

THE RUSSIAN ACADEMY OF SCIENCES
INSTITUTE OF SOCIO-ECONOMIC DEVELOPMENT OF TERRITORIES OF RAS



**ECONOMIC
AND SOCIAL
CHANGES:
FACTS, TRENDS, FORECAST**

2 (32) 2014

The journal is published according to the decision of RAS economic institutions' administration in the North-West Federal District

Institute of Economics of Karelian Scientific Centre of RAS (Karelia Republic)
G.P. Luzin Institute of Economic Problems of Kola Scientific Centre of RAS (the Murmansk Oblast)
Institute of Socio-Economic Development of Territories of RAS (the Vologda Oblast)

and according to the decision of the administration of

Saint Petersburg State University of Economics and Finance
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The decision of Presidium of the Higher Attestation Commission of the Russian MES (No.6/6, dated 19.02.2010) the journal is included in the list of leading scientific editions, recommended for publication of the main results of dissertations for the degree of Doctor and Candidate of Sciences.

The journal is included into databases: VINITI RAS, Ulrich's Periodicals Directory, Index Copernicus International, EBSCOhost, Proquest, and also into the Russian Science Citation Index, and is presented in the open access on the platform of the Scientific e-Library (<http://www.elibrary.ru>).

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CONTENT

FROM THE CHIEF EDITOR

<i>Ilyin V.A.</i>	5
Public opinion monitoring of the state of the Russian society	8
<i>Ilyin V.A., Shabunova A.A.</i> Sociological assessment of public administration efficiency	14

THEORETICAL ISSUES

<i>Balatsky E.V.</i> Prerequisites for global geopolitical inversion	28
<i>Romanova O.A., Bukhvalov N.Yu.</i> Development of the theoretical platform as a system foundation for industrial policy in the context of new industrialization	43

DEVELOPMENT STRATEGY

<i>Rotenberg R.B.</i> Strategic regulation of structural transformations in the economy of the single-industry town	54
<i>Dedkov S.M., Shcherbin V.K.</i> Prospects for economic cooperation between the Eurasian and European Unions.....	63

BRANCH-WISE ECONOMY

<i>Ivanov V.A.</i> The agricultural sector of the Pechora-Ural North	75
<i>Guzakova O.L.</i> The influence of external environment factors on the activity of higher educational establishments in the Russian Federation	89

SOCIAL DEVELOPMENT

<i>Kalashnikov K.N., Kalachikova O.N.</i> Accessibility and quality of medical service in the context of health care modernization	103
<i>Mazhitova A.R.</i> Main factors in the formation of socio-cultural identity under the conditions of incomplete modernization (case study of the Republic of Bashkortostan)	113

ChegodaeV A.V. Monitoring study of the quality of work with gifted schoolchildren
in the Russian Federation regions 123

INNOVATION DEVELOPMENT

Nikitenko P.G., Ilyanok A.M. Singular technology – the research area promoting
sustainable noosphere development in Belarus, Russia
and other CIS nations 134

Antipina N.I. Organizational-economic maintenance of innovation
activity in the region: comparative assessment 148

Liutauras Labanauskas. Knowledge work and transnational networks in Lithuanian
public sector 158

ENVIRONMENTAL ECONOMICS

Druzhinin P.V., Shkiperova G.T. Assessment of mutual influence
of economic and ecological processes 172

YOUNG RESEARCHERS

Galukhin A.V. Sustainability as the basic principle of responsible budgetary policy 182

Velichkina A.V. The assessment of the regional tourism infrastructure development 193

Requirements to manuscripts 203

Subscription information 205

FROM THE CHIEF EDITOR



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One third of V.V. Putin's presidency expires on May 7, 2014. His first two years in office were followed by a bright, spectacular, and most importantly, effective, finale.

The strategy for implementation of the tasks put forward by V.V. Putin in his pre-election articles was set out in the socio-economic development goals that the RF Government should fulfil up to 2020. It was done quite clearly, with the use of digital indicators. These tasks will allow the Russian economy to move to a new stage of development with sustainable growth for reaching the next level of viability of the country, which would enhance Russia's competitiveness in the global world.

The President found out pretty soon that the financial and economic bloc of the Government formed by D.A. Medvedev was not going to work for achieving the country's socio-economic development indicators set out in the Decrees of May 7, 2012. Four months later, in September 2012 the President had to issue reprimands to three ministers for the non-fulfilment of orders on the Presidential Decrees¹.

It was only on January 31, 2013, nine months after the decrees had been signed, that D.A. Medvedev's Government issued the Resolution "Main guidelines of activities of the Government of the Russian Federation up to 2018". Out of the 30 figure indicators, contained in Presidential Decrees, the Resolution lacked 19 indicators; the intermediate or final values of five indicators were absent; and the planned values of two indicators were changed.

Then the President gave D.A. Medvedev's Government a shake-up on April 16, 2013 in Elista².

¹ Disciplinary measures in the form of a reprimand were taken against Education and Science Minister D. Livanov, Regional Development Minister O. Govorun, and Labour and Social Protection Minister M. Topilin for to the non-fulfillment of orders on the presidential decrees. September 19, 2012, Decree of the RF President (following the results of the meeting on the draft budget for 2013–2015).

² V.V. Putin: "How do we work? The quality of the work is pathetic, everything is done superficially. If we continue this way, we won't do a thing! But if we work persistently and competently, we will make it. Let's raise the quality of our work. It ought to be done! If we don't do it, it will have to be admitted that it is either me working inefficiently or it is you failing to do your job properly. Take notice that, judging by the current situation, I, personally, lean toward the latter. I think it's clear. No one should have any illusions". April 16, 2013, the meeting in Elista (Kalmykia) on the issues of resettling residents of dilapidated housing.

Almost every month, painstakingly, publicly, through critical remarks, the President showed his dissatisfaction with the performance of D.A. Medvedev's Government on the implementation of strategic tasks of Russia's socio-economic development, defined in the pre-election articles and set out in the Decrees of May 7, 2012. The President's position and the logic of his actions are understandable, since it is only the fulfillment of his election programs, significant improvement in the quality of life of the main social groups, provision of citizens' security in the broadest sense, stability in social and economic sphere that will allow V.V. Putin to run for president in 2018.

Today, the majority of open-minded international experts, the majority of the public, scientific community and experts note the following:

- Russia's achievements over the last two years in the international sphere are significant, first of all – its role in the stabilization of the crisis in Syria;

- power vertical in all the regions has been preserved and strengthened, despite obvious problems in the financial and economic block of the RF Government;

- Sochi 2014 Olympics, the largest national project for the last 30 years, was well-prepared and implemented.

Brilliant organization, excellent security and impressive sport performance at the Olympics filled the most part of the population with pride that Russia was able to show the world its skills in organization, preparation and hosting of the best Olympic Games in every respect.

The euphoria after the Olympic and Paralympic Games was replaced by a growing concern due to the man-made crisis in Ukraine.

It should be noted that composure, demonstrated by the President, facilitated the smooth accession of Crimea and Sevastopol (the territories that had been part of Russia historically) to the Russian Federation; all the necessary procedures were carried out in six days:

- March 16 – Referendum on the accession of Crimea and Sevastopol to the Russian Federation;

- March 18 – Address by the RF President to the Federal Assembly with a request to consider a Constitutional Law on the creation of two new constituent entities within the Russian Federation;

- March 21 – the Law was signed.

With this swift “finale” V.V. Putin established the Russian Federation in its new capacity as a country that has its own national interests, a country that wants to defend them and is able to do that.

Such an active position of the President and these results of recent months have caused the rise of patriotism among the most part of Russia's population.

According to all sociological polls in March, more than 80% of the respondents strongly approve of the actions of the head of state³, the indicator is 17 points higher than in February.

The international situation around the Eastern regions of Ukraine remains very complicated. The Geneva Conventions offer some hope, but, obviously, it is only the beginning of a difficult path to their implementation.

Let us hope that the RF President's composure will not fail this time as well.

³ See, for example, WCIOM data.

If we speak about the next intermediate stage, it seems that for V.V. Putin it could be May 7, 2016, when two-thirds of his presidency expire, and by this time it is extremely important for the President to update the political elite, by eliminating the influence of its “quasi-patriotic” part⁴, to introduce considerable changes in the government team through ideologically compatible professionals, who work to achieve the common ultimate goal – to fulfil the strategic tasks set out by President V.V. Putin that are aimed at the country’s development by 2018, and at the same time to adjust socio-economic mechanisms so that the electorate would see the moving of the state towards social justice, the rule of law for all the population groups, and that the voters would feel a gradual improvement of the quality of life in their family, city, and country.

⁴ V.V. Putin: “In addition, the lack of a national idea stemming from a national identity profited *the quasi-colonial element of the elite – those determined to steal and remove capital, and who did not link their future to that of the country, the place where they earned their money*” (Speech at the session of the Valdai International Discussion Club on September 19, 2013).

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 Oblast¹.

The following tables show the dynamics of a number of parameters indicating the social feeling and socio-political sentiment of the Vologda Oblast population on average for the last 6 surveys conducted for the period of June 2013 to April 2014 in comparison with the data for 2012, as well as for 2011, when D.A. Medvedev's presidential term was due to expire, and for 2007, when V.V. Putin's second Presidency was coming to an end.

Estimation of performance of the authorities

In early 2014 important changes took place at the world political arena; they had a significant influence on the internal policy of the RF President of the Russian Federation and the nature of public opinion in all social-demographic groups of the society. The oppression of the Russian-speaking population in Ukraine, the referendum in the Crimea and Sevastopol and their subsequent accession to the Russian Federation as its subjects became the catalyst of consolidation of all the layers of the population around the external policy of the RF President, defending the country's national interests not only in words, but in deeds.

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. 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.vscs.ac.ru/>.

In February – April 2014 the approval level of the performance of Russia’s President by the Vologda Oblast population increased from 56 to 63%. Key changes that have occurred in the last two months had an impact on the estimation of the performance of the Federal Government, but they were not observed at the regional level. The approval level of the performance of the Vologda Oblast Governor for February – April 2014 has not changed and amounted to 42–43%, the share of negative assessments is 37–39%.

Table 1. How do you assess the current performance of..?, as a percentage of the number of respondents

Indicator	2007	2011	2012	2013	June 2013	Aug. 2013	Oct. 2013	Dec. 2013	Feb. 2014	Apr. 2014	Average for the last 6 surveys	Dynamics (+/-), the last 6 surveys in comparison with		
												2012	2011	2007
RF President														
I approve	75.3	58.7	51.7	55.3	54.3	55.1	54.3	57.3	56.1	62.8	56.7	+5	-2	-19
I do not approve	11.5	25.6	32.6	29.4	29.3	28.9	28.7	28.9	29.3	25.4	28.4	-4	+3	+17
Chairman of the RF Government*														
I approve	-	59.3	49.6	48.9	46.2	50.4	49.0	51.1	49.3	52.5	49.8	0	-10	-
I do not approve	-	24.7	33.3	32.8	33.2	30.4	30.6	32.5	32.9	30.9	31.8	-2	+7	-
Governor														
I approve	55.8	45.7	41.9	44.4	44.3	44.8	45.9	44.1	42.8	41.6	43.9	+2	-2	-12
I do not approve	22.2	30.5	33.3	33.2	31.9	31.1	32.4	35.3	36.9	39.0	34.4	+1	+4	+12
* included into the survey since 2008.														

More than 70% of the Vologda Oblast population give positive assessments of Russia’s policy towards Ukraine (71%) and support the accession of the Crimea as a subject of the Russian Federation (78%).

Table 2. How do you assess the policy of Russia with regard to Ukraine?

Answer	April 2014
I fully and rather approve	71.3
I fully and rather do not approve	12.0
It is difficult to answer	16.7

Table 3. Do you agree or not agree with the Crimea joining Russia as its subject?

Answer	April 2014
Yes, I agree	78.0
No, I do not agree	10.4
It is difficult to answer	11.6

Over the same period, the approval level of the President's activity increased in all the socio-demographic groups of the population, especially among women (from 57 to 66%), people aged under 30 (from 53 to 61%) and 30–55 (from 55 to 62%), with higher and incomplete higher education (from 59 to 69%).

Table 4. Dynamics of the RF President's activity approval by different social groups of population, as a percentage of the number of respondents

Indicator	2007	2011	2012	2013	June 2013	Aug. 2013	Oct. 2013	Dec. 2013	Feb. 2014	Apr. 2014	Average for the last 6 surveys	Dynamics (+/-), the last 6 surveys in comparison with		
												2012	2011	2007
Sex														
Men	73.6	55.6	48.9	52.4	53.5	53.1	48.1	52.5	55.4	58.7	53.6	+5	-2	-20
Women	76.7	61.2	53.9	57.7	54.9	56.8	59.3	61.1	56.6	66.1	59.1	+5	-2	-18
Age														
Under 30	76.6	58.3	49.7	52.9	48.1	50.9	53.4	52.7	53.0	61.1	53.2	+4	-5	-23
30–55	75.1	57.6	50.9	55.4	57.7	57.3	54.1	56.5	54.9	62.4	57.2	+6	0	-18
Over 55	74.6	60.7	54.6	57.1	53.6	55.1	55.1	61.6	59.8	64.7	58.3	+4	-2	-16
Education														
Incomplete secondary, secondary	70.3	54.9	46.0	51.4	51.6	51.1	47.5	55.8	51.9	58.1	52.7	+7	-2	-18
Secondary vocational	76.4	59.8	51.8	55.8	55.2	54.2	54.3	58.1	58.0	62.1	57.0	+5	-3	-19
Incomplete higher, higher	80.1	61.3	56.6	59.1	56.3	60.1	61.4	58.2	58.8	69.2	60.7	+4	-1	-19
Income groups														
20% of the poorest people	65.1	45.7	40.9	49.6	52.8	47.0	50.7	62.7	46.1	48.9	51.4	+11	+6	-14
60% of the people with middle-sized income	78.0	60.4	53.8	56.1	53.9	54.3	54.4	56.4	57.9	64.4	56.9	+3	-4	-21
20% of the most prosperous people	82.6	68.9	59.4	63.6	60.8	66.7	60.8	64.6	69.4	72.6	65.8	+6	-3	-17
Territories														
Vologda	74.1	58.3	51.6	53.2	51.1	54.1	52.7	55.2	53.1	61.0	54.5	+3	-4	-20
Cherepotets	82.8	68.5	62.3	63.7	65.3	62.8	63.8	65.0	66.8	73.2	66.2	+4	-2	-17
Districts	72.2	53.9	46.3	51.9	49.9	51.5	49.8	54.1	51.8	58.1	52.5	+6	-1	-20
Oblast	75.3	58.7	51.7	55.3	54.3	55.1	54.3	57.3	56.1	62.8	56.7	+5	-2	-19

The last two months saw an increase in the share of the Oblast residents who believe that the RF President is successful in coping with key problems in the country (by 3-4 p.p.).

Table 5. In your opinion, how successful is the RF President in coping with challenging issues?*, as a percentage of the number of respondents

Indicator	2007	2011	2012	2013	June 2013	Aug. 2013	Oct. 2013	Dec. 2013	Feb. 2014	Apr. 2014	Average for the last 6 surveys	Dynamics (+/-), the last 6 surveys in comparison with		
												2012	2011	2007
Strengthening Russia's international standing														
Successful	58.4	46.2	43.1	45.7	41.7	45.3	47.7	47.5	45.9	48.6	46.1	+3	0	-12
Unsuccessful	24.9	33.7	37.9	36.2	37.1	36.4	33.7	35.8	35.7	35.5	35.7	-2	+2	+11
Index of success	133.5	112.5	105.2	109.5	104.6	108.9	114.0	111.7	110.2	113.1	110.4	+5	-2	-23
Imposing order in the country														
Successful	53.2	36.6	35.4	39.4	35.1	39.9	41.7	44.5	42.7	46.7	41.8	+6	+5	-11
Unsuccessful	34.0	50.0	50.7	47.5	49.9	46.7	46.7	45.5	43.7	40.9	45.6	-5	-4	+12
Index of success	119.2	86.6	84.7	91.9	85.2	93.2	95.0	99.0	99.0	105.8	96.2	+12	+10	-23
Protecting democracy and strengthening the citizens' freedoms														
Successful	44.4	32.4	28.8	31.8	29.1	34.7	33.5	32.8	32.3	36.3	33.1	+4	+1	-11
Unsuccessful	37.0	48.3	52.3	51.0	50.0	48.5	50.9	51.6	50.1	48.7	50.0	-2	+2	+13
Index of success	107.4	84.1	76.5	80.8	79.1	86.2	82.6	81.2	82.2	87.6	83.2	+7	-1	-24
Economic recovery and increase in the citizens' welfare														
Successful	47.2	30.7	28.5	31.3	28.2	32.6	31.9	32.6	31.5	34.9	32.0	+4	+1	-15
Unsuccessful	39.1	56.1	57.9	56.8	56.7	53.4	57.7	59.7	57.1	54.3	56.5	-1	0	+17
Index of success	108.1	74.6	70.6	74.5	71.5	79.2	74.2	72.9	74.4	80.6	75.5	+5	+1	-33
* Ranked according to the average value of the indicator for the last 6 surveys.														

From February to April 2014 the share of the Oblast residents, who positively characterize their mood has increased (from 65 to 69%). The stock of patience has increased from 77 to 81%.

Table 6. Estimation of social condition (as a percentage of the number of respondents)

Indicator	2007	2011	2012	2013	June 2013	Aug. 2013	Oct. 2013	Dec. 2013	Feb. 2014	Apr. 2014	Average for the last 6 surveys	Dynamics (+/-), the last 6 surveys in comparison with		
												2012	2011	2007
Mood														
Usual condition, good mood	63.6	63.1	67.3	68.6	66.4	68.7	71.5	69.6	65.1	69.3	68.4	+1	+5	+5
Feeling stress, anger, fear, depression	27.8	28.9	27.0	26.2	25.9	26.3	24.0	26.2	27.1	24.9	25.7	-1	-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	76.6	79.3	77.8	79.7	81.6	83.1	79.8	81.3	80.6	+4	+6	+7
It's impossible to bear such plight	13.6	15.3	15.8	14.2	13.7	14.7	12.3	12.0	12.3	11.1	12.7	-3	-3	-1
Social self-identification														
The share of people who consider themselves to have average income	48.2	43.1	44.7	43.9	41.9	44.9	45.7	43.7	44.2	43.1	43.9	-1	+1	-4
The share of people who consider themselves to be poor and extremely poor	42.4	44.3	44.5	46.9	48.3	46.8	45.4	46.7	46.9	49.1	47.2	+3	+3	+5
Consumer Sentiment Index														
Index value, points	105.9	89.6	91.5	90.3	89.8	91.0	90.4	87.9	91.5	90.3	90.2	-1	+1	-16

As for political preferences of the population, the party “United Russia” retains the leading role in this regard. The level of its support in February – April 2014 was 28–30%, on average for the last 6 surveys – 29%, which approximately corresponds to the level of 2007–2013. The positions of KPRF and LDPR are also stable; they have the support of 11% and 8% of the Oblast residents, respectively. “Just Russia” has become less popular than in 2007–2012: 3% in February – April 2014; the average for the last 6 surveys – 4%; in 2007–2012 – 6-8%. The share of those who believe that no existing party expresses their interests has stabilized at the level of 35%. It is higher than in 2007 and 2012 (18 and 31%, respectively).

Table 7. 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	2012	2013	June 2013	Aug. 2013	Oct. 2013	Dec. 2013	Feb. 2014	Apr. 2014	Average for the last 6 surveys	Dynamics (+/-), the last 6 surveys in comparison with		
														2012	2011	2007
United Russia	30.2	60.5	31.1	33.4	29.1	29.4	31.3	29.6	26.9	29.5	28.3	29.5	29.2	0	-2	-1
KPRF	7.0	9.3	10.3	16.8	10.6	11.3	11.3	12.0	11.9	11.8	10.9	10.7	11.4	+1	+1	+4
LDPR	7.5	11.0	7.8	15.4	7.8	7.2	6.6	6.8	8.4	8.1	8.9	8.3	7.9	0	0	0
Just Russia	7.8	8.8	5.6	27.2	6.6	4.6	4.7	4.3	4.0	4.4	3.5	3.3	4.0	-3	-2	-4
Other	1.8	–	1.9	–	2.1	0.6	2.0	3.4	1.0	0.8	0.4	0.2	1.3	-1	-1	-1
No party	17.8	–	29.4	–	31.3	34.9	31.7	33.4	37.3	34.4	35.2	34.8	34.5	+3	+5	+17
It is difficult to answer	21.2	–	13.2	–	11.7	10.2	12.3	10.5	10.5	10.9	12.7	13.1	11.7	0	-2	-10

From the Editorial Board. November 13–15, 2014, Vologda will host the All-Russian Research-to-Practice Conference “Society and Sociology in Modern Russia”, devoted to the 20th anniversary of the Sociologist Day in the Russian Federation. The Conference is organized by the RAS Institute of Sociology, the RAS Institute of Socio-Political Research, the RAS Institute of Socio-Economic Development of Territories, and the Vologda Oblast Government. A working group has been created for the preparation to the forum. Considering that ISED T RAS has long been paying much attention to sociological research, it was decided to hold this event in Vologda.

The following publication opens a series of pre-Conference articles on the role of sociological knowledge and practice of its application in the development of Russia’s society.

UDC 316.334.2, LBC 60.561.2

© Ilyin V.A., Shabunova A.A.

Sociological assessment of public administration efficiency



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Abstract. The article presents the evolution of sociology in Russia and substantiates the increasing importance of sociological science in the country’s transition to innovation development. Special attention is paid to the methodological and practical aspects of regional sociological assessments that has been carried out by ISED T RAS in the Vologda Oblast for almost twenty years. The authors prove that sociological tools allow them to make a system assessment of the effectiveness of state management, to define the main directions of economic and social development in the country and its regions. The article points out key problems, the solution of which will enhance the role of sociological knowledge in the development of the Russian society.

Key words: Sociological measurement, assessment of the state of society, efficiency of public administration, improvement of sociological tools.

1. The relevance of sociological knowledge in the 21st century.

The development of Russian sociology is usually divided into three periods (pre-Soviet, Soviet and post-Soviet) that replace each other on the principle of continuity thus facilitating evolutionary development of science. The Soviet period, is seen by many as a stage, when science became “an institute for ideological maintenance of totalitarian regime” [1]. However, the same period was characterized by many important achievements, which provided Russia’s sociology with significant potential, enabling it to play an important role in the country’s social renewal, the transformation of scientific knowledge in the economy, politics and culture, corresponding to global trends of civilization development”. With all of its difficulties and limitations, sociology in the Soviet Union was formed as a science that met the urgent necessity to solve the internal needs of the society, as a science able to substantiate the forms and methods of overcoming urgent social, socio-economic and socio-political contradictions generated by the dominant ideology [2].

In the Soviet period the first Faculty of Social Sciences with the Department of Sociology headed by P. Sorokin (1919–1920) was opened at Petrograd University; further on, the foundation for applied sociology was laid (A.K. Gastev, F.R. Dunaevsky, N.A. Vitke, O.A. Yermansky, P.M. Kerzhentsev); T.I. Zaslavskaya started active work in this field in the 1960s, the Institute of Philosophy of the USSR Academy of Sciences established the Department of Sociology (G.V. Osipov), the Philosophy Faculties at the Leningrad and Moscow Universities opened the laboratories for sociological research (V.A. Yadov, Yu.V Arutyunyan). The Russian Society of Sociologists was established in 1989.

At the same time, these and many other achievements of the Soviet period were accompanied by certain problems: insufficient quality

of basic and applied research, weak material and technological base, reduction in the flow of young researchers in fundamental science, disunity inside the sociological community.

After the collapse of the USSR and implementation of democratic measures of organizing state and public life, the key issue of Russian sociology became the lack of interest of the authorities in serious research into the most difficult social problems of the country.

In the period of perestroika, fundamental research actually stopped. On the one hand, because many scientists directly plunged into political activities, and on the other, economic manifestations of the crisis of science, and the lack of funding began to show themselves. And the research paradigm broke down completely, it became impossible to move in the directions that developed by inertia, and methodological base was insufficient to handle pressing issues.

Equal importance was attached to the issue of sociological community fragmentation due to a great number of organizations and agencies involved in public opinion polls. The public and political situation in the late 1980s – early 1990s required inexpensive applied research seeking specific solutions to various problems. The firms and centers engaged in such studies were to turn their findings into a product by replicating their methods. In pursuit of commercial aims, such centers neglected the quality of their research, and their goals: their objectives satisfied the demands of the market, rather than the state. In the early 1990s there were about 300 such centers in Moscow alone. And the quality of their research was “not always perfect” [3].

The lack of a system approach to solving the key tasks of the country’s development, lack of coordination in sociological research at the regional level, pragmatic attitude toward the studies, which consists in the financing of only those studies that can be used in this very moment – all these problems are acute at present as well. Many organizations are

engaged in the study of public opinion. But very often the same data are interpreted differently.

However, the vector of development of the modern Russian society dictates the need for greater attention to the opinion of society in public administration. It is necessary to search for new forms of assessing its efficiency, since the market transformations going on for over twenty years have not brought any desired results so far [4]. The state–society interaction, in which sociological science plays a role of mediator, is currently one of the main resources for improving the efficiency of public administration – the task, the solution of which determines the development of regional communities and the Russian Federation as a whole.

Society needs sociology as the framework of the modern outlook, as the factor in the formation of self-consciousness of the Russian society and identity. Domestic sociology declares its adherence to the values of civil society and its readiness to participate in the formation and development of civil society in our country. It can and should influence public debate, voicing the interests of different social groups, while maintaining objectivity and commitment to the independence of scientific knowledge [5].

However, the government’s policy of extreme liberalism, large-scale withdrawal of the state from economic and social policy does not form the necessary request from the government, primarily to the Russian Academy of Sciences, to conduct research into social environment and an objective analysis of the changes in society at the national and regional levels.

2. Modern Russian society in the mirror of sociology.

The urgency of raising the importance of social science is connected with two features of development of the Russian society in the 21st century:

First, it is the lingering unsolved key problems (the dependence of the Russian economy on raw material resources, extremely low competitiveness of the manufactured products, fledgling democracy and the weakness of civil society, negative demographic trends and problems in the development of the social sphere, corruption that breeds arbitrariness, lack of freedom, and injustice [6]). The main factor impeding the reduction of the gap between Russia and developed Western countries is Russia’s state structure, primarily the oligarchic and corrupt power “vertical” built in the 2000s. Its functioning resulted in a major redistribution of resources from the groups, oriented to modernization of society, to the top officials, who seek limitless personal enrichment. In these conditions, modernization of the Russian society requires not only the development of new technologies, but also the formation of strong, competent legal and legitimate authorities, capable of radical democratization and strengthening of the main public institutions [3].

Secondly, the key changes taking place in the period of V.V. Putin’s third presidency indicate new trends in social development. We are talking about the changes that are conceptual, and global in their content, the changes that are voiced in the RF President’s speeches and reflected in the works of authoritative public figures, experts, research workers (S.S. Sulakshin, M.K. Gorshkov, V.K. Levashov, Zh.T. Toshchenko, A.G. Dugin, S.Yu. Glazyev and other [8, 9, 10, 11, 14, 15]). These are the ideas of national identity, preservation and development of national sovereignty, enhancing the role of civil society in public administration, overcoming the “crisis of confidence” in governmental and public institutions, the abandonment of the Pro-Western ideology of “consumer society” and return to original Russian roots of development based on spiritual-moral values, the transition

from the social state to the moral state, which is “inevitable non-random evolutionary stage of modern types of countries” [8].

The post-reform Russia has accumulated a huge socio-psychological resource that serves as a basis for modernization breakthrough, which Russia’s society needs desperately [6]. The desire of the RF President “to implement quality changes in Russia, to feel the people’s mood and support, to be on the same wavelength with these sentiments, to combine them and make breakthroughs that the society expects of him” [13] was one of the motives and prerequisites for the formation of the All-Russia People’s Front. Reliance on the masses facilitates the provision of efficient influence on the bureaucracy, oligarchs, and everyone else, so the mass support gives legitimacy to the Presidential power, makes decisive action and breakthroughs possible.

Consolidation potential of V.V. Putin as head of state and as a personality was noted by members of the Izborsk Club, focusing on the contrast of Russian and Western civilization and the key role of the President in the process of Eurasian integration” [14]. He “advocates conservative values, thanks to which Russia will be able to resist the erosion of moral norms going from the West [15]. Russia with Putin and Russia after Putin has an excellent and promising future if it is able to continue the line of “the function of Putin”, if it is able to continue moving in the direction of itself, its independence, preservation of its civilizational features [16].

On the eve of his third presidency in the article “Russia muscles up” V.V. Putin writes that Russian society in the post-Soviet period solved the problem of “revival of the prestige and power of the state itself... the restoration of national unity, in other words, the establishment of the sovereignty of the Russian people on its entire territory, and not the domination of individuals or groups... The recovery period has been passed. The post-Soviet stage in

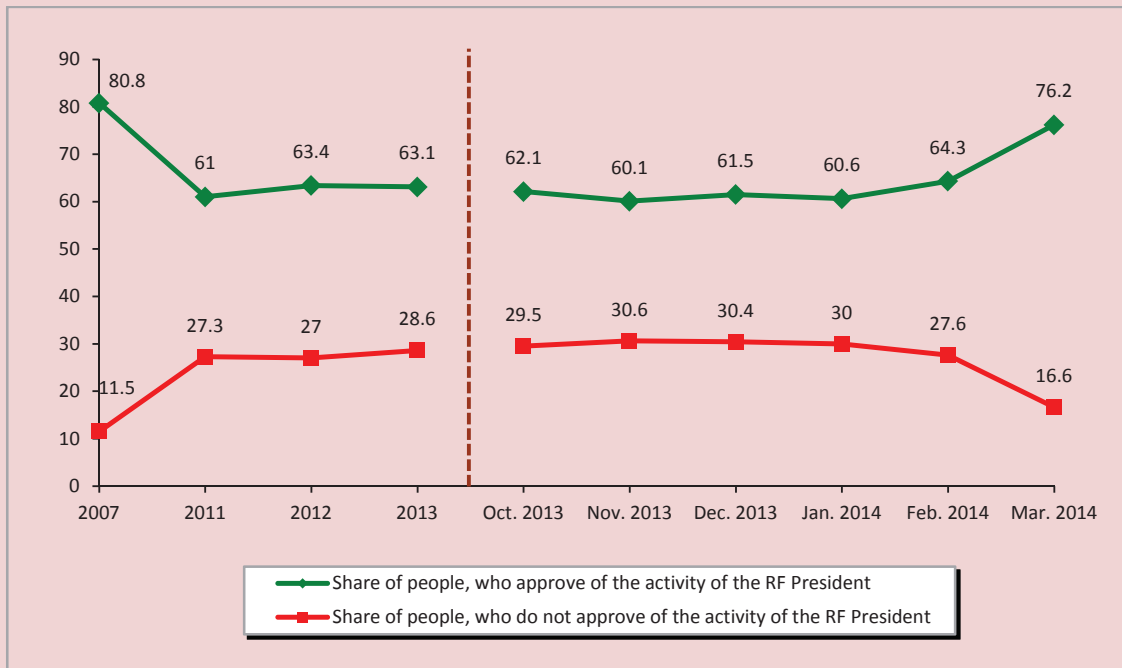
the development of Russia, as well as in the development of the whole world, is completed and exhausted. All the prerequisites for progress have been created – on a new basis and with new quality” [17].

In 2013, at a meeting on the execution of the Decrees of May 7, 2012, President of the Russian Federation V.V. Putin outlined the strategy of transformations and the guidelines of public policy that were to be achieved by 2018. They seek to “provide a higher standard of living to the citizens of the Russian Federation, primarily due to the significant increase in the efficiency of public administration and the quality of public sector” [18]. In his subsequent speeches in 2012–2013, Head of State showed his firm commitment to implement the outlined strategy, in spite of any domestic or foreign obstacles.

The President voiced his position in full measure at the meeting of the Valdai International Discussion Club in September 2013 [19]. V.V. Putin’s speech became the first large-scale attempt of Russia’s authorities to formulate a new political ideology for Russia after the collapse of the Soviet Union, and also to consider critically the issue concerning the values that should form the basis for a new Russian identity, the Eurasian peace and international relations” [20]. The President proved himself to be the “heir to the Russian conservative political tradition” [21] and the “critic of the whole modern model of development of the Western civilization” [22].

The events related to the situation in Ukraine: the referendum in the Crimea, the accession of the Crimea and Sevastopol to the Russian Federation provide a telling example in this context. They demonstrated consolidation potential of the Russian society (it is not by accident that the level of approval of the President’s activity in the last month registered by WCIOM is the maximum for the last 5 years (76%; *fig. 1*).

Figure 1. Estimation of the RF President's activity according to WCIOM data (as a percentage of the number of respondents)*



* 2007 was taken as the reference point; it is the last year of V.V. Putin's second presidential term, the estimation of his activity was the highest. For comparison, we provide the data for 2011 – the last year of D.A. Medvedev's presidency.

Source: WCIOM Database. Available at: www.wciom.ru

The position of V.V. Putin and the Russians in general was reflected in his Kremlin speech on March 18, 2014: “We understand what is happening; we understand that these actions were aimed against Ukraine and Russia and against Eurasian integration. Today, it is imperative to end this hysteria, to refute the rhetoric of the cold war and to accept the obvious fact: Russia is an independent, active participant in international affairs; like other countries, it has its own national interests that need to be taken into account and respected. Russia's foreign policy position on this matter drew its firmness from the will of millions of our people, our national unity and the support of our country's main political and public forces. Obviously, we will encounter external opposition, but this is a decision that we need to make for ourselves. Are we ready to consistently defend our national interests, or will we forever give in, retreat to who knows where?” [23].

Therefore, V.V. Putin's increased rating is connected not only with the rise of patriotic sentiments in the society in connection with the annexation of the Crimea. It is the result of a long period of growing needs of the Russian population in the consolidation on the basis of moral and spiritual ideas.

But the process of consolidation of society, as well as society and the state, cannot be effective without overcoming the “crisis of trust” in the authorities. This problem is especially relevant in Russia, because the “stabilization” of the standard of living after the 1990s crisis ceased to meet the needs of the majority. According to Edelman Trust Barometer¹, only 27% of the Russians trust the authorities (in 2013 – 29%). Russia ranks 22nd by this indicator among 27 countries that

¹ 2014 Edelman Trust Barometer. Available at : <http://www.edelman.com>

participated in the study (in 2013 it ranked 24th among 26 countries). The average level of trust in the authorities among all the countries participating in the survey was 44% in 2014 and 48% in 2013.

People more often feel that they cannot influence the decisions of the authorities, and they cannot influence the changes in their lives. According to ISEDT RAS research, for the 2011–2014 period, the share of Vologda Oblast residents who consider that they cannot influence the state of affairs in the organization where they work has increased by 8 p.p.; in the settlement where they live – by 7 p.p.; in the region – by 6 p.p.; in the country – by 7 p.p.²

A civilized and democratic way out of the situation is to enhance the role of society in the management process and the strengthening of local authorities because they are closest to the real needs of the residents, to the specifics of socio-economic development of the territory under their jurisdiction; and the municipal level is the platform on which the potential of civil activity can emerge.

Thus, at present, public administration efficiency at the federal, regional and municipal levels mainly determines the possibility to implement the consolidation potential of Russia's society. And this, in turn, is one of the main (if not the main) factors that determine further direction of social development, the competitiveness and viability of the Russian State.

Sociological science can realize the accumulated potential and become a link between the state and society, if the following two conditions are met: first, the government should provide the scientific community with tasks for the development of a uniform methodological approach to the estimation of public administration efficiency. Secondly, this work should be coordinated at the federal level; at that the Russian Academy of Sciences should play the key role.

² Data of the monitoring carried out by ISEDT RAS.

Currently, however, the Government does not set such a task. Accordingly, solving the most important issues of Russian sociology is not reflected in the legislation (still there is no draft law on strategic planning, which, in our opinion, should fix the significance of sociological indicators as indicators of public administration efficiency). Macroeconomic indicators are monitored and studied; macrosocial indicators are not, although the knowledge of how society develops is very important. The forecast estimations of social development are equally important, along with economic development forecasts [14].

3. Regional experience of sociological research as a tool for evaluating public administration efficiency.

Today, more importance is attached to the experience of independent approaches, methodological developments for assessing the efficiency of public administration worked out by individual regions. The Institute of Socio-Economic Development of Territories of the Russian Academy of Sciences is one of those research organizations, which have practical experience in the sociological assessment of public opinion at the regional level in the form of monitoring³.

T.I. Zaslavskaya emphasized the importance of monitoring, when the system of sociological research WCIOM, which now is the main sociological center in Russia, was only emerging. She wrote: "We understand that one have to repeat the same questions for monitoring the dynamics.

³ The polls are held six times a year since 1996. 1500 people 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) are polled. 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. The method of the survey is a questionnaire poll by place of residence of respondents.

As a result, there emerged many partial “author’s” monitoring studies. There are monitoring studies of the standard of living, labor market, and a number of others” [3]. This was the basis, on which WCIOM created a single, integral *sociological monitoring of economic reforms*. It makes it possible to solve a number of new tasks. First of all, it provides an opportunity to eliminate (or at least mitigate) significant shortcomings in the information-sociological maintenance of economic reform – to get away from the element of chance in time, subject, and space. Secondly, it makes the research regular. And the main thing is the comprehensive approach to the issue “from the researcher” rather than “from the customer”

The implementation of this idea at the regional level (such, in fact, is the public opinion monitoring carried out by RAS Institute of Socio-Economic Development of Territories in the Vologda Oblast since 1996) allows us to present our methodology of assessing the effectiveness of public administration.

ISED T RAS monitoring has long-term, regular and complex nature, the importance of which was stressed by T.I. Zaslavskaya. Comprehensive sociological studies cover the area of policy and economic relations; they also reveal the issues of health, regional characteristics of living conditions, opportunities and mechanisms for the implementation of labor potential, prospects for the development of civil society, etc. (tab. 1).

We use, besides other methods, the index method⁴ for assessing the authorities’ performance effectiveness. Its advantage consists

⁴ The value of the index is calculated in points. Each index is calculated for every question: the share of negative answers is subtracted from the share of positive answers, after that 100 is added to the obtained figure in order to avoid negative values. Consequently, fully negative answers would give the total index 0, fully positive answers – index 200, the balance between the former and the latter – index 100, which is, in fact, a neutral mark. Each of the four minor indices is calculated as average of the sum of the three indices for each of the questions.

in revealing the ratio of positive and negative attitudes in society, which allows us to “determine some “critical points” in public opinion, and, what is more important, in the real state of affairs” [24]. At that, we interpret not so much the numeric value of the index as its variations and changes in time that are associated with other political, social, and economic events [25]. There are various techniques of application of the index in Russian practice. For example, WCIOM assesses the indices of social feeling every month; Levada Center calculates the social sentiment index (SSI), etc. [26].

The index of public mood in the region (IPMR) developed by ISED T RAS is used to summarize the data on the attitude of the inhabitants of municipalities to the work of federal and local executive authorities, as well as the data on the assessment of population’s material well-being and social mood. In addition, it allows researchers to group areas depending on the combination of different indicators (sub-indices), and to track changes in the situation in the region.

IPMR is calculated in three stages (fig. 2):

1. The four sub-indices: Sub-Index of Stability, Sub-Index of Well-Being, Sub-Index of Efficiency of the Regional Authorities, Sub-Index of Loyalty to the Policy of the Federal Authorities – are calculated on the basis of the primary sociological data.

2. The first and second indices are combined into the *Index of Social Feeling*, the third and fourth – in the *Index of Attitude to the Authorities*.

3. The integral indicator, the *Index of Public Mood in the Region*, is calculated on the basis of these two indices.

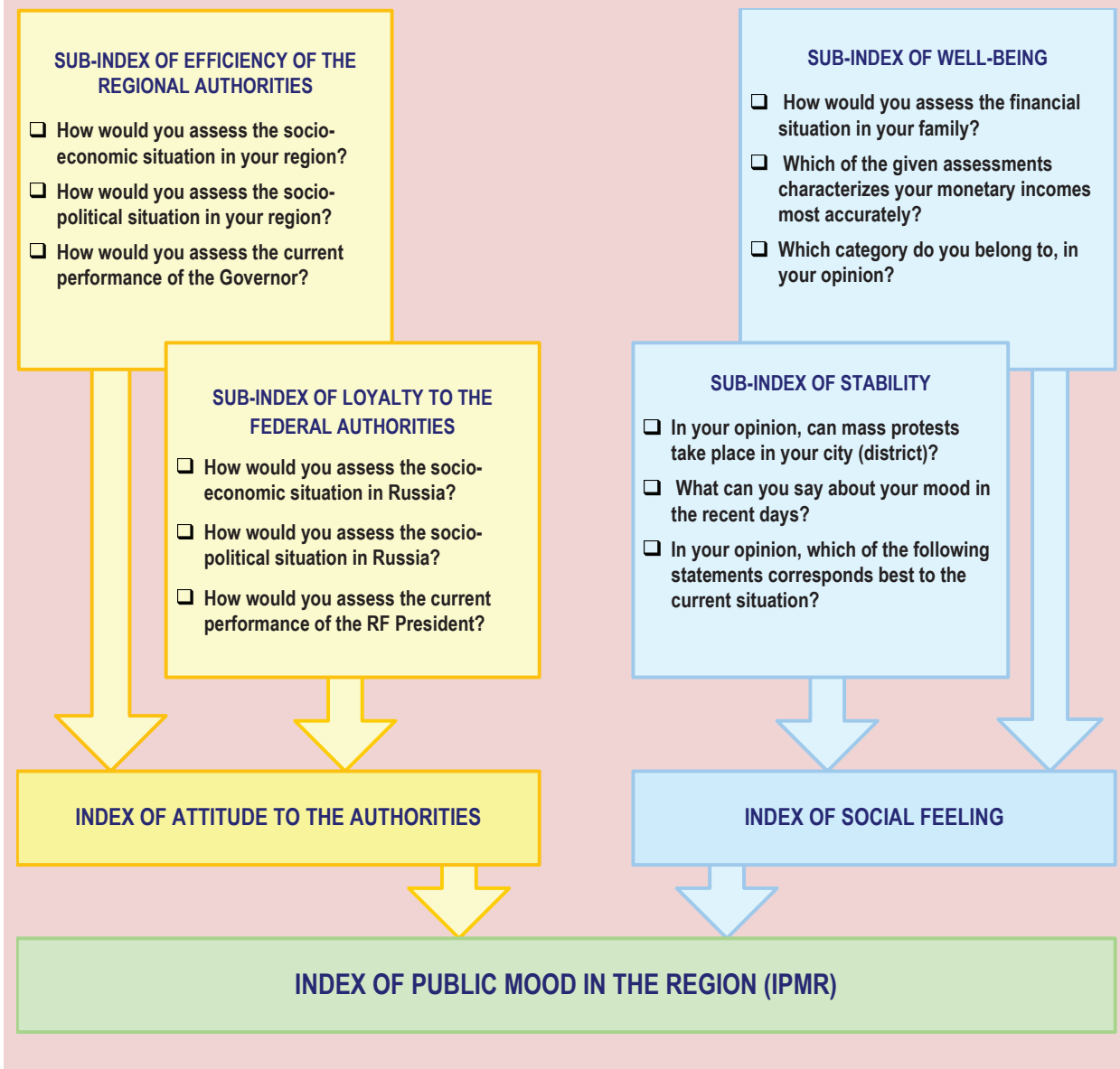
Measuring the *Index of Social Feeling* in the urban and rural areas of the Vologda Oblast revealed two problems:

1. *Absence of positive changes in the Vologda Oblast population’s assessments of their financial situation*. Despite the growth of positive sentiment in the society (as evidenced by the

Table 1. Brief characteristic of sociological research conducted by ISEDT RAS

Areas of research and main research projects	Year when the research was started	Presence of author's patent
<i>Monitoring of economic condition and social feeling of the population</i>		
Monitoring of economic condition and social feeling of the Vologda Oblast population	1995	Database of the monitoring of economic situation and social feeling of the Vologda Oblast population, certificate of the state registration of the database No. 2013620087. Database of the monitoring of economic condition and social feeling of the population in the regions of the Northwestern Federal District, certificate of the state registration of the database No. 2012621290.
Monitoring of economic condition and social feeling of the population in the regions of the Northwestern Federal District	2005	
<i>Reproduction of the population of the territory: trends and reserves</i>		
Conditions for the formation of a healthy generation	1995	Database of the monitoring of the research into the conditions for the formation of healthy generation in the Vologda Oblast, 2012; certificate of the state registration No. 2012620788.
Monitoring of health condition 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 the most important characteristic of demographic crisis	2013	
<i>Human capital management and innovation development of the territory</i>		
Monitoring of the quality of labor potential	1996	Database of the monitoring of the quality condition of the Vologda Oblast population's labor potential, 2012, certificate of the state registration of the database No. 2012620757, No. 2011614700.
Labor behavior as a form of realization of individual labor potential	2011	
Formation of research-and-education space	2009	
Formation of human capital of the territories	2010	
Institutional analysis of the regional labor market	2010	
Human potential of rural territories	2013	
<i>Sociocultural modernization in Russia, its condition in the regions of the country</i>		
Economic behavior of the population (savings, financial, investment, etc.)	2001	Information-analytical system for monitoring the levels of modernization in Russia's regions, certificate of state registration No. 2012661285.
Socio-economic inequality of the population in the region	2006	
Socio-cultural portrait of the Vologda Oblast	2008	
<i>Monitoring of living conditions in the city of Vologda</i>	2003	–
<i>Monitoring of the formation of small and medium business in modern conditions</i>	2002	Database of the surveys of small and medium business in the Vologda Oblast No. 2012620336 (04.01.2012).

