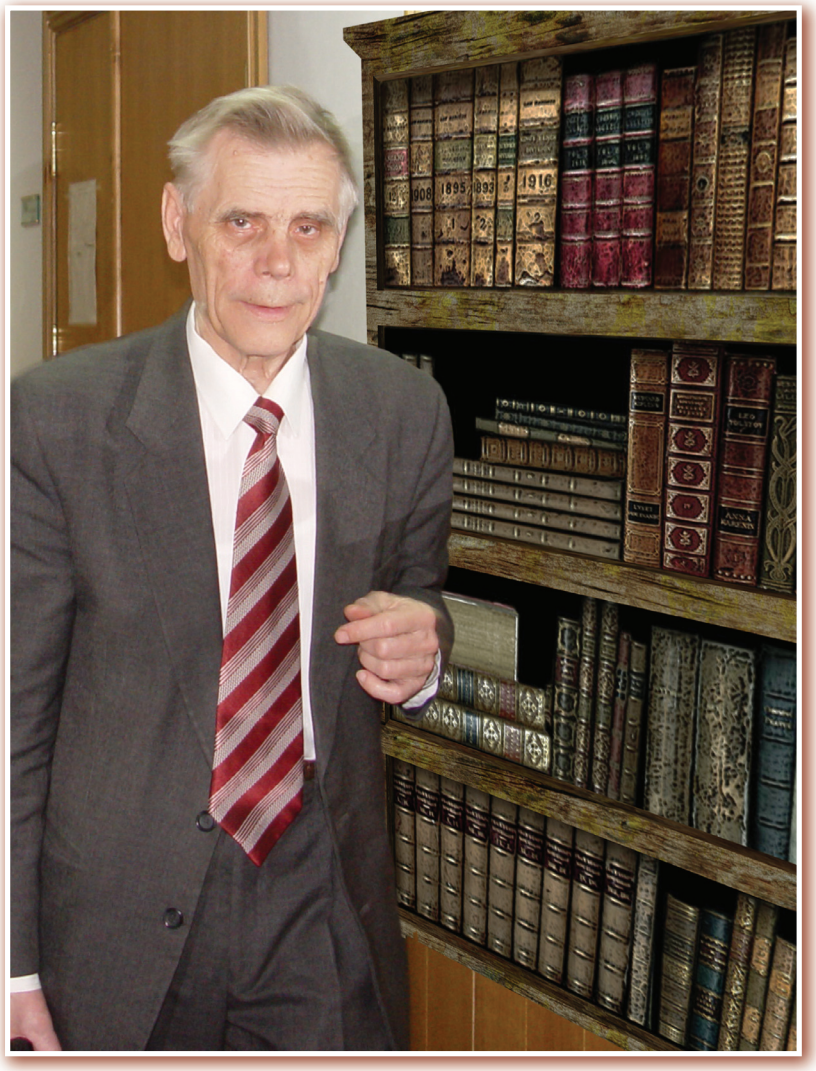
ANNIVERSARIES

Mikhail Fedorovich Sychev Celebrates His 80th Birthday



October 23, 2015, Mikhail Fedorovich Sychev, Ph.D. in Economics, Leading Research Associate at the Institute of Socio-Economic Development of Territories of RAS celebrated his 80th birthday.

Mikhail Fedorovich was born in 1935 in the village of Turmasovo, Michurinsky District, Tambov Oblast. In 1959 he graduated from the agronomical faculty of Michurin Fruit and Vegetable Institute with the qualification of

agronomist. In 1969 he completed his studies at the graduate school under the Institute of Economics of the Academy of Sciences of the USSR and defended his Ph.D. dissertation there.

Mikhail Fedorovich started to work in 1959 as agronomist at the Collective Farm Druzhba in Cherepovetsky District of the Vologda Oblast; then he was elected First Secretary of the Cherepovets District Komsomol Committee, and in 1960 – Secretary of the Vologda Oblast Komsomol Committee. In 1964–1984 he worked as assistant to First Secretary and as Head of the Department of Agriculture and Food Industry at the Vologda Oblast Committee of the CPSU. In January 1984 he was elected Secretary and in May 1985 – Second Secretary of the Vologda Oblast Committee of the CPSU.