Figure 2. Scheme of calculating the Index of Public Mood in the Region



dynamics of the *Sub-Index of Stability* that increased from 139 points in 2007 to 147.5 points in 2013), material well-being of the Oblast inhabitants remains lower than in 2007. The regions and especially the district centers saw the decline in the population's assessments of their financial situation in 2013 compared to 2011, as evidenced by the dynamics of the *Sub-Index of Well-Being*. Its value in the Oblast decreased from 93 points in 2007 to 88 points in 2013 (*tab. 2*).

2. *Generally positive changes observed in the dynamics of the Index of Social Feeling and its components are formed at the expense of public opinion in urban areas.* In rural areas we observe a decline in the index from 114 points in 2007 to 110 points in 2013. The situation in the regions remains tense, which was repeatedly stressed by the Vologda Oblast Governor O.A. Kuvshinnikov, who pointed out the key role of municipal districts in the development of the entire Oblast [28].

Table 2. Index of Social Feeling

Territory	2007	2011	2012	2013	2013 to		
					2012	2011	2007
Sub-Index of Stability							
Vologda Oblast	139.1	142.3	145.8	147.5	+2	+5	+8
Major cities	138.9	144.3	150.4	153.1	+3	+9	+14
<i>Vologda</i>	141.5	142.3	148.2	154.5	+6	+12	+13
<i>Cherepovets</i>	136.6	146.2	152.5	151.8	-1	+6	+15
Districts, including	139.2	140.3	141.3	141.5	0	+1	+2
<i>Urban area</i>	140.6	143.6	148.4	145.5	-3	+2	+5
<i>Rural area</i>	137.6	137.0	134.4	137.4	+3	0	0
Sub-Index of Well-Being							
Vologda Oblast	93.3	88.0	89.0	87.9	-1	0	-5
Major cities	101.9	94.0	95.4	95.1	0	+1	-7
<i>Vologda</i>	98.8	87.4	90.3	88.7	-2	+1	-10
<i>Cherepovets</i>	104.7	99.9	100.1	101.3	+1	+1	-3
Districts, including	85.3	82.3	82.8	80.5	-2	-2	-5
<i>Urban area</i>	80.5	80.0	82.3	78.1	-4	-2	-2
<i>Rural area</i>	90.6	84.6	83.3	82.7	-1	-2	-8
Index of Social Feeling							
Vologda Oblast	116.2	115.2	117.4	117.7	0	+3	+2
Major cities	120.4	119.2	122.9	124.1	+1	+5	+4
<i>Vologda</i>	120.2	114.9	119.3	121.6	+2	+7	+1
<i>Cherepovets</i>	120.7	123.1	126.3	126.5	0	+3	+6
Districts, including	112.2	111.3	112.1	111.0	-1	0	-1
<i>Urban area</i>	110.5	111.8	115.3	111.8	-4	0	+1
<i>Rural area</i>	114.1	110.8	108.8	110.0	1	-1	-4

The lack of positive changes in the dynamics of financial situation of the population affects the assessment of performance of the authorities. A slight improvement of public opinion concerning public administration at the federal level (growth of the *Sub-Index of Loyalty to the Policy of the Federal Authorities* from 100 points in 2012 to 102 points in 2013; *tab. 3*) is observed only in the last year. It turns out that the appeals and promises made by the RF President receive active support of the population, but their implementation at the municipal level is still insufficient. The *Index of Attitude to the Authorities* in 2012 and 2013 was 102 p., which is somewhat lower than in 2011 (108 p.), and significantly lower than the level of 2007 (126 p.).

The analysis of public reports of the executive authorities on the performance results for the year 2013 shows that they contain only the fulfillment of planned indicators, the disbursement of funds and so on, but they do not contain information on the issues that are of primary concern to the population, such as availability and quality of services, standard of living, etc. Although the very initiative concerning the accountability of the authorities to the general public (at least, those who have access to the Internet) corresponds to the tasks set before the public administration at present.

Thus, the Index of the public mood in the region provide a comprehensive assessment of the efficiency of state management,

Table 3. Index of Attitude to the Authorities

Territory	2007	2011	2012	2013	2013 to		
					2012	2011	2007
Sub-Index of Loyalty to the Federal Authorities							
Vologda Oblast	128.0	107.0	100.3	102.6	+2	-4	-25
Major cities	127.1	110.9	104.7	107.3	+3	-4	-20
<i>Vologda</i>	<i>117.8</i>	<i>109.6</i>	<i>102.7</i>	<i>104.4</i>	<i>+2</i>	<i>-5</i>	<i>-13</i>
<i>Cherepovets</i>	<i>135.5</i>	<i>112.1</i>	<i>106.5</i>	<i>110.1</i>	<i>+4</i>	<i>-2</i>	<i>-25</i>
Districts, including	128.9	103.2	96.0	97.6	+2	-6	-31
<i>Urban area</i>	<i>131.6</i>	<i>100.1</i>	<i>92.4</i>	<i>93.4</i>	<i>+1</i>	<i>-7</i>	<i>-38</i>
<i>Rural area</i>	<i>125.9</i>	<i>106.4</i>	<i>99.6</i>	<i>101.9</i>	<i>+2</i>	<i>-5</i>	<i>-24</i>
Sub-Index of Efficiency of the Regional Authorities							
Vologda Oblast	125.8	108.4	103.0	100.6	-2	-8	-25
Major cities	122.5	114.5	109.5	108.2	-1	-6	-14
<i>Vologda</i>	<i>113.3</i>	<i>110.0</i>	<i>103.0</i>	<i>100.2</i>	<i>-3</i>	<i>-10</i>	<i>-13</i>
<i>Cherepovets</i>	<i>131.0</i>	<i>118.5</i>	<i>115.5</i>	<i>115.8</i>	<i>0</i>	<i>-3</i>	<i>-15</i>
Districts, including	128.9	102.6	96.7	92.5	-4	-10	-36
<i>Urban area</i>	<i>129.6</i>	<i>101.9</i>	<i>96.7</i>	<i>95.3</i>	<i>-1</i>	<i>-7</i>	<i>-34</i>
<i>Rural area</i>	<i>127.9</i>	<i>103.2</i>	<i>96.6</i>	<i>89.6</i>	<i>-7</i>	<i>-14</i>	<i>-38</i>
Index of Attitude to the Authorities							
Vologda Oblast	126.9	107.7	101.7	101.6	0	-6	-25
Major cities	124.8	112.7	107.1	107.7	+1	-5	-17
<i>Vologda</i>	<i>115.6</i>	<i>109.8</i>	<i>102.9</i>	<i>102.3</i>	<i>-1</i>	<i>-8</i>	<i>-13</i>
<i>Cherepovets</i>	<i>133.3</i>	<i>115.3</i>	<i>111.0</i>	<i>112.9</i>	<i>+2</i>	<i>-2</i>	<i>-20</i>
Districts, including	128.9	102.9	96.4	95.1	-1	-8	-34
<i>Urban area</i>	<i>130.6</i>	<i>101.0</i>	<i>94.6</i>	<i>94.4</i>	<i>0</i>	<i>-7</i>	<i>-36</i>
<i>Rural area</i>	<i>126.9</i>	<i>104.8</i>	<i>98.1</i>	<i>95.8</i>	<i>-2</i>	<i>-9</i>	<i>-31</i>

simultaneously reflecting the dynamics of public opinion about activity of authorities, social mood and self-appraisal of material situation.

As for the Vologda Oblast, the dynamics of IPMR demonstrates the need to increase the efficiency of public administration (the indicator's value for 2012–2013 has not changed – 110 points, and at the district level it has even declined – from 104 to 103 points; *tab. 4*).

The urgency of financial problems in the district centers remains higher than in rural settlements, the inhabitants of which, apparently, cover the shortage of financial resources by subsistence farming (*Sub-Index of Well-Being* in the district towns in 2013 was 78 points, and in rural areas – 83 points).

4. The task of social science at the new stage of development of the Russian society.

Both international and domestic events of recent months have shown that at present the Russian society is ready to support the policy of the President aimed at the renewal of the country. But this requires a clear organization of bilateral cooperation between state authorities and population at all levels (federal, regional, municipal). Scientific basis for such interaction can be provided by domestic sociology that has accumulated considerable potential in the course of its development, taking into account the specifics of mentality of the Russian society. To unlock the potential of sociological science, certain key problems, which hamper

Table 4. Index of Public Mood in the Region

Territory	2007	2011	2012	2013	2013		
					to 2012	to 2011	to 2007
Vologda Oblast	121.6	111.4	109.5	109.6	0	-2	-12
Major cities	122.6	115.9	115.0	115.9	+1	0	-7
<i>Vologda</i>	<i>117.9</i>	<i>112.4</i>	<i>111.1</i>	<i>111.9</i>	<i>+1</i>	<i>-1</i>	<i>-6</i>
<i>Cherepovets</i>	<i>127.0</i>	<i>119.2</i>	<i>118.7</i>	<i>119.7</i>	<i>+1</i>	<i>+1</i>	<i>-7</i>
Districts, including	120.6	107.1	104.2	103.0	-1	-4	-18
<i>Urban area</i>	<i>120.6</i>	<i>106.4</i>	<i>104.9</i>	<i>103.1</i>	<i>-2</i>	<i>-3</i>	<i>-18</i>
<i>Rural area</i>	<i>120.5</i>	<i>107.8</i>	<i>103.5</i>	<i>102.9</i>	<i>-1</i>	<i>-5</i>	<i>-18</i>

the development of the scientific community in the 21st century, should be overcome; they are: insufficient demand of the authorities for the information obtained through sociological studies; fragmentation within the sociological community itself; lack of coordination of experience of independent research.

The methodology for constructing the Index of Public Mood in the Region is just one attempt to work out a comprehensive approach to assessing the efficiency of public administration. Other subjects of the Russian Federation (Lipetsk, Rostov, Vladimir oblasts, etc.) have an experience of using sociological methods, but as long as the authorities at all levels are not interested in such studies, it is difficult to talk about the systemic nature of the sociology of public administration.

The authorities should develop the need for unbiased, accurate information about public perceptions of socio-economic and political situation in the country; the authorities should require that science provide them with the data on the dynamics of public opinion. And it is necessary to remember that

a competent, stable, reliable public opinion is formulated primarily in open debate.

It is necessary to strengthen the role of the Russian Academy of Sciences as an independent institution, which coordinates sociological research; besides, it is necessary to enhance support to promising regional scientific schools and young scientists, to promote the search for new forms of inclusion of the results of Russian sociology in the world science. Sociology will be able to perform its function only when the system foundation of the research is fixed in the legislation and when there are the unified mechanisms for monitoring public opinion and analyzing the data obtained with its help.

As life and social relations become more complex, the thematic field of sociological science will be expanded, new areas will appear that will require sociological approaches to their measurement. However, one should always remember that the issues, which are crucial for social development and which determine the viability of the country, should not remain without attention, control and comprehensive support from the state.

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Prerequisites for global geopolitical inversion



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Abstract. The article considers a possibility of change of the current global world economic leader – the United States. The author introduces the concept “geopolitical inversion”, which means the change of the global economic center. The article describes a common globalizing trend in the formation of the world centers of capital, provides quantitative characteristics of this process – the indices of territorial and demographic dominance. The article uses the example of the UK and the USA to show five steps in geopolitical inversion and give their chronology. The author makes some suggestions concerning a new global leader that could succeed the USA.

Key words: globalization, geopolitical inversion, global economic center, trends.

1. Introduction: the global hegemon or the global leader? At present, the issues concerning the U.S. leadership and the approaching decline of its domination are widely discussed. This topic is largely speculative – participants of the discussion use the data that are controversial and sometimes unreliable. However, even Z. Brzezinski believes that the era of unlimited hegemony for the U.S. has mainly come to its end; the superpower, which has been holding the status of the first global empire for almost 25 years, is now becoming a second-place player [3].

However, the United States can still maintain their status of the global leader, under which Z. Brzezinski understands the nation that possesses the capacity sufficient to guide, as it pleases, the development of the world community [3]. J. Arrighi prefers another expression – “dominance without hegemony” [1] – describing the U.S. relations with the rest of the world. This raises a sacramental question: which country will take the place of the U.S. as the next global economic center (GEC)¹. Naturally, the answer to this question turns everyone’s attention to China, which,

* The article was prepared with financial support of the Russian Foundation for Basic Research (project No.14-06-00262a).

¹ Here and further on we consider the global economic center as the synonym for the world center of capital, which we understand as the leading country in the world economy. This center has the largest industrial, technological and financial potential among all the countries of the world.

in recent years, has aspired to become the center of power rivalling the U.S. How justified are these expectations? Can China really become the new GEC? What does this require and how much time will it take?

The author makes an attempt to answer these questions, using historical analogy.

2. Geopolitical inversion and its regularities.

If we are determined to find the answer to the question about the possibility of China's seizing the leadership from the USA, we should find out whether such precedents have ever taken place in the world history. As it turns out, the competition between the UK and the USA is the closest historical example of such *geopolitical inversion* (GPI). We shall understand the GPI hereinafter as the process of changing the GEC and seizing the business initiative from one country by another. In this respect, any geopolitical inversion is characterized by a pair of successive global economic centers; for example, the GPI "USA–UK". However, earlier there were other countries acting as GEC, besides Great Britain and the U.S. G. Arrighi made the most thorough analysis of the sequence of GPI and singled out four global economic centers: the Republic of Genoa, the Netherlands, the UK and the USA [1]. However, in some of his works G. Arrighi, following K. Marx, singles out the Republic of Venice, which "wedged in" between Genoa and the Netherlands for a relatively short time [1]. Let us take a glance at the circulation of capital between these historical global economic centers.

Beginning from the 11th century, Genoa was actively engaged in trade in the Mediterranean. Due to its participation in the Crusades, the city turned into a powerful Republic of Genoa with numerous colonies. By the beginning of the 12th century it became an independent city-state. In the times of the Crusades Genoa surpassed many of the European kingdoms by its wealth

and influence, possessing developed trade, shipbuilding industry and banking system. The 13th century is believed to be a period of Genoese domination of the Mediterranean. However, Genoa did not maintain its position as the first global economic center for a long time, and in the end of the 14th century it ceased to be the world leader. Nevertheless, for rather a long time after that, until the mid-17th century, Genoese bankers were managing European finances with such subtlety and skill that, according to F. Braudel, historians could not notice it for quite a while [1]. For instance, the Genoese Banking Consortium funded many enterprises of the Spanish crown and provided loans to the Habsburg dynasty by seizing the initiative from the German banking houses.

The early 13th century witnessed the emergence of a new global economic center represented by the Republic of Venice, which by the end of the 14th century became the dominant trader in the East, and, virtually, the dominant international trader of that period. At that very time the first geopolitical inversion took place, when Venice succeeded Genoa as a new global economic center. At the end of the 15th century the Republic of Venice was extremely rich and powerful, its trade and industry flourished, and its education in arts and sciences was popular all around Europe. Even the common population of Venice was rich due to moderate taxes and soft government policy. Venice was constantly expanding its mainland territories; the city-state was turning into a colonial power. However, in the late 17th century the Republic of Venice faded into the background and took little part in the world trade. Nevertheless, as K. Marx points out, Venice, even in a state of decline, continued to lend large sums of money to the new emerging global economic center – Holland [1].

The Netherlands became the third global economic center, after gaining independence in 1581 and finishing the Eighty Years' War

(1568–1648), which marked the onset of the so-called “Golden age” of the country – a period of economic and cultural prosperity that lasted the whole 17th century. However, that period of economic triumph was brief, and in the beginning of the 18th century Holland was no longer the dominant commercial and industrial nation. Nevertheless, it is noteworthy that in the period of 1701–1776 the Dutch were lending enormous sums of capital to Great Britain, which replaced Holland as the next global economic center [1].

Economic rise of Britain as the fourth center of global capital began in the late 17th century and reached its peak in the mid-19th century; then the country lost its positions and began issuing extensive loans to the USA, the nation that since the 1830s had been rapidly moving to the position of the fifth global economic center. By the 1880s, the U.S. had already become the

world’s leading economy, and in the 1970s they started to move their capital to China, which marks a new stage of development of the global market system. From this moment begins the rise of the Celestial Empire, and many analysts now see it as the next probable global economic center.

The process of global economic centers succession is presented in *Figure 1* that shows in a very simplified and stylized way the geographical distribution of *geopolitical inversion* and the scope of the world centers of capital.

Many important features of the historical scheme of geopolitical inversion were disclosed by J. Arrighi; however, the research literature either does not mention them at all or takes their existence for granted and does not formulate them explicitly. We think they should be given special attention.

Figure 1. Stylized scheme of successive global economic centers

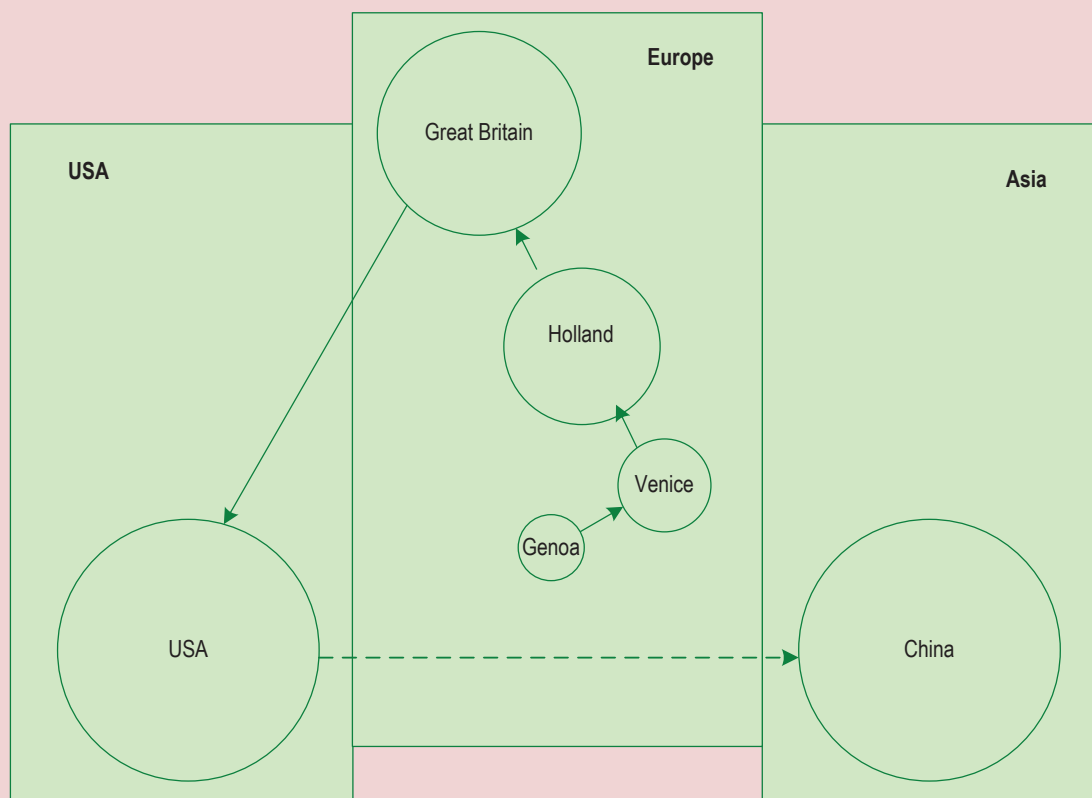


Table 1. Main features of global centers of capital

Global economic center	Area, square km	Population, persons
Genoa	243	≈100000*
Venice	412	≈200000*
Netherlands	41526	16805037
UK	244101	63395574
USA	9372610	320194478

* The data on Genoa and Venice are given for the peak of their historical development and are very rough.

First of all, let us note that all the above chronology is rather conventional and can not be considered commonly accepted. For example, J. Arrighi himself sometimes interchanges the places of Genoa and Venice in the sequence of GEC [1]. In any case, one should not look for strict time (circular) patterns in the alternation of the national schemes of capital accumulation. Meanwhile, we can trace without much effort a very interesting and typical trend in the globalization of GEC.

3. Globalization of the world centers of capital. If we have a closer look at the five GEC with their key economic characteristics – area and population, we will easily see the important patterns of geopolitical inversion (*tab. 1*).

First, all the GEC evolved in the direction of *territorial globalization*. The area of each subsequent GEC was greater than that of its predecessor. This pattern applies even to medieval city-states, although it is not so evident with regard to them. For making a numerical assessment of this trend, we considered GEC in their modern borders; the historical borders were a little different and they often changed with the country's growth and development. However, these minor statistical distortions do not affect the main conclusion – the extension of each new GEC was always very noticeable and it happened in any case without exceptions.

Secondly, along with territorial expansion, all GEC experienced *demographic globalization*, i.e. they all showed the increase in the number of population. As in the previous case, each subsequent GEC had a bigger amount of population than its predecessor. This trend

is observed even in medieval city-states, with some exceptions. For example, the data on the Republics of Genoa and Venice reflect the time of their historical peak [6; 5]. These figures have been rounded off, and they show the superiority of the later GEC. At present, the two cities have experienced demographic reshuffle – the population of Genoa increased up to 604 thousand people and that of Venice – only up to 270 thousand. However, taking into account this historical amendment, even these early GEC fit into the general global trend.

Thirdly, when there was a change of GEC, *territorial globalization was much more evident than demographic globalization*. As an example of this effect, let us consider the indices of territorial and demographic advantage, which are calculated as the ratio of land area and population of a later GEC to that of an earlier one. The values of these indices for the four geopolitical inversions are provided in *table 2*, which shows that the indices of territorial advantage of almost all the geopolitical inversions (except for the geopolitical inversion “Venice–Genoa”) exceed the indices of demographic advantage².

Thus, the formation of a new global economic center required much larger economic space, which in the course of its development was being gradually “filled” with people. In this sense, the spatial factor acted as the *leading* (primary) one, while the demographic factor played a *supportive* (secondary) part.

² The geopolitical inversion “Venice–Genoa” is an exception from the rule, possibly due to small scale of the cities-states and low accuracy of the data.

Table 2. Indices of geopolitical inversions

Geopolitical inversion	Index of territorial advantage	Index of demographic advantage
Venice–Genoa	1.7	2.0
Holland–Venice	100.8	84.0
Great Britain–Holland	5.9	3.8
USA–Great Britain	38.4	5.1

The number of population seemed to catch up with the scale of the economic zone, which “was allocated” for a new center of capital. Moreover, globalization makes its steps in strict sequence: first there is a transition to a more extensive economic territory, which, as a rule, is underpopulated; and only after that the demographic globalization begins. We can say that the effect of territorial globalization comes even before the emergence of a new GEC (a priori), while the effect of demographic globalization comes after (a posteriori) the establishment of the GEC; the sequence of these events is impossible to reverse. This fact is extremely important, and further on we will use it to interpret the current events.

On average, the index of territorial advantage for all the geopolitical inversions is 36.7, whereas the index of demographic advantage – only 23.7. Therefore, the pace of spatial globalization was about one and a half times faster than that of demographic globalization.

Apparently, this *effect of globalization* of GEC is produced by another fundamental economic phenomenon – scale effect, in accordance with which, the increase in the scale of economic activity leads to the increase in economic efficiency. This fact determines the motivation for the search and formation of a new global economic center; otherwise it would make no sense. The direct consequence of globalization is the *acceleration* of development of the new GEC, which is manifested in higher rates of economic growth. Moreover, the effect of acceleration covers almost the entire world

economy. For example, the per capita income in the countries, which began their growth later, is increasing much faster in comparison with the countries that began their growth earlier [11].

Understanding the globalization trend in the formation of new global economic centers is the starting point in the analysis of the probability of obtaining this status by a country.

4. Stages of geopolitical inversion. Besides the general tendency towards globalization of GEC, there is a strict sequence in the implementation of the stages of their formation. It is possible to work out a detailed chronology of these stages if we take a look at the geopolitical inversion “USA–Great Britain”. For this purpose it is sufficient to make comparative calculations for GDP and per capita GDP in the two countries in U.S. dollars at the current GBP to USD exchange rate; the analyzed period – 1830–2011 [14].

In general, the formation of a new global economic center involves five stages, the sequence of which is rather strict.

The first stage is consolidation of territorial integrity of the country, which significantly exceeds the previous GEC in its area. The USA had already gone through this stage in the time of their formal establishment as a nation in 1776 when the thirteen united British colonies declared their independence [10]. According to our calculations, the area of these 13 states exceeded that of the Great Britain in 3.6 times. The extent of territorial globalization is shown by the fact that the area of only two states – Pennsylvania, and North Carolina – exceeded the area of the whole Great Britain by 6%.

The second stage is the superiority of the new GEC by the number of population. Our calculations show that this happened in 1856. From then on the U.S. has surpassed Britain not only by the size of their territory, but also by the number of residents.

The third stage is production dominance, when the GDP of the new GEC exceeds that of the old GEC. This first happened in 1852, when the U.S. GDP was bigger than the British GDP; the following year, Britain returned its leadership in this respect, but in 1854 the United States finally won this production race. *Figure 2* shows the “struggle” between the GDP of the two countries during 1830–1870; in the later period the dominance of the USA only strengthened.

The fourth stage is the superiority of the new global economic center in the production efficiency of its economy. This fact is marked by the superiority of per-capita GDP of the USA over that of the UK. This first happened in 1842, after which the UK regained its position for several years; the U.S. established its superiority for the second time in 1847–1848, and then

again lost its leadership for a year; the United States was leader again in 1850–1863, “falling behind” in the following year; in 1865–1867 the U.S. again won back its positions, losing their leadership in the following two years; the U.S. gained leadership once again in 1870, after which the UK prevailed; the line was drawn in 1878, beginning from which the United States were no longer in an inferior position to the UK. *Figure 3* shows the “struggle” of per capita GDP of the two countries during 1930–1870; in the later period the U.S. preserved its dominance. These data demonstrate the fact that the struggle for the status of the richest nation was very dramatic, and it had lasted with varying success for 36 years. Taking into account the fact that per capita GDP is connected with labor productivity, we can state that the fourth stage of geopolitical integration, “USA–Great Britain” was a battle for the *excellence in technology*.

The fifth stage is the monetary dominance of the new global economic center, manifested in the creation of a world financial system based on its own currency. This happened in 1944

Figure 2. GDP of the USA and UK, million U.S. dollars

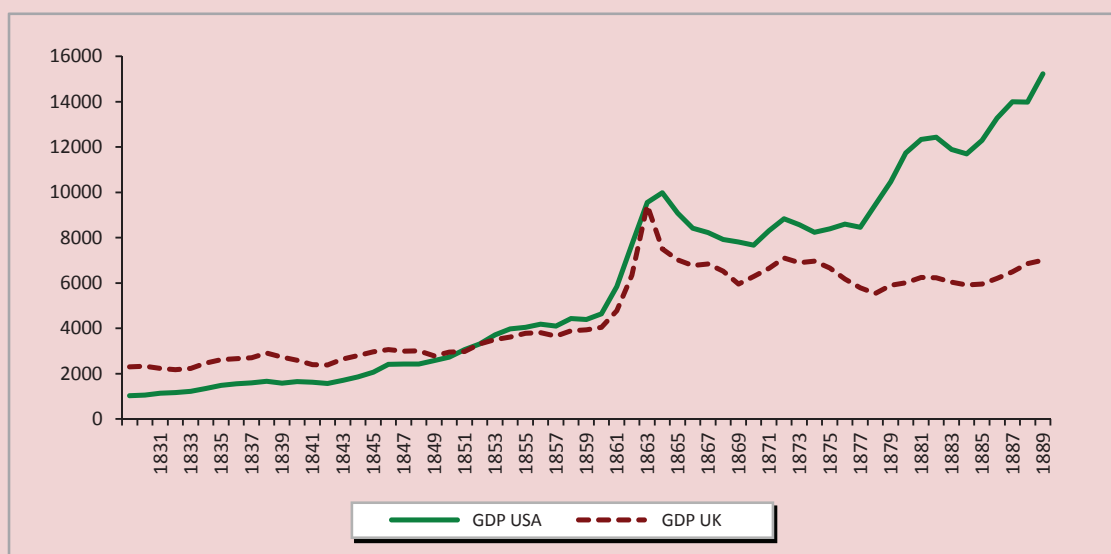


Figure 3. Dynamics of per capita GDP in the USA and UK, U.S. dollars

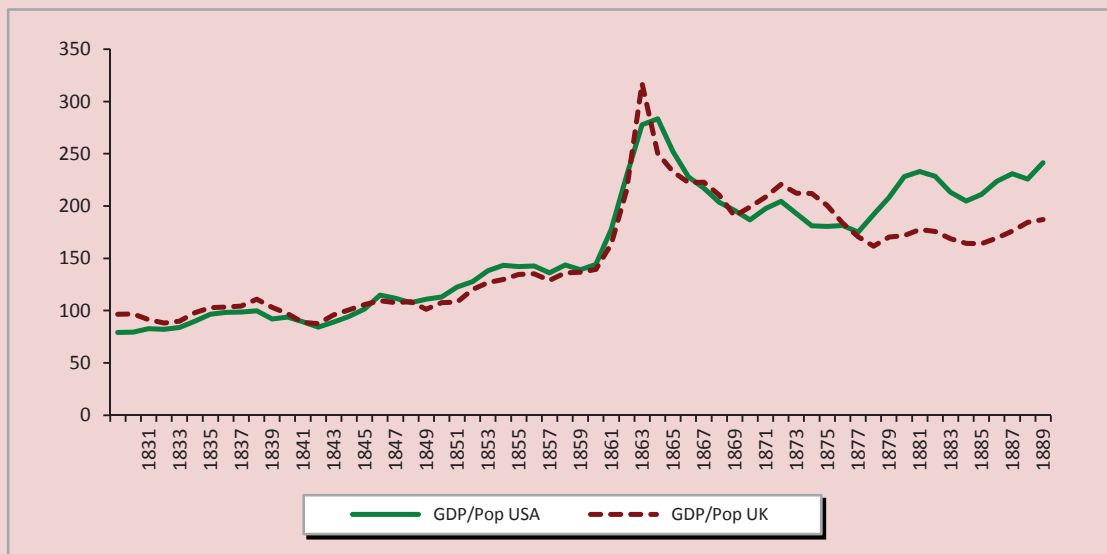


Table 3. Chronology of the stages of geopolitical integration “USA–UK”

Event	Type of dominance				
	territorial	demographic	production	technological	currency
Date	1776	1856	1852–1854	1842–1878	1944

with the establishment of the Bretton Woods system that fixed the price of gold in U.S. dollars for the purposes of international trade. From that moment, the U.S. dollar has become a world currency [4].

Table 3 summarizes all stages of geopolitical integration “USA–UK”.

The formation periods between different phases of geopolitical inversion are of the greatest importance in the chronology under consideration. For example, technological dominance was achieved only 24 years after production dominance; and currency dominance was established only 66 years after technological hegemony. These two intervals alone form a historical period of 90 years. Thus, the transition from the old global economic center to a new one implies going through certain stages of development and takes quite a long time. The data obtained can be used for various present-day analogies.

5. Who will become the new leader? Now, let us try to find out what country will be able to replace the U.S. as the global economic center. We can proceed from the established fact of territorial and demographic globalization of GPI. This means that the contender should surpass the U.S. by its territory. China formally meets this requirement, but a deeper analysis shows that, according to this criterion, it does not pass a “fitness test”, strictly speaking. The point is that, as we already noted, the index of territorial advantage on average for all the geopolitical inversions was 36.7, and its minimum recorded value was 1.7. For the proposed geopolitical inversion “China–USA” this index is vanishingly small – 1.02 (*tab. 4*).

Thus, China, as a new global economic center, would not provide the world with any territorial globalization; this fact challenges the very possibility of China becoming a new global center of capital. We can say that China cannot

Table 4. Main features of contenders for the role of the global economic center

Country	Area		Population	
	square km	% (USA=100)	people	% (USA=100)
USA	9372610	100.0	320194478	100.0
Japan	377944	4.0	127253075	39.7
China	9596960	102.4	1349585838	421.5
Canada	9984670	106.5	34568211	10.8
Russia	17075400	182.2	143548980	44.8

provide global capital with the scale effect, which would initiate its final movement to a new jurisdiction.

It is worth recalling an interesting, but already well-forgotten episode from the history of world economy, when Japan was aspiring to become the new global economic center. After the World War II it adopted the Western institutions and received capital from the U.S.; as a result, in a half-century Japan almost caught up with the United States in terms of GDP and even surpassed it by the value of GDP per capita and labor productivity. However, by the beginning of the 21st century it became clear that Japan would not become the new global economic center – the pace of the country’s development dropped dramatically and it fell irreversibly behind its rival – the U.S.

The tension of rivalry between Japan and the U.S. can be illustrated by the following data. For instance, in 1995, when Japan was in the prime of its economic development, its GDP amounted to almost 70% of the U.S. GDP (at the current exchange rate based on the World Bank data [13]). For comparison: China’s GDP in 2012 was only 50% of that of the U.S. Thus, in 1995 Japan was much closer to the world leader than China is at present. According to our rough estimates, even in 1884 the per capita GDP (and labor productivity, respectively) in Japan was 23% lower than in the USA, and in 1989 it increased by 34%. The superiority of Japan reached its peak of unprecedented 70% in 1995, but in 2001 the country’s per capita GDP was again less, than in the USA. During this period, the Land of the Rising Sun finally lost the competition to the U.S. and actually

abandoned its pursuit of global leadership. According to our estimates, Japan had been ahead of the U.S. in terms of per capita GDP for 14 consecutive years – from 1987 to 2000 inclusive. At first glance it seems almost incredible that such long and victorious “rally” ended so obscurely. However, we recall that the 19th century witnessed similar technological confrontation between the USA and the UK, which lasted for 36 years; the United States was able to consolidate its superiority only after completing this long journey.

The case of Japan can be considered a classic example. The point is that this country had no “globalization” prerequisites for becoming a global economic center – its population was 2.5 times lower than in the USA, and its area – 25 times less. Such economic characteristics made it impossible to maintain leadership even in a few spheres. We can say that Japan could not secure its success primarily because of the absence of scale effect. Due to its tiny territory and small population, Japan could not maintain economic superiority over the U.S. economy for very long. Thus, Japan’s failure to meet the two “globalization” criteria led to the failure of its attempt to become the new global economic center. This example proves that the globalization trend cannot be “stepped over”.

Speaking about China, we see that by and large, it meets only one “globalization” criterion – population increase. But it has certain problems in this respect. As noted above, when global economic center changes, the territorial advantage greatly exceeds the demographic advantage, and in the very

beginning of geopolitical inversion the new global economic center must have much fewer population than the previous one. Meanwhile, China does not fit into this pattern. At present the country is able to provide global capital with only a 2% territorial gain compared with the U.S., on the background of the demographic gain of 320%. Such a disposition of two globalization factors is non-typical, and the existing disparities are considered excessive. We can say that China outpaced the regular course of history, having increased its population before attracting international capital. These facts show that, strictly speaking, China is not a suitable contender for a new global economic center. At least, the world history has not seen such precedents so far.

Now let us have a look at other hypothetical global economic centers. As it turns out, there are only two of them – Canada and Russia. Moreover, both countries are antipodes of China concerning their population that is much smaller than in the U.S. Besides, Canada can be discarded as a serious contender, because its territorial advantage is too small (the excess of 6.5% do not make any difference to the world capital) regarding a rather serious demographic “failure”³.

It may seem paradoxical, but, in view of the above, Russia is the only potential contender for a new global economic center. It is connected with two points. First, only Russia is capable of providing a really significant expansion of economic space. Second, disastrous demographic situation in Russia is not a fatal parameter and it provides good opportunities in terms of international migration. Here we are talking about the fact that the territorial factor is not subject to significant adjustment, while the demographic factor can be improved quite strongly and quickly.

³ The big advantage for Canada is its common border with the U.S. and also the similar culture of the two countries. However, we think these factors are not enough to outweigh its shortcomings.

Let us recall some of the twists and turns in the geopolitical integration “USA–UK”: the U.S. first leaped onto the stage as the world leader in 1852, when its GDP exceeded that of the UK, but it was only in 1856 that the U.S. took over Great Britain in terms of population. Moreover, the reshuffle took place quite rapidly: in 1840, the U.S. population was 30% less than in the UK, while in 1870 it increased by almost 30%. Thus, under certain circumstances, Russia is able to catch up with the U.S. concerning the demographic situation. But let us be clear: here we are talking only about compliance with global trends. In reality, Russia is institutionally not ready even to join the competition for the right to become the new global economic center, let alone actually gain this status.

Since Russia cannot compete for world leadership, the majority of analysts are persistent in their opinion that it is China that can. According to the Pew Research Center, even the Americans themselves view this country as the leader: 47% of respondents think that China is the world’s leading economic power, while only 31% of Americans consider their own country as such; 9% point out Japan, and 6% – the EU as the world leader [7]. Here we can mention a funny, though very telling fact: the British journal “The Economist” placed the following economic game on its website: setting the inflation and GDP growth in the U.S. and China, one can see on the graph the year when China will outstrip America in terms of economic development. Under plausible parameters, this should happen in 2018 [8; 15]. This indicates that wide public is preparing psychologically to the change of the global leader. However, such calculations require some clarification.

As we have shown above, the change of the global economic center takes place in five stages. Proceeding from the fact that China has passed the first two stages, three more are left for it.

First – it has to outrun the U.S. by GDP. Second – it has to outrun the U.S. by the GDP per capita. Third – it has to establish the currency supremacy of the yuan. Let us make an approximate estimate of the time that China would need for passing the second (T) and the third (τ) stage. For this purpose we shall consider three scenarios: *optimistic* (GDP growth rates in China and the U.S. meet the recorded maximum over the past 15 years – in 2007 and 2005, respectively); *pessimistic* (GDP growth rates in China and the U.S. meet the recorded minimum – in 2012 and 2013, respectively); and *depressive* (the chosen growth rates for both countries are the most modest and correspond to a very “cold” economy). Calculations are simplified; they do not take into account possible changes in the population size of the countries. For 2013 the starting value of China’s GDP is 50.6% of the U.S. level and China’s per capita GDP is 12.0% of the corresponding indicator for the U.S. The results of calculations are presented in *table 5*.

What do the obtained figures indicate?

First of all, the existing views on the forthcoming dominance of China are overrated. Even under the most favorable scenario for China, it will catch up with the U.S. in terms of GDP only in 2020, and in terms of per capita GDP – in 2034. If things turn out not in favor of China, which is very likely, then the corresponding achievements will be gained only after a long-term period – in 2031 and 2068, respectively. If we average the extreme estimates, they show that China could enter the fourth stage in 2051. Moreover, it is necessary to implement the fifth stage – the transformation

of the yuan into the dominant world currency. It has taken the U.S. more than 60 years to achieve that for the dollar. Even if we take into account the acceleration of all the processes and assume that China would need just 15 years to accomplish the fifth stage, the formation of the new global economic center would be completed only in 2066. Even if all the stages are implemented, it will take more than 50 years. Thus, China is unlikely to establish itself as global leader in the foreseeable future. In this sense, the prospects of turning China into the new global economic center seem utopian.

We should add the following. All the extrapolations do not take into account the main thing: physical constraints on economic growth. It is not inconceivable that transformation of China into the global leader would be connected with the complete destruction of its ecology and excessive consumption of all types of economic resources. This is a separate topic for discussion, and it contributes further adjustments to overoptimistic forecasts.

6. A multipolar world. All the above reasoning leads us to the understanding of the fact that globalization factor is practically exhausted. Three potential centers of global capital – China, Canada and Russia – do not meet “globalization” criteria. Does this mean that the very scheme of geopolitical inversion ceases to exist? Can we say that the flows of global capital do not comply with the reasonable deterministic laws anymore, that they are losing the vector of their direction and entering the turbulent regime? What will the landscape of the global economy look like in this case?

Table 5. Comparative parameters of growth of the U.S. and China's economies

Scenario	Basic parameters		Calculated parameters	
	Growth rate, USA, %	Growth rate, China, %	Equalization period for GDP (T), years	Equalization period for GDP per capita (τ), years
Optimistic	3,1	14,2	7	21
Pessimistic	1,9	7,8	13	38
Depressive	1,0	5,0	18	55

To answer these questions, one should take a look at the world history of the last decades from a slightly different angle.

As we have stated above, global capital “lives” according to its own laws that require the presence of a certain geographic center, in which all the economic activity will be most effective. These centers are formed spontaneously in accordance with the *logic of capital*. S. Žižek argues that the true aim of the capitalist system consists in self-reproduction of capital through its continuous rotation; the main thing in capitalism is the self-propelling circulation of capital (Žižek, 2012). Capital should increase by earning interest on it (rate of return) – this is the logic of capital. At that, the very logic of capital is characterized by *anonymity, systemacity, abstractness and objectivity* [2]. The whole mechanism of circulation of capital in the modern world, as D. North points out, is *impersonal*. It is the system of impersonal exchange, according to D. North, became the apotheosis of socio-economic development of the West [12]. Hence the fact that it is pointless to look for specific people in the periodic reform of the capitalist system; all conspiracy theories simply lose their personalized aspects under the logic of capital.

In this context, the post-war world history can be presented as follows. The global economic center represented by the United States was gradually seeking for a new territorial base for the accumulated world capital. At that, everything pointed to the USSR as the only and a very real new GEC. Its area in 1991 was 2.4-fold more than that of the USA, and its population was greater by approximately 15%. Possessing such economic characteristics, the country had every opportunity to become the new GEC. However, it was impossible due to ideological reasons. The Soviet system officially denied the capital and was not able to provide a comfortable environment for its development. In our opinion, it was the most dramatic moment in the world history: the only country

that could allow global capital to take the next step in its development, “rejected” it. It was the first obstacle on the path of globalization of the world capital, there is a possibility that this very fact became the main cause of the two world wars. The obstacle has been removed only in 1991, when the Soviet Union ceased to exist and broke up into many smaller and weaker states.

At that moment, the situation became a stalemate, when none of the countries fully complied with the territorial globalization criterion and could serve as a safe harbor to the global capital. Ten years later, it became clear that Japan failed completely in its attempts to become the new global economic center. However, the U.S. was simultaneously “building” two new centers of global capital: traditional (sovereign China) and non-traditional (the United Europe). In fact, it became clear already in 1991 that the new GEC had to be created artificially by combining the states culturally close to each other. Z. Brzezinski made a comprehensive analysis of the actions undertaken by the U.S. for integrating the European countries; he believes that American policy was dictated not by abstract altruism, but the desire of the U.S. Government to get a strategic partner for solving all the key geopolitical and economic issues [3]. Besides, we may add that the big capital of the U.S. was latently hoping to see the new and more attractive GEC in the European Union (EU). Although it is already clear that this policy also failed – the EU cannot become the new GEC.

In our opinion, the failure with the EU is the same as with China. The point is that the area of Europe, even after its consolidation, only slightly exceeds that of the U.S. (*tab. 6*). In this sense it is similar to Canada. Thus, the spatial criterion of globalization has been met only formally; the EU does not have a significant advantage in its organization of economic space.

At the same time, the demographic factor in Europe is more significant than in the U.S., although not as excessive as in China. Moreover, the spatial factor in the EU is very unreliable. The point is that without Belarus and Ukraine, Europe loses a considerable part of its economic space and its area becomes 98.1% of the U.S. territory. Consequently, according to the spatial criterion of globalization, the EU is not fit for the role of the new global economic center.

Summing up all the post-war attempts to build a new GEC, we can say that there were four of them: USA, Japan, Europe and China⁴. What does this mean?

All indicators prove that the *world capital globalization factor has been exhausted* – no country and no region can claim the role of a full-fledged global economic center. In this situation, the traditional scheme of circulation of global capital by GEC is broken. Instead, it is necessary to establish a new scheme of the *efficient coexistence* of multiple regional economic centers (REC). Currently, such centers already exist: the U.S., China, the EU, Japan, and Russia. This system is the implementation of the *multi-polar world model*. We cannot give a characteristic of this system due to the short time of its existence. Most

likely, regional economic centers will constantly form temporary alliances and thereby stabilize the world economy.

Meanwhile, we can assume that the attempts to create a new global economic center will be continued, for instance, the establishment of the Customs Union and the even more ambitious Eurasian Union. The Customs Union alone holds great opportunities. Continuing the experience of the United Europe, it possesses much more attractive features. For example, the integration of Russia, Kazakhstan, Ukraine and Belarus would create a single economic space with the area 2.2-fold exceeding the U.S. territory. The population of the Customs Union will be 70% of that in the USA (*tab. 6*), and the opportunities for further demographic growth in the united territories are almost unlimited. Such characteristics should be recognized as unique and very promising for the modern world.

The above highlights the unfolding struggle between Russia and Europe for Ukraine from a different angle. If the geopolitical situation in this country is not able to shift the balance in favor of one of the competing centers of power, it can at least weaken the position of the Customs Union as a new global economic center.

Table 6. Main characteristics of European countries

Country	Area		Population	
	thousand km ²	% (USA=100)	million people	% (USA=100)
USA	9372.6	100.0	320.2	100.0
Europe	≈10000.0	106.7	≈730.0*	228.0
Ukraine	603.7	6.4	46.3	14.5
Belarus	207.6	2.2	10.3	3.2
Kazakhstan	2717.3	30.0	17.2	5.4

* Including 110 million people living in the European part of Russia. For reference: the population of the EU is 530 million people.

⁴ Note that the U.S. directly participated in the “testing” of all the potential global economic centers, except for the USSR. For instance, Japan not only adopted American market institutions up to antimonopoly regulation, it is also completely dependent on the U.S. militarily; in fact, Japan is still a military dominion of the United States. China “grew up” after the United States opened its domestic market for Chinese goods and supported the Chinese economy by its investments; China’s accession to the WTO in 2001 became the apotheosis of this “friendship”. The European Union in its present form was made possible through the expansion of American military alliance NATO to the East and admission of the Eastern European countries in it. It was possible to create the common European economic area only on the basis of the integrated military alliance of European countries. At the emergence of political problems in Yugoslavia, the peacekeeping operations on its territory were carried out by the U.S. forces.

7. Culture vs economy. We have analyzed purely economic factors in the formation of the global world center. However, this does not answer the question of what to expect in the future. We can definitely say only the following. Neither the EU, nor China or Russia in their present state cannot become the new GEC. According to a number of indications, the U.S. is also close to losing this status. The world is in a state of institutional vacuum – it is not clear which political jurisdiction will determine the flows of global capital. It seems that the United States is the final point, in which the process of globalization of world capital has been completed. What is next?

All the regional economic centers are now facing very serious economic problems. However, none of these problems is unsolvable. The only question is how quickly and at what cost they will be handled. This situation brings the culture factor to the fore. How flexible, creative and wise will the countries be at solving the urgent problems?

It is already clear that the main problem of the U.S. lies not in its economy, but in the cultural environment, which has formed in the country. The disintegration of the society, the absence of its uniting idea, the lack of adequate institutions – these are the main threats to any country, including the USA. Thus, the change of centers of power in the world system will depend on the cultural factor rather than the economic factor.

Paradoxically, Russia, due to its huge territory, will always be the center of gravity for world capital. At present, it is not happening mainly because the country has not adopted modern capitalism. In fact, Russia, on the contrary, is trying to limit it and take it under control. This primacy of the state over the capital moderates the interest in Russia on the part of the world business community. If the country radically changes the attitude to capital, it can become a new global economic

center⁵. However, global capital, as it has already proved over the previous centuries, will not be too concerned about its new jurisdiction. History shows that capital is not tied to the area of its origin and temporary stay. In this sense, Russia has a real chance to become the stronghold of global capital. What obstacles does it have to face?

First of all, cultural traditions, which are called *community traditions* against Western *individualistic* patterns of behavior. Assuming the role of GEC means renouncing all historical traditions, old cultural formats of conduct and public management. What social consequences can this kind of reforms have? How realistic are they? Are they appropriate for the Russian people and national capitalist elite? Is it worth to sacrifice local interests for the sake of gaining global achievements?

The answers to these questions are ambiguous. And this is a separate topic for discussion.

This article describes some objective economic prerequisites for the rise of a new global economic center. And in this regard, as it turns out, Russia has enormous potential. However, we have deliberately left aside a number of factors that can turn the course of history in an unexpected direction. For example, we have not considered a possibility of *military-political* actions. For example, China's geopolitics is quite aggressive. In addition to capturing Tibet in 1951, China literally keeps all of its neighbors, Vietnam, Myanmar, Laos, Taiwan, in fear; the 2014 World Economic Forum in Davos revealed the escalated military confrontation between China and Japan. Many of these countries believe that China lays claim to their territory and can at any moment launch a military invasion. The unfolding of military actions can change the geopolitical influence

⁵ Note that any Northern country aspiring to the role of the new GEC should be a modern energy superpower. Russia has this feature.

of China, including its territory. In this case, the shift of the global economic center toward Russia would be problematic or at least slowed down.

We also disregarded the *environmental factor*. For example, the growth of per capita GDP in China up to the U.S. level will, most likely, lead to such an increase of anthropogenic load on the environment that it will not be compatible with normal life of the population.

There is a danger that the United States might *prolong* the time of its existence as a GEC. This process already manifests itself partly in active implementation of shale oil and gas production technology in the U.S.; the presence of vast undeveloped areas in the country considerably slows down the transition to a new GEC. The American business is planning to transfer high-tech production from Asia to the USA for similar purposes. This measure may prolong the life of the United States as a GEC.

There is a danger that Russia might *break up*, and Ukraine might be *divided*. Such a split up of the territory of a new potential global economic center can lead to a radical reshuffle of the interests of big capital, and Russia might as well have no prospects as a GEC.

There is a danger of *hostile cultural integration* of the representatives of global capital and the Russian population. Just like the Anglo-Saxon capital established itself efficiently in the USA and suppressed the local Indian population, it can dominate in Russia, driving the Russians in a kind of economic reservation. Of course, such a “hostile takeover” on the part of global capital will cause fierce resistance and can result in the fact that the world business elite will cease to look upon Russia as a global economic center.

All these circumstances can disturb the natural logic of the movement of world capital to a new global economic center. But in any case, all these factors only disturb the main evolutionary trend – globalization of GEC and search for a new base for global capital.

Editorial note. Some of the conceptual provisions contained in the article of Professor E.V. Balatsky, are open to question, or require additional arguments. The author of the article, in particular, believes that the change of the global leaders is a process characteristic of the development of capitalist relations on the global scale. But are there any limits to capitalist development? When will the process of geopolitical inversion of capitalism fade? Is capitalism eternal? Is there any alternative to it?

The article by E.V. Balatsky gives a “good food” for discussing global development issues. The Editorial Board invites esteemed readers to join this discussion on the pages of our Journal.

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Development of the theoretical platform as a system foundation for industrial policy in the context of new industrialization*



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Abstract. The article considers industrial policy as a compulsory attribute of the state participation in the economic development of any country, singles out types of industrial policy and emphasizes contradictory understanding of industrial policy in Western countries and domestic economy. The author describes the features of industrial policy implementation in foreign countries and analyzes the stages of its development and implementation in Russia. The article substantiates the fact that the current trend of modern national economy development is new industrialization. It clarifies the research conceptual framework, describes the author’s concept of new industrialization, reveals its functional-catalytic type and formulates the concept of “institutional contour of new industrialization”. The research develops theoretical-methodological bases and proposes the theoretical platform for industrial policy in conditions of new industrialization. The platform system base is the synthesis of the institutional theory provisions, the theory of long-term technological and economic development and economic synergy. The article reveals the evolution of the industrial policy implementation mechanism and singles out the modern mechanisms, typical for industrial policy of the 21st century.

Key words: industrial policy, new industrialization, institutional contour of new industrialization, theoretical platform, implementation mechanism.

* This article has been carried out with the support of the Program of interregional and intergovernmental fundamental researches, grant No. 12-C-7-1003 “Research and forecasting structural and space-temporal dynamics of regional sectoral markets and the development of adaptive models of industrial policy”.

Introduction

Industrial activity in the 21st century will be the most important factor in economic development. The multifunctional mechanism for the formation of a competitive structurally balanced economy as the total of industrial activity is industrial policy is an obligatory characteristic of government involvement in the economic development of any country. However, the forms and methods of government participation are extremely varied. They depend not only on the stage of the civilization development of the society, the level of socio-economic development of the country, the mentality of the population, but also the specificity of the institutional environment, the structural characteristics of the economy, etc.

The state carried out industrial policy which was formed in the age of industrialization in the 19th century, when technical and technological means were the key tool to solve major social and political problems [1, p. 48]. Today in this country, the problem of industrial policy, which is the central core of innovation policy, is in the focus of both public authorities and business community. This interest is mainly determined by great structural imbalances in the domestic economy that has greatly complicated the consequences of a systemic crisis, as it has had a structural nature. The overcoming the crisis, the intensifying research in the field of a new industrialization of the economy of Russia and foreign countries require industrial policy to be based on the combination of an active role of the state and market mechanisms. The role of the state in European countries is not seen from the perspective of the growth of its presence in economy, but from the position of SMART-state, it is the state, which defines goals, objectives and priorities of the development of a country.

It may be noted that the most discussed alternative models of economic policy, which define the type of industrial policy are liberal and dirigiste. The first one is characterized by a

free play of market forces and the minimum of state involvement in economy. In accordance with this model, the “soft” or horizontal model of industrial policy is formed. The dirigiste model involves an active participation of the state in economy not only as a reformer, but a subject, a state entrepreneur and an investor. In this case, the “hard” or vertical model of industrial policy is formed.

At the same time there is no consensus on the understanding of the economic content of industrial policy. The term “Industrial – policy”, widespread in Western countries is, first of all, the policy of the support separate, the most important sectors of economy at the different stages of its development. In the USA you can hear “industrial policy in agro-industrial complex or in tourist industry,” etc. In this country, the word for word translation of the term “Industrial – policy” predetermined its understanding as the policy in the sphere of industry. The problems of the legislative implementing of industrial policy in Russia are discussed today from these perspectives.

Industrial policy in foreign countries

In global economy the priorities of the support for industrial policy are varied. For example, supporting priorities in several countries in South America include loans for fixed assets or investment projects, equity investments, loans and tax benefits for specific sectors, credit programs and tax benefits for separate regions. As an example, one of the areas of industrial policy in France, where a lot of attention is paid to the formation and implementation of industrial policy, is the benefits for R&D enterprises. The special system of the measures of industrial policy has been created and is being constantly changed in the EU.

Harvard University Professor D. Rodrik said: “In developing countries, it is difficult to find a prosperous industry, which would not have been the result of industrial policy” [13, p. 17]”. Industrial policy was one of the

main instruments used by foreign countries to change the image of national industry and solve structural problems. At the same time “Industrial policy” means not only sectoral policy, but also the state policy in promoting economic recovery, including industrial recovery, from structural crisis.

The experience in developed and developing countries shows the positive outcomes of the realization of industrial policy. In particular, D. Rodrik [13, p. 26] presented the interesting data on exports to the United States of five most important export items of the three countries – the economic leaders in Latin America – Brazil, Chile and Mexico. It turned out that each of these products still had the status of the beneficiary of special support programs (including aviation industry, whose development has brought Brazil to the third place in the world in the export of aircraft, and steel industry, and footwear industry). Russia has always had significant assets in aerospace complex, but missed the leadership in aircraft manufacturing, giving a large multiplier effect. The Brazilian corporation “Embraer”, which started up only in the late 1970s, has become the world’s third producer and exporter of aircraft (after “Boeing” and “Airbus”). Brazil has become the world leader in this promising niche of alternative power industry as the production of bioethanol and biodiesel [4].

The experience of Latin American countries, aimed in the 1990s in accordance with the recommendations of the Washington Consensus at the “soft” industrial policy, showed the unreliability of this development. During this period, the role of market mechanisms in Latin America had considerably increased while the government intervention in economic processes sharply reduced. The degree of liberalization of the economy, i.e. the decreasing government intervention, is characterized by the Index of structural reforms. The maximum value for this Index is 1. The value for this Index for Latin America in the early 1970s was 0.47. In the mid-

1980s its value climbed to 0.55 and increased by the end of the 1990s by 0.82 [12]. However, the rates of economic growth of the region were considerably lower in the 1990s than before 1980, when the degree of the openness of the countries of the region and the quality of the existing institutions were inferior to these of the leading countries. In fact, the economies of three Latin American countries – Chile, Uruguay and Argentina – grew much faster in the 1990s than in the 1950–1980s.

This experience is very different from the experience of the countries such as South Korea and Taiwan (from the beginning of the 1960s), China (late 1970s) and India (from the beginning of the 1980s). In these countries universal industrial policy was widely used. There has not been well established property right and such measures of government policy, which are considered as the main obstacle to economic development, have been implemented. However, this was not an obstacle for the above-mentioned countries, on the contrary, it was the reason for success in overcoming difficulties in the economic development and the formation of modern technological structures there, corresponding to the conditions of knowledge economy.

The nature of government support in different countries and in different periods of time is being changed. For example, France in the 1960–1980s used the following instruments with clearly specified target orientation: assistance to export businesses, development of certain regions, promotion of scientific research. The assistance to industry continued to be implemented in the second half of the 1980s, but there was a shift in emphasis. 50% of the funds were allocated to the traditional industries (iron and steel, shipbuilding and textiles) while only 20% – to high technology. The overall funding went to production, then – productive investment, and only in the third place there were R&D investments. For small and medium-sized enterprises the assistance

was provided in two basic forms: subventions (70% of total aid) and loans. The core funding came to small and medium-sized enterprises and only 5.5% – directly to R&D [6, p. 27].

At the end of the 20th century the situation with the financing of R&D in France changed. The basic assistance was implemented to the so-called industrial technology¹, which was funded in the form of traditional government R&D loans, concessional finance, government contracts, infrastructure for the development of science and technology.

Industrial policy in Russia

Russia has quite a rich experience in the formation and implementation of industrial policy. In 1989–1991 there was no question of the setting of the industrial policy, because the belief in the market as a panacea for all woes prevailed. In 1992–1993 at the government level the range of sectors, supported, as a matter of priority, with a special support budget fund for priority sectors was defined.

Then (1994–1998) there was a rejection of the selection criteria. The industry and commercially viable projects (financing principle 4:1) were supported. The absence of technological progress, as well as positive structural changes led to a new stage, when the prevailing point of view was that the best industrial policy was its absence. Having been established as a result of such a policy the preservation of industrial structure predetermined the need for more active government industrial policy, which in the period of 2001–2005 implemented the universal methods of industry support.

In the period of 2006–2008, the “soft” industrial policy was supplemented by selective measures of supporting priority activities. At the same time the question of the formation of a national industrial policy and the transition to a competitive industrial policy was raised. The result was a slight increase in innovative capacity and an increased emphasis on the

development of high-tech industries. Modern industrial policy, the policy of the 21st century, is the policy of economic reconstruction with the identification of the areas of possible government intervention to soften the structural changes and effective cooperation with business, civil society institutions.

Industrial policy as the tool of a new industrialization

Numerous changes in the dynamics of the vector of the domestic economy in the first decade of the 21st century intensified the researches in the field of a new industrialization. The debate on it as the current trend of modern economic development has provoked a broad-based discussion in terms of not only the possible ways and means of its implementation, but also the interpretation of the concept of a new industrialization. The analysis of the various points of view on its essential conception [2; 4; 10] showed that it was often interpreted as the creation of new sectors of economy and new businesses, forming together the so-called “new economy”. Much less attention is paid to the modernization and innovative development of traditional industries that make up the economic foundation of industrial regions.

It is not also taken into account that during the formation of new industries and infrastructure there is a disparity between the technical, economic and socio-institutional spheres. In addition, in the economic system the internal contradictions between old and new technologies are arisen. The process of overcoming these internal contradictions is quite long, complex, and socially painful, and can be successfully implemented only through interactive social, political and administrative changes. Therefore, a new industrialization, in our opinion, not only affects the management and organization at the level of individual firms, industries and sectors, but also the entire system of social and political control. For its success fundamental changes in investment behavior,

¹ The term “industrial technology” means the complex of different forms of industrial innovations and R&D.

in technological solutions, in organizational models that improve efficiency, in the mentality of society and in institutional environment, which regulates and maintains the desired economic and social processes, are inevitable.

Neoindustrialization is understood as a synchronous process of creating new, high-tech sectors of economy and effective innovative renewal of its traditional sectors, with agreed between technical, economic and socio-institutional spheres qualitative changes, implemented through interactive technological, social, political and administrative changes.

In the development of this concept it seems to make sense to highlight the functional catalytic industrialization as a particular type of a new industrialization. Its typological principle is the dependence of creating new sectors of economy and the development of conjugate industries, including traditional, on realizing new opportunities of catalytic properties of innovative technologies and product innovations.

The typical example of industries, forming the basis of functional catalytic industrialization, would be nano-, bio-, info-industry, rare earth industry, composites, use of the product of which is the basis not only for the creation of new types of production and product innovations, but also for the emergence of a multiplier effect in the base sectors of economy.

Institutional outline of a new industrialization

The success of a new industrialization process is largely determined by the quality of institutional environment. It is productive, in our opinion, to use the concept of institutional matrices to investigate the influence of institutional factors on the development of processes of neoindustrialization. The first mention of them is found in the works by the neoinstitutionalists K. Polanyi and D. North. The further conceptual development of this area is associated with the works of the researchers from the Institute of Economics of the Siberian Branch of the Russian Academy

of Sciences [5]. The institutional matrix in these papers is interpreted as the form of public relations, integrated through the system of basic institutions in the major spheres of society - economy, politics and ideology. This concept has been used as basic in the study of the institutional environment of small business development in the Urals [9, p. 84]. The concept of institutional matrices is supposed to be the essential basis for this new concept, proposed by us, as the institutional outline of a new industrialization.

The institutional outline of a new industrialization - is the most significant types of economic, political and ideological work in the field of social development, with high technological and socio-economic importance of having a high multiplier effect and the capacity of self-development, contributing to the development process of a new industrialization on the basis of network communications of industrial, innovative and socio-economic systems.

A new industrialization makes new sets of demands on conducting industrial policy. The technological upgrading of basic material production sectors, for prejudging the possibility of their qualitative transformation, plays a critical role in the creating a fundamentally different technological framework to change the structure of production, focused on the priority of human development. However, nowadays there is no unified theoretical platform, which can be a basis for the system of industrial policy, equal to the requirements of the new industrialization.

Theoretical platform for the formation of industrial policy

There are different viewpoints on the theoretical nature of industrial policy. (E. Yasin believes that government, including industrial, policy should not be related to certain theoretical models. The position by G. Kolodko seems to be more reasonable, according to which the policy should be based on the theory that

explains the mechanisms of functioning of economy and its growth. A good policy can be formulated and implemented only on the basis of a good economic theory). Our position is that the presence of a theoretical platform and its timely adjustment are obligatory in the formation of industrial policy.

The necessity for a new theoretical platform of industrial policy is determined by such features of modern economy as multilevel, polystructure, heterogeneity, instability, multifactor, and fractal. This involves the mandatory participation of the state not only at different hierarchical levels, but also business and civil society institutions, as the subjects of industrial policy. The researches carried out in the Institute of Economics, The Ural Branch of the Russian Academy of Sciences, have allowed to develop the proposals for the formation of modern theoretical platform of national industrial policy. The fundamental basis of this platform can be the synthesis of the concepts of the institutional theory, the theory of a long-term techno-economic development and economic synergy.

The institutional classical theory (its most prominent representative - W. Samuels) is, in our opinion, one of the core theories in the development of the theoretical foundations of industrial policy for the following reasons. Institutionalists consider economy as an organic, evolving system. It is particularly important from the standpoint of industrial policy to take into account the emphasis that institutionalists do in terms of the application of the theory to the problems of policy and the economic role of a state. They emphasize that the power structure (including legal rights) determines whose interests must be taken into account, and, hence, optimal solutions by Pareto are specific for each structures.

Institutionalists emphasize the actuality of taking into account the inherent link between any action and technology at the formation of industrial policy. Therefore, the rules for conducting this action are not set out on the basis

of free individual rational choice but on the basis of technological basis of objective parameters. Thus, a mandatory attribute of institutions in terms of institutional classics is the subject-pragmatic content related in the framework of industrial policy to the achievement of higher technological stage, the increasing the competitiveness of economy on the basis of its new industrialization. The understanding of the institution by institutionalists as a collective action, controlling and expanding an individual action, plays a special role. That is, in this framework the priority is given to sociality, collectivity in relation to personality [7]. This position determines the multistakeholder model of industrial policy, when not only government and business, but also science, education, civil society institutions are involved in the development of ideology of formation of industrial policy and its implementation.

As a government is “deeply involved as both dependent and independent variable in the socio-economic structure of power” [8, p. 137], the main practical problem of the formation of industrial policy is the non-juxtaposition of permissibility of government intervention in economy to its total absence. The most significant is what interests government will support; what priorities will be the most important for it. Institutionalists emphasize that the vector of the formation of government industrial policy is determined by the system of legal relations in a particular society. Therefore, its improvement determines the efficiency and effectiveness of industrial policy in any country.

The theory of long-term technical and economic development mainly explains the regularities of geotechnological dynamics. The studies by K. Peres, S. Glazyev, V. Dementiev, B. Kuzyk, V. Majewski, Y. Yakovets showed that in the technological structure of economy you could define the groups of technological sets, linked with the similar technological chains and formed reproduced integrity that was the basis of the relevant technical economic paradigm and forming technological structures.

The researches of the above-mentioned scientific school have established a number of the regularities of long-term economic development, which should be considered, in our opinion, in the formation of the functional multistakeholder model of industrial policy. The following regularities should be noted:

- alternation of long waves of economic conditions;
- deep technological shifts that fundamentally change the structure of the world economy as a factor in recurrent structural crises;
- non-equilibrium of processes of techno-economic development, the life cycle of which has its internal logic and objective limitations;
- non-linear path of development, distribution and replacement technologies;
- uncertainty and alternative technological trajectories in the early lifecycle of the directions of technical and economic development;
- the presence of gaps between the phases of the lifecycle evolution of technologies, the ability of overcoming these gaps depends on the state of innovation and investment institutions of the system.

Synergetics. These patterns are largely similar to the methodological ideas of self-organization theory, or synergetics. It has absorbed the systems theory and the theory of evolution, focusing on the study of non-equilibrium situations, the threshold points of development and quality transitions. The basis of synergetics is an interdisciplinary approach that is used to identify and explain the evolution in coordinates “space – time” for the “design the future”. Synergetics should be regarded as a new scientific paradigm.

Economic synergetics plays a special role from the position of forming a new paradigm. Economics, unlike the natural sciences, is full of the subjective activity. The problem of the subject exists in the economic sciences initially, and only then the problem of non-linearity, uncertainty, chance and necessity comes.

This is especially important in the formation of industrial policy, because control and management subjects affect the effectiveness of its implementation.

It must be emphasized that synergetics has an interaction analysis (subject-subject relationship), that means the reference to specific historical subjects. Consequently, modern economy, in the space of which states, market institutions of different types, large, medium and small business structure, financial funds, the banking system, the population interact, is impossible to be investigated outside the interaction theory, and hence outside synergetics (this fact has helped to transform government industrial policy into national).

Thus, among a number of basic properties, which allow us to consider synergetics from these positions, we can note two features which are directly related to the formation of industrial policy:

1. Synergetics grew out from modern communicative stage in the development of society and it is the science of the interaction as the universal mechanism of functioning and development of complex open systems, nature and society.

2. Synergetics, being the science of formation, works with irreversible time and space, that concerned to all levels of nature and society, and is directly related to industrial policy, in particular to the formation of a new technological system (TS) and its intellectual core.

At the formation of industrial policy it is important to consider the principles of co-evolution, the principles of non-linear synthesis of different structures to complex structural holistic formations. Coevolution is not just the process of adaptation of separate technologies to each other during the formation of a new TS. Its replacement requires changes in social and institutional systems, which promotes a more active implementation of the technologies of a new TS. Coevolution is an interactive

communication between individuals within social organizations and the human community as a whole.

Synergetic principles of coevolution, focused on the distant future, which is almost impossible to design on the base of traditional methods, are necessary for effective management. They can be used for formation of the strategic vision for the future, for long-term planning, for development of government industrial policy in a globalizing world.

The general pattern of co-evolutionary development is that the union in the long historical perspective is beneficial not only to weak elements, in view of aging technological structures, but also strong, highly developed elements, i.e. the elements that form the core of technological order. The most important synergetic idea is that a certain amount of chaos for sustainable development process of coevolution is required, i.e. spontaneity of development and self-management, as well as a certain amount of external control. Moreover, these two components – the self-organization from the bottom and the organization from the top – should be balanced, and that determines the specificity of industrial policy at different stages of economic development.

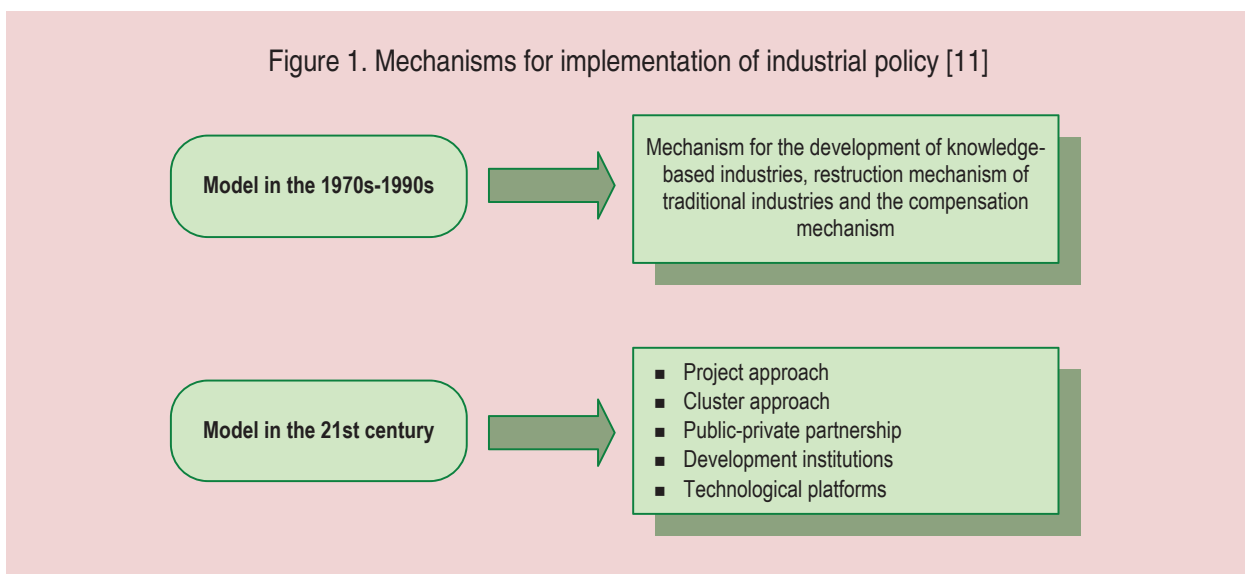
The mentioned positions of institutional theory, the theory of the long-term feasibility and synergetics can be, in our opinion, a reliable theoretical and methodological basis for the formation of industrial policy.

The proposed theoretical platform for formation of industrial policy includes the mandatory use of modern methodology of identifying its priorities. The most reliable and proven method in the world practice is foresight, the theoretical foundation of that has much in common with the above-mentioned basic positions which form a modern approach to industrial policy.

Mechanism for the implementation of industrial policy

The successful realization of the priorities of industrial policy is largely determined by appropriate mechanism for its implementation, which is understood as the system of measures used to achieve the stated objectives. It may be noted that this mechanism, as well as industrial policy itself has been undergone the major changes (*fig. 1*). In the 1990s the basic model of the mechanism for the implementation of both state and regional industrial policy is the mechanism for the development of knowledge-based industries, restructuring mechanism of traditional industries and the compensation mechanism

Figure 1. Mechanisms for implementation of industrial policy [11]



traditional industries and the compensation mechanism. The latter was intended not only to reduce the negative social consequences of the transformation of industrial complex areas, but also to solve problems which were common to both traditional and high-tech industries (the problems of structural unemployment, infrastructural support of industrial restructuring, increasing “innovation intensity” of industrial complex, etc.).

The changing conditions and new requirements for a modern industrial policy predetermine the necessity of the development of new approaches to the mechanism of its implementation. Five approaches can be identified as the most important:

1. The implementation of *priority industrial projects* of different scale. Administrative, financial, structural, technological, human and market resources are connected within the framework of the project as a tool of industrial policy.

2. *Cluster approach* – is not only the means to achieve such objectives of industrial policy as structural changes, modernization of economy, increasing its competitiveness, strengthening the innovation focus, but also a powerful tool for regional development.

3. *Public-Private Partnership (PPP)* has a long history, but a special attention is being paid to its development in the national economy at the moment. The development of relations between the government and private business is characterized by the fact that they can be successfully implemented not only at the federal level, but also at lower levels of the social system – the level of regions and municipal level. This is important from the perspective of the formation of industrial policy, because there is a growing necessity for its implementation at different hierarchical levels. This is due to the redistribution of financial flows in favor of particular regions and, as mentioned above, to the practicality of expanding range of individuals and organizations interested in the implementation of industrial policy.

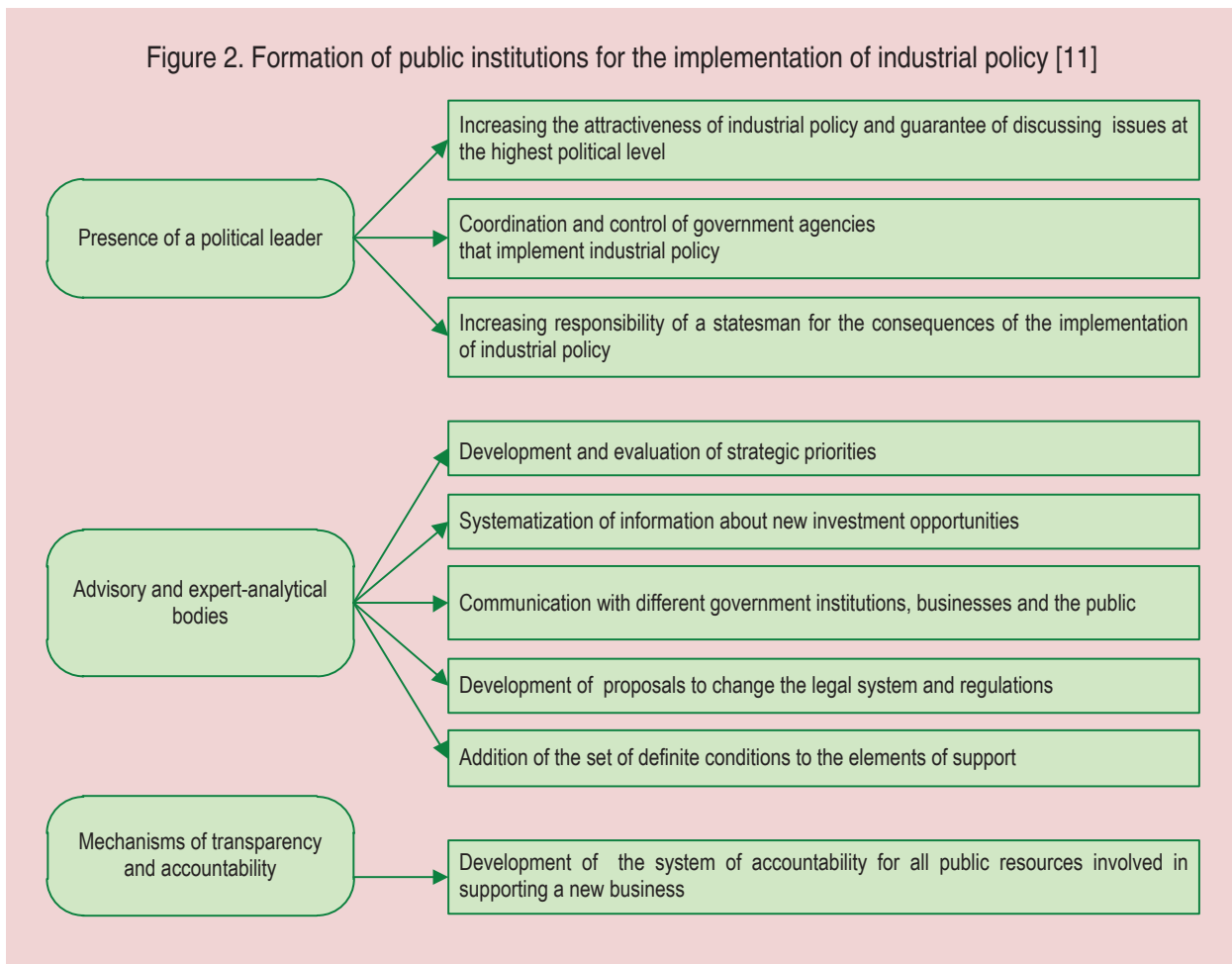
4. *Development institutions*, established in Russia, are divided into administrative, for example, special economic zones, and financial, such as an investment fund, Russian Venture Company, Bank of the Development of the Russian Federation, etc. In addition, development institutions are complemented at the regional level by complementary development institutions as the catalysts for innovation growth and effective tools of state regional industrial policy.

5. *Technological platforms* are one of the most important instruments of industrial policy, implementing national technological development priorities. Technology platforms are intended to overcome the gaps between science and business, based on a strong focus of scientific researches on industry requirements. The coordination of researches and the possible ways of their practical application will allow to make R&D order more precisely and accelerate their commercialization on the basis of public-private partnerships.

The successful implementation of industrial policy is largely determined by the availability and efficiency of public institutions which participate in its holding (*fig. 2*).

The participation of a political leader in the implementation of industrial policy and its full responsibility for the consequences of its realization seems to be obligatory. The importance of the focused work of advisory and expert-analytical bodies, developing and evaluating strategic priorities, systematizing information about new investment opportunities, communicating with different government institutions, businesses and the public, developing proposals to change the legal system and regulations, is increasing. The strategic cooperation of civil society with the government and the private sector is the foundation that will allow to offer the ways of effective reducing any barriers to the obstacles to the restructuring of the national economy and achieving the stated objectives of industrial policy.

Figure 2. Formation of public institutions for the implementation of industrial policy [11]



Conclusion

The formation of industrial policy based on the theoretical platform, as it has been explained above, will contribute to its implementation not as a static system, but the system, which can change, self-build, develop and finally go to the mode of self-organizational functioning. In this case the economic content of industrial policy will be aimed at implementing of a competitive vector of structural changes, correcting market forces by increasing or reducing the effect

of the distribution of resources, assisting in achieving synergetic effect, maximizing its own potential for economic growth, reducing the risk of production losses and rent-seeking. This industrial policy can be an effective tool of a new industrialization of the domestic economy. In this case the interaction of a variety of activities with high technological and socio-economic significance is achieved and that will contribute to the establishment and development of structurally – balanced, high-tech, competitive domestic economy.

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DEVELOPMENT STRATEGY

UDC 338.242 : 353, LBC 65.050.23

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Strategic regulation of structural transformations in the economy of the single-industry town



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Abstract. The article considers the problems of strategic regulation of the structural transformations processes in the single-industry towns' economy. The author substantiates the view that its future economic development directly depends on the activity of the town-forming enterprise and presents the algorithm of restructuring program formation. The contents of the main algorithm blocks (stages) are studied in detail. According to the author, the fundamental point in the proposed algorithm is to evaluate the features of the town-forming enterprise in ensuring the implementation of the social objectives of town development. This issue is in focus. The author indicates the necessity to develop the enterprise restructuring program and single out the best option to diversify the town's profile economic structure. In this regard, the article suggests the schematic diagram of the choice and objectives of effective diversification option. According to the author, the options generation procedure for the diversification profile structure of single-industry towns' economy should base on the strategic analysis of the town's economic capacity to identify the competitive advantages of single-industry towns and possible barriers to diversification processes. The author notes that the options implementation will require various types of resources and first of all, investment, labor, energy and land ones. The article provides detailed recommendations on this issue.

Key words: Strategic regulation, single-industry town, restructuring, goal setting, improving the population life quality, the profile structure diversification of the single-industry towns' economy.

The results of promising economic development of a single-industry town will critically depend on the activity of the town-forming enterprise (or several enterprises, conducting their production activities within a single production cycle).

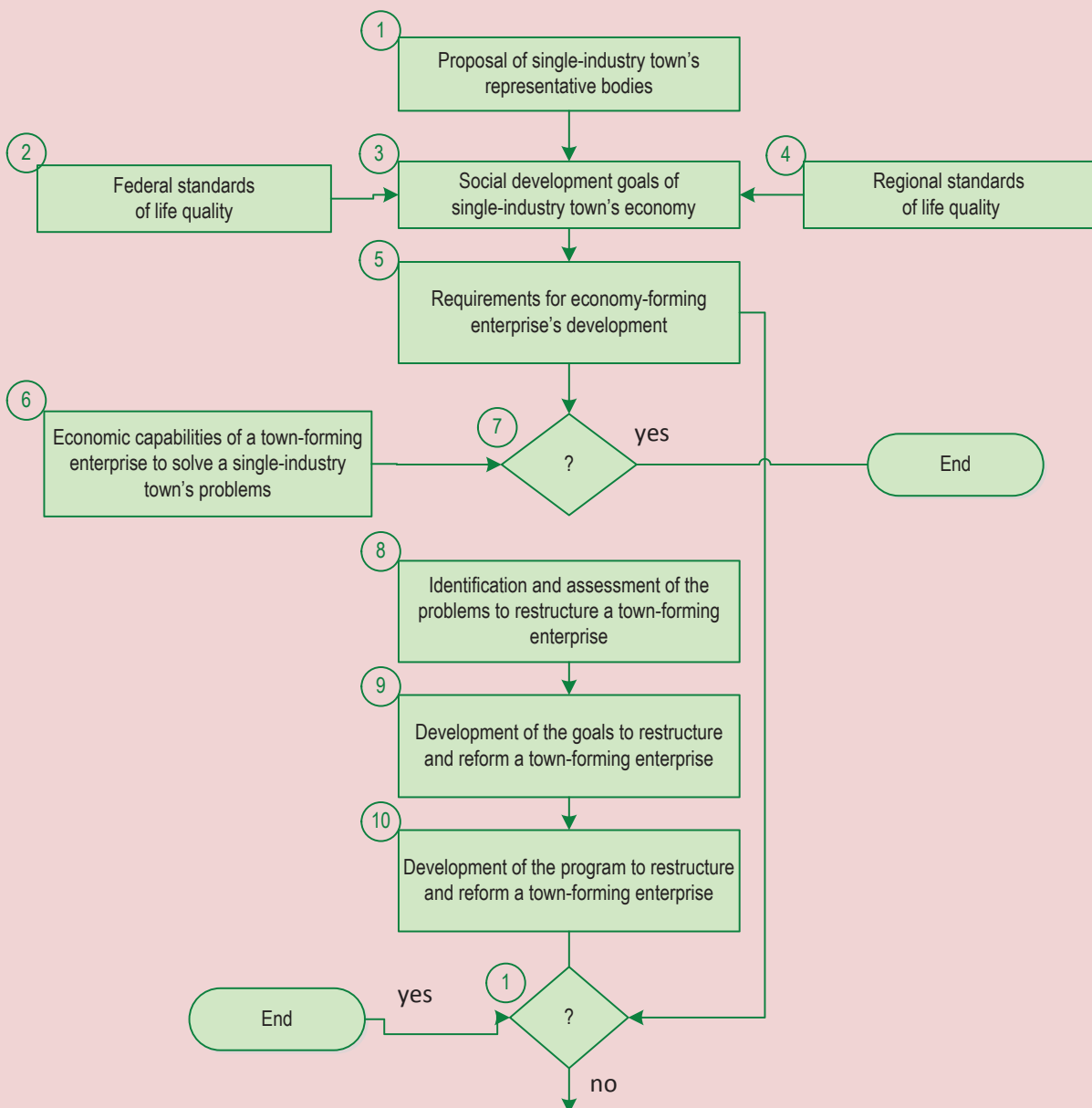
The most important principle of a single-industry town's economic development is to ensure the changes' social orientation in the economic sphere, which directly follows from the constitutional provisions to build a social state in Russia.

So, the initial stage of the research, defining the prospects of a single-industry town's economic development, is connected with estimation of the town-forming enterprise's abilities to ensure the implementation of social objectives of the town development (fig. 1).

The goal setting, as a key feature of scientific organized management, has not been in focus in the process of strategic

management of Russian cities' economic development, including single-industry towns. The reasons are commonly seen in the weakness of the current management; however, the roots of this situation have an ideological character to a certain extent. So, the famous German philosopher and sociologist K. Mannheim said: "Unlike the bourgeois researchers, paying special attention to the objectives definition, K. Marx... refused

Figure 1. Development of the program to restructure a town-forming enterprise of a single-industry town



the precise definition of the objective that can be separated from the process” [5]. To substantiate this point of view, he referred to K. Marx’ statement, principled for consideration of the goal setting process: “Communism for us is not a state to be achieved, not an ideal for the reality to conform. We call the process, which destroys the present state, as communism” [6].

Meanwhile, modern philosophy states that the objective is an ideal reflection of social life and its laws [8]. Cybernetics considers the goal as a certain state for a particular object to strive for; with this state being quite a definite object existence form, implemented in a specific time [2]. So, we can see that K. Marx, having a powerful impact on the formation and development of socialism, was, in fact, a goal setting opponent of principle; our economic practices still experience the consequences.