Minkail Fedorovich Sychev is a prominent scientist in the field of analysis of economic development of territorial production systems; he has been working in ISEDT RAS since 1991. A scientific school that studies and develops theoretical and methodological foundation for modernization of economic entities in Russia's northern regions taking into account current goals of national development was developed under his leadership. He is the author of more than 40 scientific papers.

During his work at the Institute M.F. Sychev conducted a great deal of basic and applied research on the issues of socio-economic development of territories and enhancement of economic efficiency in the regions of Russia's European North. He is the author of several sections in the monographs of the Institute that received high praise in the scientific and industrial community: "Analysis and assessment of the capabilities of the Vologda Oblast science-and-technology potential for coping with the tasks of structural adjustment" (Vologda, 1996); "Agro-industrial complex of the region: reform and development" (Vologda: VSCC CEMI RAS, 1997); "Timber industry complex: problems and solutions" (Vologda: VSCC CEMI RAS, 1999); "Investment activity in the region" (Vologda: VSCC CEMI RAS, 2002); "Trends and issues of region's development" in 3 volumes (Vologda: VSCC CEMI RAS, 2005); "Region's development strategy" (Moscow: Academia, 2006); "Regional strategy for economic growth" (Moscow: Nauka, 2007); "Spatial aspects of region's development" (Vologda: VSCC CEMI RAS, 2008); "Regional development issues: 2002–2012" (Vologda: VSCC CEMI RAS, 2009); "Trends and issues of region's development" in 4 volumes (Vologda: ISEDT RAS, 2011); "Economics of reforestation" (Vologda: ISEDT RAS, 2011); "The influence of the metallurgical corporation owners' interests on socio-economic development" (Vologda: ISEDT RAS, 2012). M.F. Sychev supervised several works that received grants from federal research funds and financial support from the regional authorities. These works define the strategic reserves and areas of socio-economic development in the region, highlight the priorities for the implementation of economic reforms associated with the combination of large-scale production and capabilities of small and medium business, substantiate the most important conceptual provisions for the development and implementation of current and long-term economic modernization in the country.

He took active part in the research on the criteria by which the Vologda Oblast can be classified as a region of the North (the materials were submitted by the Vologda Oblast Administration to the Government of the Russian Federation) and in the development of strategies for socio-economic development of Cherepovetsky, Sokolsky, Gryazovetsky and other districts of the Vologda Oblast.

M.F. Sychev makes a significant contribution to the training of scientific personnel and highly qualified specialists in economics. Two ISEDT RAS associates defended their Ph.D. dissertations under his direct scientific supervision.

M.F. Sychev gives regular consultations to ISEDT RAS graduate students; it helps them improve the quality and relevance of their dissertations. He was engaged in teaching at Vologda State University. Over 50 graduation papers were prepared and defended under his supervision in 2000–2015.

M.F. Sychev received government awards for his work achievements (two orders of the Badge of Honor – 1971, 1973, the Order of Friendship of Peoples – 1986, the Honorary Diploma of the Presidium of the Supreme Soviet of the RSFSR – 1985). Besides, he was awarded the Honorary Diploma of the Russian Academy of Sciences (2005), and received awards from the Vologda Oblast Governor. In 2013 he won the Vologda Oblast science and technology award, which was given to ISEDT RAS research team.

Mikhail Fedorovich Sychev is Deputy Editor of the journal "Economic and Social Changes: Facts, Trends, Forecast" included in the VAK List (the list of peer-reviewed scientific editions approved by the Ministry of Education and Science of Russia that publish major research findings of Ph.D. and doctoral candidates), and member of editorial boards of the journals "Problems of Territory's Development" and "Territorial Development Issues" that are published by ISEDT RAS; he organizes peer review of the articles submitted to the journal from various regions of Russia, and organizes work with the contributors of articles. He is distinguished by high professionalism, constant creative search, high demands to his work.