In a complex qualitative and quantitative certainty, which is a goal of urban development, target indicators serve to express target setting [11]. However, in the target concept system the goal setting acts as an element, which indicates the level of scientific knowledge and notion about the object at the time of goal setting; it is the goal basis and it defines the nature of quantitative dependence and their dynamics. Unlike targets setting, the target indicators can vary when the time period of the goal achievement decreases (increases), depending on the changes of external conditions and prerequisites for the development of a goal setting object. Then, the goal of single-industry town’s economic development can be generally interpreted as its future state characteristics for a considered prospective.

Now let us return to the issue of setting strategic goals to improve the life quality of single-industry town’s population, acting as a kind of “tonometer” “that provides “adjustment” to achieve the whole economic system of the town (Block 3 of the functional diagram, fig. 1). In this regard, one can conditionally

single out two main generators to set strategic goals of a single-industry town’s social development.

One generator is “inside” the town: it is the representative bodies’ proposals to enhance the citizens’ life quality for a considered prospective (Block 1 of the functional diagram); another is outside the town: it is the federal and regional governance structures’ minimum obligations to the population (Blocks 2 and 4, respectively).

Currently, there is not a generally accepted system of legitimate state grants, ensuring minimum social standards, but this does not mean that they do not exist at all. Various legal documents, adopted at the federal and regional levels, stipulate such standards; however, they do not make a complete system. The literature describes the difficulties, associated with scientific definition of minimum state social standards of the population’s life quality; although the key problem here is the lack of political will to address this problem. After all, the decision to develop such minimum state social standards was adopted in 1996 and the draft document was developed [7]. Further suspension, in our opinion, is caused due to the unclear role of state and municipal bodies in the decision of problems of provision of minimum social guarantees to the population.

Block 5 identifies new (increased) requirements for the development of town-forming enterprises’ economy, defined as the difference between the current and forecasted indicators of urban social development in the monetary form. Within Block 7 these requirements are compared to the economic capacities of a town-forming enterprise to encourage social development of a single-industry town (developing required profitable part of the city balance of financial resources, ensuring employment of economically active population, solving environmental problems, arising from the town-forming enterprise’s activities and so on), formed in Block 6 of the functional diagram (fig. 1).

If the comparison reveals the enterprise's ability to correspond to forecasted requirements, the forecast-analytical work is terminated; otherwise there is a shift towards Block 8, which stipulates the identification and assessment of problems to restructure and reform a town-forming enterprise.

We consider the problems to restructure and reform the enterprise's economy as an obstacle to achieve the goals of social economic development of a single-industry town. Each goal is recommended to have the following data:

- detailed descriptions of the problem, a problem statement;
- assessment of the unresolved issues' negative impact on the implementation of the objectives of single-industry town's social economic development; such impact is recommended to be characterized by means of indicators. Their change shows the problem aggravation degree in time;
- characteristics of the problem complexity, involving, for example, the necessity to develop appropriate legal support, to carry out research, design and construction works and to retrain the staff, etc.

To develop the target setting as a basis for the strategic objectives to restructure and reform a town-forming enterprise, it is necessary make grouping, synthesis and ranking.

The essence of the identified problems grouping is their differentiation by the indicators (technological, organizational, problems of management mechanism enhancement, innovation problems and so on); by the types of necessary resources (human, financial, investment, information and so on) and by other grounds.

The synthesis essence is to identify recurring or close problems, to single out common problems, essential to meet the goals of single-industry town's social development. The synthesis results are used to rank the problems

by their importance, determined by the impact on the implementation of the planned social objectives of single-industry town's economic development.

The strategic target setting of single-industry town's economic development stem from the identified problems' essence, that is why blocks 9 and 10 of the functional diagram reveal the development goals to restructure and reform a town-forming enterprise and the creation of an appropriate program.

Realization of full potential of town-forming enterprise's development is possible only when financial situation is stable. To achieve it, most enterprises require restructuring, including organizational and industrial structures, facilities, property and occupied land in accordance with the product demand, as well as upgrade of the financial management system [3]. This involves changes in the organizational and industrial structures, assets, debts, the structure and quality of the staff, etc. in order to boost the enterprise's efficiency.

At the same time, the town-forming enterprise's restructuring is only one of the possible tools to improve its functioning efficiency. It presupposes optimization of the enterprise's structure and production capacity, leading to increased competitiveness of the manufactured products. The investment attractiveness increases with the financial balance improvement. It is the basis for the mechanism of financial resources attraction to industrial enterprise's development. Then there forms the enterprise management system, adequate to the current political-economic conditions, and organizes the work to improve the staff's skills and resources allocation (energy, labor, land and so on).

Restructuring of a town-forming enterprise should comply with the following basic requirements:

- preservation of the existing scientific, technology, production and staff potential;

- increase in real income into the town budget;
- maximum possible preservation (with the tendency to increase) of job places;
- when making managerial decisions to restructure and then reform the enterprise, one should seek economic interests compliance of all stakeholders – owners, managers, employees, power bodies, population, potential investors, etc.;
- substantiation of the state support system to restructure and then reform the economy of a town-forming enterprise in order to prevent mass unemployment and growing social tension.

The latter case presupposes permission to lay-up the property, not used in the production process, thus there is no need to pay property tax, rental fee (or land tax) for unused land, etc.

Block 11 of the fundamental diagram compares the requirements to develop the town-forming enterprise' economy (Block 5) with the software results of its restructuring and reform. If the comparison results meet the requirements of the enterprise's economic development, then the social objectives of single-industry town's economic development can be implemented. Otherwise, one has to develop the proposals for economic diversification of the town.

Nowadays the restructuring and subsequent reform of the enterprise does not often solve the problem of its successful development in the strategic perspective completely. As a rule, the reason for it is not only the lack of the enterprise's allocations into the city budget (more precisely, into the city balance of financial resources, which revenue part takes into account financial resources of budgets of different levels and funds of investors), but mainly the employment problems of economically active urban population, since the unemployment rate in the Russian single-industry towns today is about 6 times higher

than the national average. That is why the creation of job places for economically active population is considered to be one of the main requirements to diversify the profile of the town's economy.

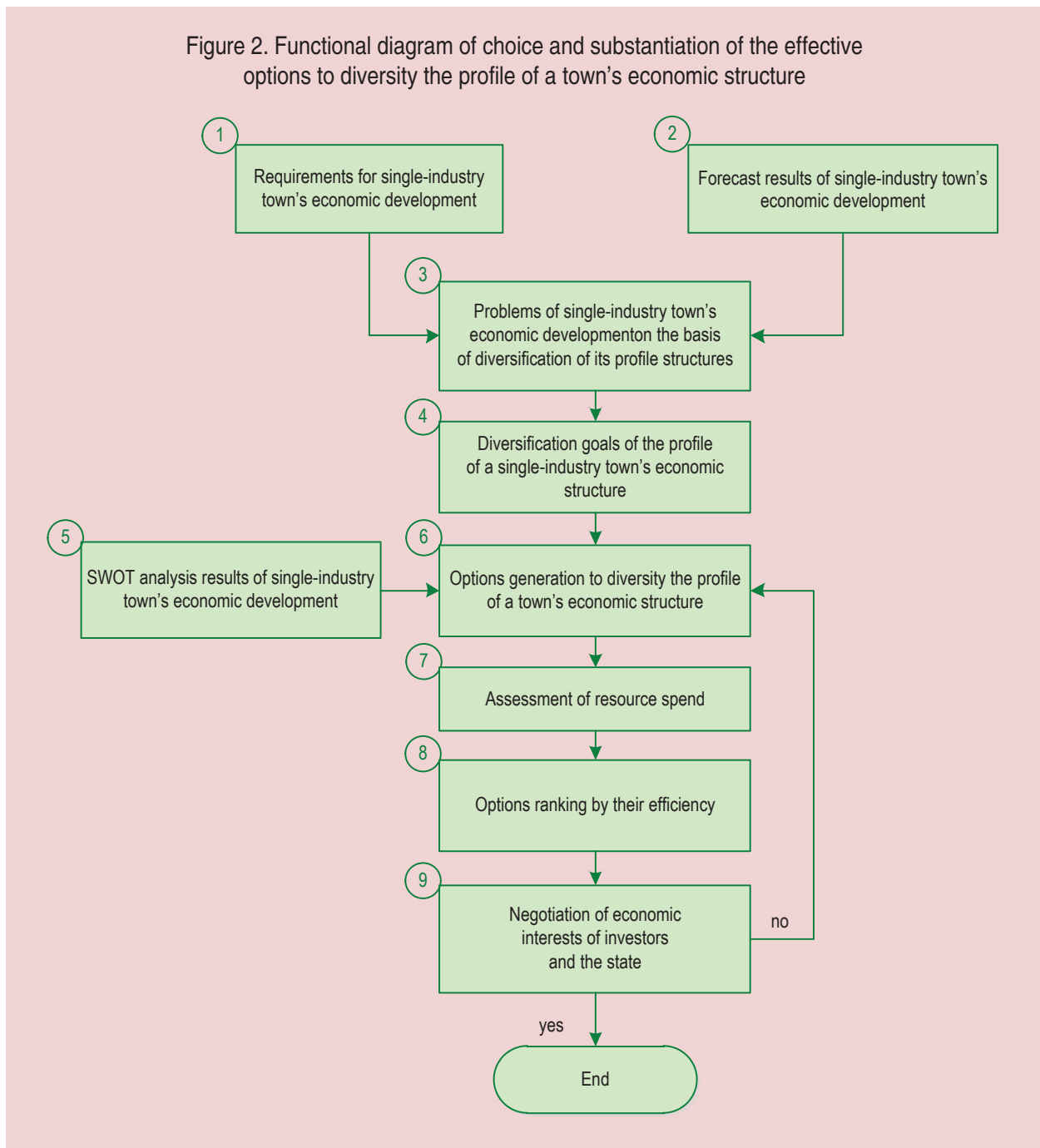
However, it is necessary to indicate the demand in job places, connected with the implementation of high-tech projects, due to the requirements of mostly innovative and effective economic development of a single-industry town in the long term. Therefore, the processes to single out and substantiate the diversification options are closely related to the works on their investment maintenance. What is more, the social orientation of single-industry town's economic development requires the city community's engagement into conciliation, as the restructuring measures can affect different layers of urban population [9].

Now let us consider the essence of the proposed concept to single out and substantiate the effective option of diversifying the profile of a town's economic structure (*fig. 2*). Blocks 1 and 2 reveal the requirements for single-industry town's economic development, arising from the adopted strategic social objectives of the city development, and the forecast results of town-forming enterprise's development, respectively. As for a functional diagram in Figure 1, it is referred to the procedures, implemented in blocks 5 and 12.

Then Block 3 of the considered functional diagram identifies the problems of single-industry town's economic development, their solution is associated with diversification of its specialized structures. To set targets, the already mentioned methods of grouping, synthesis and ranking are used; then in Block 4 the diversification objectives of a town's economic structure are defined in the strategic perspective.

Block 6 of the functional diagram describes the procedure of options generation to diversity the profile of a town's economic structure. It

Figure 2. Functional diagram of choice and substantiation of the effective options to diversify the profile of a town's economic structure



is, in fact, substantiation of a new strategic choice [4], which consists in a shift from a single-industry economic structure, due to the economic entities' inclusion (branches, activities types) into the structure. They are really (potentially) capable of:

- making stable increasing contribution to the city budget;
- increasing the number of job places;

- stimulating positive transformation of a town's economic structure due to the emergence and development of new items;

- improving a city's image, boosting its investment attractiveness and expanding the range of investment sources, financing diversification projects of the town's economy;
- obtaining new markets for manufactured products.

The procedure of options generation to diversify the profile of a town's economic structure is based, in particular, on the results of the strategic analysis of the town's economic potential [12], which gives the opportunity to identify competitive advantages and potential barriers to economic diversification (Block 5). Moreover, taking into account the possible state support to realize diversification projects, it is recommended to consider the strategic priorities of economic development, disclosed in the relevant documents of federal and regional level.

The options to diversify the profile of the economic structure can be generated differently. The way "from below" involves the initiative of the municipal government, population and local business community, the way "from above" – the initiative of the state, federal and regional governance structures. Nowadays the second option clearly prevails, although, in our opinion, the leading role here should belong to the local authorities, because they know competitive advantages of a single-industry town, possible obstacles to the implementation of one or another direction of diversification, and finally, they bear full responsibility for economic and social development, in accordance with the current legislation.

It is evident that the implementation of the proposed options to diversify the profile of a single-industry town's economic structure will require different types of resources, such investment, labor, energy, land resources. Block 7 of the fundamental diagram determines the required resource spend (by types).

The most important condition for successful realization of the planned options is investment provision. Therefore, the authors' constructive proposal [1] presupposes combining stages to initiate the options with the issues of their investment provision, potential investors' attraction to the project at an early stage.

To do this, it is necessary to single out the main groups of investors who can be interested in implementing the projects, related to economic restructuring of a single-industry town. As the projects are long-term and risky, it is necessary to attract, particularly, strategic investors, who do not count on a short payback period. State and municipal bodies that use the funds of budgets of different levels can be such investors.

It would be better when potential investors have already participated in the generation processes of the options to diversify the profile of a single-industry town's economic structure, discussing the terms of their possible participation in the transformation of an economic structure profile. This requires that a single-industry town is active at the investment market and informs potential investors about its readiness for a constructive dialogue, regarding their participation in the planned diversification projects.

In modern conditions the value of staffing increases significantly when solving diversification problems; the city's emerging economy requires personnel with creative thinking, able not only to meet the established regulations and to pattern after the previously created technological and management innovations, but to create new innovation-based regulations, providing effective development of the city's economy. Therefore, when estimating the resource support to implement initiated diversification options, it is necessary to identify the urban economy's requirement in personnel, sources of their coverage and to provide the economically active population with professional retraining programs, etc.

Among the resources provision factors of diversification of the profile of a single-industry town's economic structure, the availability of free land and energy resources are of great importance. It seems clear that

the energy security factor can act as a catalyst and a significant limitation while initiating the projects of structural adjustment of the profile of a single-industry town's economic structure.

The factor, associated with the presence of free land plots for economic development, is also increasing its role by the following reasons. Firstly, the available land resources are necessary for new manufactures construction in the framework of diversification projects. Secondly, housing and utilities complexes of Russian single-industry towns are often deteriorated. Thus the system of measures to diversify the city's economy should envisage construction of new housing, water supply and sewerage services, etc. that requires significant land plots.

Block 8 of the fundamental diagram ranks the initiated options to diversify the profile of a single-industry town's economic structure according to their designed economic efficiency.

Block 9 stipulates the negotiation of diversification options implementation with the key stakeholders, who have interest in its strategic economic development, such as municipal and state authorities, investors, business communities, set up by the public, and representatives of the independent expert community. The object for discussion can be, for example, the municipal government's capabilities to create conditions for effective work of potential investors and state support of project proposals, etc. If the main actors in the negotiation come to agreement or reveal similarity of interests, then the process of choosing the option(s) to diversify the profile of a single-industry town's economic structure is completed, otherwise, they have to return to Block 6 of the fundamental diagram.

Practical implementation of the project proposals in the sphere of structural reorganization of a single-industry town's economy involves the creation and ensuring of effective functioning of their implementation mechanism. However, there are different approaches to define the essence of this mechanism: ensuring the transfer of the city's economy into a qualitatively new state due to achievement of strategic development objectives; stakeholders' purposeful influence on all economic entities in the city in order to achieve regional development goals [10] and so on. We believe that the interpretations diversity is caused by the basic fact that the idea of this mechanism depends on the degree of its knowledge, and, therefore, we try to determine the essence, structure and purpose of such a mechanism, principles of its formation.

In our opinion, the mechanism of the project proposal implementation to restructure a single-industry town's economy is the following: in order to achieve the goal, municipal bodies together with government authorities and other stakeholders influence structural economic change. The mechanism purpose is to provide transition of a single-industry town's economic structure into a qualitatively new state, characterized by achievement of the adopted strategic social goals of its development.

The composition of the given mechanism is controversial. We believe that as a complex system it includes: scientific principles of its development; program documents that implement the proposals to restructure and reform a single-industry town's economic structure and to diversify the profile of the economic structure; documents on their implementation.

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Prospects for economic cooperation between the Eurasian and European Unions



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Abstract. The article analyzes the history of European integration, summarizes the negative experience of some previous attempts to form a greater Europe. The authors discuss certain challenges that Eurasian integration throws out to the EU. They define the prospects of economic cooperation between the Eurasian Union and the European Union in the framework of practical implementation of the idea of “integration of integrations”.

Key words: European integration, greater Europe, the idea of “integration of integrations”, challenges of Eurasian integration, Common European Economic Space, economic integration.

We believe, it is appropriate to start discussing this topic, crucial for the future of the whole Europe, with the review of the history of European integration, since it is responsible for some skeletons in the closet that now impede the formation of a greater Europe. It is well known that “the idea of unification of the European continent has accompanied

every stage of its history” [1]. However, all the previous attempts to implement this idea into practice (initiated by the Roman Empire, the medieval Charlemagne’s empire, French Emperor Napoleon and the leader of the Nazi Reich Adolf Hitler) were the manifestation of strong-arm policy, and they largely discredited this idea in the world public consciousness.

Suffice it to say that the First and Second world wars, which brought countless victims, troubles and sufferings, began on the European continent. And it is Europe that had to deal with the most negative consequences of these world wars: “After World War II Western Europe, which used to be the incarnation and stronghold of European civilization, lost world leadership; after World War II it faced the threat of becoming a region without its own future, completely dependent on other world forces” [2].

The sad historical experience of the attempts to unite all the European countries with the use of power justifies the following conclusion: “Attempts of unification by force have demonstrated their transient nature. The overall outcome was the undermining of Europe’s standing in the world. One more resort to force would bring it to self-destruction” [3]. The validity of this conclusion, can be proved by the fact that the share of Europeans in the world population in the 20th century has decreased from 25% to 12% [4].

Furthermore, when working out the promising directions of development of relations between the European countries (integration groupings), the integration experience accumulated by the Europeans requires the priority consideration of the actual and potential challenges and threats that are brought by new attempts of practical implementation of the idea of unification of the European continent. For instance, Belarusian political scientist S.A. Kizima, discussing the idea “integration of integrations” (i.e. a possible combination of integration plans implemented in the framework of Eurasian integration, on the one hand, and within the framework of EU integration on the other) put forward by the President of the Republic of Belarus A.G. Lukashenko [5], identifies the following eight challenges that Eurasian integration throws out to the European Union:

1. Aggravation of regional competition between the Eurasian economic Union

(hereinafter: EEU) and the European Union (hereinafter: EU/European Union) over the former Soviet republics.

2. Aggravation of regional competition between these integration associations for the countries that are currently the EU members or candidates for EU accession.

3. Competition between the EEU and the EU for natural resources of the former Soviet republics.

4. Geopolitical competition between them for the spheres of influence in the modern world.

5. Technological competition between the two major European integration associations.

6. The revival of the industry in the framework of the EEU poses environmental risks for the EU.

7. Competition between the EEU and the European Union for highly qualified personnel.

8. Reindustrialization and neo-industrialization of the countries included in the EEU, can deliver a blow to the EU industry, similar to that which was caused by a rapid industrialization of China [6].

Other researchers name other challenges that the European Union will have to face due to further development of Eurasian integration. For example, the Russian strategic analyst A.A. Kurtov points out the following challenges:

1. Authoritarianism, which is characteristic of many former Soviet republics, is unlikely to be accepted by the public opinion in the EU member states: “Authoritarianism in its varieties is the primary type of political regime in the former Soviet Union” [7].

2. Leaders of former Soviet republics lack the desire to delegate their powers to any supranational bodies, unlike, say, leaders of EU countries: “Authoritarianism, not to mention the cases where it acquires some elements of ethnocracy with its priority rights of the “indigenous” nation, or even more archaic – despotic forms of power organization (like

in Turkmenistan), as a rule, never seeks to delegate part of their real powers to anyone. Authoritarian governments cherish their sovereign rights to manage the policy, to dispose of raw material and human resources on their territory. If they have to compromise, without which no integration process is essentially possible, such compromises are usually either false, or short-lived" [8].

3. Absence of a strong legislative power in the framework of the EEU, in contrast to the European Union: "The EU has the European Parliament, directly elected by the citizens of the EU member states. The Eurasian Economic Union has no such body so far; and if it were to be established, it would be most likely modeled on the CIS, CSTO and EurAsEC, the organizations that possess weak inter-parliamentary bodies consisting of deputies from national legislatures" [9].

4. Former Soviet republics are characterized by a dominant priority of local interests over the interests of integration associations (CIS, CSTO, EurAsEC and others): "If we make a cold-eyed assessment of the situation, we cannot but admit that the creed of those, who was occupied by the integration in the Commonwealth after the collapse of the USSR, in most cases, can be expressed by the following motto: "to get the maximum benefits for themselves at the minimum obligations to others" [10].

5. No matter how the idea of "integration of integrations" is implemented in practice, the Russian Federation with its vast territory and abundance of natural and human resources, etc., is a giant, with which no European country can compete in the struggle for leadership in a greater Europe; this fact will inevitably cause all sorts of fears on their part: "Russia has remained a mighty power in comparison with other participants of the integration process, and this fact gave rise to various phobias on the part of European states" [11].

We can name other challenges and threats that the EU countries would face in case of their integration with the former Soviet republics in the framework of a greater Europe [12]. However, we think the consideration of the above-mentioned challenges provides ample proof to the fact that it is impossible to establish a united, greater Europe in the coming decades. In any case, the French scientist, Professor of Sorbonne M. Lefebvre came to a similar conclusion: "The chance to put the idea of a political Europe into practice is no greater now than it was earlier" [13].

Moreover, we have no doubt that the competition between the EEU and the European Union will remain tough. In this case, we have to agree with the opinion of S.A. Kisima, who points out that "the EU is not pleased with Eurasian integration. The establishment of the Eurasian Union will be accompanied by a constant opposition on the part of the jealous European Union" [14]. However, all the above does not mean that the Europeans have to abandon all hope of creating a greater Europe, which "would help the Europeans to become a single and strong historical community" [15] that still plays the leading role in the modern world. We are talking only about the abandonment of illusions and intentions to "build castles in the sand". Especially since the former Soviet Union "has already had a negative experience with integration projects, first of all, because of the impossibility of the tasks and the attempts to solve them quickly" [16].

For the above reasons, the development of promising areas of cooperation between the EEU and the European Union should proceed from the existing political, economic, social, scientific and other realities of the modern world; and it is necessary to carry out pragmatic integration policy aimed at solving not just any tasks but scientifically grounded tasks. Moreover, the basis for such policies should consist of the norms of international law

and fully complying interests of the two European integration associations, i.e. the international realities and requirements that were not taken into account until now: “Our own historical experience shows that so far integration within our space was never carried out on the basis of international law under compliance with democratic norms and taking into consideration the political equality of the parties. To be successful, integration should be attractive to all of its participants” [17].

If we look from this viewpoint on the possible ways and directions to implement the idea of “integration of integrations”, we cannot but notice the obvious fact that the EEU and the EU differ in what they consider to be the most promising direction of interaction between each other. In particular, the EEU believes that the priority and the most promising direction of cooperation with the EU is the creation of a Common European Economic Space (CEES), i.e. economic cooperation between the former Soviet republics and the EU nations without restrictions (quotas) and high tariff duties [18]. For example, the experts, who prepared the Eighth National Human Development Report “Belarus: Addressing Imbalances in the Economy and Society (2004–2005)”, believe that “in the long term, integration within the EU – Belarus – Russia triangle should result in the creation of a common economic area that applies progressive EU standards and facilitates the movement of Belarus and Russia towards a post-industrial economy” [19]. Similarly, in the early version of the “Big Eurasia” strategy, developed by the Department for Economic Cooperation with CIS Countries (Ministry of Economic Development of the Russian Federation), the Common Economic Space (CES) is planned to be build not within the CIS itself, but between the CIS and the EU on the basis of the Treaty on the EU–CIS Free Trade Area. Next, according to the updated version of the Strategy-2020, prepared by the working group of experts for the Russian

Federation Government, in the long term (after 2015–2020) the economic space of the Eurasian Economic Union should “fit” into the common economic space of Europe in the West (EEU–EU) and in the APEC space in the East (EEU–SCO–APEC), creating a wide Eurasian space of economic cooperation, or “harmonious community of economies from Lisbon to Vladivostok”, as V.V. Putin called it [20].

Unfortunately, the priorities of the EU in its integration policy concerning the EEU countries are very different. According to the Belarusian political scientist L. F. Evmenov, who studied the European Union’s basic documents, “in all the legal acts the EU attaches *paramount importance* to the issue of *political convergence and unity* and considers it a *priority*. For instance, the Joint Declaration of the Eastern Partnership, which invited six former Soviet republics (as “students”, naturally) that lag considerably behind political, human rights and legal *standards* of the developed countries of the European Union, states: “The main goal of the Eastern Partnership is to create the necessary conditions to accelerate political association and further economic integration between the European Union and interested partner countries” (see: Declaration Commune adoptee lors du sommet de partenariat oriental. Prague, 2009. P. 6). With this aim, the Eastern Partnership will seek to support “*political and socio-economic reforms of the partner countries*, facilitating approximation towards the European Union” (ibidem) [21].

In other words, the EU leadership is trying to use its largest economic potential, constituting 29% of the global GDP (for comparison: in the USA – 23%, in China – 10%, in Japan – 9%, in Russia – 3% [22]) and its big internal market, very attractive for export-oriented enterprises of the former Soviet states, in order to impose its political and other standards on the EEU countries. In this regard, the Russian political scientist M.G.

Delyagin notes that “developed countries (including in the framework of the Eastern Partnership) act (perhaps unknowingly) by the principle “Take our standards and we will take your resources and destroy what you can use to compete with us”. In general, it increasingly resembles not a just, but a neo-colonial model of cooperation” [23].

The European Union was guided by the same hegemonic objectives when it attempted to establish the Transatlantic Trade and Investment Partnership between the United States of America and the European Union (TTIP). This strategic initiative of the EU is viewed negatively even by Western researchers. For example, the Swiss Economist, Professor J.-P. Lehmann believes that the TTIP belongs to the category of centrifugal forces that disintegrate the common European space: “This is an attempt of the “old” powers to prevent the rise of “newcomers” by creating a block to preserve the levers of the global power and the ability to set the rules” [24]. According to J.-P. Lehmann, the counterbalance to this dubious strategic initiative of the European Union is “a real large-scale initiative on the part of Russia would be the suggestion of an idea, and then – of a detailed plan for creating an open Eurasian economic space, which would extend from Korea in East Asia to Ireland in Western Europe and include South, Central and West Asia. This should be an *open space* rather than a preferential, discriminatory area, as in the case of the TTIP and TPP [Trans-Pacific Partnership promoted by Washington. *S.D., V.Shch.*] ... By adopting an imperative of stable, genuinely multilateral principles, this initiative will take under control the ongoing transformations and coordinate development” [25].

Unfortunately, even among Russian economists there are those claim that economic integration should be carried out exclusively within the national economic systems; at that, the functions of integration associations

are reduced to the solution of political tasks, like the European Union plans to do in its interaction with the EEU. In particular, the Russian researcher R.M. Doshayev believes that “in the near future, Russia and other CIS countries will have to determine the functions and tasks of the CIS under new conditions. It would be necessary and proper, if this association were used for solving only political tasks rather than economic ones, associated with the development of national economies, including integration. And besides, once and for all to name the CIS not an integration union, but simply a political body that handles issues of peaceful coexistence of former Soviet republics” [26].

Although the primacy of economic integration of the CIS countries before any other type of their integration interaction was already recognized by many national researchers in the first years of existence of this integration association: “Military alliances hold together due to a common external threat. Unlike military alliances, economic integration is determined by internal needs of the states at a certain stage of their development. By increasing competition, it improves the life support systems of society and raises its welfare. Apparently, therefore, the economic integration is primary; it has a priority over all other aspects of the integration process: political, military, social and legal. The emergence of the single economic complex overtime evokes the need for the emergence of political, military, legal and other superstructures. Attempts to put the pyramid upside down, to modify the natural course of integration usually failed” [27].

Currently, many Belarusian researchers take a similar position on the issue of primacy of economic integration among all the existing types and forms of integration processes: “It is only a mutually beneficial economic cooperation that can be the main driving force of integration processes in the Commonwealth.

Political and military alliances of different countries were repeatedly created and dissolved throughout the history, and only by rare exceptions led to economic integration. Integration implies first of all, the economic cooperation between the states. The need for economic integration of real economic entities, regardless of forms of ownership, is the main condition of its onward movement. Political decisions should contribute to the creation of the necessary economic preconditions" [28].

By the way, the history of the European Union itself shows telling examples of how the struggle between different types of integration (military-political and economic) always ended up with the victory of economic integration: "In 1954, the French Parliament rejected the Treaty on the European Defence Community signed by all the six countries, thereby crossing the plans of the forced military-political integration. It took them three years to agree that a "United Europe" would be created through economic integration, and to sign the Treaty of Rome establishing the European Economic Community" [29]. So far, one of the basic conflicts impeding the transition of the European Union to a political union (a new stage of integration) lies in the disagreement of its member states on the issues of foreign and defense policy, and on a closely related issue concerning the further transfer of functions from the national to the supranational level. The recent global political and military conflicts have clearly shown that the EU is not able to solve them "unanimously" and that its political weight on the world stage is considerably weaker than its economic potential" [30].

According to the Russian researcher D.A. Gavrikov, the main obstacles standing on the way of formation of a common external and defense policy of the European Union, include the following:

1) the largest EU countries (UK, Germany, France) "are not ready to lose their influence on the world stage in favor of a unified "European Union" voice" [31];

2) individual EU countries have multi-vector geopolitical interests in different regions of the world (France – in Africa, Spain – in Latin America, Germany – in Eastern Europe and so on);

3) not all the EU states are ready to transfer part of their sovereignty to the government in Brussels: "Many countries, especially the UK and Scandinavian states often perceive it as a loss of national sovereignty" [32];

4) EU countries have different degree of readiness for self-defense and a different set of commitments to major international military organizations (NATO, OSCE and WEU) [33].

The attractiveness of the EU for the former Soviet republics is reduced by certain political standards and requirements imposed on the candidates for EU accession, and also by the introduction of restrictions in the field of labor migration planned by the leading EU countries: "Recently the UK Prime Minister D. Cameron...announced the necessary measures that restrict labor migration from Eastern European countries that are EU members. Mutual openness of labor markets and the freedom of movement is the cornerstone of a coordinated policy and, as it is rightly believed, "the key point of external attractiveness of the European Union". The "reform" suggested by the UK draws a clear discriminatory line separating Europe on the principle: "a rich man is no friend to a poor man"... But this approach to labor migrants from Eastern Europe was supported by Austria, Germany and the Netherlands" [34]. Recently, Switzerland has joined this group of countries.

Unlike the EU, China, when dealing with former Soviet countries, "deliberately emphasizes that it is interested only in business, and it does not set forth any political conditions" [35]. Moreover, China confirms its declared position by signing mutually beneficial agreements with Belarus, Russia and Ukraine for granting them quite a significant volume of loans for implementing the largest infrastructure projects in these countries.

The European Union holds quite a different position concerning the allocation of big loans to former Soviet republics for transition to European standards; there are some objective reasons for this: “Neither Brussels nor Berlin will achieve any consensus within a United Europe. What remains? One cannot promise substantial loans, which are not available. One is unable to reach an agreement with the IMF, which does not agree to provide Ukraine with special refinancing terms, except for small concessions. One cannot promise a share in the product market, overheated by internal competition. Finally, it is impossible to make room in the European labor market overwhelmed with raging passions. One cannot even guarantee the freedom of movement, if the latest UK proposals will be accepted. Political pressure is the only remaining alternative” [36].

Historical experience proves that the efficiency of using this method as a political pressure, in the case of the East Slavic countries (Belarus, Russia and Ukraine) is extremely low in handling integration cooperation issues. The European Union becomes increasingly aware of the futility of this method in respect of the above countries. The Russian political scientist N.K. Arbatov states that “today the EU and Russia show an obvious desire to build relations with each other on the model of EU’s relations with China. It is proposed to focus on common interests rather than common values” [37].

In this context, the suggestion of the Vice-President of the NAS of Ukraine, Academician V.M. Geets seems very promising: he proposes to join the efforts of the CIS countries and the European Union for establishing a number of single integration spaces: “Further EU enlargement to the East under the same ideology of the formation of the Union through the admission of new members, such as Turkey and/or Ukraine, will lead in many respects (domestic and foreign policy, economy, society and culture) to the aggravation and

emergence of new destabilization factors in the EU and in the globalizing world. That is why the movement to the East should seek the aim of allocating separate spaces (sectors) rather than the aim of obtaining membership; the coordinated actions in the framework of these sectors would be in some way similar to the conditions of formation of the ECSC [European Coal and Steel Community. *S.D., V.Shch.*]. Then, cross-border mergers and acquisitions will become dominant; although they will be lobbied by the government in the interests of their countries, but they will promote the creation of a single market by overcoming economic differences” [38].

The top Russian officials and Russian scientists, who devote their research to European issues, have similar opinion in this matter. In particular, as follows from the official statements of the Russian Government, Russia continues to seek close cooperation with Europe, but without entering the EU structures [39]. In turn, Research Associate at IMEMO V. Gutnik believes that Russia’s accession to the European Union “is inexpedient primarily because its organizational structures and management mechanisms do not comply with the tasks that Russia’s economy faces...Russia must remain independent in making decisions. If we retain the freedom of choice of forms, tools, changes, timing, etc. and at the same time will take Europe as a model, our country will become more European than in the case if Moscow achieves formal membership in a common organization of European States and will be forced to obey the “jointly developed solutions” [40].

The growing trade turnover between individual countries of the EEU and the European Union shows that the common European economic space (with participation of representatives from both European integration associations) is already being created, regardless of whether officials in Brussels like it or not.

For example, modern economic cooperation between Belarus and EU countries is characterized by the following indicators:

1. “Today the EU is the second largest trade partner of Belarus after Russia. In ten years – from 2001 to 2011, the goods turnover between Belarus and EU countries has increased tenfold, reaching 24.4 billion US dollars in 2011, or 28.4% of the total foreign trade turnover (which amounts to 86.04 billion US dollars)” [41].

2. “The main trade and economic partners of Belarus in January – October 2013 among the European countries were Germany (3rd place in the trade turnover among all the countries - trade partners of Belarus), the Netherlands (4th), Poland (6t), Italy (7th), Lithuania (8th), UK (9th), Latvia (11th place). Thus, our first ten trading partners consists of the European Union countries by more than the half [42].

3. Economic cooperation of Belarus with the EU countries is not limited to trade only: “For 9 months of 2013 the EU allocated investments to Belarus in the sum of 4.9 billion US dollars (100.8% compared to the same period in 2012), including direct investments – 3.7 billion US dollars (106%). The share of investors from the European Union accounts for 45.2% of all foreign investments into the Belarus economy in January – September 2013” [43].

Economic cooperation between Russia and EU countries is even more impressive:

- “Back in 2003, Russia and the EU agreed on the formation of a common economic space, coordination of the rules of economic activity without creating supranational structures” [44].

- “For Russia the EU is now (and is likely to remain in the future) partner number one in the economic sphere” [45].

- “Import and export operations with the EU are the priority for Russia; and they account for about 45% of all Russian foreign

trade turnover. For the EU, Russia occupies only the 3rd place according to these indicators (after the USA and China) with a share of 9.5%” [46].

- “About 40% of Russia’s gold and foreign currency reserves is in Euro. The foreign trade pattern between Russia and the EU objectively allows them to smooth deficits and imbalances of their economies. The consolidation of economic opportunities of Russia and Europe can create the potential for development of the huge industrial and raw materials giant “from Lisbon to Vladivostok” [47].

Finally, the above-mentioned indicators and prospects for economic cooperation of individual countries of EEU and the European Union, if we sum them up, look even more impressive:

1. “In 2011 the EU accounted for 55.5% of the total exports of Russia, Belarus and Kazakhstan and 44% of their total imports. In turn, the Customs Union is the third largest trading partner for the EU (11% of foreign trade turnover), after the USA (13.8%) and China (13.3%). By the volume of sales of goods in the EU market, the Customs Union, which accounts for 13.8% of total imports of the EU countries, occupies the second place after China (17.3%), outrunning the United States (10.9%). The share of the Customs Union in the EU export accounted for 7.9% – it is the third place after the United States (17%) and China (8.9%)” [48].

2. Speaking about the prospects of development of economic cooperation of the Eurasian Union and the European Union, we should point out that these largest integration associations of our continent are to a great extent complementary parts of one Greater Europe and if they consolidate their economic potentials, they can leave their geo-economic rivals (China, the US and Japan) far behind. RAS Corresponding Member R.S. Grinberg noted on this occasion that “it is only giants that can fight giants” [49].

3. It is the central position of the EEU on the Eurasian continent (between the EU and the ASEAN and SCO), that determines the geo-strategic role that the EEU can perform as a natural transport and energy bridge between Western Europe and East Asia on the whole space of the world's largest continent, which has a population of 4.8 billion people and more than half of world GDP (about 40 trillion US dollars) [50].

4. Due to a closer economic cooperation between the EEU and the European Union, the latter can overcome its one-sided focus on the use of a neoliberal economic model, and associated social costs: "All stages of European integration were accompanied by numerous debates about its ways and purposes, the related processes and phenomena were discussed and criticized. However, the form, in which the European project has been implemented since the late 1990s, evokes the growing resistance of citizens, not only in the "problem" countries. In the course of consolidation, quite a hard neo-liberal economic model was implemented with such integral elements as the reduction in wages and social spending, the weakening of social security institutions, elimination of sustainable employment, etc. The originally difficult situation was aggravated by the global financial and economic crisis of 2008–2009" [51]. As a result, due to the use of the neoliberal economic model, EU's GDP decreased by 4.5% only in 2008–2009 and the number of dollar billionaires in the world has increased manifold over the same period [52], also due to profiteering with EU finances. We do not observe such an obvious dominance of the neoliberal economic model in the EEU economies, and the strategic goal of these countries is declared to be the creation of a socially oriented market economy. The latter will have to be considered by the EU nations in their economic cooperation with the EEU countries.

5. Due to closer economic cooperation between the EEU and the largest EU countries

(Germany, Britain, France and others), Russia's excessive domination in the EEU economy can be partly smoothed: "The Russian Federation has 87.6% of the economic potential, 78.4% of the population and 83.9% of the territory of the emerging EEU. Russia accounts for 78.3% of total GDP, 53.2% of the population and 79.3% of the territory in the free trade zone within the CIS. This creates both advantages and difficulties in the formation of Eurasian economic integration structures [53]. Russian researchers recognize the existence of a "dimensions barrier" within the post-Soviet integration: "It is easier for EU members than for CIS members to find compromises in an interesting game called "to give and take". Russia is too large to be an equal partner, and this impedes any integration with its participation" [54]. For the above reasons, closer economic cooperation of the EEU countries with the largest EU countries will make it possible to balance Russia's economic influence in the framework of the Common European Economic Space.

Thus, mutual benefits achieved by the countries of the Eurasian Union and the European Union due to economic cooperation between the two largest integration associations of Europe, are more than obvious. As R.S. Grinberg pointed out in this respect: "Our conditions for integration are worse than those in the European Union. But as for a purely economic aspect of integration projects, they are favorable under certain conditions [55]. And the main condition is that the leadership of both integration unions completely abandon the use of any ideological motives in the development of joint integration megaprojects. Since the world integration practice shows that relying on a particular ideology inevitably leads to the "formation of a system of two global polar elements of the world – dominant and subordinate, the former is organized and socially united, the latter is disorganized and divided. Attempts to implement this model

by mechanical planting of multiculturalism, by defining national objectives based on the interests of international capital, and by promoting a “new nomadism”, in reality always lead to the loss of social solidarity and growth of internal conflicts” [56].

Our analysis of the existing realities of the Eurasian and the EU integration allows us to make a conclusion about exceptional prospects of economic cooperation between the EEU and the European Union. This conclusion is supported by the very history of world integration, the main axiom of which is the statement that economic integration always comes before political integration [57]. Thus it is necessary to emphasize the importance

of economic cooperation between the two integration blocs (EEU and the European Union), which is the practical implementation of “integration of integrations” idea. In other words, along with bilateral economic cooperation between the Eurasian Union and the European Union, it is necessary to promote multilateral economic cooperation in the framework of the two basic types of European integration (Eurasian and the EU). The President of the Republic of Belarus A.G. Lukashenko points out: “This integration on the post-Soviet space will lead to closer and more equal relations with the European Union and the creation of a Greater Europe faster than separate visits to European offices” [58].

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BRANCH-WISE ECONOMY

UDC 338.463.33:330.34(470.1-17), LBC 65.32-18(2Rus.Kom)

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The agricultural sector of the Pechora-Ural North*



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Abstract. The article reveals the rural sector's role in food supply of the population of the Komi Republic arctic and subarctic territories (the Pechora-Ural North). It considers conditions, analyses resources, organizational-legal management forms in agricultural production. The study indicates the agriculture status in the pre-reform (1960–1980) and market upgrade periods (since 1992) and the reforms' impact on socio-economic processes in the industry. The article investigates obstacles to the agricultural sector development. It proposes development directions of reindeer and cattle breeding. It recommends to accelerate the development and adoption of the law “On reindeer breeding in the Russian Federation”, a federal target program for the reindeer breeding development, and it also proposes to enhance inter-regional relations in the field of joint systems of pastures control. The research highlights the necessity to strengthen the material and technological base of the dual purpose cattle breeding, to increase financial support of traditional Northern branches.

Key words: Agriculture, natural conditions, resource potential, specialization, market upgrade, development directions, the Pechora-Ural North.

Currently, the role of the Arctic sub-region as a resource storehouse of the economy is increasing. Among the factors determining the complex development of the Northern and Arctic territories, the great importance is attached to agriculture and fishing that provide the population of this area with fresh

biologically wholesome foodstuffs: meat, fish, milk, eggs and vegetables. There are favourable conditions for economically viable production of goods that are mainly environmentally friendly, perishable and not very suitable for transportation; this production frees the economy of other Russian regions from the

* The article was prepared with the financial support of the Russian Humanitarian Science Foundation and the Komi Republic Government, research project No. 13-12-11001 a/Si of the fundamental research programs of the Ural Branch of RAS, projects No. 12-U-7-1013; No. 12-7-8-006.

need to harvest, process and transport the equivalent amount of such products. At that, investments in transport are saved, product losses reduced, its quality improves.

Traditional forms of economy are mostly used by indigenous peoples of the North. In pre-reformed period more than 62% of representatives of small peoples were employed in the agriculture and fisheries sector. The data of the 2006 All-Russian Agricultural Census showed that in large and medium agricultural enterprises 15% of representatives of numerically small peoples were engaged in northern reindeer breeding, horse-breeding and fishing; 10% were engaged in hunting, 15% – in the processing of products of traditional and other industries. These figures were, respectively, 16, 35 and 20% in small agricultural enterprises [5].

The object of the study is the economic entities of the agrarian sector of the Arctic and subarctic areas of the Komi Republic (Pechora-Ural North) that are included in such city districts as Vorkuta, Inta, Usinsk, and municipal districts – Pechorsky, Ust-Tsilemsky and Izhemsky districts. The sub-region under consideration is characterized by abundance of mineral and fuel-energy resources. It has significant reserves of coal, oil, gas, chromium, manganese, diamonds, vermiculite, nickel, copper and other rare metals. Industrial character of functioning of the Arctic sub-region makes it possible to allocate a significant share of financial resources for the development of the agricultural and food sector and rural areas.

In the early 20th century A.V. Zhuravsky, the founder of agricultural science in the European North of Russia, proved that farming was possible in northern territories. The Pechora Agricultural Experimental Station was opened in Ust-Tsilma in 1911 by the Order of Russia's Department of Agriculture. Zhuravskiy was the founder and first Director of the Station. He proved that "it is not the climate that impedes

Pechora's agricultural development, but the conditions that have nothing to do with the climate. And we hope that a time is coming when the abundance of light near the Pole will be used for the welfare of Russia..." [3, p. 64]. N.I. Vavilov, D.N. Pryanishnikov and other scientists substantiated the expediency of the "northering" of agriculture.

The works [1; 4; 6; 7] contain practical recommendations on food security of the population in the Arctic areas of the Euro-North-East, on the development of reindeer breeding, fodder production through the grassing of the tundra.

Specifics of functioning of the agrarian sector

Agroclimatic conditions in the sub-region impede the effective development of agricultural production. Conditions for agriculture are especially unfavorable in the urban districts of Vorkuta and Inta, where tundra soils prevail and thermal resources are very limited. Most of the territory is permafrost. Fodder production development in the Arctic zone is possible by the grassing of the tundra [6]. However, it should be noted that, there are favorable conditions for the development of agriculture in the basin of the Pechora river (sufficient rainfall, which provides a relatively high efficiency of fertilizers; long light day, which makes the growth of plants more rapid; vast floodplain meadows). Due to the long light day, the grass in the Arctic zone is growing with high intensity; as a result, the amount of green mass that is formed within 180 vegetation days in southern regions, here is formed within 70–80 vegetation days. Average daily growth of grasses in the beginning of spring in the auspicious days is 3–9 cm [2]. The potential for collection of forage from the flooded meadows in the sub-region exceeds 17 thousand tons of forage units.

Labor resources. At present only 1.8 thousand people are employed in the agricultural sector in the Pechora-Ural North, whereas in 1989 this figure was over 8 thousand people.

Municipal unitary enterprises that produce agricultural goods have 12.4% of the total number of agricultural workers, limited liability companies – 46.9%, cooperatives – 19.1%, peasant (farm) enterprises – 10.2%, joint-stock companies – 11.3%.

The sector experiences a shortage of specialists, middle managers, farm machinery operators, milking machine operators and reindeer herders. There is a high turnover of personnel, low level of education of managers and specialists.

Land resources. The total land area is 15.7 million hectares, including 9.5 million hectares of reindeer pastures, 44% of which are located in the Nenets Autonomous Okrug. Only a small part of the land is used for agricultural purposes – 0.8%, and the share of arable land is only 0.08% of the land area. A higher level of land development for growing crops is typical of Izhemsky district (0.2%). There are 0.5 hectares of farmland and 0.05 hectares of arable land per one citizen of this territory.

The farmland structure is dominated by forage grassland – hayfields and pastures. For instance, there are 7.8 hectares of meadows per hectare of arable land.

The analysis of agricultural resources has shown that the considered Arctic territories have less biological resources per capita (except for the natural pastures and deer population) in comparison with other municipalities and the Republic in general (*tab. 1*). Moreover, with the twofold population decline in 1990–2012, the availability of sowing land per capita decreased in 3.2 times, the availability of cattle – in 6.1 times, poultry – in 5.6 times; the number of reindeer increased in 1.9 times (*fig. 1*).

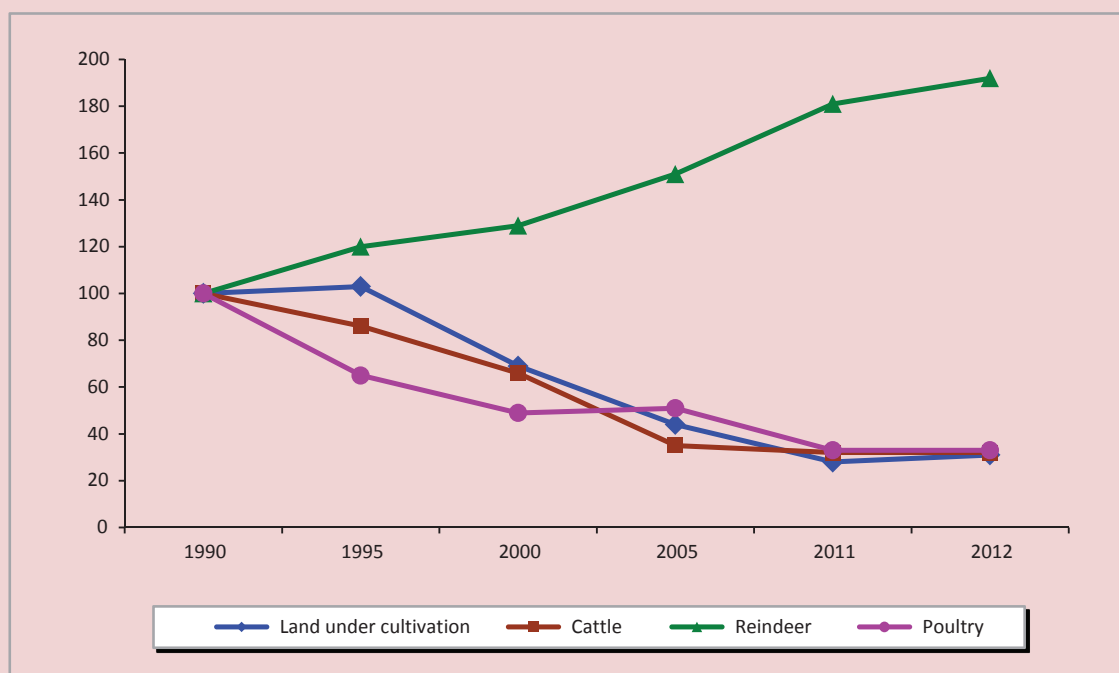
Low availability of resources hinders the self-sufficiency of the population of the Arctic sub-region in terms of local foodstuffs. Given the specifics of agricultural production in the Arctic zone, in the future it is necessary to focus on the municipalities of the southern and central regions where conditions for farming are more favorable.

Table 1. Agricultural resources (per 100 people) in 2012

Municipal entity, region	Agricultural land, ha	Including arable land	Cattle, head	Including cows	Reindeer, head	Swine, head	Sheep and goats, head	Poultry, head*
Vorkuta	10.9	6.1	0.01	0.005	23.6	0.8	0.2	-
Inta	33.3	3.3	2.3	1.0	103.8	0.08	0.6	488
Usinsk	27.3	2.9	3.7	1.5	57.0	0.4	0.7	-
Pechorsky District	34.5	2.9	1.8	0.7	-	0.3	0.4	-
Ust-Tsilemsky District	355.6	11.2	25.6	11.1	6.6	0.03	11.1	-
Izhemsky District	144.7	16.3	16.9	9.9	46.0	0.03	4.1	-
Pechra-Urals North	48.4	5.4	3.8	1.8	35.6	0.4	1.1	67.6
The rest of the territories of the Komi Republic	47.1	13.8	4.5	2.0	-	3.4	2.1	242
Komi Republic	47.5	11.6	4.3	1.9	10.2	2.5	1.9	192

* Data on agricultural organizations.
 Calculated according to: 1. Sel'skoe khozyaistvo v Respublike Komi. 2013: stat. sb. [Agriculture in the Komi Republic. 2013: Statistical Digest]. *Komistat*. [Territorial Body of the Federal State Statistics Service in the Komi Republic]. Syktyvkar, 2013.
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Figure 1. Dynamics of biological resources (per 100 people) in the Pechora-Ural North for 1990–2012, (1995 = 100%)



Specialization and organizational-legal structure of agriculture

Agriculture in the areas under consideration is specialized in the production of the products of reindeer breeding, poultry farming and cattle breeding. This specialization was formed under the influence of natural conditions, geographical location, natural-historical and socio-economic factors and the needs of the society. The share of animal husbandry in the Arctic and subarctic zone of the Komi Republic in 2012 accounts for 71% of the gross output of agriculture, the share of plant cultivation is 29%.

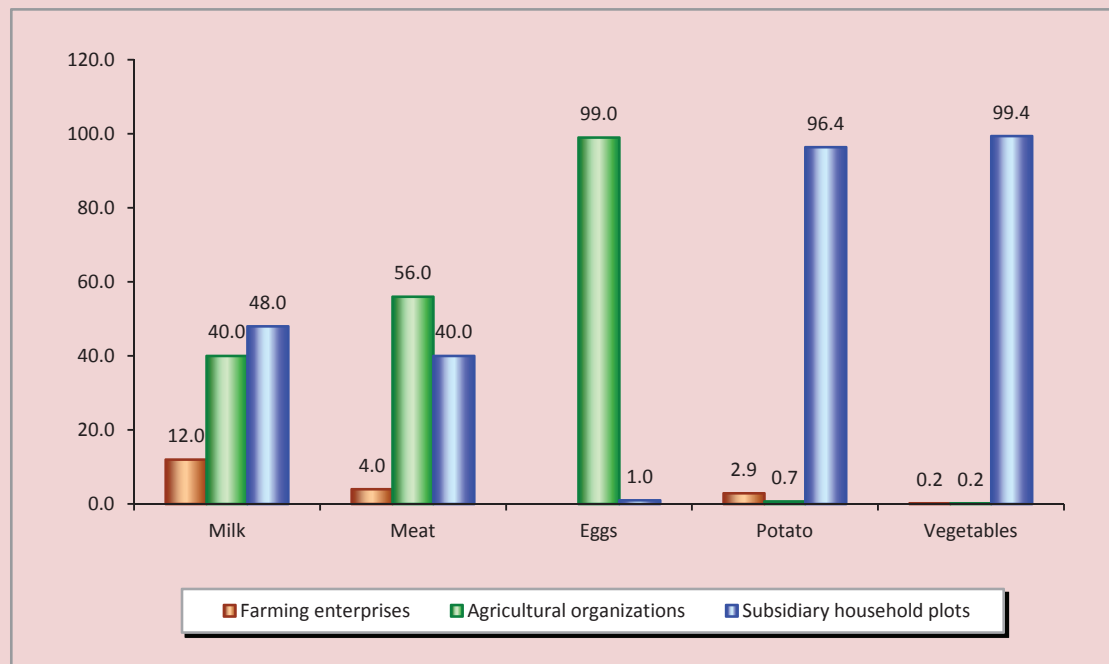
Agricultural goods are produced in 28 collective organizations, 23.4 thousand households and 119 peasant (farm) enterprises. In its total volume, the share of agricultural production cooperatives is 28.6%, limited liability companies – 60.7%, joint-stock companies – 7.1% and state unitary enterprises – 3.6%.

Agricultural companies are engaged mainly in the production of eggs (Inta Poultry Plant – 99%), reindeer meat and beef (56%); households are engaged mostly in the production of potato (96%) and vegetables (99%). The share of agricultural enterprises in the total volume of milk production is 40%, population households – 48%; peasant (farm) enterprises do not play a significant role in the production of agricultural products. They account for 12% of milk; 4% of meat; 2.9% of potato and 0.2% of vegetables (*fig. 2*).

When dealing with the issue of promising types of farming in the Northern and Arctic territories, it is important to consider a more pronounced tendency of rural workers towards collective work. Here they count on the support of the team in the time of need, on its help in working on subsidiary household plots; they see a secure job.

Besides, the Soviet period contributed to the formation of a rural way of life, based on

Figure 2. Share of different types of farms in the Arctic and subarctic zone of the Komi Republic in production in 2012, %



the work of peasant farmers in collective farms. Therefore, it is necessary to restore medium and large agricultural production, which is integrated with processing industry and which should form the basis for the agricultural economy.

Due to the reduction of rural households, deterioration of demographic situation in rural areas, ageing of rural population, decrease in the share of capable persons, low production efficiency based on manual, low-skilled labor, it would be wrong to focus on private farms of citizens as the basis for creating the food fund. Currently, their vast majority relates to a consumer type. Besides, since 1995, crop areas, livestock and production are reduced in the population's households.

The farmer setup in the medium term will not get significant development. The formation of peasant farming requires large investments for the creation of material base and infrastructure, a lot of time, competent workers, adapted to market conditions.

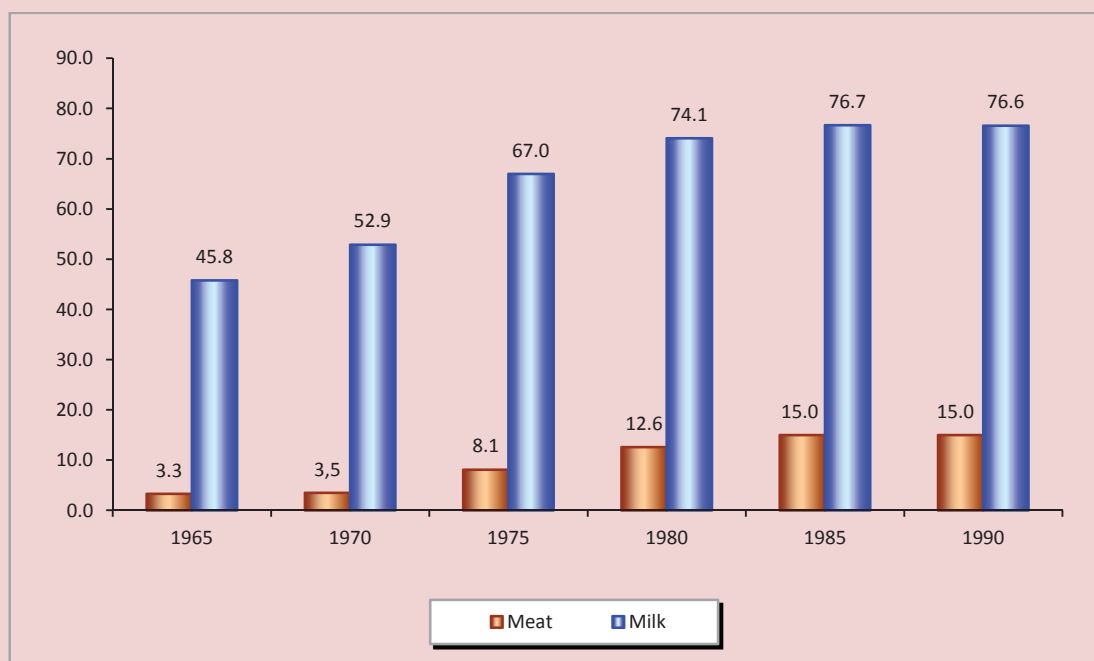
Agriculture in the pre-reform period

In the pre-reformed period the agriculture in the Pechora-Ural North experienced progressive changes of technological, economic, social and organizational nature. The strategy for the development of agriculture in these years was determined by intensification of production by strengthening the material and technological base. For 1985–1990 the investment in industry increased by 3.3 times, provision with fixed assets (basic production assets per 100 hectares of farmland) of agricultural enterprises increased in 1.4 times.

All this contributed to the improvement of major production indicators of agriculture and, first of all, its leading sector – livestock breeding. Meat production in all categories of farms of the Arctic sub-region in 1990, compared to 1965, increased by 4.3 times, milk production – by 1.7 times (*fig. 3*).

In the total meat production in the Komi Republic the share of the considered sub-region has increased from 14% in 1965 to 26% in 1990,

Figure 3. Meat and milk production in all types of farms in the Arctic and subarctic territories of the Komi Republic, thousand tons



milk – from 28 to 37%, eggs – from 5 to 36%. In the early 1970s, egg factories were built in the towns of Vorkuta and Inta; as a result, it satisfied the demand of the population for fresh egg. In order to create a food base, subsidiary plots were developed, they were represented by large farms, functioning at the expense of financial, material and labor resources of mining companies. In 1988 the share of subsidiary farms in Vorkuta and Inta accounted for 100% of vegetables production, and for 76 and 70% of milk and meat production, respectively. The share of rural subsistence farming in the Republic on the whole amounted to 23% of meat production, 27% of milk production, 10% of potato production and 15% of vegetables production.

In the pre-reformed period, all agricultural enterprises and all types of production were profitable. The level of profitability varied from 35% in agricultural enterprises of Vorkuta up to 51% in Ust-Tsilemsky District (*tab. 2*).

Livestock production (especially deer meat), was characterized by high profitability, as well as milk and dairy products. In 1990, the level of profitability of reindeer meat was 324%.

Thus, the development of agriculture in the pre-reform period was characterized by good production dynamics. All agricultural enterprises were profitable. The level of profitability has made it possible to implement extended reproduction. Positive changes occurred in the harmonization of conditions and living standards of rural and urban population.

Market reforms in the agrarian sphere

Reforms in agricultural sector were accompanied by a sharp reduction of government funding, decline in investments, accelerated liberalization of prices for material and technological resources, which led to the price disparity. This impeded the machinery and technological re-equipment of agricultural production, and social transformations in rural

Table 2. Profit and profitability of production in agricultural organizations of the Arctic and subarctic regions of the Komi Republic for 1989

Indicator	Town		District			
	Vorkuta	Inta	Usinsky	Pechorsky	Ust-Tsilemsky	Izhemsky
Profit, thousand rubles	464	1601	3213	3556	6145	6109
Profitability of the whole activity, %	34.8	40.1	54.4	50.5	51.1	46.0
Plant cultivation	-		-	56.1	12.7	29.8
Animal husbandry	34.8	40.1	54.4	60.2	51.4	46.3
Milk and milk products	...	...	77.2	70.7	66.0	64.3
Meat of all types	...	...	38.4	21.1	33.5	30.2
Beef	...	...	10.1	22.1	34.3	29.4

Source: Osnovnye pokazateli khozyaistvennoi deyatelnosti sovkhovov za 1989 g. [Main Indicators of Economic Activity of State Farms for 1989]. *Komi respublikanskoe upravlenie statistiki* [Komi Republic Department of Statistics]. Syktyvkar, 1990.

Table 3. Availability of main types of machinery and power capacities in the agricultural enterprises of the Pechora-Ural North to the end of the year, units

Types of machines	1991	2000	2005	2010	2011	2012
Tractors of all types	1629	886	441	211	201	200
Tractor trailers	979	387	166	83	75	75
Plows	191	63	30	14	14	14
Cultivators	92	11	4	3	3	2
Sowing machines	136	59	25	8	8	8
Mowers	690	362	222	95	95	97
Tractor rake	427	137	78	29	32	34
Balers	182	95	70	34	37	35
Combine harvesters: forage harvesters	84	30	16	2	1	1
potato harvesters	11	10	-	-	-	-
Fertilizer applicators: for solid fertilizers	405	101	42	9	11	11
for liquid fertilizers	74	17	3	-	-	-
Milking installations and units	411	175	83	20	20	23
Including with milk pipeline	....	....	....	4	4	5
Power capacities, thousand hp	363.0	188.3	105.5	54.2	50.1	51.2

Source: Komistat.

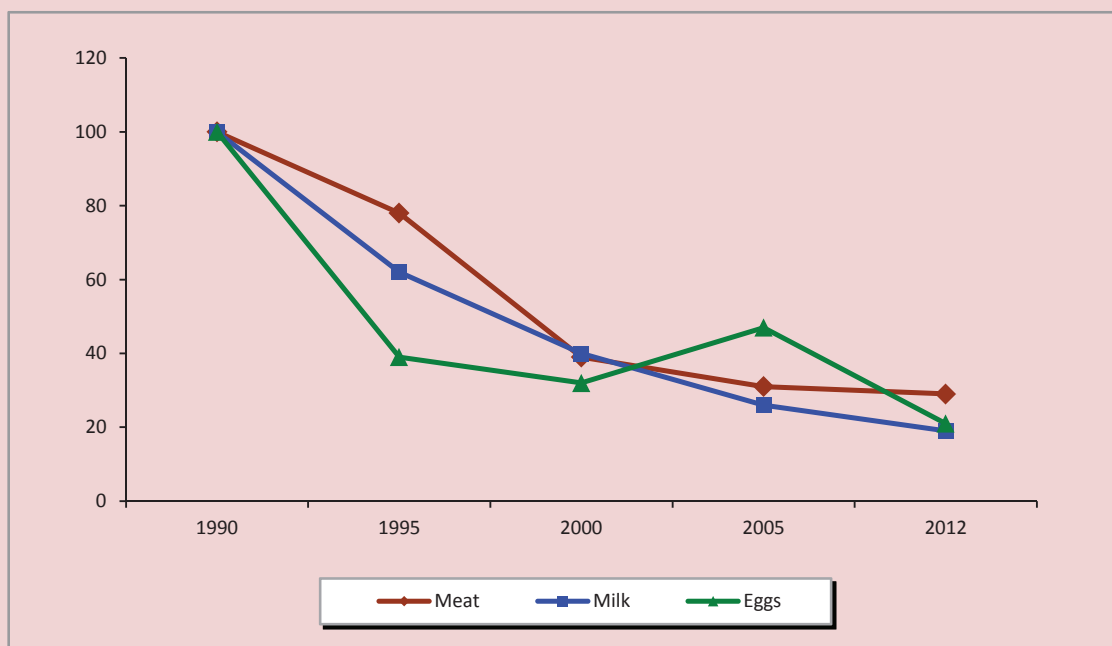
areas. Over the years of reforms, the number of machinery and power capacities in agricultural production sharply reduced (*tab. 3*). The available machinery is aging rapidly alongside significant reduction of technical equipment.

The application of organic and mineral fertilizers decreased dozens of times: 198.3 thousand tons of organic fertilizers were applied

in 1990, in 2012 – only 6.6 thousand tons, mineral fertilizers – 23 272 and 538 centners, accordingly. This leads to the removal of nutrients from the soil exceeding their inflow with fertilizers.

Market transformation was accompanied by agricultural production decline. For 1990–2012, the production of meat (mostly beef) in

Figure 4. Dynamics of production of animal husbandry in all categories of farms of the Arctic sub-region in the Komi Republic for 1990–2012, (1990 = 100%)



all categories of farms in the Arctic sub-region decreased in 3.5 times, milk production – in 5.3 times, eggs production – in 4.7 times (*fig. 4*). In the rest of municipal entities the reduction in meat production amounted to 1.5 times, milk production – 2.8 times, eggs production – 2.2 times.

At the twofold decline in the number of population in the subarctic region, the production of meat per person decreased in 1.8 times, milk – in 2.7 times, eggs – in 2.4 times. In the other regions and towns when the population decreased by 18%, production per capita declined, respectively, in 1.3; 2.3 and 1.8 times.

The rates of production decline in the Arctic and subarctic areas were significantly higher than in other areas of the Republic. For the analyzed period the share of the sub-region in the production of all kinds of agricultural products decreased, while the share of other areas increased (*fig. 5*).

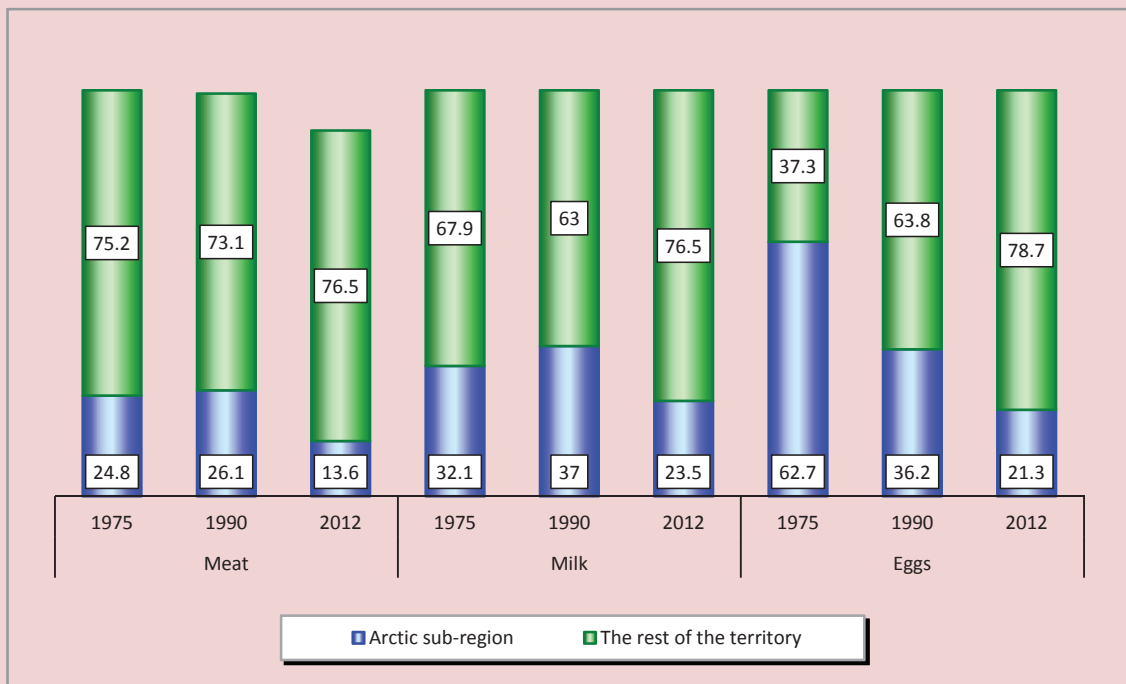
The reduction in the production of agricultural products has led to a constant reduction in the provision of the population with local foodstuffs. The main food resources are formed at the expense of import from other regions of the country and from abroad.

The decline in the production of local products was caused by the reduction of crop areas and the number of livestock. These indicators declined most rapidly in agricultural enterprises. In 1990–2012, their crop areas decreased in 11.2 times, cattle head – in 12.3 times, poultry – in 5.6 times.

In agricultural organizations the principle of self-repayment and self-financing has been violated. The share of unprofitable organizations is 42%. More than half of agricultural enterprises are in a crisis condition.

The main factors hindering the development of the agricultural sector, are as follows: an extremely unsatisfactory condition of material and technological base, low investment

Figure 5. The share of the Pechora-Ural North in the Republic's animal husbandry production, %



attractiveness of the industry, limited financial resources of business entities, insufficient and inefficient mechanisms of state support of the agrarian sector, lack of qualified staff, low salaries, poor development of production and market infrastructure, deterioration of the social sphere in rural areas. Constraints on the development of the sector are shown in *figure 6*.

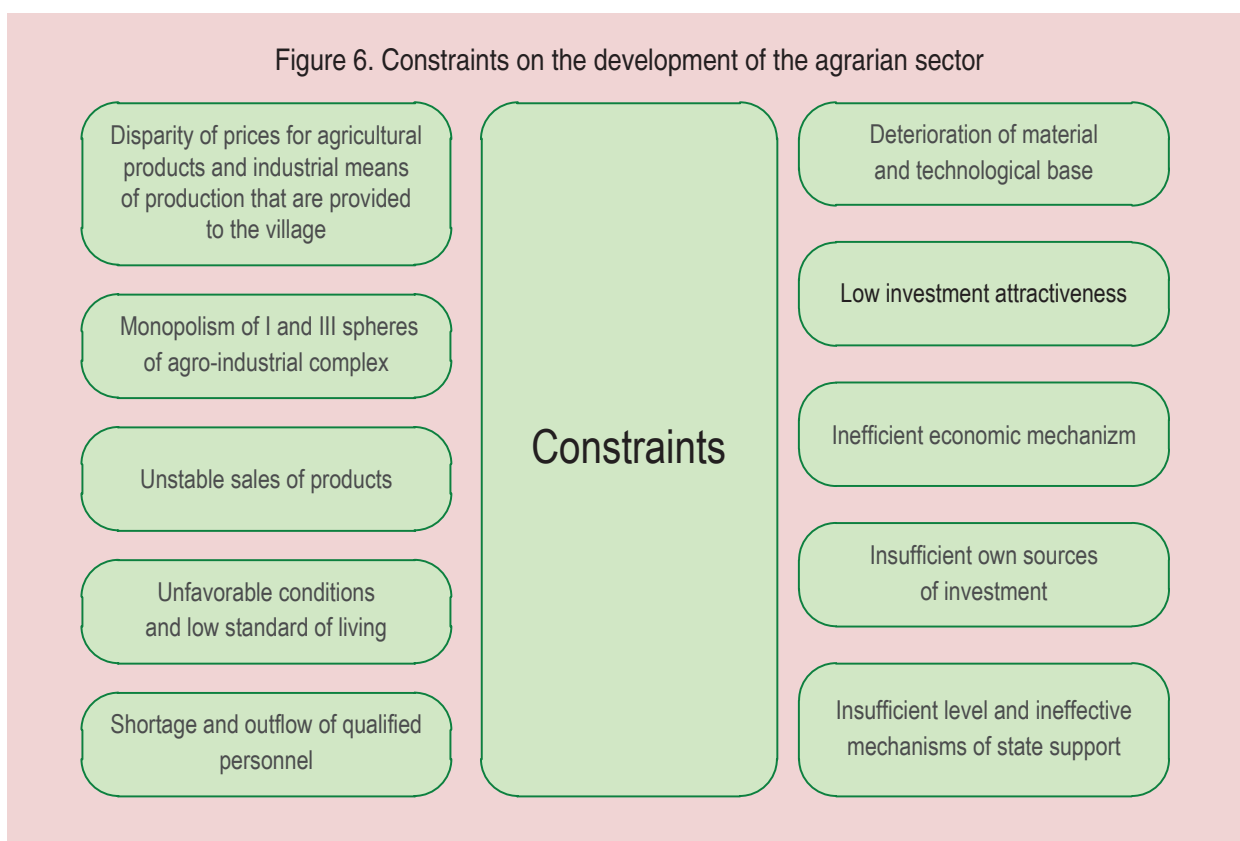
The Arctic and subarctic territories that are engaged in agricultural production and fishery in extreme conditions, cannot be considered from the perspective of obtaining the profit sufficient for expanded reproduction. The agricultural industry by virtue of its nature is drawn to the social sphere and can develop only with state support. Subsidies to agricultural producers make it possible to get profit in addition to the proceeds from the sale of products without affecting the growth of food prices. Revenue growth increases investment opportunities for modernization and innovation development of agricultural production.

Main directions of development of the agrarian sector

The situation in reindeer herding is relatively stable among the agricultural branches in the region. In recent years, with the adoption of the law “On reindeer breeding in the Komi Republic” and the target program “Development of reindeer breeding in the Komi Republic (2011–2015)”, the sector is experiencing positive changes. In 2012, compared with 2010, reindeer population in all categories of farms increased by 9.3%. Agricultural organizations are increasing their production and sales of meat, improving livability and actual accretion of calves.

80.8 million rubles from the budget of the Komi Republic and 37.6 million rubles from the federal budget were allocated for financial support of the program. This allowed reindeer farms to build three new corrals (Agricultural Production Cooperative “Olenevod”, LLC “Severny” and LLC “Agrocomplex “Inta

Figure 6. Constraints on the development of the agrarian sector



Pripolyarnaya”), to complete the construction of the third modern slaughter unit in Inta, to purchase snowmobiles, boats, boat engines, diesel power blocks, satellite phones. Geobotanical exploration of reindeer pastures was conducted by APC “Olenevod” in 2011 and by LLC “Agrocomplex “Inta Pripolyarnaya” in 2012. 12.2 million rubles was allocated to these purposes from the Republic’s budget. To date, geobotanical surveys of reindeer pastures have been carried out in all the five reindeer herding enterprises in the Republic. The availability of modern slaughter units in APC “Olenevod”, LLC “Severnoy” and LLC “Agrocomplex “Inta Pripolyarnaya” makes it possible to establish a facility for storage and processing of endocrine glands (endocrine-enzyme raw materials), as well as blood and its components.

The implementation of the target program improved social services and material welfare of reindeer herders and their families. In the framework of the measures on the organization

of transportation of reindeer herders’ children from camping grounds to the place of study and back during the summer holidays in 2012 127 children were transported from the tundra and 77 children – to the tundra. Average monthly wage of people employed in reindeer herding has increased by 69% (from 10.5 thousand rubles in 2010 up to 17.7 thousand rubles in 2012).

Although the situation in reindeer breeding in the Komi Republic in comparison with other subjects of the North looks relatively stable, the sector has accumulated a lot of problems. Their origins can be seen both at the federal and regional (inter-regional) level. The absence of a special law of the Russian Federation “On reindeer breeding” creates uncertainty of the position of reindeer breeding in the system of state control and subordination. Strict monetary policy makes it impossible to obtain long-term loans for modernization of production and establishes exorbitantly high interest rates on short-term loans.

The regional and inter-regional levels do not have well-established inter-regional relations in the sphere of joint systems of control over the condition of pastures.

The main problems of reindeer herding development are severe conditions for life and labor, and low wages of herders. For this reason, young people do not want to work as reindeer herders after finishing their compulsory military service. Farms experience a constant shortage of zootechnicians and vets. The lack of veterinary care entails a significant increase in reindeer mortality from diseases and injuries. On average, reindeer farms obtain 8 kg less body weight per adult reindeer.

In accordance with the current forest legislation, reindeer farms, as tenants of forest areas are to carry out a complex of measures for the provision of fire safety during the entire year. Forest pastures are used only during the winter period (5–6 months a year). Reindeer farms bear additional financial costs when extinguishing fires in forests.

In recent years, as a result of industrial development of mineral and forest resources, the reduction of the area and contamination of reindeer pastures continue; the quality of fodders is deteriorating and forage reserves are reducing. Man-made destruction of soil-covering, degradation of grasslands, reduction of fodder stocks and their availability are observed near the sites of exploration, production and transportation of minerals in the tundra and forest tundra, and in the areas of development of forest resources in the taiga. Due to these factors, and also as a result of changes in the organization of grazing (redistribution of pastures between farms of different categories, changes of stock driving roads, delays of herds in areas of corrals, etc.), the reindeer pastures have local areas with unfavorable ecological situation within which reindeer herding is becoming impossible, and on the adjacent areas it is possible only to a limited extent. This led to the increase of the

load on the pastures remaining at the disposal of reindeer herders and to the reduction of their reindeer-feeding capacity, disturbance of fodder balance at seasonal pastures in general. It is noteworthy that the landscapes with the most valuable forage resources (tundra and forest tracts) are violated most often.

Geobotanical surveys of the tundra and forest-tundra pastures of reindeer farms in the urban municipalities of Inta and Vorkuta showed a significant decrease in the share of main fodder plants, and absence of lichen forage. There has been an increase in shrubs and uneatable plants.

It is expedient to develop the territories in Northern taiga for the forest reindeer-breeding; it is an alternative solution aimed at the preservation of depleted tundra and forest-tundra pastures from irreversible degradation, and the forests of the Far North – from destruction. Northern taiga has the total area of 400 thousand hectares of land.

The Republic has made its first step towards the creation of forest reindeer-breeding. Knyazhpogostsky district is building the fence; and reindeer have been purchased there. This work will help to find out the terms for creating forest herds based on the adaptation of tundra reindeer. There is also a second way. In 2010 design-and-survey and geobotanical works were conducted on the territory of LLC “Agrocomplex “Inta Pripolyarnaya”, and also a plan of land management was drafted for the creation of a pilot forest herd. For this purpose it is planned to purchase reindeer in the Khanty-Mansi Autonomous Okrug that have already been adapted to the year-round maintenance in the forest. This will reduce the cost of building full-scale hedges, and cheapen the actual keeping of animals. This project even has potential investors.

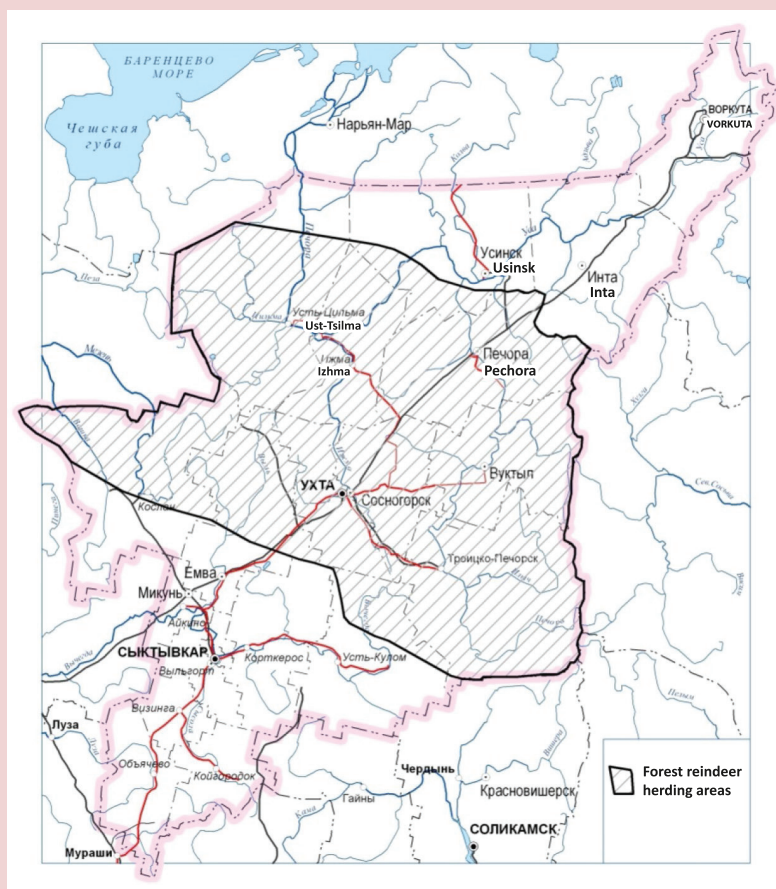
Successful work on the establishment of taiga reindeer husbandry should involve regional researchers and land surveyors. Their participation in the creation of pilot herds of

forest reindeer will make it possible to prepare useful recommendations, to find places in the taiga that are suitable for the maintenance of large reindeer herds. Working actively, in 5–7 years the Komi Republic will be able to recreate former forest reindeer herds in Izhemsky, Udorsky and Ust-Kulomsky districts, and, afterwards, to develop taiga reindeer herding in all of the northern and in several central areas of the Republic. This will open up great opportunities for development of tourism connected with reindeer herding. The map-scheme of promising areas for forest reindeer breeding is presented in *figure 7*.

Further development of reindeer breeding is possible with the active support of the Komi Republic Government in the following areas:

- initiating the adoption of the Federal Law “On reindeer husbandry in the Russian Federation”, and also the drafting of the federal target program for the development of reindeer breeding;
- expansion of the republic’s target program “Development of reindeer breeding in the Komi Republic” by inclusion of measures to support the establishment of forest reindeer breeding, starting with design and survey works;
 - consolidation of forest pastures in long-term lease to reindeer breeding farms;
 - creation of facilities for processing of reindeer herding products together with other reindeer herding regions. Potential investors can be attracted by the projects for processing of reindeer skins in the urban district of Inta, and

Figure 7. Map-scheme of promising areas for forest reindeer breeding in the Komi Republic



for the production of valuable and profitable endocrine-enzyme raw materials, which is in great demand abroad;

- provision of support to organizations that are willing to organize tourism associated with reindeer breeding;

- creation of a specialized structural unit for extinguishing fires in the northern woods with the release of deer-breeding farms from these duties;

- introduction of a monthly fee to veterinary specialists working directly in reindeer herding.

The municipal district of Pechora requires the construction of a dairy complex for 400 cows to provide the population with whole-milk and dairy products. In small rural settlements it is advisable to build dairy farms that maintain 100–200 cows with high productivity level (5–5.5 thousand kg), consistent with the principles of production of organic products. Modern highly effective means of mechanization and automation for manufacturing processes can be applied in such farms as well. It is also possible to process some of the milk into butter and cheese.

Highly qualified workers, managers and specialists play an important role in the boosting of modernization and innovation development of the agrarian economy in the Arctic and subarctic territories. The staffing of modernization processes requires the implementation of the set of measures proposed by V.V. Terentyev [8].

It will be necessary to enhance state support of traditional industries of indigenous peoples in the Arctic and subarctic regions from the federal budget. It is expedient to carry out such support in the following directions:

- funding of the programs for development of reindeer herding, aimed at stabilization and increase of livestock population, complex processing of products and raw materials of reindeer husbandry that are in great demand both in the domestic and international market;

- allocation of subsidies for elimination of poverty of the indigenous rural population;

- partial compensation of the cost of modern machinery and equipment, mineral fertilizers, fuel, spare parts, combined feeds, purchased by agricultural producers;

- compensation of tariffs in the amount of 50% when transporting material and technological resources by railway and water; compensation of part of expenses for power and thermal energy, and natural gas, which are used for technological needs;

- subsidizing of interest rates on loans;

- assistance to rural cooperatives (in production, marketing, processing, procurement, lending and insurance of agricultural producers);

- financing of scientific research in the field of agriculture and fishery.

At the regional level it is proposed to maintain the subsidizing of interest rates on loans for companies of agri-food sector, grant agricultural producers a remission of property and transport taxation.

The accession of the Russian Federation to the world trade organization (WTO) will require certain corrections to be made due to the restrictions envisaged by the WTO in the sphere of state support of agriculture in the Far North and the Arctic. It is necessary to remove restrictions on the “yellow basket” for agriculture functioning in extreme conditions.

In the conditions of WTO membership it is reasonable to exempt the peasants from all taxes for 5 years, like it is done in some regions of China, and increase the role of long-term credit. Concessional loan for the construction and modernization of cattle-breeding facilities in conditions of the North and Arctic should be granted for 20–25 years, and for the acquisition of machinery and equipment – for 6–8 years.

The study of the conditions and problems of development of the agrarian sector in the Arctic and subarctic areas of the Komi Republic leads to the following conclusions.

1. The agricultural sector provides the population with fresh, wholesome food, and ensures people's employment; it also performs the functions of the traditional lifestyle of indigenous peoples.

2. The agrarian sector has the following prerequisites for development: availability of labor resources, natural forage base (vast floodplain meadows), production of organic products, demand for local products.

3. Evaluation of agricultural development shows that the highest rates in the industry were achieved in the pre-reform period; transformation processes on 1990–2000 led to a decline in production, degradation of resource potential and decrease in the standard of living and quality of life of peasant farmers. If the situation remains as it is today, it will make the trend of destruction of agriculture irreversible.

4. There remain certain obstacles to the development of the agricultural sector: extremely unsatisfactory condition of the

material and technological base of agricultural enterprises and peasant farms, low investment attractiveness of the industry, limited financial resources of business entities, insufficient state support of the agrarian sector and unavailability of preferential loans, lack of qualified staff, low level of management and unsustainable marketing of agricultural products.

5. The most important directions of development of local agricultural production are: modernization of production with the use of innovation technologies; improvement of legislation and target-oriented management; creation of conditions for the elimination of the deficit and outflow of skilled workers from the sector; increase of direct state support to the agrarian sector; sustainable sales of agricultural and fishery products; participation of resource enterprises in the financing of food production. In the nearest future it will be necessary to solve modernization and social issues in the agricultural sector.

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The influence of external environment factors on the activity of higher educational establishments in the Russian Federation



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Abstract. The instability of market economy development causes continuous changes in the activity of higher educational establishments. The article deals with the processes, taking place in the system of higher professional education in the Russian Federation in recent decades. On the basis of the analysis of statistical data and normative acts of the Government and Ministry of Education and Science of the Russian Federation, the key global and national trends in higher education are identified: increasing demand for higher education, resulted in its considerable offer (the growth of quantitative indicators is not always accompanied by improvement of higher education quality); reduction in the total number of students due to the demographic situation worsening; transition to a multi-level system of higher education under the Bologna process; change in specialties patterns and directions of training specialists with higher professional education due to the economy structural reforms and labor market needs; aggravation of competition. The tendencies lead to the emergence of demographic, political and economic risks. To reduce negative impact of the external risks to the universities' activity it is necessary to develop corresponding state educational policy in the sphere of higher education and risk management in universities.

Key words: trends in higher education development; continuing education; the structure of specialists' training; external risks; standards of financing; effectiveness of the activity, competition.

Instability of the market economy development, uncertainty, caused by the continuous changes, lead to the emergence of the risks, affecting the operation of higher education institutions. To forecast the situation development and to effectively plan universities' activity in these conditions it is necessary to determine the main trends of the higher

professional education development in the Russian Federation and to reveal the factors, which influence it. The external risks (those that are not directly related to the universities' activity) are affected by a very large number of factors: political, economic, demographic, social, legal and others. One can single out the most important of them.