The ability to think big, exceptional diligence, perseverance and persistence in achieving goals bring him success in dealing with administrative, scientific, methodological and other issues.

Mikhail Fyodorovich Sychev is a responsive and benevolent person. He enjoys well-deserved authority and respect of the Institute's staff. It is the authority of a professional and creative individual and a richly gifted intellectual personality.

The staff of ISEDT RAS give Mikhail Fedorovich their most cordial congratulations on his anniversary and sincerely wish him good health and long, happy days of life, further success in scientific work, creative achievements and prosperity.

Requirements to manuscripts

The proposed articles should contain the results of the studies characterized by novelty and practical orientation. They should be available in the form of presentation for a wide range of readers and meet the scientific focus of the journal (economic and sociological researches).

The article should generally include the following aspects: the purpose of research; method and methodology of work, its results and the field of their application; conclusions. The findings may be accompanied by recommendations, suggestions and hypotheses, resulting from the contents of the article. When presenting the results of sociological research in the article, it is necessary to state the following information: methods and methodology; the date, place (territory) and organization which carried out the study; the structure of total population; the type, volume and sampling error; the description of methods of data collection and analysis. This information should be arranged according to one of the following options: in the special section (paragraph) of the article; directly in the text; in the footnote. When creating tables, it is necessary to specify, whether the percentage of persons is calculated out of the number of those who answered the question, or out of the total amount of respondents. References should demonstrate the author's professional outlook and the quality of the research.

Authors are responsible for the selection and authenticity of the facts, quotations, statistical and sociological data, proper names, place names and other information, as well as for ensuring that the article does not contain the data that cannot be liable to open publication.

The cost parameters in tables (diagrams) related to different time periods are usually represented in the form of comparable scores. If tables (diagrams) contain comparative data on some territories, kinds of economic activities, etc., they should be presented in rank order, indicating the period of ranking.

The volume of articles should be no more than 40 000 printed characters (1 author list), including spaces and footnotes, for doctorates and PhDs (including the co-authors having no degree). It should contain no more than 20 000 printed characters (0.5 AL) for the rest of the authors. Exceptions are possible only in terms of a preliminary agreement with the editorial board.

The author should send the text of the article and supporting information in printed form by mail (1 copy on one side of the sheet) and identical materials by e-mail. The printed copy must be signed by the author(s).

The text of the article is sent in MS Word format, in accordance with the following parameters: headset Times Roman, font size – 14-point type, line spacing – 1.5, footnotes in Arabic numerals are placed at the end of the text in the order mentioned in the text. Graphs and charts for an electronic version of the articles are performed in MS Excel. They should be done in a separate file, which must contain not only the graphics, but initial data (tables). Flowcharts are drawn in MS Word or MS Visio.

The article should be assigned **the UDC index** (it is located above the title of the article).

The article should be accompanied by **the abstract** (600-700 printed characters; the summary is supposed to contain the following aspects: statement of problem, research techniques and information resources, characteristic of basic research results, the ways of problem solving), **key words in the English and Russian languages, references.**

The works in references are arranged in alphabetical order, firstly in the Russian language, then – in English (other languages – in Latin). When the author makes reference to the work, it is necessary to give its number in square brackets.

Information about authors is attached to the article in a separate file. It should contain the title of the article **(in Russian and English)**, surname, name and patronymic (in full), academic degree, academic rank, full name and address of the organization – the place of employment, work status, telephone and fax numbers, e-mail address and mailing address for correspondence.

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Manuscripts should be sent by mail to: 56A Gorky Street, Vologda, 160014, Russia, ISEDT RAS, the editorial board, marked "for publication in the Journal "Economic and Social Changes: Facts, Trends, Forecast", and to **e-mail:** common@vscc.ac.ru. Fax (8172) 59-78-02. Tel. (8172) 59-78-31.

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Translators and Proof-readers A.A. Sokolova, O.L. Gagarina

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Address of the Publisher and Editorial Office:
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