Firstly, it is necessary to emphasize the changing role of higher education in modern society, where science, information and new technologies are key productive force. Information, penetrating all spheres of life, has become a critical factor in economic growth, affecting production development, efficiency and employment. Computerization of production, introduction of advanced technology and cutting-edge technologies, development of new types of products and services, radically changing production processes, impose at the same time the growing requirements on education and professional training. Informatization of the economy is connected with:

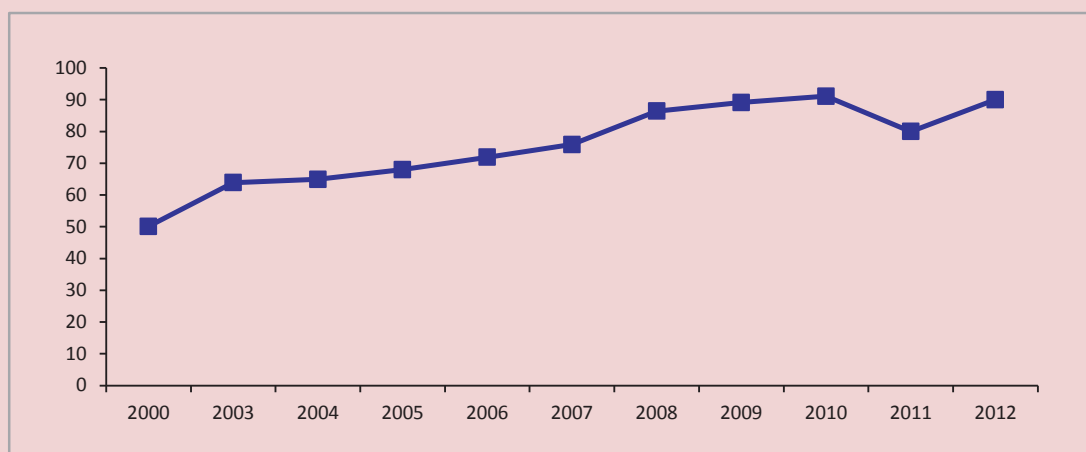
- extension of the information sector industries (production of computing and communication technologies, information services industry, including research centers, consulting firms, centers of scientific-technical information, and so on);
- giving new qualities of production and management at the enterprises of traditional economical sectors;
- creation of a new base to develop small businesses, providing both large and small firms

with equal access to information (via the Internet) and extending possibilities of home-based work, flextime and part-time work. The formation of information society is accompanied by significant changes in the sphere of higher education.

First, there is an increase in the level of education of the labor force. The forecast, carried out at the end of the 20th century, revealed that the developed countries in the beginning of the 20th century would transfer to universal higher education, and the rest of the world – by the end of the 2020s [2, p. 8]. In fact, higher education became wide-spread [1, p. 3]. The share of young people, aged from 18 to 25, who are getting higher education, amounts to 80% in the USA, 60% – in Europe, 25% – in China and 15% – in India [13, p. 30]. According to the Rosstat data, in the Russian Federation in 2000 about half of young people, aged 17, were freshmen at higher education institutions, and in 2010 this figure increased to 91% (*fig. 1*).

It should be noted that in 2011 the share of 17-year-old youth, entering universities, decreased to 80%. It was caused by the reduction of

Figure 1. Enrolment coefficient to educational establishments of higher professional education in the Russian Federation in 2000–2012, %*



* Enrolment coefficient to educational establishments of higher professional education is defined as a ratio of the people, accepted to educational institutions of higher professional education, to the population at the age of 17 (%).

Source: *Osnovnye pokazateli obrazovaniya* [Basic Indicators of Education]. Available at: http://www.gks.ru/free_doc/new_site/population/obraz/obr-svod1.htm

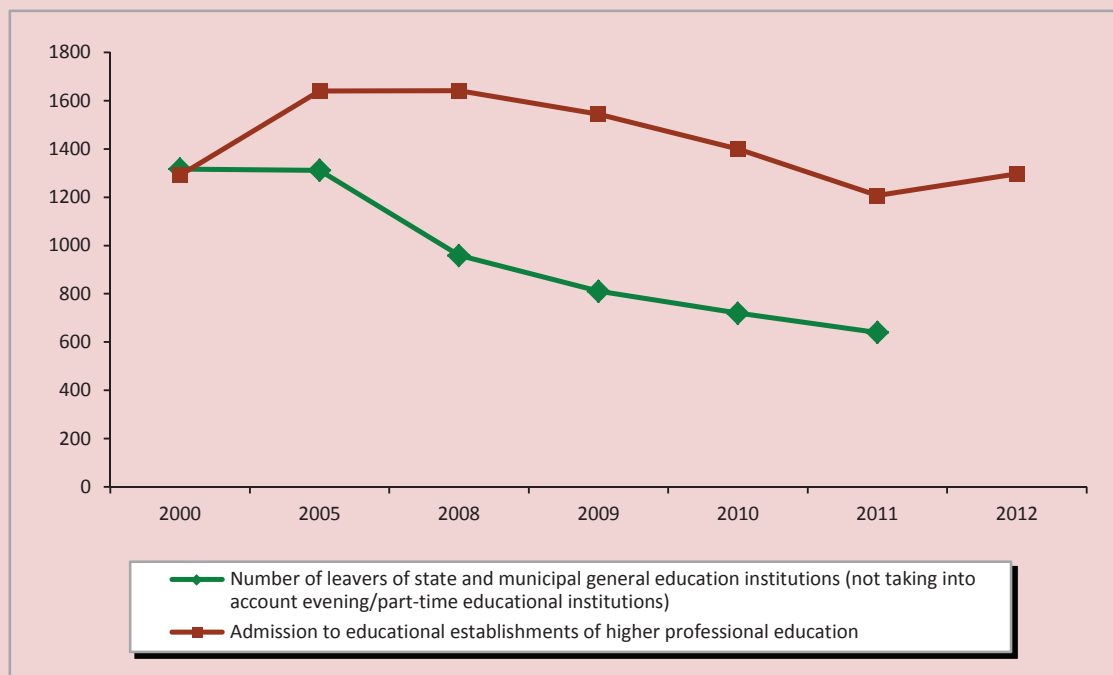
enrolment at universities, which fell by 13.7% as compared to 2010, with the number of school leavers being decreased by 11.1%¹ (fig. 2).

In the 2012–2013 academic year the enrolment coefficient to educational establishments of higher professional education in the Russian Federation was 90%, due to higher admission quotas in 2012 [4, p. 560]. This statistics reveals, “firstly, the increase of demand for higher education; secondly, the social capabilities of the state (availability of political will and budget resources, necessary for financing universities); thirdly, the living standard of the population» [13, p. 30].

Research and project competences, formed at the first stage of higher education, presuppose rising popularity of higher education [1, p. 4].

Secondly, nowadays one can notice gradual transition to the system of continuous education, covering the entire period of the employee’s labor ability. The society wants everyone to keep acquiring new knowledge, improving their professional skills, qualification and general culture. So, getting professional education is only the first step in a career. Today education is not focused just on memorizing constantly increasing amounts of information, but on acquiring skills to find data and on developing

Figure 2. Certain indicators of the education system in the Russian Federation, 2000–2012, thousand persons



Sources: *Vypusk obuchayushchikhsya gosudarstvennymi i munitsipal'nymi obshcheobrazovatel'nymi uchrezhdeniyami (bez vechernikh (smennykh) obshcheobrazovatel'nykh uchrezhdeniy), 2000–2011 gg.* [The Number of Leavers of State and Municipal General Education Institutions (Not Taking into Account Evening/Part-Time Educational Institutions) in 2000 to 2011]. Available at: http://www.gks.ru/bgd/regl/b12_14p/lssWWW.exe/Stg/d01/06-08.htm; *Priem na obuchenie po programmam vysshego professional'nogo obrazovaniya, 1990–2007 gg.* [Admission to Study by the Higher Professional Education Programs in 1990–2007]. Available at: http://www.gks.ru/bgd/regl/b12_14p/lssWWW.exe/Stg/d01/06-26-1.htm; *Priem na obuchenie po programmam vysshego professional'nogo obrazovaniya, 2008–2011 gg.* [Admission to Study by the Higher Professional Education Programs in 2008–2011]. Available at: http://www.gks.ru/bgd/regl/b12_14p/lssWWW.exe/Stg/d01/06-26-2.htm; *Sotsial'no-ekonomicheskoe polozhenie Rossii – 2012 god. Obrazovanie* [Socio-Economic Situation in Russia in 2012. Education]. Available at: http://www.gks.ru/bgd/regl/b12_01/lssWWW.exe/Stg/d12/3-5.htm

¹ It should be noted that there are nor definite correlations between these indicators, as not only school leavers can enter the university, but also those who have already got primary or secondary professional education

motivation to continue education and self-education. The report of the International Commission on Education for the 21st century “Education: a Hidden Treasure”, presented by UNESCO in the late 1990, stipulates that “the educational ideal of the 21st century differs radically from the classical ideal, based on encyclopedic knowledge. The new educational ideal stands on four pillars: learning to know, learning to do, learning to live together and learning to live” [16, pp. 10-11].

Thirdly, the mobility of students, teachers, and scientific employees of higher education institutions is rising, the national borders are “removing”. Economy globalization leads to increased competition for students (applicants), scientific-pedagogical staff, financial resources (budgetary financing, grants, funds of economic entities to conduct scientific research and others) between universities of different countries. At the same time, universities strive to improve the education quality, using modern technology, including distance, carrying networking cooperation, etc.

The Russian system of higher education is influenced not only by global processes influence, but also by national trends.

First of all, one should highlight the demographic situation worsening, due to decline in fertility in the 1990s, which led to reduction in the number of school leavers at the present time. Since 2005 the number of population, aged 15–24, has continuously decreased by 3% per year (*tab. 1*).

According to the Federal State Statistics Service, the neutral forecast assumes the decrease by 42.7% in the RF population of the given age for 2002–2020. Rosstat forecasts that the demographic situation in this age group will aggregate till 2021, when the youth population stops decreasing and starts increasing. The growth in the number of young people, aged 15–24 years, will continue throughout the next decade, but even in 2030 the number of the youth in this age group is projected by 5.5% less than in 2013 (*tab. 2, fig. 3*).

Changes in the youth population has a strong influence on the number of applicants,

Table 1. Distribution of the RF population, aged 15–24, by age groups in 1989–2012, as of January 1st, thousand persons

Population at age of, years	1989	2002	2004	2005	2007	2008	2009	2010	2011	2012
15–19	9968	12801	12544	12212	11244	10485	9650	8389	8237	7631
20–24	9755	11466	11870	12081	12298	12457	12389	12169	12122	11599
Total	19723	24267	24414	24293	23542	22942	22039	20558	20359	19230

Compiled by: *Raspredelenie naseleniya po vozrastnym gruppam* [Distribution of the Population by Age Groups]. Available at: http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/population/demography/

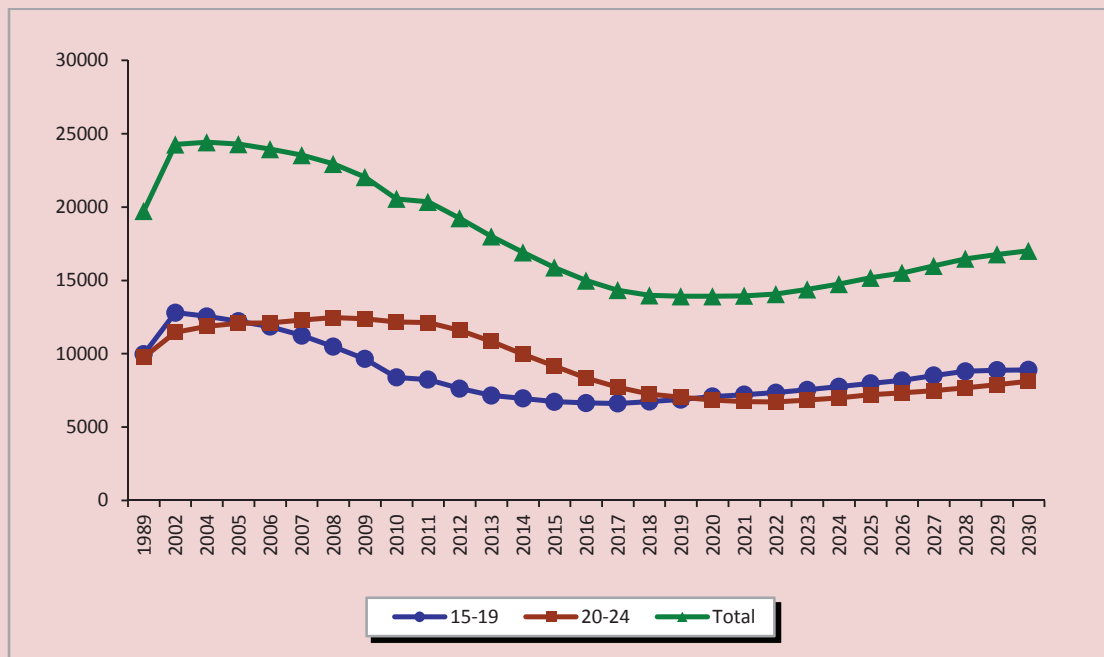
Table 2. Forecast of distribution of the RF population, aged 15–24, by age groups in 2013–2030, as of January 1; thousand persons

Population at age of, years	2013	2015	2017	2019	2021	2022	2024	2026	2028	2030
15–19	7150	6725	6612	6875	7205	7352	7759	8178	8804	8895
20–24	10846	9151	7717	7041	6743	6717	6988	7328	7669	8118
Total	17996	15876	14329	13916	13948	14069	14747	15506	16473	17013

Calculated on the basis of the neutral forecast of the RF population, presented by the Federal State Statistics Service.

Source: *Chislennost' naseleniya Rossiyskoy Federatsii po odnoletnim vozrastam. Demograficheskiy prognoz do 2030 goda* [Population of the Russian Federation by One-Year Age Groups. Demographic Forecast till 2030]. Available at: http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/population/demography/#

Figure 3. RF population, aged 15–24 in 1989–2030 as of January 1; thousand persons



Sources: *Raspredelenie naseleniya po vozrastnym gruppam* [Distribution of the Population by Age Groups]. Available at: http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/population/demography/

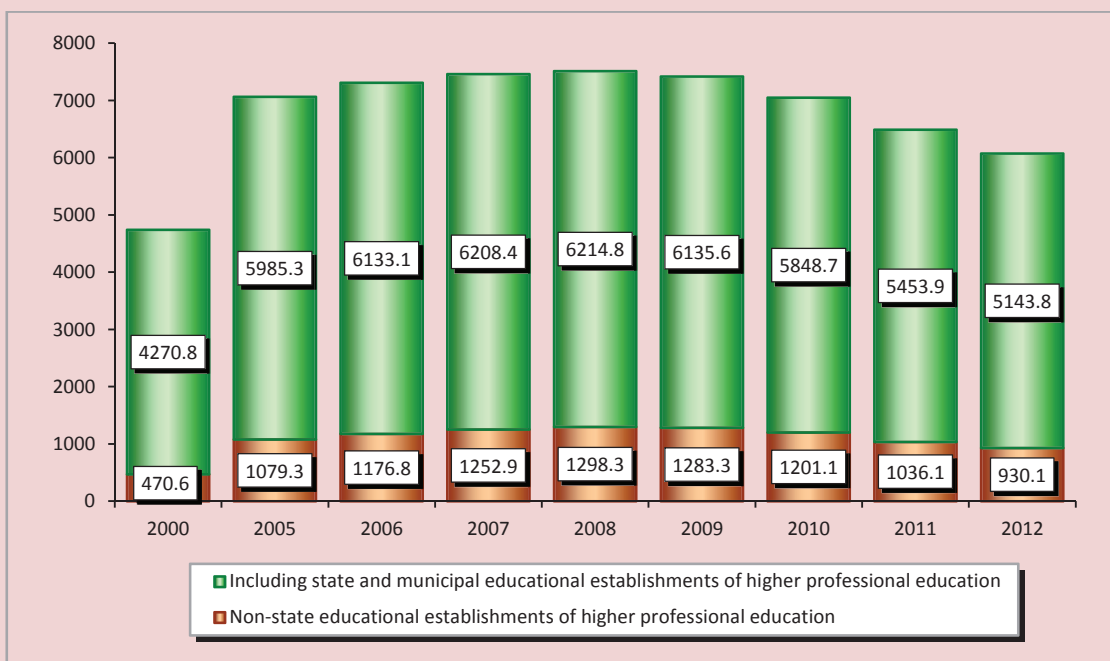
but there are not definite correlations between the number of a relevant population group and the number of students, as older people enter universities, choosing part-time education or evening classes. So, despite the fact that the decline in the youth population, aged 15–24, has been observed since 2005, in this period the number of students has been increasing, reaching its peak in the 2008–2009 academic year, and then rapidly began to decline (*fig. 4*).

The decline in the number of students affected both state and non-state establishments of higher professional education, with the latter experiencing a greater decline. So, in 2012, compared to 2008, the number of students in private institutions decreased by 28.4% (in absolute terms at 368.2 thousand people), while in state universities the drop amounted to 17.2% (1071.0 thousand people). As a result the share of students, admitted to private institutions, decreased by 2% respectively (from 17.3 to 15.3%).

The situation can change due to redistribution of admission to educational institutions of higher professional education in favor of the private sector. So, in the 2012–2013 academic year enrollment to private establishments of higher professional education rose by a quarter, and admission to state and municipal institutions – only by 5% [17]. The share of the students who have a full refund of tuition: 57.7% – in 2011 and 60.0% – in 2012. The share of the admitted to state and municipal educational institutions of higher professional education with a full refund of tuition was 54% (*fig. 5*) [17].

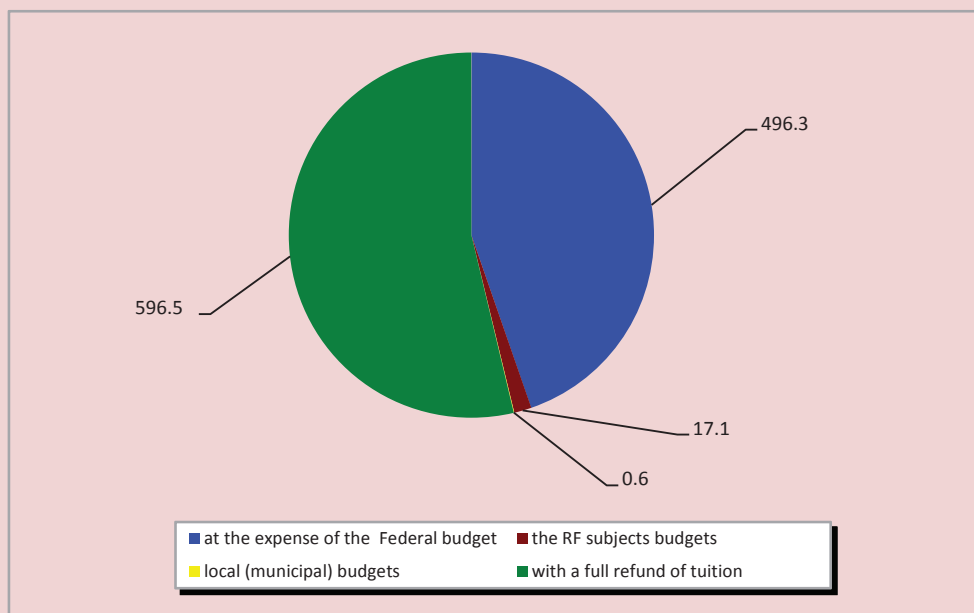
The peculiarity of the Russian Federation is the significance of its territory, the multi-ethnic population and uneven distribution of the population on the territory. This problem is aggravated due to the intensification of migration processes, including those, connected with different development of the education system, primarily of higher education.

Figure 4. Number of students at educational institutions of higher professional education in the Russian Federation in 2000–2012 (as of the beginning of academic year), thousand persons



Source: *Obrazovatel'nye uchrezhdeniya vysshego professional'nogo obrazovaniya (na nachalo goda)* [Educational Establishments of Higher Professional Education (for the Beginning of the Year)]. Available at: http://www.gks.ru/free_doc/new_site/population/obraz/vp-obr1.htm

Figure 5. Admission to state and municipal educational institutions of higher professional education of the Russian Federation in 2012, thousand persons



Source: *Sotsial'no-ekonomicheskoe polozhenie Rossii – 2012 god. Obrazovanie* [Socio-Economic Situation in Russia in 2012. Education]. Available at: http://www.gks.ru/bgd/regl/b12_01/lssWWW.exe/Stg/d12/3-5.htm

If in 2000 in six Federal districts out of eight, particularly in the Volga, Southern and North Caucasian districts, the share of the accepted to higher educational establishments in the total admission volume throughout the country was less than the share of the leavers of state and municipal educational establishments (not taking into account evening/part-time educational institutions) (*tab. 3*) in the total number of leavers in the country, in 2011 such a situation was observed only in four Federal districts. This indicates greater opportunities for school leavers to enter universities of their region. However, there are significantly increased disparities between the studied indicators in two Federal districts: the North Caucasian (in 2000, the proportion of school leavers exceeded the proportion of the enrolled in higher education institutions by 1.3%, and in 2011 – by 4.2%) and the Far Eastern (the excess was 0.7% and 1.5%, respectively). The situation

can be caused by a reduction of the admission to universities of these districts due to the fact that Unified State Exam was introduced, thus expanding opportunities for young people to enter prestigious universities in other regions. This reveals an unequal level of education quality in universities of different RF regions.

Such disproportions cause the necessity of implementing sound state educational policy in Russia, aimed at creating conditions for successful development of firm universities that receive special resources provision. Such educational establishments should contribute to increasing the country's competitiveness on the global stage and providing equal opportunities for quality education in the regions. According to Kh.G. Tkhangapsoev, "The university strategy should not only seek to "join the list of 100 or 500 best universities in the world", but to eliminate that dangerous social, economic and cultural gap between regions, ethnic groups

Table 3. Distribution of leavers of state and municipal educational establishments and the accepted to establishments of higher professional education between Federal districts of the Russian Federation in 2000 and 2011, %

Federal District	2000		2011	
	Leavers of state and municipal educational establishments (not taking into account evening/part-time educational institutions)	The accepted to establishments of higher professional education	Leavers of state and municipal educational establishments (not taking into account evening/part-time educational institutions)	The accepted to establishments of higher professional education
Central	23.5	30.0	24.3	29.0
Northwestern	9.3	11.2	8.4	10.6
South	9.5	7.4	9.5	9.0
North Caucasian	5.4	4.1	9.6	5.4
Volga	22.5	19.5	22.2	20.1
Ural	8.6	8.2	6.7	8.0
Siberian	15.8	15.0	13.7	13.7
Far Eastern	5.3	4.6	5.7	4.2
Russian Federation	100.0	100.0	100.0	100.0

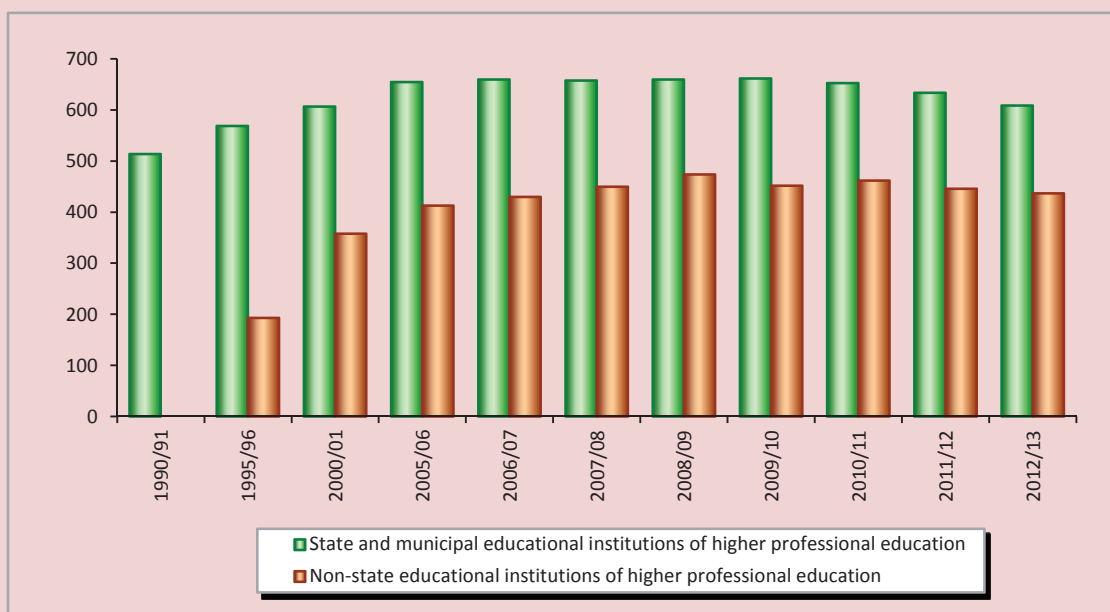
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and cultures which is aggravating now. We are talking about problems of “internal” nature. It would be better if in each oblast (republic, krai) at least one University possesses a resource base and technologies of the modern university process” [18, p. 27].

This problem is quite critical due to the necessity to raise universities’ efficiency. In the Federal Target Program of Education Development for 2011–2015 stipulates that “due to demographic reasons and improvement of the educational institutions system the institutions, not included in the number of Federal and national research universities, is to be significantly updated. The typology and structure of a university network is supposed to be adjusted by means of optimization of the number of university branches towards their reduction to some tens of university branches a year. It is also possible to reduce the total universities number by increasing the number of students, getting quality higher education

in Federal and national research universities, equipped with modern laboratory facilities” [19]. The Activity Plan (a road map) “Changes in the social sectors, aimed at improving efficiency of education and science”, approved by the order of the RF Government, dated December 30, 2012, no. 2620-r, stipulates that “the enhancement of the structures and networks of state educational institutions of higher education includes: realization of an annual monitoring of the universities efficiency; development, approval and implementation of the program to upgrade the network of state educational institutions of higher education by means of reorganization and amalgamation of the branches; upgrade of the system of licensing and accreditation of educational programs” [10]. Since 2008, when there were the greatest number of universities in the country (1134 units), and the total number of universities in the Russian Federation has decreased by 88 units (or by 7.8%; *fig. 6*) by 2013 [7].

Figure 6. Number of educational establishments of higher professional education (for the beginning of the academic year)



Source: *Obrazovatel'nye uchrezhdeniya vysshego professional'nogo obrazovaniya (na nachalo goda)* [Educational Establishments of Higher Professional Education (for the Beginning of the Year)]. Available at: http://www.gks.ru/free_doc/new_site/population/obraz/vp-obr1.htm

The number of public and municipal higher education institutions has decreased by 51 units, non-state – by 37 units. The percentage change in the number of universities of these groups is approximately the same.

In 2012 the number of state and municipal educational institutions of higher professional education decreased by 25 units and non-state – by 9% [17]. According to the results of the monitoring of universities efficiency, in 2012–2013 22 universities, institutions within jurisdiction of the Ministry of Education and Science and 178 branches were reorganized or supposed to be reorganized [6]. Thus, many universities are challenged by the optimization process of the higher education system, realized by means of amalgamating universities and branches, as well as terminating a license to conduct educational activity.

Since February 1, 2012, the amendments to the RF Law “On education” have come into effect. The non-state institutions of higher and secondary professional education, having the state accreditation, are entitled to participate in the contest for the admission quotas establishment along with state universities [21]. A similar provision is stated in Article 100 of the Federal law “On education in the Russian Federation” no. 273 [22]. The students, admitted to the budget-funded places in non-state accredited higher and secondary educational establishments, have equal rights with students of state higher and secondary educational institutions, particularly in getting scholarship. This measure deprives the state universities of one of their key advantages, the availability of budget-funded places, and boosts competition between institutions, regardless of their form of ownership, thus enhancing the higher education quality.

The Russian economy demands cause changes in the structure of specialties and training directions of specialists with higher professional education. In 1990–2010 there can be distinguished three stages, associated

with significant transformations in the sectoral structure of the economy. Thus, the structure of graduates in secondary special and higher education, implemented in the Soviet Union and focused primarily on the needs of manufacturing industries, but not on the demands of social and services spheres, has led to overproduction of technical specialists, which together with the decline in production in the 1990s has caused high unemployment rate among workers in this category. At the same time, in the labor market there was a constant demand for specialists in education, healthcare, consumer services, information systems, lawyers, marketers and managers.

The graduates structure of the Russian Federation and developed countries in the early 1990s differed in the share of engineering and technical specialists, as in Russia it was 4 times higher than in the USA; in the share of agricultural specialists, which in Russia was 15 times higher than in France and 7.5 times – than in the USA; in the share of the human sciences in Russia was 10 times less than in France and 5 times less than in the USA [5, p. 134].

The situation in the labor market, established within the second development stage of professional education in Russia in the late 20th century, resulted in stimulating human sciences development, while putting aside engineering and agricultural sciences.

The third phase, which began in the 1990s, is connected with the change of the objectives of the Russian economy development. To boost innovativeness, technical re-equipment and production competitiveness has become a new goal. Hence, the admission quota for economic, human and social sciences was reduced. The number of budget-funded places remained steady at engineering and technical sciences, including those that correspond to the priority directions of modernization and technological development of the Russian economy [8, p. 31].

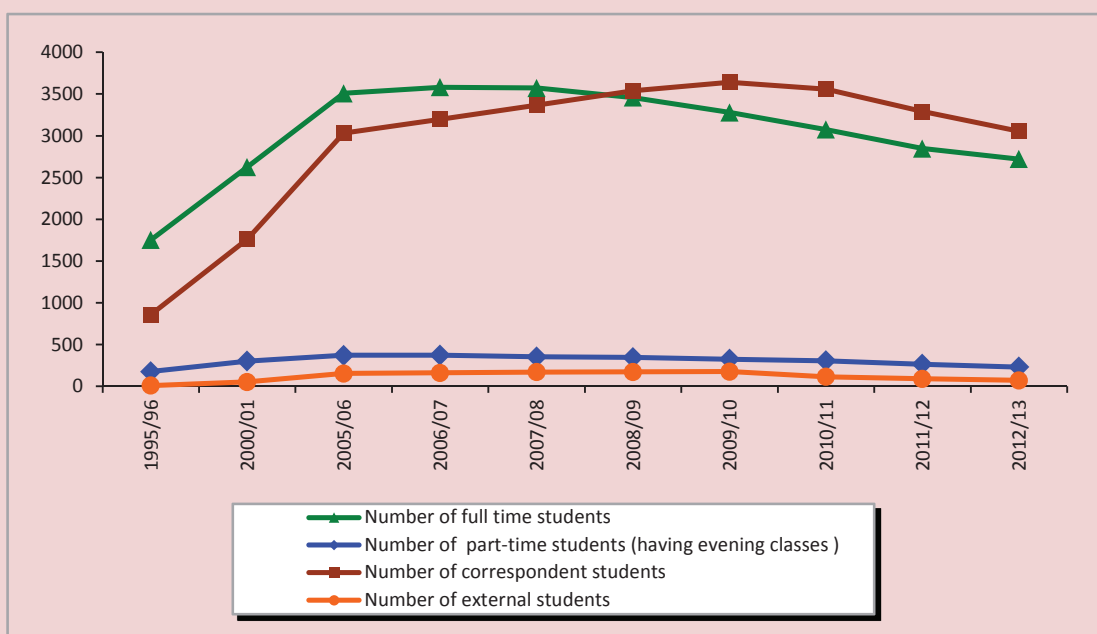
Significant changes also occur in the course of study (fig. 7). Though there are such courses of study as full-time, part-time (evening), correspondence and external, the majority of students prefer full-time and correspondence courses.

The time line of 1985–2010 can be divided into three periods by the dynamics of the total number of students in Russian universities and the course of study. The first period, since 1985 to 1992, is marked by a significant decrease in the total number of students (by 12%) and their number at all courses of study, except full-time [14, p. 106]. In 1993, the share of full-time study was highest possible – almost 64%. The second period, since 1992–1994 to 2006–2008, is characterized by almost three-fold increase in the total number of students, decline in the share of full-time education

and rise in the proportion of correspondence education. In 2008 the number of students of full-time education was less than part-time for the first time in Russia. The third period, started in 2006–2008, is marked by decline in the overall number of students, decline in the share of full-time education and increase in the share of correspondence education. It is mostly characteristic for non-state higher educational institutions; in 2010 there were less than 18% of full-time students and almost three quarters of correspondent students [14, p. 107]. The increase in the number and share of correspondent students is explained by less financial expenditure.

This trend will continue in the coming years. The “road map” stipulates the reduction in the total number of students by 20.7% in the sphere of higher education by 2018 (compared

Figure 7. Number of students of different courses of study at educational institutions of higher professional education (in 1995–2013, thousand persons)



Source: *Obrazovatel'nye uchrezhdeniya vysshego professional'nogo obrazovaniya (na nachalo goda)* [Educational Establishments of Higher Professional Education (for the Beginning of the Year)]. Available at: http://www.gks.ru/free_doc/new_site/population/obraz/vp-obr1.htm

to 2012) planned and the described group of students – by 28.2%², thus indicating further change in the students structure, with the full time education being decreased and other courses of study, most likely, correspondence education, being increased (*fig. 8*)³. Correspondence education presupposes fewer number of class hours, hence the time of direct communication between students and professors goes down and the share of independent goes up. Moreover nowadays, unlike the Soviet period, it not necessary to work within specialty, you are getting as a correspondent student. Thus, the education quality of graduates is reduced. Therefore, to ensure the required quality of correspondence education, it is necessary to use new technologies, distance education with an appropriate educational support, etc.

Thus, in the higher education system one can highlight the following trends:

- increased demand for higher education, which led to greater proposal (the growth of quantitative indicators is not always accompanied by the quality improvement of higher education);
- decrease in the total number of students, due to demographic situation deterioration;
- growing imbalances between RF regions in opportunities to get high quality education;
- reduction in the share of students, enrolled in non-state institutions;
- introduction of higher education levels, shifting to a bachelor degree system and master's degree programs, while retaining a specialist's degree system;
- change in the specialties structure and directions of training in the system of higher

professional education, due to economic restructuring and labor market needs. For the last 3–5 years it has included more budget-funded places for the most demanded specialties in accordance with the RF priority directions of development of science and technologies, and reduction in admissions quota for human and economic sciences;

- optimization of the network of universities, involving the reduction of their number;
- decline in the share of full-time study and growth of part-time education for almost two decades.

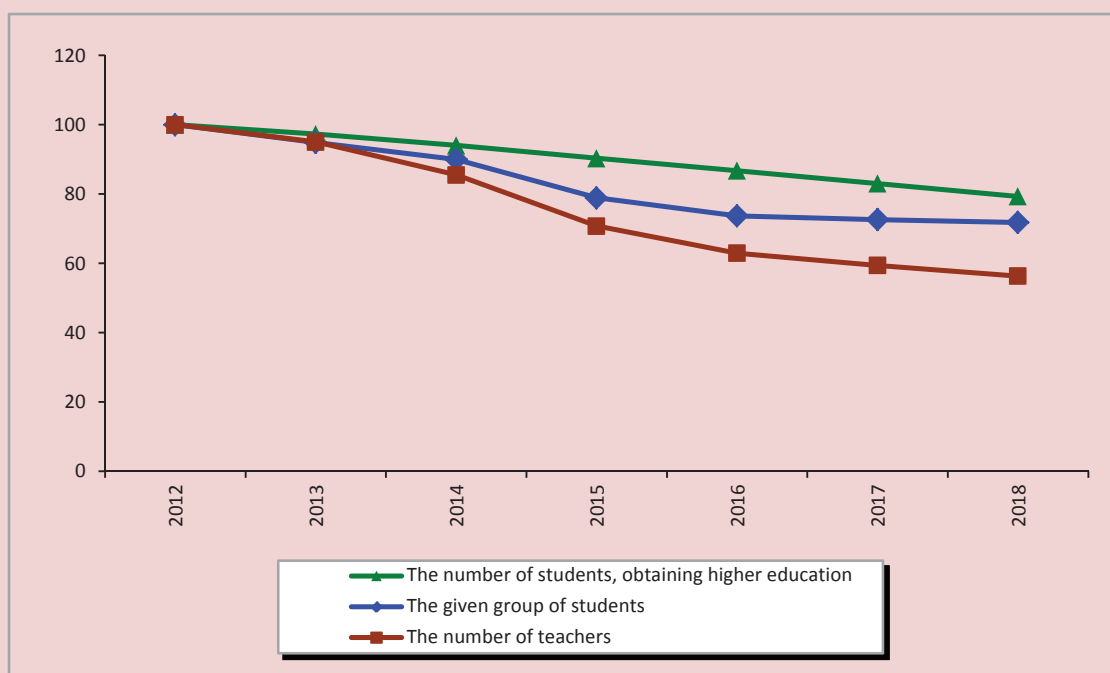
Identification of these trends gives an opportunity to characterize some risks of development of higher professional education system. First of all, it is a high level of political risk, associated with various events and governmental decisions that affect education. Among them, one should mention Russia's joining European educational space, transition to tier system of education, optimization of the network of universities, including creation of Federal and research universities, allocation of budget-funded places to non-state universities, etc. These decisions are aimed at increasing competitiveness of Russian universities; however the negative impacts are possible, due to uncertain conditions of their accepting.

Economic risks are risks, arising from changes in the economy. According to the Federal law, “On amendments to certain legislative acts of the Russian Federation due to improvement of the legal status of state (municipal) institutions” dated May 8th, 2010, no. 83, budget financing of the university is provided not by means of a balance sheet, but by means of a government grant, with the number of people, who chose the educational program, being taken into account [20]. Concurrently, there are risks, associated with the reduction of per capita financing, due to decrease in the number of students

² The given group of students is calculated as the sum, equal to the number of students of full-time course of study, number of students, part-time forms of education, multiplied by a factor of 0.25, and the number of correspondent students, multiplied by a factor of 0.1.

³ It should be noted that in 2012 the growth of admission to full-time study at state and municipal educational institutions of higher professional education on training was ahead of the growth of the total enrolment (6.1% against 5.0%) [17].

Figure 8. Change in basic quantitative characteristics of higher education system in 2012–2018, in % by 2012



Source: *Plan meropriyatiy (dorozhnaya karta) "Izmeneniya v otraslyakh sotsial'noy sfery, napravlennye na povyshenie effektivnosti obrazovaniya i nauki": utverzhden rasporyazheniem Pravitel'stva RF ot 30.12.2012 №2620-r* [The Activity Plan (the Roadmap) "Changes in Social Sphere, aimed at Improving Education and Science": Approved by the RF Government Decree of December 30, 2012 No. 2620-r]. Available at: http://www.rg.ru/pril/76/89/67/2620_plan.pdf

against the background of the demographic crisis, and also due to expel of students. The university faces a challenge. On the one hand, it can expel students, who do not cope with the requirements of the state educational standards, thus decreasing education quality of graduates. On the other hand, it can maintain a high level of requirements to students and expel those who do not cope with them, thus getting fewer allocations from the budget. Introduction of standard financing can ensure the growth of competition between educational institutions and increase state universities' freedom in using funds.

One of the consequences of the state education policy is reduction in the number of qualified teachers. The number of academic teaching staff will reduce by 43.7% in 2018

compared to 2012. The greatest decrease is forecasted for 2015, when the number of academic teaching staff will decrease by 17% compared to the previous year (calculated by the activity plan and the road map [10, p. 88]). This change is caused by the reduction in the number of students, the last graduation of specialists with a 5-year term of study under the State Educational Standard of Higher Professional Education, and the first graduation of bachelors with a 4-year term of study under the Federal State Education Standard of Higher Professional Education. Most universities will experience a transition from a five-year to a four year term of study. Moreover, higher educational establishments can expect the rise in a standard teacher-student ratio from 1:9.4 in 2012 to 1:12 in 2018 [10, p. 88].

The elaborated changes will inevitably lead to reduction in the number of academic teaching staff, thus the educational institutions will lose their competitiveness in the market of educational services, unless they increase the level of qualification of the teaching staff gradually.

Thus, the educational services market experiences intensified competition between

state and non-state higher education institutions, primarily, between those that implement the same programs, as well as between institutions of higher and secondary professional education. A university, seeking a stable position in the educational services market, should manage market risks, that is identify, assess and minimize their negative consequences.

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UDC 614.2(470.12), LBC 51.1(2Rus-4Vol)

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Accessibility and quality of medical service in the context of health care modernization



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Abstract. Assessment of access to health care is a complicated scientific and practical problem. The solution can not be limited to formal indicators of state and departmental statistics. Existing solely for the purpose to preserve the citizens' health, the health care system must be based and reconstructed on the opinion of its customers, the territory's residents who receive medical services under the state guarantees program. That is why, the necessary, if not the most important, component to assess the health care access is sociological data analysis.

The Institute of Socio-Economic Development of Territories of the Russian Academy of Sciences has carried out the measurement and analysis of the Vologda Oblast population's estimates of the access to medical services and its quality, provided by regional health institutions. This study is especially important because a number of reforms and the Program of Health Care Modernization have been implemented in the Russian health care over the last years.

The authors have found out that the reforms improved the provision of the medical institutions with equipment, but the problem of staff shortage was not solved. What is more, the region's residents are still concerned about ethics violations, medical workers' rude behavior and difficulty to make an appointment at the doctor's. These problems remain acute.

Key words: Health care modernization; medical aid; access to medical services and its quality; sociological research; Vologda Oblast.

Since the early 2000s the Russian health care has undergone a number of modernization reforms, which today, after almost 15 years, should be given at least an interim evaluation. The content of the activities and the declared objectives sound clear and theoretically true: increasing the effectiveness of health care and providing the population with accessible medical care. The mechanisms to achieve this goal are consequent and quite reasonable. Particularly, it is a shift of emphasis from secondary health care, which is well developed in Russia [7], but does not justify its scale, to the primary link with its strategic advantages, such as early diagnosis and prevention, introduction of advanced methods to pay for medical care, changing the medical personnel payment system, when their efforts are taken into account.

However, most citizens, facing health care problems in everyday life, apprehend only strategic objective of expanding the access to medical care, and judge about its achievement by experience. The traditional problems of Russian health care, such as queues, disrespectful and uncaring attitude of health workers, increasing payment for medical services, insufficient provision of medicines, still retain and do not satisfy people.

Let us consider an example. Even the relatively prosperous 2000s experienced reduction in the amount of bedspace, which began in the 1990s crisis. In 2007 the formal method to estimate the Executive bodies' performance was approved, according to which the reduction of places at day-night hospitals was regarded as a sign of the effective public spending¹. The compensatory measures were not taken. As a result, in 2000–2012 the provision with hospital beds declined

¹ The method, developed by the Commission under the President of the Russian Federation on the issues of improving public administration and justice, pursuant to Russian President Decree "On Estimation of Efficiency of the Executive Authorities of the Russian Federation Subjects" of June 28, 2007 No. 825.

in the Russian Federation (by 27%), in the Northwestern Federal district regions (by 25% in total) and in the Vologda Oblast (by 28%). The given reduction is unlikely to contribute to the expansion of access to medical services.

The Program of Health Care Modernization, implemented in 2011–2012, was looked to, as its 5 billion budget is very significant for the region. In the conditions of deficit financing, the implementation of target programs becomes the only opportunity to enlarge medical institutions' resources, at least in some territories.

The article, on the basis of a sociological survey of the Vologda Oblast population, considers how these processes influence the population's assessment of the access to and quality of medical care².

When starting a substantial part of the article, let us focus on the citizens' assessment of their own role in maintaining health, which is especially important in modern conditions, when a person's own life is becoming the main arena of the struggle for human health [6]. Over a relatively short period of 2005–2013 the population's consciousness has changed in the Vologda Oblast: particularly, people have become increasingly aware of their responsibility for health. Thus, if in 2005, 73% of the population considered themselves partly or fully responsible for their own health, in 2013 this indicator increased to 88%. At the same time, there decreased the proportion of citizens, who lay this responsibility on health workers (from 23% in 2005 to 14% in 2013), relatives and family members (from 9% to 3%). There is a significant reduction (from 25% in 2005 to 7% in 2013) in the proportion of people who consider the state to be responsible for their health. Indirectly this fact reflects the

² Monitoring of the population's public health on the basis of questionnaires method has been conducted since 2002. The sample representativeness is provided by setting quotas of gender and age, equal placement of observation units, representative volume in 1500 people. The sampling error does not exceed 5%.

growth of civil consciousness and the expansion of society atomization process [1]. The regional researches reveal the same [6].

On the background of the changing patterns of health factors [10] the person's role in its preservation and strengthening is growing. However, this should not depreciate the importance of health care and medicine. These two subjects' effective cooperation in matters of health preservation and life prolongation is critical nowadays. Medical activity is a manifestation of self-preservation behavior, way of life [3]. Therefore, the prevention and timely use of the qualified medical care remain the important aspects of health preservation.

As a rule, people visit a doctor in the period when they are ill. Another significant reason to visit medical institutions is periodic health examination. The 2013 survey indicates that 44% of the population visited a hospitable because of poor health for the last 12 months;

21% – for periodic health examination, 17% – for diseases prevention (*tab. 1*). According to the 2013 data, 13% of the population self-medicated. A quarter of the population noted that in the past year they had not had a sick-leave certificate, 22% – missed work days due to sickness and disease.

The measured level of the access to medical care in 2011–2013 remained almost unchanged: 77% of the region residents were more or less satisfied with the provision of medical services. The sum of low values (22% for the region as a whole) exceeds the sum of high values (14%). The most popular value is “satisfactory” (63% of the population) (*tab. 2*).

The assessment of rural and urban residents do not differ significantly, however, the villagers are less inclined to describe the access to health care as high than citizens (8% of the estimates in municipalities against 18% – in Vologda and 13% – in Cherepovets).

Table 1. Distribution of answers to the question: “Why have you made an appointment with a doctor for the last 12 months?” (as a percentage of the number of respondents)

Answers	Vologda	Cherepovets	Districts	Oblast
For prevention	45.5	46.5	42.5	44.3
In the period when I was ill	17.1	21.2	23.1	21.1
For periodic health examination	16.6	12.8	18.8	16.7
I don't remember	3.6	4.6	9.9	6.9
I have not seen a doctor because I have self-medicated	16.4	16.1	8.4	12.5
I have not seen a doctor because I have not been ill	10.6	11.0	10.5	10.7

Source: data of ISEDT RAS sociological research in 2013.

Table 2. Distribution of answers to the question: “Please, estimate the overall level of the access to health care (in % of respondents number)

Answers	Vologda	Cherepovets	Districts	Oblast
High	4.2	0.5	1.9	2.1
Quite high	17.9	13.0	8.3	12.0
Satisfactory	54.8	66.5	65.2	62.9
Rather low	15.8	12.3	14.6	14.3
Low	5.5	5.9	8.8	7.2
Medical services are not available	1.0	0.5	0.4	0.6

Source: data of ISEDT RAS sociological research in 2013.

The analyzed correlation between demographic characteristics of the population and the assessment of access to health care has not revealed any special features: there are both positive and negative estimates among men and women, aged from 30 to 60–55.

The retrospective review of medical institutions for the period of the Modernization Program shows that the traditional problems have remained acute, but the year of 2013, compared to previous years, witnessed a noticeable improvement in all considered aspects, except for “the lack of necessary professionals”. Till 2010 more than half of the region inhabitants marked long queues at medical institutions and the inability to make an appointment at the doctor’s at a convenient time, in 2012 and 2013 their number decreased significantly (up to 50% and 36%, respectively) (*tab. 3*). The lack of necessary professionals was a problem for 34% of the population in 2012 and 42% in 2013. People do not like doctors’ rude behavior (18% in 2012, and 13% in 2013), their carelessness (24% and 16%, respectively) and ongoing commercialization of health care (17 and 14%).

The respondents, highly assessing the accessibility and quality of medical services, agree with the presence of the mentioned problems, especially with those of doctors’ disrespectful attitude and payment for medical care.

Drawing attention to the fact that the most common problem for the region’s population is still the difficulty to arrange a visit to a doctor at a convenient time, it should be noted that the information technology plays its role in enhancing the access to health care. People, highly assessing this role, use electronic terminals (infomats) to make an appointment at the doctor’s by 4.5 times more likely than the dissatisfied with the present level of medical services access. This demonstrates the prospects of electronic devices and the Internet in boosting the efficiency of medical service provision.

However, today the practical role of information technologies is insignificant. The absolute majority of residents (82%) do not use the infomats for this purpose and slightly more than half know about their existence (at the time of publishing the article there are 37 infomats in the region). What is more, 62% of the respondents are unable to arrange a visit to a doctor via the Internet. The given research does not study the causes, but there is no doubt that the reasons are not only people’s low level of digital literacy, but also usual conservatism and habits. Moreover, the opportunities of “electronic reception” will not be able to solve the problem of the access to health care without proper staffing in hospitals.

Table 3. Negative phenomena in the medical institutions’ activities in the Vologda Oblast (% of the number citizens who have attended hospitals and opted such answers as “it satisfies partially”, “it does not satisfy in many cases”, “it does not satisfy at all”)

Negative phenomenon	2002–2006	2008	2010	2012	2013
Inability to get an appointment at a convenient time, long queues	58.1	56.7	59.4	49.7	35.8
Lack of necessary professionals	-	24.9	34.8	34.3	41.6
Negligent attitude of health workers	-	18.0	24.2	23.5	15.5
Rudeness, disrespect to patients	15.2	11.5	12.5	18.3	12.5
Lack of information on the specialists’ work	21.0	14.7	23.5	18.2	
Need to pay for medical services,	16.9	9.9	14.5	17.2	13.7

Source: data of ISED T RAS sociological research in 2013.

However, there is some correlation between the use of registration terminals and the Internet for an appointment to see a doctor and key demographic characteristics of the population (tab. 4). Older people are often not aware of the availability of electronic registration and do not use them.

Women of young and middle age groups use electronic technology more active than men of similar ages. For example, the sum of answers to the question about the availability of “electronic reception” shows that the ratio of answers “Yes” and “No” for men of 30–60 is 24 and 28%, respectively, for women – 28% and 18%.

The significant number of settlements with small population, dispersed over a wide area, and poor infrastructure make the issue of

medical institutions’ territorial and transport accessibility very relevant.

Contrary to the expectations, the way to the nearest medical institution takes slightly more time for villagers than for citizens. The only significant difference in terms of “city-village” arises when the time to get to place of destination takes “more than two hours”: this option is marked by 7% of rural residents and by 1–2% of urban residents (tab. 5).

As for the public transport quality, the difference between villages and big cities is more visible: it is bad for 17% of the rural population, 5% for people in Vologda and 2% for people in Cherepovets. The residents of Cherepovets estimate the availability of public transport much more highly than the residents of the regional capital, but this problem refers

Table 4. Age and gender characteristics of the population and “electronic reception” (as a percentage of the number of respondents)

Socio-demographic characteristics of respondent	Do you know that you can use electronic devices (infomats) via the Internet to make an appointment with a doctor?		Do you have an opportunity to make an appointment with a doctor via the Internet?		Do you use electronic terminals (infomats) to make an appointment with a doctor?	
	Yes	No	Yes	No	Yes	No
<i>Sex/age</i>						
Men up to 30	12.1	10.4	12.5	10.6	11.7	11.3
of 30–60	24.2	27.8	26.1	25.5	22.3	26.3
over 60	5.4	10.6	4.7	9.6	5.9	8.1
Women up to 30 years	14.8	6.4	17.2	7.5	17.6	9.8
of 30–55	27.8	18.2	30.4	19.5	33.2	21.6
over 55	15.8	26.6	9.1	27.3	9.4	23.0

Source: data of ISEDТ RAS sociological research in 2013.

Table 5. Distribution of answers to the question: “How much time does it takes you to get to the nearest doctor/medical assistant or hospitable?” (as a percentage of the number of respondents)

Answers	Vologda	Cherepovets	Districts	Oblast
Up to half an hour	49.1	57.0	36.2	44.9
About an hour	32.2	34.5	34.9	34.1
One to two hours	9.1	4.3	4.6	5.7
Over two hours	2.1	0.8	6.9	4.1
I do not know	7.5	3.3	17.4	11.2

Source: data of ISEDТ RAS sociological research in 2013.

to the urban bus service system more likely than to the access to health services (*tab. 6*).

The access to health care is also characterized by the payment for the services, which role will increase with the growing commercialization of health care. Among people, expressing dissatisfaction with the existing level of medical services availability, 14% have indicated the need to pay for health services

(*tab. 7*). The prevalence of commercial practices in the field of public health is demonstrated by the significant proportion of people (44%), who have paid for treatment in the current year (37% of urban inhabitants have not spent money on treatment)³.

The access to medical treatment is considered as low more often by those people who have paid for them (26% against 41%; *tab. 8*).

Table 6. Distribution of answers to the question: "How does the public transport, you use, work?" (as a percentage of the number of respondents)

Answers	Vologda	Cherepovets	Districts	Oblast
Good in general	26.8	40.4	7.2	20.9
Rather good	36.9	43.0	30.1	35.2
Rather bad	16.4	5.6	17.7	14.2
Bad	4.9	2.3	16.6	9.9
I do not know	15.1	8.7	28.5	19.9

Source: data of ISEDТ RAS sociological research in 2013.

Table 7. Distribution of answers to the question: "Have you spent money on treatment at a medical institution this year?" (as a percentage of the number of respondents)

Answers	Vologda	Cherepovets	Districts	Oblast
Yes, monthly	11.2	7.4	5.9	7.7
Yes, once in three months	16.1	10.2	6.9	10.1
Yes, once in six months	15.8	13.6	13.0	13.9
Yes, once a year	15.3	21.0	6.5	12.5
No, I have not	23.9	36.6	44.2	37.0
No, I have not, because I have not been ill	16.4	10.5	21.3	17.2

Source: data of ISEDТ RAS sociological research in 2013.

Table 8. Age and gender characteristics of the population and assessment of the access to medical services (as a percentage of the number of respondents)

Have you spent money for treatment at a medical institution this year?	How do you assess the level of access to health care?		
	High	Satisfactory	Low
Yes, monthly	8.5	7.1	8.7
Yes, once in three months	12.7	8.8	12.0
Yes, once in six months	11.8	15.1	12.3
Yes, once a year	7.5	12.5	16.0
No, I have not	41.0	39.4	26.2
No, I have not, because I have not been ill	17.9	15.7	21.7

Source: data of ISEDТ RAS sociological research in 2013

³ The question wording should be clarified and the costs should not include money, spent by an outpatient on the purchase of medicine.

Seventy five percent of the region's population has noticed that most payments for treatment are formal. There is a small amount of informal payments. However, 28% of the population has spent their own money to pay for treatment procedure, 7% – on medicaments, when having inpatient treatment (*tab. 9*).

The dynamics of the population's estimates of the access to health care is interesting. Since 2003 there has been a tendency of decrease in the share of respondents who consider that the access to health services has not changed for the last 12 months.

The share of the region's residents, marking negative tendencies in the sphere of medical services accessibility, is not stable. The increase in the number of dissatisfied with the changes was recorded in 2005–2006. After the sharp rise up to 28% in 2010 this indicator started to decline, reaching 12% by 2013. The share of positive estimations is not stable as well; however since 2007 it is decreasing. So, in 2013 only 8% of the population has appreciated the change in the access to health services (*fig.*).

The medical care quality is another critical characteristic for the population. The sociological survey data are not the most reliable method to assess the quality of medical care for several reasons. There is information asymmetry between medical workers and patients that prevents objective perception of the quality parameters of medical services. The ability to achieve the high-quality medical services is limited by public guarantees

and financial possibilities of the state [2, 4]. Thus, the quality standards are the result of a compromise between theoretically correct ideas of humanism and recognition of the patient's interests as a supreme value and limited resources of budgets and extra-budgetary funds for their provision.

The most acceptable way to mitigate information asymmetry in the framework of this organizational model is standardization of medical assistance. However, in this case the patient's notion about a proper (or desired) level of health services quality can differ from formal regulations. Moreover, taking into account the phenomenon of asymmetric information, it is logical to assume that patients consider medical care quality as effectiveness of disease control, as well as conditions of its provision, including a wide range of measurable moments (for example, professional culture of the medical staff, cleanliness of a sick room, etc.). Despite these circumstances, we can say that the assessment of medical care quality is one of the informative indicators of efficiency of medical institutions' activity, reflecting the current situation and the problematic aspects that require attention and interference.

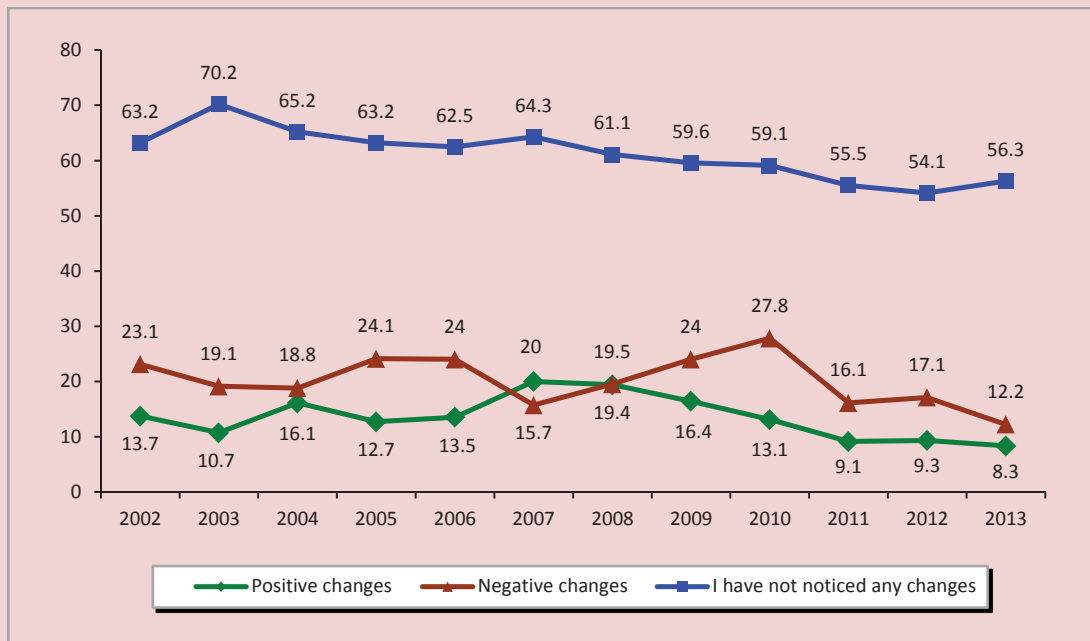
The Vologda Oblast population's estimates of the health services quality have undergone significant changes during implementation of the Modernization Program. In 2011 78% of the population was more or less satisfied with the medical services quality, in 2013 the figure rose to 82%.

Table 9. Distribution of answers to the question: "When paying for treatment at a hospital, you pay the money... (as a percentage of those who have spent money on treatment this year)"

Answers	Vologda	Cherepovets	Districts	Oblast
To a pay desk of the medical institution	70.2	87.7	69.2	75.3
To a head of the medical institution	3.1	0.5	0.0	1.2
To a doctor	7.1	4.9	3.0	5.0
To a medical personnel (a nurse, a medical assistant)	3.1	2.5	2.6	2.7
To a hospital attendant	1.3	2.9	0.0	1.4

Source: data of ISEDT RAS sociological research in 2013.

Distribution of answers to the question: "Have you noticed any change in the access to health services over the past 12 months?" (in % of those who have sought medical help)



Source: ISEDT RAS data.

The sum of the highest ratings (18% for the region as a whole) is close to the sum of low estimates (17%). The most common is a "satisfactory" estimate: 64% of the Vologda Oblast population has such point of view (*tab. 10*).

The difference in assessments of health care quality between big cities and municipal districts is that rural residents are less likely to give high marks than residents of Vologda and Cherepovets, however, this difference is redistributed with the answer variant "satisfactory".

The connection between age and gender characteristics and estimation of medical aid quality is reflected in the fact that older people have negative assessments more often.

The ratio of the availability and quality of medical care is an interesting question. Foreign researches, first of all inter-country ones, concerning a comparative analysis of different public health systems, often view the gap

between availability and quality of medical services as the specification of the health protection models. Let us consider the results of the study, conducted by the Gallup University in America. It is based on telephone interviews of the population in Canada, the US and the UK. In Canada satisfaction with the access to health care (57%) is slightly higher than satisfaction with the quality (52%); in the UK where there is also a high share of public resources in health care, satisfaction with accessibility and quality of medical care is lower, but the population's estimates do not differ practically (43% and 42%, respectively). The US residents, where health care is based on paid services and there is not a universal health insurance system, estimate the access to expensive health services as very low (only 25% of the Americans is satisfied with the medical care availability), but the quality is not highly valued as well (only 48% is satisfied with the quality) [11].

Table 11. Distribution of answers to the question: "How do you assess the quality of medical care?"

How do you assess the medical services quality?	How do you assess the access to medical services?		
	High	Satisfactory	Low
Very good	8.5	0.2	0.6
Rather good	51.7	13.8	4.0
Satisfactory	37.0	77.5	45.4
Bad	2.8	7.9	44.2
Very bad	0.0	0.5	5.8

Source: data of ISEDT RAS sociological research in 2013

According to the results of our study, the Vologda Oblast population assesses the quality and access in a unified manner. The respondents, highly evaluating the access to health services, practically do not estimate the quality negatively (there are no answers "very bad", the share of answers "bad" is insignificant (3%), while the total share of answers "good" and "fairly good" reaches 60%). On the contrary, among the people, dissatisfied with the current level of access to health care, at least half of them have negative assessments of its quality (*tab. 11*). One can suppose that people do not differentiate the notions "access" and "quality" of medical services, a priori assuming that a qualified specialist, working in this sphere, does his/her best.

There is correlation between the estimates of quality and services payment. Among those who do not use paid medical services, the proportion of low estimates of their quality is higher, compared to those who pay for health services (37% against 26%).

It should be recognized that the assessment of medical care quality is highly subjective and can not reflect real changes in the medical institutions' activities. The study of the access to medical services is always more objective in this respect. However, ignoring people's estimate of medical care quality can be a big mistake.

Thus, the population's responses to questions about the quality and access to local health services do not contain univocal assessment of the current health care or the Modernization Program results. On the one hand, directly or indirectly the population's opinions point to the deep structural problems and negative private practice, for many years hampering the increase in access to health care. But, on the other hand, one cannot but notice positive changes in a number of activities and citizens' loyalty to the Russian healthcare system in general.

Although most people are satisfied with the access to and quality of medical assistance, just a small number of them appreciate it highly. The population is concerned of difficulties to arrange to see a doctor, lack of specialists, rude and careless attitude of medical workers and difficult access to many medical services.

It is known that the patients' characteristic to expect health services of a high level and neglect their success is an objective fact of social life throughout the world, however, it should not become the reason to ignore the citizens' collective opinion that the national health care system has a number of problems that limit the accessibility and quality of medical services and are still far from being solved.

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Main factors in the formation of socio-cultural identity under the conditions of incomplete modernization (case study of the Republic of Bashkortostan)



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Abstract. Modernization caused deep and extensive socio-cultural changes in the Russian society. According to the research conducted by the Centre for the Study of Social and Cultural Change of the Institute of Philosophy of the Russian Academy of Sciences, modernization processes in Russia are different on the national and regional levels. The republic studies¹ show that indexes and phase values of modernization in the Republic of Bashkortostan are lower than in Russia as a whole. Like Russia, the Republic is now in the phase of mature primary modernization. With regard to secondary modernization², Russia has entered the phase of high medium development and Bashkortostan – a phase of medium medium development. The processes of integrated modernization in Russia are already at the medium medium level, in the Republic – at the low medium level.

The secondary modernization leads to the formation of the society that is based on knowledge, and on information and communication systems. Combining the means of communication, radio, television and computer in a coherent system resulted in emergence of a single socio-cultural space. Modern people live in a world of signs and symbols, which largely determine their behavior. Since that time it is not only people that create signs and symbols, but, in a sense, it is the signs and symbols that form people.

¹ The study of the level of modernization was carried out using the tools developed by the head of the China Center for Modernization Research of the Chinese Academy of Sciences (CCMR CAS) Professor He Chuanqi and adapted to the specifics of Russian statistics by the RAS Corresponding Member N.I. Lapin (Center for the Study of Social and Cultural Change of the Institute of Philosophy of RAS). According to Professor He Chuanqi, there are two different stages of modernization in developed countries: 1) primary modernization, corresponding to the industrial stage of development of society; it began in Europe in the 18th century; 2) secondary modernization, corresponding to the information stage of development of society based on knowledge; it began in the USA in the last third of the 20th century. Secondary modernization emerged on the basis of primary modernization and interacts with it. According to He Chuanqi, integrated modernization is the interrelation of both stages of modernization and their evolution as a comprehensive whole.

² N.I. Lapin believes that, since Russia as a whole and the majority of its regions have the medium level of development, it is advisable to differentiate the medium level of the regions into three sub-levels: 1) high medium, 2) medium medium, 3) low medium.

If modernization implies the transition from a traditional society to a modern information society, then in the field of culture it is the transition from a national culture to the global culture. Currently, mass culture is the major factor determining people's way of life, outlook, habits and behavior. Such influence aligns the personality in a way, and forms an average individual.

Recent years have seen the increase in the number of people advocating the preservation and development of national culture, traditions, folk crafts and the sense of uniqueness of the nation. The author is convinced that it is the socio-cultural environment and its infrastructure (family, education, culture, religion, etc.) and mother tongue that should become crucial factors in the positive identification of the population. In the conditions of modernization these institutions (their activity, functions and role in the society) experience radical changes. The proposed assumptions are supported by the materials of official statistics and sociological research.

Key words: modernization; positive identification; social and cultural identity; socio-cultural environment; family; education; mother tongue; cultural capital.

The socio-cultural space and image of man is changed under the influence of modernization processes. The old social institutions (family, education, religion, culture, etc.) and their structure have been undermined, the usual image of the world and way of life changed. Due to these factors, the search for a new world outlook, cultural and ethnic identity has become relevant. The scientists [6, 8, 18, 19, 20, 21] talk about the "crisis of identity". The crisis consists in the break up of ties between individuals and the world around them, the lack of integration into the socio-cultural and civil institutions.

Russian scientist P.A. Sorokin highlights three components in the structure of social interaction: "an individual as the subject of interaction; society as the set of interacting individuals with its socio-cultural relationships and processes; and culture as the set of meanings, values and regulations that are owned by interacting persons, the set of carriers that objectify, socialize and disclose these values. None of the members of this triad can exist without the other two [16, p. 218].

Modernization in Russia has not been completed yet. According to S. Gavrov, "modernization in present-day Russia is, in fact, self-westernization, which seeks to achieve internal development goals, and catch up with the

Western civilization in terms of technology" [2]. RAS Corresponding Member N.I. Lapin points out: "In the coming decade Russia is able to transform the maturity of primary modernization into the preparation and launch of secondary modernization" [12, p. 11]. Bashkortostan occupies an intermediate position between traditional society and information society. The development of information society in Bashkortostan is asynchronous, the level of modernization (degree of informatization, networking cooperation, availability of knowledge, total higher education) is distributed unevenly across the region.

The indisputable recognizable brands of the Republic include not only its diverse and unique nature, Bashkir honey, quray (national musical instrument), but also national diversity of Bashkortostan. This is confirmed by the results of the survey³, in which the majority

³ Sociological study "The socio-cultural portrait of the Russian region. The Republic of Bashkortostan". Sample size – 1 292 residents of the Republic of Bashkortostan aged from 18 to 75. The sample was stratified by type of settlement and socio-economic sub-area of the Republic of Bashkortostan with quotas at the stage of selection of household by sex, age, nationality, and level of education. Method of research – personal interviews at the place of residence. Method of information processing – software package for statistical data processing. Timing of fieldwork: May 23 – December 20, 2011. The study was conducted by the Institute of Socio-Political and Law Research of the Academy of Sciences of the Republic of Bashkortostan (ISPLR AS RB).

Table 1. Distribution of answers to the question: "According to your experience, what attractive features does our Republic have?"

Answer option	Share, %
Beautiful nature	76.7
Kind, sincere people	36.2
This region has good prospects for life	14.6
There are many opportunities for enterprising people here	7.7
Other	0.9
It is difficult to answer	8.6
Refused to answer	1.5

Table 2. Distribution of answers to the question: "In your opinion, what can Bashkortostan be proud of in the first place?", %

Answer option	Share, %*
Nature	79.5
Rich history	38.8
Oil industry	31.3
Honey and koumiss	30.6
Preservation of traditions	30.0
Sport achievements	20.4
Interpersonal relations	17.6
Bashkir cuisine	14.0
Folk music and art	12.6
Modern literature and art	3.8

* The total amount of the answers exceeds 100%, because the question implied several answer options.

of respondents pointed out the following attractions of the Republic: beautiful nature (76.7%), kind, sincere people (36.2%), prospects and opportunities (14.6%), diverse opportunities for the growth of initiative (7.7%) and others (*tab. 1*).

The results of the survey⁴ of young people show that, first of all, they are proud of the

⁴ According to the sociological study "Moral, spiritual, patriotic and physical education and the organization of available cultural leisure of young people in the Republic of Bashkortostan", carried out by ISPLR AS RB with the use of probability sampling with stratification by type of settlement and socio-economic sub-region of the Republic of Bashkortostan. Sample size – 1445 people, among them the following number of respondents were surveyed in educational institutions: 410 people in initial professional education institutions, 414 people in secondary professional education institutions, 621 people in higher professional education institutions. Anonymous questionnaire at the place of study was the method of gathering sociological data. The software package for statistical data processing SPSS was the method of information processing. Timing of fieldwork: November 12–23, 2011. Project supervisor – Ph.D. in Sociology R.M. Valiakhmetov.

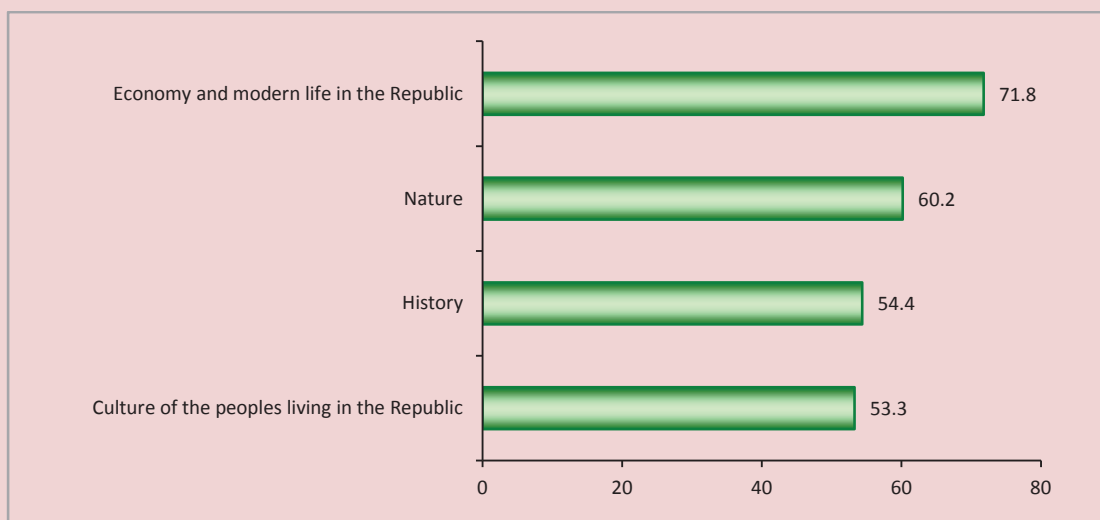
following: the nature of the Republic (80%), its rich history (38.8%), such "symbols" of Bashkortostan, as oil industry (31.3%), honey and koumiss (30.6%) and the preservation of traditions (30%) (*tab. 2*).

According to the results of the survey⁵, the youth is mainly interested in modern life, economic development and nature (*figure*); that is why we believe that social and cultural identity of the younger generation can be formed on the basis of regional patriotism, economic achievements and ecological concept.

At present, Bashkortostan shows quite a successful model of coexistence of cultural diversity that creates favorable conditions for development of various ethnic cultures and religions.

⁵ Source: sociological study "Moral, spiritual, patriotic and physical education and the organization of available cultural leisure of young people in the Republic of Bashkortostan".

Priority interests of young people in the study of Bashkortostan, %



Source: sociological study "Moral, spiritual, patriotic and physical education and the organization of available cultural leisure of young people in the Republic of Bashkortostan".

Despite certain problems inherent in any multicultural space, the Republic in general manages to avoid the aggravation of inter-ethnic contradictions or any forms of cultural discrimination.

Judging by the results of the 2010 all-Russia population census, there are 160 nationalities and 13 constituent ethnic groups in Bashkortostan [1]. The most numerous ethnic groups are the Russians, Bashkirs and Tatars; the ethnic and confessional structure of the population comprises the followers of Islam (Bashkirs and Tatars) and Orthodoxy (Russians).

In recent decades the spiritual and integrating social function of religion, which was undermined during the Soviet period, has been revived and is now expanding. Religion is penetrating the mass consciousness, the role of religious institutions in the country is enhancing. All this affects the religious identification of an individual. According to the survey, 79% of respondents consider themselves believers (including rather believers than non-believers). It should be noted that the number of religious institutions increases every year. For

instance, 757 such institutions were registered in 2008 [10, p.111], and 1090 – at the end of 2012 [11, p.95].

Bashkortostan is characterized by high ethnic and confessional tolerance, low level of stress and religious-based conflicts. According to the sociological survey⁶, respondents feel most secure (including, those, who consider themselves "rather secure") from religious harassment (58.6%), discrimination based on national origin (58.1%), age and gender harassment (54.3%).

The greatest concern is caused by the feeling of insecurity from crime (42.5%), poverty (39.7%), arbitrariness of officials (34.7%), law enforcement bodies (31.8%) and environmental threats (31.8%).

If human development is the process of enlarging people's choices of socio-cultural self-determination, then socio-cultural freedom is an important component of human potential, which helps people determine their identity.

⁶ Sociological study "The socio-cultural portrait of the Russian region. The Republic of Bashkortostan".

According to the survey⁷, most respondents (57.5%) consider their identification with the immediate environment (family) to be most important.

A significant part of respondents describe themselves as a person, individual and personality (44.6%) through the prism of personal qualities (37.1%), profession (33.7%) and gender (30.6%). The respondents consider their regional identity more important than ethnic identity (13.2% and 4.3% respectively; *tab. 3*).

The results of the survey show that the most part of respondents name civic identity (74.5%; *tab. 4*). The feeling of kinship with the Russian people is most pronounced in the Russians (80.2%), Bashkirs (72.8%) and Tatars (70.6%). Every second respondent favors the republican identity. Ethnic identity in the Republic is on the fifth place, it is stronger in the Bashkirs (51.9%) in comparison with the Tatars (43.3%) and Russians (41.4%). Thus, the indigenous people is characterized by strong ties with its ethnic group and the Republic.

Table 3. How would you answer the question “Who am I?”
Write, without thinking, the first five words that cross your mind

Answer option	Share, %*
Recognition of oneself in accordance with one's role in the family	57.5
Recognition of oneself as a person, individual, personality	44.6
Recognition of oneself through personal qualities, traits of character	37.1
Recognition of oneself as belonging to a certain profession, occupation	33.7
Recognition of oneself in the gender aspect	30.6
Recognition of oneself as a citizen of the definite country, as a resident of a certain area	13.2
Recognition of oneself as a representative of the nationality	4.3
Recognition of oneself as a representative of the definite confession	1.0
Recognition of oneself as a representative of the certain epoch, generation	0.3
Other	17.0
It is difficult to answer	3.4
Refused to answer	1.2

* The total amount of the answers exceeds 100%, because the question implied several answer options.

Table 4. Choose the groups, which you can describe with the statement
“This is us” Determine the degree of kinship with them on the scale: “substantially”, “to some extent”,
“I do not feel kinship” (share, %)

Scale	Law-abiding people	Citizens of Russia	People, whose wellbeing is the same as yours	People of the same nationality	Fellow countrymen	People, who live in the same city/ village as you	People of the same religious denomination as you	People of the same profession, occupation as you	Europeans	People, who have the same outlook on life as you
Substantially	50.5	74.4	35.5	45.4	57.9	58.0	37.3	33.5	18.0	35.8
To some extent	36.9	20.9	46.4	42.8	33.5	33.5	46.9	45.8	34.5	43.6
I do not feel kinship	12.6	4.8	18.1	11.7	8.6	8.5	15.8	20.7	47.5	20.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: sociological study “Twenty years of reforms in Russia in the eyes of residents of the Republic of Bashkortostan”.

⁷ Ibidem.

Family is an institution where an individual adopts life guidelines, spiritual and moral values, and learns his/her mother tongue. Absorbing all the cultural heritage that the society has accumulated, the family, under the influence of cultural change and established traditions, creates its cultural environment and life attitudes of each member, forms the basis for ethnic and national identity, language, and norms of behavior. However, in the 21st century, the role of family and its socializing function are being transformed. One of the reasons is that parents spend too much time at work and do not have enough time to spend with their children.

In information society the knowledge of English is an essential prerequisite for success in business, research, and social adaptation. Language carries a certain culture and vision of the world. An individual thinks, feels and lives exclusively in the language and he/she should be developed primarily with the help of it. Language contributes to the formation of a certain “outlook”, characteristic of a certain nation. Native language forms the sense of participation in the history of its people, its ethnic and cultural identity. People, who are alien to national origins, and indifferent to their national culture, are unable to perceive the world experience as well.

For example, according to sociologists⁸, the majority of respondents learned their native language at home (90%), school (7%) and kindergarten (2.3%). Most part of respondents (70.4%) gave high estimates of the efforts their parents had made to help them master

⁸ Sociological study “Twenty years of reforms in Russia in the eyes of residents of the Republic of Bashkortostan”. The sample size was 2014 people aged 18–75. The study used the random probability sampling with stratification by type of settlement and socio-economic sub-region of the Republic of Bashkortostan with quotas on the stage of selection in the household by age, gender, nationality and level of education. The method of research – personal interviews at the place of residence. The timing of field works: April – May 2011. Research was conducted by the Institute of Sociology and ISPLR AS RB. Project Supervisor – Ph.D. in Sociology R.M. Valiakhmetov.

their native language. Despite the fact that communication in native language is widespread within families, it is declining from generation to generation and in the direction from rural to urban settlements.

The result of the formation of the secondary modernization is the general higher education. The level of education, along with the standard of living and longevity, serves as the basic indicator for assessing the human development index (HDI)⁹. In addition, the index of knowledge, along with other indicators, is the basis for calculating the indicators of modernization in different countries (China Center for Modernization Research, Chinese Academy of Sciences (CCMR CAS) and in Russia (the Center for the Study of Social and Cultural Change of the Institute of Philosophy of RAS). Thus, education, as a universal value, and its institutions are crucial in the process of formation of socio-cultural identity.

The level of education among the population of the Republic is high. This is evidenced by the data of the 2010 all-Russia population census in comparison with the data of the 2002 census. Positive dynamics of the educational level, according to Bashkortostan Statistics Service studies, is connected with the following factors: competitiveness in the labor market; changes in the standard of living; death of the generation that had a lower education level due to objective reasons [17, p. 3-4].

The HDI ranking of Russian regions placed the Republic of Bashkortostan at the 5th position in 1999 [3, p. 82], in 2006 the Republic ranked 9th [4, p. 198] and in 2013 – 18th [5, p. 150]. The Republic managed to achieve leading positions due to its high education development index (EDI).

⁹ The index, published in the framework of the United Nations Development Program in the reports on human development, was founded in 1990 by a group of economists headed by Mahbub ul Haq (Pakistan). However, the conceptual structure of the index was established in the work of Amartya Sen. The index is published by the UN in its annual report on human development since 1990. It is available at: <http://ru.wikipedia.org/wiki/> (accessed November 25, 2013).

However, from year to year the dynamics of this indicator is negative: in 1999 – 0.935, in 2006 – 0.901 and in 2010 – 0.832.

As is known, the value of education, as well as the interest in science, declined in the 1990s during the period of modernization. But in recent years there has been a positive shift in the target orientations; the values of education, especially higher professional education, have become more important in people's consciousness; it is proved by the decrease in the number of applicants of primary and secondary professional educational institutions and the increase in the number of those enrolled in universities.

Modernization processes left their trace on the activities of the regional cultural institutions, which play an important role in the formation of personal identity.

The Republic is actively engaged in construction and reconstruction of theatres, museums, shopping centers, primarily in big cities; people have more opportunities for spending their free time. However, leisure usually conforms with consumer behavior, especially among young people, and is spent passively. As the practice shows, the culture is westernized (i.e. unified).

The general decline in the level and quality of life, and economic difficulties of the transition period have considerably reduced people's opportunities in the use of cultural capital¹⁰, especially in rural settlements. It should be noted that the use of cultural resources is very different in the city and village.

Rapid development of mass communications and the Internet, and wide spreading of e-book readers have led to a reduction in the number of libraries, especially in the city (in 2 times). According to the target program, the index of the Republic's readiness to information society ranks 51st in the Russian Federation and 10th in the Volga Federal District (VFD) [9].

¹⁰ The cultural capital of an individual is accumulated in the process of reading books, visiting museums, theatres, concerts, and during interpersonal communication.

As is known, the differences in living conditions and income level of urban and rural residents determine the differences in provision with personal computers and the Internet at home. For instance, rural areas lag far behind cities by the availability of computers and access to the Internet from a home computer. Therefore, libraries are more popular in rural areas: from 1990 to 2012 their number has increased from 1502 [10, p. 98] to 1557 [11, p. 83], and the number of readers remains about 1 million 100 thousand people (for this period in town their number has decreased from 1 million 200 thousand people to 900 thousand people).

According to the sociological research¹¹, the majority of the respondents visit libraries once a year and less and this figure decreases in rural to urban direction.

Regional publishers experience difficulties with the issuing of printed materials under the conditions of fundamental reforms. From 1990 to 2011 the publication of books and brochures has decreased in 3.5 times, but the issuing of newspapers and magazines per 1000 population per year has increased in 3.7 times [10, p. 109; 11, p. 93]. It should be noted that national publications occupy a significant segment in the media of Bashkortostan. The publications are in the Russian, Bashkir, Tatar, Mari, Chuvash, and Udmurt languages.

Thus, the conditions of rapid development of information and communication technologies make new requirements to cultural institutions.

Recent years saw the rise of interest in the study of history of the native land and town; the study of one's ancestry; historians and ethnographers from rural areas have intensified their work, which led to the increase in the number of museum visitors. For the past seventeen years, the Republic has managed to preserve and considerably increase the number of museums by means of state support.

¹¹ Sociological study "The socio-cultural portrait of the Russian region. The Republic of Bashkortostan".

Table 5. How often did you visit cultural institutions last year? (share, %)

Frequency of visits	Library	Theatre	Circus	Museum	Stadium	Disco	Cinema
Once a week	4.4	0.2	0.2	0.0	1.5	3.3	2.2
1-3 times a month	7.8	3.2	0.8	1.2	3.4	11.6	10.3
1-3 times every 6 months	8.2	13.1	5.4	6.3	9.8	5.2	16.3
Once a year and less	27.5	30.1	30.4	31.9	25.9	30.7	21.7
It is difficult to answer	38.1	38.7	45.5	43.5	42.2	36.4	33.9
Refused to answer	14.1	14.7	17.8	17.1	17.2	12.8	15.6
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: the data of the sociological study "The socio-cultural portrait of the Russian region. The Republic of Bashkortostan"

Table 6. The number of sports facilities (at the end of the year) in the regions of the Volga Federal District

Territory	Stadiums with 1500 seats and more				Flat sports facilities (grounds and fields)				Sports halls				Swimming pools			
	1995	2000	2005	2010	1995	2000	2005	2010	1995	2000	2005	2010	1995	2000	2005	2010
Volga Federal District	459	436	431	414	26088	25703	29221	30955	13404	14092	15626	17884	543	549	650	981
Republic of Bashkortostan	41	43	39	36	3692	4351	5104	5579	1997	2213	2420	3367	57	102	108	159
Mari El Republic	4	7	5	10	1157	919	947	954	334	352	360	400	20	23	24	32
Republic of Mordovia	15	17	15	22	1506	1234	1571	1234	454	466	539	560	26	14	17	23
Republic of Tatarstan	28	34	35	40	2228	3512	4246	4661	1556	1679	1842	1935	57	68	100	150
Udmurt Republic	14	19	24	35	440	656	864	1260	571	658	733	1020	26	31	40	56
Chuvash Republic	7	8	10	11	1666	1685	2068	2210	584	632	682	714	35	38	38	61
Perm Krai	40	35	35	34	1669	1680	2305	2204	1159	1137	1172	1528	48	39	70	67
Kirov Oblast	39	30	27	28	1833	889	978	1003	808	803	1394	1287	26	14	23	24
Nizhny Novgorod Oblast	67	66	70	60	2386	2305	2453	2530	1282	1334	1375	1497	50	43	49	132
Orenburg Oblast	32	36	40	28	2223	2050	2286	2490	1042	1067	1126	1173	47	55	54	58
Penza oblast	37	31	26	25	1951	1765	1989	2060	661	678	764	822	42	35	40	68
Samara Oblast	46	46	42	40	2018	1896	1927	1971	1165	1192	1328	1356	47	45	50	65
Saratov Oblast	51	35	34	27	2507	2041	1515	1614	1143	1207	1161	1457	31	16	17	51
Ulyanovsk Oblast	38	29	29	18	812	720	968	1185	648	674	730	768	31	26	20	35

Source: *Regiony Rossii. Sotsial'no-ekonomicheskie pokazateli. 2010: stat. sb.* [Regions of Russia. Socio-Economic Indicators. 2010. Statistical Digest]. Moscow: Rosstat, 2010. P. 353.

The total number of performances in theatres has already reached the level of the Soviet period after the significant decline in the activity of theatres in the years of radical reforms. In 1990 there were 306 theatre visits per 1000 population, in 2012 – 220 [10, p. 105; 11, p. 90]. This means that even if theatrical activity is revived and the number of theatres is increasing, the number of visitors, however, is declining.

Although the present-day level of consumption of motion picture industry products is different from that in the Soviet times, it has somewhat increased in recent years, though it

affected only cities so far. The arrival of major film distributors to the Republic enlivened movie life in town; movies again return into the life of citizens, especially young people and wealthy groups. The situation in rural areas is different: due to the reduction in the number of cinema projectors, TV remains the only way to spend leisure time and the only opportunity to enjoy modern cinematography for the majority of population (72.5%)¹².

¹² According to the sociological study "Twenty years of reforms in Russia in the eyes of residents of the Republic of Bashkortostan"

The results of sociological studies prove the fact that the majority of respondents visit cultural institutions, including museums and stadiums once a year or less (*tab. 5*).

N.I. Lapin points out that “Russia ranked 41st (among 131 countries) in the rating of the primary stage of the world modernization in 2010, its index reached 99.9 points (not 100% due to insufficient life expectancy)” [12, p. 8]. Official statistical data show that life expectancy in the region has a positive dynamics: it was 66.7 years in 2000 [13, p. 85] and 69.04 years in 2011 [15, p. 83]. It should be emphasized that the development of health infrastructure is a priority direction in health care.

The infrastructure of physical culture and sports is steadily developing. As for the number of sports facilities, Bashkortostan lags behind other regions of the Volga Federal District (VFD) only by the number of stadiums that seat 1500 people and more. The Republic is the leader by the number of sports grounds and fields, gyms and swimming pools (*tab. 6*).

Thus, the research shows that modernization in Russia has not been completed. The desire to create a knowledge society (information society) involves the development of services, innovation, universal informatization, the balance between urban and rural spheres, the availability of general higher education. Bashkortostan meets these requirements only partly. Given the incompleteness of modernization in the society, it is necessary to develop human potential. Taking into account the survey results¹³, the authorities, educational, cultural and spiritual institutions should use the regional component and scientific and economic achievements in their activities.

Based on the above, we can conclude that social and cultural identity of the population should be formed on the basis of historical, cultural, natural, ethnic and religious characteristics of the region, like in the countries of South-East Asia that adhere to the principle: “Think globally, act locally”. These countries managed to preserve their ethnic identity in the conditions of global unifying processes.

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Monitoring study of the quality of work with gifted schoolchildren in the Russian Federation regions



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Abstract. The article presents the results of research into the quality of work with talented schoolchildren in the Russian Federation subjects. It shows that it is the regional and municipal levels that should be most actively involved in the identification and development of such children. The author suggests his methodology of calculating the integral index of the quality of work with gifted schoolchildren in the regional educational systems. The article shows that Russia's territories differ considerably according to this indicator. The highest value of the index is registered in the Volga Federal District (average rating is 0.499) and the Central (0.480) Federal District. The constituent entities of the North Caucasian (0.303) and Far Eastern (0.358) federal districts have the lowest average rating.

The regions were divided into five groups by the index of quality of work with gifted schoolchildren. The Vologda Oblast joined the group in which the level of quality of work with gifted schoolchildren was above average; the Oblast ranked 22nd in the country and 5th in the Northwestern Federal District. The Oblast has the greatest progress by the set of indicators "Olympiad movement" (6th place among Russian regions). According to some indicators, the Oblast's results were below the threshold indicators.

The dynamics of the integral index of the quality of work with gifted students for 2012–2013 was analysed by the cross grouping of the regions according to the level and rate of growth (decline) of the integral index. The Vologda Oblast was included in the group of regions with low growth rates of the integral index (94%), which creates the risk of decrease in the quality of work with gifted students.

The article states the main reasons for the integral index decline; it also suggests certain measures for the improvement of the quality of work with gifted schoolchildren.

Key words: Education, gifted schoolchildren, integral index, dynamics of development of education, school Olympiads.

Nowadays the issue of the system of work with gifted children at the state level is in focus due to the changes in the country's socio-economic development. The most important condition of its innovation development is the intellectualization of human capital [13]. In this regard, one of the priority tasks of the Russian education policy is to create conditions for development of gifted children and youth. The relevance of this direction is emphasized in such documents of the federal level as "The Concept of Long-Term Socio-Economic Development of the Russian Federation for the Period up to 2020" (approved by the Russian Government Decree of November 17, 2008 no. 1662-r), a national educational initiative "Our New School", "The Concept of the National System for Identifying and Developing Young Talents".

The necessity to work out the national system of search and development of talented children and youth was discussed at the joint session of the Presidium of the State Council, the Council for Culture and Art and the Council for Science and Education, held April 22, 2010. Special attention was paid to regional and municipal parts of the system. Regional authorities should develop mechanisms to identify gifted children, systems of monitoring, stimulating and encouraging their creative development as well as supporting teachers who have achieved significant success in training gifted children and youth [5]. In this context, it is important to assess approaches to work with intellectually gifted children at the regional level, which is the purpose of the present study. This target is specified in the following tasks:

- identification of indicators that determine the effectiveness of work with gifted students;
- determination of a current level and analysis of the work quality dynamics;
- research into the dependence between indicators that determine the level of work with gifted students;

- forecast of development trends in the work with gifted children.

In 2013 the Institute of Socio-Economic Development of Territories of the Russian Academy of Sciences (ISED T RAS) carried out the monitoring study of the education development in Russia [4]. The set of indicators included some indicators, characterizing the level of talented youth support. However, currently there are no studies, specifically devoted to quality of work with gifted children at the regional educational systems. This article is the first attempt to elaborate a systematic approach to the evaluation of such work in the RF subjects. In accordance with the definition of giftedness, proposed by the authors of domestic "Working Concept of Giftedness" (V.D. Shadrikov, D.B. Bogoyavlenskaya and others), we consider talent as a system human feature, developing in the process of his/her activity and determining the possibility of achieving outstanding results in society's valuable activities [3]. A gifted child is a child who outstands among others due to bright, obvious, sometimes striking achievements (or has internal prerequisites for such achievements) in any activity.

The algorithm to conduct a monitoring research includes the following stages:

- identification of indicators and development of research tools;
- processing of data, obtained in the research course;
- analysis of the received data, formulation of the proposals to improve the quality of work with gifted students on its basis.

To single out the indicators of the quality of work with gifted students we have analyzed regulatory documents that determine the strategic development of this direction at the federal and regional level. As a result, 9 indicators have been chosen. The data have been taken from public sources, such as "The Complex Program of Education Modernization (CPEM) "Our New School";

the official information portal of the Unified State Examination; the official site of the All-Russian Student Olympiad; the Olympiad schools ranking of the Russian Rectors Union [7, 8, 9, 16].

The dynamics of quality of work with gifted students for 2012–2013 has been assessed. The given years have been chosen, as the Program “Our New School” began to be implemented in 2010, and the set of indicators was changed in the first two years of monitoring.

The selected indicators have been grouped into three thematic blocks. The list and characteristics of the included indicators are presented in *Table 1*. The share has been calculated from the total number of pupils in the region.

1. *Olympiads*. Subject school Olympiads are considered as one of the most effective methods to identify gifted and talented young people. The Chairman of the Russian Council of Student Olympiads, academician V.A. Sadovnichii marks their high significance as a tool of strengthening intellectual competitiveness of Russia [6].

This block singles out the indicators that determine the effectiveness of student participation in the All-Russian Student Olympiad and contests, held by the Rectors Union. The differences of these Olympiads have ideological and instrumental character. The All-Russian Student Olympiad includes 4 stages and characterizes both the contest popularity (the share of pupils of 5–11 forms, taking part in a school stage of the All-Russian Olympiad) and the level of work with the most talented pupils (the total number of winners is about 1500 people a year). The data of municipal and regional stages of the contest are not reflected in the indicators, as the share of winners is prescribed in of the Regulation on the Olympiad (not more than 25% of the participants number) and is about the same for all regions. The Olympiads under the Rectors Union, in fact, replace the system of entrance examinations in the most prestigious universities and serve as a search tool for well-prepared students for further education (the total number of winners and prizewinners is about 22.5 thousand people a year).

Table 1. Indicators to measure the quality of work with gifted students in the RF regions

No.	Indicator	Unit of measure
<i>Olimpiads</i>		
1.	Share of final stage winners of the All-Russian Student Olympiad	%
2.	Share of winners and prizewinners of Olympiads, held under the auspices of the Russian Council of Student Olympiads	%
3.	Share of pupils of 5–11 forms, taking part in a school stage of the All-Russian Olympiad (in number of pupils of 5–11 forms)	%
<i>Educational activity results</i>		
4.	Share of school leavers, received a certificate of secondary (complete) education and gold and silver medals	%
5.	Share of Unified State Examination participants, received 100 points in particular subjects	%
<i>Support of talented students</i>		
6.	Share of school leavers, who have had profound study in some subjects (of the total number of school leavers)	%
7.	Share of pupils who have conditions for creative activities	%
8.	Share of funds, specifically allocated for the support of gifted children and talented youth from the regional budget	Rubles per person
9.	Share of pupils, enrolled in educational institutions that receive assistance under the programs of support of gifted children and talented youth at the regional level	%

2. The effective educational activity is characterized by such indicators as the share of honors students and the share of students, who received 100 points in the Unified State Examination in particular subjects.

3. The indicators of regional systems of the gifted students support are the following: infrastructure indicators (a share of school leavers, who have profound study in some subjects and a share of pupils who have conditions for creative activities) and financial ones (specific amount of funds, allocated for the support of gifted children from the regional budget and a share of children who receive assistance under the programs of support of gifted children and talented youth at the regional level).

Two methods were used to process statistical data in order to increase the results reliability. First, it is a multidimensional comparative analysis, based on the Euclidean distances method, which determines not only the absolute values of the indicator, but the degree of their proximity to each other [2, p. 143]. The integral index of the quality of work with gifted students in the RF regions was calculated by the following algorithm.

Stage 1. Each indicator has a maximum element, taken as a unity. Then all the elements of the corresponding column (a_{ij}) are divided by the maximal element of the reference region ($\max a_{ij}$). The result is a matrix of standardized coefficients (x_{ij}) from 0 to 1. Moreover, the critical value (a_{ij}), an average value of the indicator, is calculated for each indicator.

Stage 2. The composite rating for each block is calculated by the Euclidean distance formula:

$$I_i = \sqrt{\frac{\sum_{j=1}^n x_{ij}^2}{n}}$$

Stage 3. The integral rating is calculated by the geometric mean formula:

$$I = \sqrt[3]{I_1 \cdot I_2 \cdot I_3},$$

where I_1 is a composite rating, revealing the level of the Olympic movement development;

I_2 is a composite rating of educational activity effectiveness;

I_3 is a composite rating of the system of the gifted students support.

Due to the fact that some of the variables have a different scale of values and their meanings differ much from each other, z-transformation was used to standardize the indicators. It takes into account different dispersions of the indicators.

The integral index is calculated by the following algorithm:

Stage 1. The standardized indicators are calculated by the formula

$$x_{ij} = \frac{a_{ij} - \bar{a}_i}{\sigma_i},$$

where a_{ij} is a value of the indicator "i" in the region "j";

\bar{a}_i is an average value of the indicator "i",

σ_i is a root-mean-square deviation of the indicator "i", calculated by the formula.

Negative values of the index indicate its location below the average of the entire sample, and positive – the location above.

Stage 2. The composite index of each block is calculated as an arithmetic average of its constituent indicators. The integral rating of the quality of work with gifted students is calculated as an arithmetic average of each block indices.

The relative regions position in the ranking is almost the same for both methods of data processing. The Pearson correlation coefficient, close to 1 ($r=0.974$), indicates very close relationship of the calculated integral indicators. We will use the first calculated rating, taking values from 0 to 1, as this ranking is more convenient to calculate the dynamics of the indicators and to research the deviation from the maximum and critical values.

The calculations have estimated the quality of work with gifted students in the RF subjects and indicated the integral index dynamics for 2012–2013. The Volga (the average rating equals to 0.499) and Central (0.480) federal districts demonstrated best results in 2013. The North Caucasian (0.303) and the Far Eastern federal districts (0.358) have the lowest average ratings (*tab. 2*). The regions ranking by the index of quality of work with gifted students has allowed to divide the regions into 5 groups:

1. *Regions with a high level of the quality of work with gifted students (the integral rating is more than 0.54) – 11 RF subjects.* It is territories that have high values by almost all indicators due to sound educational policy of regional authorities. Most these regions also have high level of education sphere development. The city of Moscow (0.698), the Chuvash Republic (0.636) and the Republic of Mordovia (0.622) have the highest rating of the quality of work with gifted students.

2. *The regions with an above average level (the rating is from 0.471 to 0.54) – 15 RF subjects.* They have favorable conditions for the gifted students development and good potential for further work in this direction.

3. *The regions with an average level (the rating is from 0.41 to 0.47) – 26 RF subjects.* They are characterized by high values of selected indicators. Further development of these regions requires management actions to maintain strong side and improve weak side.

4. *The regions with a below average level (the rating is from 0.35 to 0.409) – 20 RF subjects.* These territories have values below critical by most indicators due to rather passive approach of the regional education system to create conditions for talents development.

5. *The regions with a low level (the rating is less than 0.35) – 11 RF subjects.* This group

indicates a very low interest of regional authorities to the work with gifted pupils. The urgent measures are required to improve the situation.

The Vologda Oblast belongs to the group of regions with the above average level of the quality of work with gifted students, ranking 22nd in the country and 5th in the Northwestern Federal District. The achieved indicators lag behind such leading regions of the Northwestern Federal District as Novgorod (18%), Kaliningrad (12%) Leningrad (7%) oblasts and the city of Saint Petersburg (11%).

The results of the Vologda Oblast by single indicators is non-uniform (*tab. 3*).

The following parameters reveal the most progress:

- a share of children who receive assistance under the programs of support of gifted children and talented youth at the regional level (2nd place, 79% of the leader index);

- a share of pupils of 5–11 forms, taking part in a school stage of the All-Russian Olympiad (7th place, 93% of the leader index);

- a share of the final stage winners of the All-Russian Student Olympiad (9th place, 53% of the leader index).

It should be noted that the Vologda Oblast is one of the leaders by the effectiveness of participation in the final stages of the All-Russian Student Olympiad for the past 10 years [13] and by the scale of participation in the school stage. The study revealed a significant ($\alpha = 0.05$) positive statistical relationship between these two indicators (Pearson correlation coefficient $r = 0.237$). This indicates that the greater the number of students involved in the Olympiad activity, the higher the number of winners at the final stage, i.e. it proves the transition of quantitative indicators into qualitative ones.

Table 2. Integral index of quality of work with gifted students in the RF regions in 2013

Region	Rating	Region	Rating
Central Federal District	0.480	Republic of Tyva	0.258
Moscow	0.698	Northwestern Federal District	0.449
Belgorod Oblast	0.546	Novgorod Oblast	0.577
Tambov Oblast	0.543	Kaliningrad Oblast	0.540
Bryansk Oblast	0.521	Saint-Petersburg	0.536
Moscow Oblast	0.508	Leningrad Oblast	0.512
Voronezh Oblast	0.497	Vologda Oblast	0.475
Lipetsk Oblast	0.497	Murmansk Oblast	0.474
Vladimir Oblast	0.479	Komi Republic	0.392
Tula Oblast	0.474	Republic of Karelia	0.392
Ivanovo Oblast	0.468	Pskov Oblast	0.355
Orel Oblast	0.451	Nenets Autonomous Okrug	0.354
Kaluga Oblast	0.446	Arkhangelsk Oblast	0.336
Kostroma Oblast	0.439	Ural Federal district	0.429
Kursk Oblast	0.429	Khanty-Mansi Autonomous Okrug – Yugra	0.475
Smolensk Oblast	0.426	Tyumen Oblast	0.465
Tver Oblast	0.413	Yamalo-Nenets Autonomous Okrug	0.430
Yaroslavl Oblast	0.411	Sverdlovsk Oblast	0.423
Ryazan Oblast	0.389	Chelyabinsk Oblast	0.417
Volga Federal District	0.499	Kurgan Oblast	0.366
Chuvash Republic	0.636	Southern Federal District	0.403
Republic of Mordovia	0.622	Krasnodar Krai	0.461
Kirov Oblast	0.559	Rostov Oblast	0.428
Samara Oblast	0.552	Volgograd Oblast	0.422
Republic of Tatarstan	0.546	Republic of Kalmykia	0.392
Mari El Republic	0.541	Astrakhan Oblast	0.357
Penza Oblast	0.506	Republic of Adygea	0.355
Ulyanovsk Oblast	0.463	North-Caucasian Federal District	0.303
Nizhny Novgorod Oblast	0.456	Republic of North Ossetia-Alania	0.463
Republic of Bashkortostan	0.455	Stavropol Krai	0.459
Orenburg Oblast	0.447	Karachay-Cherkess Republic	0.373
Saratov Oblast	0.438	Kabardino-Balkar Republic	0.329
Udmurt Republic	0.382	Republic of Dagestan	0.239
Perm Oblast	0.379	Republic of Ingushetia	0.166
Siberian Federal District	0.407	Chechen Republic	0.095
Tomsk Oblast	0.484	Far Eastern Federal District	0.358
Kemerovo Oblast	0.476	Khabarovsk	0.427
Krasnoyarsk Oblast	0.473	Jewish Autonomous Oblast	0.395
Novosibirsk Oblast	0.465	Magadan Oblast	0.386
Republic of Khakassia	0.456	Republic of Sakha (Yakutia)	0.366
Altai Krai	0.431	Kamchatka Krai	0.362
Omsk Oblast	0.420	Amur Oblast	0.360
Zabaikalsky Krai	0.380	Chukotka Autonomous Okrug	0.332
Republic of Buryatia	0.366	Sakhalin Oblast	0.306
Republic of Altai	0.348	Primorsky Krai	0.284
Irkutsk Oblast	0.330		

Source: author's calculations.

Table 3. Comparison of the Vologda Oblast indicators in 2013 with the limit and maximum indicators for the Russian Federation

Indicators	Actual value (2013)	Position among RF regions	Limit level		Maximum level		
			Value	Deviation, in %	Value	Region	Deviation, in %
The share of winners of the final stage of All-Russian Student Olympiad, people per 100 thousand students	20.89	9	9.33	124	39.36	Moscow	-47
The share of winners and runners-up of the Olympiads held under the auspices of the Russian Council of Student Olympiads, people per 100 thousand students	147	22	111	41	750	Moscow	-80
The share of students of 5–11 grades, who took part in a school stage of the All-Russian Olympiad (in the total number of students of 5–11 grades), %	47.9	7	39.4	22	51.4	Nenets AO	-7
The share of graduates who obtained high school diplomas and were awarded gold and silver medals, %	6.02	59	7.64	-21	13.54	Republic of Mordovia	-56
The share of USE participants, who got 100 points for USE in particular subjects, people per 100 thousand students	63	38	63	0	234	Bryansk Oblast	-73
The share of high school graduates, who attended classes with advanced or specialized study of some subjects (in the total number of high school graduates), %	26	79	54	-52	99	Novgorod Oblast	-74
The share of students, who have opportunities to be engaged in creative activities %	34	56	40	-15	83	Leningrad Oblast	-59
The share of funds allocated from the regional budget for the support of gifted children, rubles per person	5	64	106	-95	1034	Chukotka AO	-99.5
The students, who study in educational institutions, which receive support in the framework of programs for support of gifted children and talented youth at the regional level, %	45.35	2	2.96	1432	57.77	Republic of North Ossetia-Alania	-21

Source: author's calculations.

The performance results of the Vologda Oblast were below the limit (national average) by some indicators:

- the share of graduates who obtained high school diplomas and were awarded gold and silver medals (by 21% lower than the threshold level);
- the share of high school graduates, who attended classes with advanced or specialized study of some subjects (by 52% lower than the threshold level);
- the share of students, who have opportunities to be engaged in creative activities (by 15% lower than the threshold level);
- the share of funds allocated from the regional budget for the support of gifted children (by 15% lower than the threshold level).

To analyze the dynamics of the integral index of quality of work with gifted students for 2012–2013 the cross grouping of regions by the level and rate of growth (decline) of the index was carried out, by the results of which the territories were combined into five groups (*tab. 4*). The highest growth rates are observed in the Jewish Autonomous Oblast (139%), Kamchatka Krai (129%) and the Republic of North Ossetia–Alania (124%), and the lowest – in the Kirov Oblast (87%). Over the last two years 53 subjects of the Russian Federation improved their positions, 25 subjects experienced deterioration of their positions. It should be noted that the group of regions with extremely high growth rates of the index is significantly larger than the group with extremely low growth rates (18 territories against four). 11 RF subjects demonstrated high and extremely high values and growth rates of the indicators of the quality of work with gifted students; this fact opens up good opportunities for intellectualization of human capital in these territories.

The Vologda Oblast was included in the group of regions with low growth rates of the integral index (94%), which poses the risk of deterioration of the quality of work with gifted students. Partly this can be explained by rather high rates and indicators of development achieved in 2010–2012 in the whole sphere of general education and also in the sphere of support of talented students (during this time, the integral index has increased in 3 times). In 2013 the pace of development somewhat slowed down.

It should be noted that the dynamics of the region's indicators is highly heterogeneous. Positive dynamics is observed in the following indicators: productivity of performance at the final stage of the All-Russian Olympiad (106%); the share of medalists (105%); the share of students who study in specialized classes (130%); the share of students, who have opportunities to be engaged in creative activities (114%). However, the abandonment of the programs for support of gifted students, did not allowed the Vologda Oblast to surpass in 2013 the indicator of 2012. In 2013 the index of the number of students, who received support in the framework of regional programs for support of talented children, amounted to 79% of the 2012 level, and the index of the volume of financial resources allocated for their support was 6%, respectively. In September 2012 by Order of the Vologda Oblast Governor under the Department of Education a working group was created for the purpose of developing a model of the system for identification and development of gifted children in the region, the author of the article is the member of this group. The draft model developed by the group for 2013–2017 pays special attention to the following areas:

- organization and expansion of intellectual contest events for children;

Table 4. Matrix for comparing the RF regions by the rate and level of the quality of work with gifted students

Level	Rate				
	Extremely high (over 108%)	High (from 104 to 108%)	Moderate (from 98 to 103%)	Low (from 92 to 97%)	Extremely low (less than 94%)
High (over 0.54)	Republic of Mordovia (112)	Republic of Tatarstan (105) Novgorod Oblast (105) Belgorod Oblast (104)	Kaliningrad Oblast (103) Mari El Republic (100) Samara Oblast (99) Moscow (99) Tambov Oblast (98)	Chuvash Republic (97)	Kirov Oblast (87)
Above average (from 0.471 to 0.54)	Tula Oblast (119) Kemerovo Oblast (118)	Moscow Oblast (107) Tomsk Oblast (105) Murmansk Oblast (105) Penza Oblast (105) Bryansk Oblast (104)	Saint Petersburg (103) Krasnoyarsk Krai (103) Vladimir Oblast (102) Leningrad Oblast (102) Khanty-Mansi AO (100) Voronezh Oblast (100)	Lipetsk Oblast (97) Vologda Oblast (94)	
Average (from 0.41 to 0.47)	Republic of North Ossetia-Alania (124) Kostroma Oblast (110) Tyumen Oblast (110) Ivanovo Oblast (112) Yamalo-Nenets AO (109)	Khabarovsk Krai (108) Krasnodar Krai (108) Omsk Oblast (107) Tver Oblast (106) Saratov Oblast (105) Novosibirsk Oblast (105) Sverdlovsk Oblast (105)	Orlov Oblast (103) Republic of Kalmykia (103) Volgograd Oblast (103) Republic of Bashkortostan (102) Smolensk Oblast (101) Nizhny Novgorod Oblast (101) Kursk Oblast (101) Chelyabinsk Oblast (100) Yaroslavl Oblast (99) Kaluga Oblast (99) Ulyanovsk Oblast (99) Altai Krai (98)	Republic of Khakassia (96) Stavropol Krai (92)	
Below average (from 0.35 to 0.409)	Jewish Autonomous Oblast (138) Kamchatka Krai (129) Karachay-Cherkess Republic (114) Komi Republic (114) Magadan Oblast (113) Astrakhan Oblast (113)	Zabaykalsky Krai (108) Republic of Buryatia (105)	Rostov Oblast (103) Orenburg Oblast (103) Udmurt Republic (103) Perm Krai (99) Republic of Adygea (98) Republic of Karelia (98) Kurgan Oblast (98)	Ryazan Oblast (96) Republic of Sakha (96) Pskov Oblast (94)	Amur Oblast (89) Nenets AO (88)
Low (less than 0.35)	Tuva Republic (120) Republic of Dagestan (116) Chukotka AO (112) Sakhalin Oblast (110)	Primorsky Krai (105) Republic Altai (105)	Irkutsk Oblast (100) Kabardino-Balkar Republic (100)	Republic of Ingushetia (95) Arkhangelsk Oblast (93)	Chechen Republic (90)

Source: author's calculations.

- motivational support of the work with gifted children;
- expansion of the network of educational institutions specializing in the work with intellectually gifted children;
- development and improvement of the scientific-methodological base, introduction of modern educational technologies in the work with intellectually gifted students.

Implementation of a systematic approach to finding talented students and working with them should allow the Vologda Oblast to strengthen its leading positions in traditionally strong sectors and to overcome negative trends in individual indicators. The use of the results of monitoring research in the

organization of work with gifted students helps to assess trends in the development of this direction and make timely corrections for improving the quality of work with gifted students.

Further research on this topic is planned to be focused on the following points:

- adjustment of calculation methods (adjustment of a system of indicators with regard to relevant directions of educational policy, determination of weight coefficients of individual indicators);
- assessment of the dynamics of indicators for a longer time period, and forecast of the development of regional educational systems.

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INNOVATION DEVELOPMENT

UDC 332.05+338.124.4, LBC 65.011.151

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Singular technology – the research area promoting the country's sustainable noosphere development in Belarus, Russia and other CIS nations



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Abstract. The article is devoted to nano- and femtotechnology as the basis for sustainable noosphere development of the global socio-economic mega system “nature–man–society” in its relation with the Universe (cosmos) in Belarus, Kazakhstan, Russia, Ukraine and other CIS nations.

Such factors as the formation of a new (noospheric) political and economic outlook and the changes in scientific and technological structure of economy are gaining paramount importance under the action of the law of time and the adequate need to change the logic of socio-economic behavior of the population of planet Earth.

Singular technology can become a strategic priority in finding practical solutions to these issues. When creating new productive forces and relations of production, these technologies act as a synergetic and bifurcation (unpredictable) interaction of the three system technologies: artificial intelligence, molecular nanotechnology and molecular biotechnology.

As soon as man grasps the essence of singular technology, it will be possible to create a new structure of matter at the nano- and femtotechnology levels, and to exercise control over this process. The new structure of matter is the basis for the creation of new productive forces and relations of production in the noosphere economy.

Technological singularity originated in the mapping of the human genome, creation of a self-replicating organism, and a self-replicating machine. The nearest strategic objective (2020–2030s) of singular technology is to create an artificial brain – a “digital man” on the basis of nano- and femtotechnology.

This research area and practice will open the way to new forms of energy, productive forces, industrial relations and socio-economic noosphere systems in general. The wide application of singular technology in the economy will contribute to the conservation and civilizational development of the planetary megasystem “cosmos–nature–man–society”.

Key words: law of the time, sustainable noosphere innovation development, noosphere economy, megasystem “cosmos–nature–man–society”, socio-economic system, productive forces, relations of production, mind, consciousness, singular technology, nano- and femtotechnology, biotechnology, artificial intelligence, computer science, genetics, genetic engineering, stem cells, unresponsiveness to innovation, innovation economic efficiency, power corruption, currency corruption, offshore capital, taxes, levies.

At present, in accordance with the law of the time, humanity stands on the threshold of a paradigm change or, in other words, a series of rapid socio-economic and science-and-technology progress, which entails the change of worldview, socio-economic behavior, values, research and technological tools, etc. This factor, of course, should be taken into account in the formation of civilizational, intellectual, moral and spiritual processes in the world.

Nowadays there is also a need for a new global ideological science-and-technology paradigm. Within its framework it is necessary to formulate an underlying task that can highlight a new vector of development for our countries and for mankind in general, and to facilitate the science-and-technology revolution [1].

A priority of the new ideology should be the need for the use of breakthrough singular technology for the improvement of man and his environment [2]. This is associated with the fact that today the society has developed a new research area named technological singularity. It is a moment in time, after which advances in technology will become so rapid and complex that they will be beyond human comprehension. As Michael Deering says, singularity is the most significant event in the history of mankind. It will come as the result

of simultaneous action of three advanced technologies: artificial intelligence, molecular nanotechnology and molecular biotechnology. The rate of progress to the point of singularity increases gradually at first, but the mechanism of feedback with every shortening cycle leads us to singularity more and more rapidly. When singularity is reached, the capabilities of mankind will become really stunning – full control over the structure of matter at the atomic level, the thorough knowledge of biological processes from macro- to micro- and molecular levels, and superhuman artificial intelligence [3].

The starting point of technological singularity is considered to be the mapping (the sequencing?) of the human genome by Celera Genomics in 2000 and the construction of the first living self-replicating organism in 2010 (Craig Venter). Actually Venter created the first self-replicating machine.

The second point of technological singularity can arise from the development of nanotechnology, which was discussed in the 2007 report by the Commission for Economic Policy of the US Congress. The predicted date of singularity is said to be 2020 or even 2030. Currently, the creation of the artificial brain – a “digital man” – is the principal area in the formation of singularity.

The development of femtotechnology can be the third point of singularity. Femtotechnology studies matter in the range from nanometers to femtometers, i.e. from the atom to the nucleus (in the energy equivalent from electronvolts to megaelectronvolts). This science is the basis of nanotechnology and opens the way to new forms of energy and new kinds of communication.

At present, unrestrained consumption of natural resources is aggravating and, as a consequence, the destruction of biosphere can become irrevocable. Thus, mankind is faced with the actual possibility of a global ecological catastrophe with further socio-economic development; this uses are discussed thoroughly in the UN documents. The Earth Charter is a telling example of an international framework document on the issues of sustainable development. It is an international declaration of fundamental principles and values for establishing a just, sustainable and peaceful global society in the 21st century. One of its sections is devoted to social and economic justice. It includes the following provisions:

- eradicate poverty as an ethical, social and environmental imperative;
- ensure that economic activities and institutions at all levels promote human development in an equitable and sustainable manner;
- affirm gender equality and equity as prerequisites to sustainable development and ensure universal access to education, health care and economic opportunity;
- uphold the right of all, without discrimination, to a natural and social environment.

All these principles should lead to sustainable development of mankind – to the right, balanced development, when the exploitation of natural resources, the direction of investments, the focus of science-and-technology development, personal development and institutional change are coordinated with each other and strengthen the current and future

potential to meet human needs and aspirations without compromising the ability of future generations to meet their own needs.

In the future, sustainable development will be based on the oriented resource-saving and human-preservation economy, in which all goods and services must be accessible to all. At the same time, land, energy, and money should not be private goods and private property.

Nowadays modern society in developed countries owns high technology and can provide food, clothing, housing, medical care and education to all the inhabitants of the planet. However, they do not yet possess the technology for producing renewable green energy sources in unlimited quantity. Besides, their extremely productive economy demands that overconsumption be made the way of life. This is implemented with the help of two factors – planned and forced obsolescence¹. Planned obsolescence is technological in its nature, but forced obsolescence is regulated by a dominant fashion trend and mass culture.

Macroeconomic trends in the world economy development

The theory of macroeconomics argues that the economy of any country usually undergoes four stages of development: chaos, investment, innovation, wealth. For example, the Republic of Venice went through all of these four stages at the time. After the stage of wealth the Republic disappeared as an independent state. In the 1960s the “golden billion” countries [the term is used mainly in the Russian-speaking world, referring to industrially developed nations, or the West – *translator’s note*] began to move from the most effective stage – the stage of innovation – to the stage of wealth, dominated by private financial capital. The prestige of science and engineering labor is falling. Leaving the stage of wealth is a very long and complicated

¹ Planned obsolescence is obsolescence before the time, when it is really needed. Forced obsolescence occurs when things that are still useful are thrown out (editor’s note).

process: for example, Japan has been trying to get out of it for over 15 years. And the zero banking rate is of no help here.

In its time the Soviet Union was in the stage of planned state investments with some patches of innovation phases in its defense industry. Trying to shift the entire economy in the stage of innovation on the basis of market relations ended with the stage of chaos. This stage is characterized by high inflation, corruption and loss of state control of the economy.

Negative macroeconomic change in the advanced countries, i.e. the transition from the stage of innovation to the stage of wealth have led to the fact that from the mid-1960s the progress in such key sectors of human activity as astronautics, aviation, land transport, nuclear physics and energy has virtually stopped. The remnants of positive trends are still observed in microelectronics, computer science and genetics. According to Academician D.S. Lvov, the age of great discoveries is a thing of the past, now is the age of the great "screwdriver and assembling" technologies.

For example, the USA began showing the signs of movement to the stage of wealth in the mid-1960s. This is evidenced by the fact that in the 1960s the total pretax income of the private financial sector (service sector) amounted to 14% of all corporate taxes. This share has increased to 40% by 2008. For example, in the pre-crisis period, the largest company General Electric obtained 80% of the profit from its financial dividends instead of developing its production and gaining profit from that.

Under the pressure from the US and European Union, the leaders of 20 advanced countries adopted the "high-tech" way out of the global crisis (only in words so far): they have decided to support their economies and allocate four trillion US dollars for the development of high-tech products, and clean energy, and one trillion US dollars for the International Monetary Fund to support the markets of

developing countries. But all this is only wishful thinking. As Mr. Khazin points out, the number of manufacturing facilities in the world already exceeds consumers' capabilities for purchasing manufactured goods. And if we take into account that even this demand is significantly subsidized at the expense of targeted emissions of dollars, it becomes clear that *to establish production in a developing country would be simply unprofitable*. The plans to get the leading countries out of the crisis do not include the CIS nations.

Multinational corporations (MNCs) play an important role in the globalization of the economy. On the one hand, globalization facilitates economic interaction between countries, creates conditions for their access to advanced achievements of mankind, ensures resource conservation, facilitates world progress. On the other hand, globalization has a negative impact, for example: the maintenance of the peripheral model of economy, the loss of their own resources by the countries outside the "golden billion". Globalization spreads competition among all the participants, including developing countries, which leads to the shakeout of small businesses, deterioration of living standards and so on.

For example, the prominent economist J. Stiglitz proves with numerous facts and examples that globalization is destroying industry, contributes to the growth of unemployment and poverty, hampers the progress in science and technology, and aggravates environmental disasters on the planet. He criticizes the policy of global institutions – the WTO, the IMF, which use globalization and its ideology (free trade, free access to raw materials, the world patent law, the use of "paper" US dollar and Euro as the world's currencies, the intervention of international institutions in domestic policy, etc.) in the interests of several most developed countries to the detriment of most of the other countries.

Thus, it can be concluded that *the CIS countries can rely on MNCs only to a limited extent*. The case of Russia is a telling example. Not a single high-tech production with MNC participation has been organized for 20 years. They have only established various assembly factories to promote their obsolete products, and also used the Russian Federation as a source of raw materials and highly qualified specialists. The situation is no better in other CIS nations.

At present, MNCs mainly seek to gain profit and super-profit by expanding markets at the expense of developing countries and using their resources.

The main internal barriers to civilizational development in the CIS countries

We have discussed several external factors influencing the development of the CIS countries; let us now consider the internal problems that can slow down the transition of our countries to the innovation stage and to the sixth technological mode.

Paradox of plenty. When countries with an abundance of natural resources, are often considered to be less economically developed than the countries that have fewer natural resources or do not have them at all. This is hypothesized to happen for many different reasons, including a decline in the competitiveness of other economic sectors caused by appreciation of the real exchange rate as resource revenues enter an economy, volatility of revenues from the sales of natural resources in the global market, government mismanagement, or development of corruption due to the inflow of “easy” money in the economy.

Government corruption. Since the activity of authorities is dynamic, diverse and complex, it faces the emergence and functioning of the institutions crucial to the development of society, state and individuals. They become especially important under volatile, uncertain

and imitating condition of political and other institutions. One of these institutions is “political corruption”, which, like other concepts reflecting the actual phenomena of political reality, has been uncovered on a mass scale at the different levels of power.

The World Bank calls such practice of political parties (the practice of selling state, national and economic interests) “state capture”. The World Bank has the evidence that about 20% of the total number of the world’s population suffers from political corruption that spreads through the adoption of laws in the Parliament (the “purchase of laws”) and the financing of political parties.

The fact of political corruption can be proved indirectly by the following criteria.

1. The outflow of capital from the state is higher than its inflow.

2. The lack of “long-term” money for funding advanced technologies. Sergey Glazyev provides the following example: while exporting hundreds of billions of dollars of savings at 2–3% per annum, Russia attracts foreign capital at 7–8% per annum. In so doing, we actually change our “long-term” cheap money earned by exporting goods on expensive short-term loans from foreign emission centers. This policy resulted in the fact that Russia’s financial system suffered direct loss of 20–50 billion dollars a year, only because of the difference in the interest allocated for maintaining American financial pyramids. However, Mr. Glazyev ignores an important factor – the Keynesian multiplier. Each exported dollar leads to a fivefold reduction of industrial capital in the economy and a 25-fold reduction of “high-tech” capital. It is this factor that has destroyed the most science-intensive industries in Russia: aeronautics and defense, since they are tied to foreign currencies.

3. Inappropriate use of budget funds. “Handwaving” with no practical result. The use of budget funds for financing outdated (junk) technologies with the purpose of

suppression of advanced industries. The direct suppression of competitive industries like electronics, microelectronics, aircraft building, nuclear (atto), nano- and femtotechnology, etc.

Unresponsiveness to innovation. A gravest problem in the development of civilizational processes is the immunity of the CIS economies to novel solutions, as well as widespread underestimation of efficiency and quality of production, science and technology achievements, i.e. unresponsiveness to innovation. It can be overcome by changing the government policy, the activity of management bodies of enterprises and organizations. These changes should be focused on the use of innovation solutions, technology, products and services for accelerating modernization process in the economy and social sphere. The extent of unresponsiveness to innovation is measured by the Global Innovation Index – a composite index measuring the level of innovation in the country, developed jointly by The Boston Consulting Group, the National Association of Manufacturers (NAM) and The Manufacturing Institute, the NAM's nonpartisan research affiliate. NAM describes it as the "largest and most comprehensive global index of its kind".

The Global Innovation Index is part of a large research study that looked at both the business outcomes of innovation and government's ability to encourage and support innovation through public policy. The study comprised a survey of more than 1.000 senior executives from NAM member companies across all industries; in-depth interviews with 30 of the executives; and a comparison of the "innovation friendliness" of 110 countries and all 50 U.S. states. The findings are published in the report "The Innovation Imperative in Manufacturing: How the United States Can Restore Its Edge".

The report discusses not only country performance but also what companies are doing and should be doing to spur innovation. It looks at new policy indicators for innovation,

including tax incentives and policies for immigration, education and intellectual property. The index was last published in March 2009. To rank the countries, the study measured both innovation inputs and outputs. Innovation inputs included government and fiscal policy, education policy and the innovation environment. Outputs included patents, technology transfer, and other R&D results; business performance, such as labor productivity and total shareholder returns; and the impact of innovation on business migration and economic growth. The following is a list of the twenty largest countries by the Global Innovation Index, published in 2012:

Belarus is not included in the list, since there was no reliable information about its innovation development.
















Table 1 shows that in this respect the situation in the CIS countries is catastrophic. For example, in Russia, the share of organizations implementing technological innovations is 8.0%. The share of innovation goods (works, services) in the total industrial production volume is 0.4%. Innovation-active enterprises practice a widespread import of technology, which often means in Russia obsolete junk technologies.

There are several conditional types of innovation according to the degree of their novelty:

- radical/breakthrough (strategic innovation that facilitate a breakthrough in theory and practice);
- modifying (enhance individual elements of existing systems);
- conditional (represent a new combination of old elements);
- combined (combine the features of all the above).

These four types of innovation result from different types of related research and development. The most radical strategic innovation generally requires the complete innovation cycle: fundamental and applied

Table 1. The Global Innovation Index <http://ru.wikipedia.org/>

Rank	Country	Overall	Innovation inputs	Innovation performance
1	 Singapore	2.45	2.74	1.92
2	 South Korea	2.26	1.75	2.55
3	 Switzerland	2.23	1.51	2.74
6	 Hong Kong	1.88	1.61	1.97
7	 Finland	1.87	1.76	1.81
8	 United States	1.80	1.28	2.16
9	 Japan	1.79	1.16	2.25
15	 United Kingdom	1.42	1.33	1.37
16	 Israel	1.36	1.26	1.35
19	 Germany	1.12	1.05	1.09
27	 China	0.73	0.07	1.32
46	 India	0.06	0.14	-0.02
49	 Russia	-0.09	-0.02	-0.16
60	 Kazakhstan	-0.23	-0.51	0.07
64	 Ukraine	-0.45	-0.13	-0.73

research, development, implementation and dissemination (market penetration) of innovations. Other types of innovation do not require new achievements of fundamental science, but they often need applied research and they always need developments (bringing innovation to production) and implementation, and, except for certain cases, market penetration. Let us note once again that the most radical strategic innovation is based on the achievements of fundamental science [5].

The required performance level of new R&D may be provided only through the appropriate level of research environment, for which the necessary conditions are created by the government.

Inefficiency of special economic zones. Since 2005, Belarus, Russia and other CIS countries consider special economic zones (SEZ) as

centers for crystallization of a new economy based on high technology. These centers were believed to become an effective tool for the commercialization of R&D results, the growth of R&D and science-intensive products and services, the development of innovation infrastructure, as well as a tool for attracting foreign investment and increasing exports of high-tech products.

The world experience proves that to create a new workplace in high-tech sphere requires not less than 100 thousand dollars of capital expenses; meanwhile, the creation of a new workplace in IT-sphere is cheaper by 1–2 orders of magnitude: it requires a table and a computer. This was the reason for a rapid development of IT in science and technology parks, instead of the real development of high technology.

For example, in 2006–2010 Russia implemented the state program for the creation of science and technology parks in high-tech sphere approved by the Government on March 10, 2006. According to the program, for the four-year-period, from 2007 to 2010, up to 29 billion rubles of the total public funding were to be allocated for the construction of a network of 27 parks in seven regions of Russia. It means that only 10 thousand high-tech jobs were created in all of Russia for 4 years!

It was estimated that by 2011, the total production output by hosted companies in science and technology parks could amount to 100 billion rubles, and the average revenue per one employee of a science and technology park could be about one and a half million rubles. In fact, according to the data for the third quarter of 2011, the revenue was only 33 billion rubles and the number of employees in all industrial parks amounted to 11 thousand, the number of hosted companies – about 440. Out of the 27 industrial parks that were planned to be constructed, only four are actually functioning. The project development is impeded by the following factors: lack of preferential taxation; financial difficulties; dependence on higher education institutions; high monopolization of the economy. As a result, the share of high-tech products in the country's GDP has not increased so far.

At present, there is also a massive replication of demonstrative strategies in the scientific environment that imitate their relation to advanced technology [6]. Recent years have seen a rapid increase in the number of projects and works, the names of which are purposefully supplemented with the “grant-promising” prefix “nano” to make them look more attractive for receiving grants and investments. If nanotechnology secures the status of a national strategic priority, it will cause respective changes in the policy of grantors. Researchers use this situation to their advantage; such actions can be called “marketing mimicry”, i.e. changing

the name without upgrading the content of their developments. “Pseudoindustrialization” is especially dangerous due to the underdevelopment of the expert community in the field of nanotechnology in RUSNANO and SKOLKOVO.

In such conditions, Russia's ambitious plans to create 25 million jobs will not be implemented.

Belarus has also tried to establish a high-tech park; however, in fact, it was turned into a park of information technology, and it specializes only in offshore software that is justified on this stage of development.

On the other hand, innovation policy in Belarus has a positive feature: all its territory was declared the offshore zone for high and advanced technology, as it is shown in *table 2*. The Belarus Government creates economic zones with even more favorable terms for attracting strategic investors.

Paragraph 38 of the Decree of the President of Belarus [7] states that *the entire territory of the Republic of Belarus is an offshore zone for high technology*. “Legal entities of the Republic of Belarus, which are not residents of the High Technology Park, who are implementing (intending to implement) business projects in the field of new and high technology in the areas of activity of the Park, including those not related to the activities specified in paragraph 3 hereof (hereinafter – non-residents of the High Technology Park), and who have registered such projects, have the right to use the benefits contained in paragraphs 48–52 of this Provision”.

Tactics of Belarus and the CIS

The main goal of our countries is to move from the fifth to the sixth technological mode, i.e. to a postindustrial society.

The key factor in the sixth technological mode is singular technology that includes nanotechnology, femtotechnology, nuclear (atto) technology, biotechnology, genetic engineering, information technology, green energy.

Table 2. Tax benefits and charges for the residents of the Chinese-Belarusian Science and Technology Park, the Park of High Technology, the Free Economic Zone “Minsk”

Government taxes and levies	Republic of Belarus as a whole	Chinese-Belarusian Science and Technology Park	Park of High Technology	Free Economic Zone “Minsk”
Profit tax	18%	During the ten calendar years after registration the taxes are not levied, in the following ten years – 50% of the rate	Is not levied	The tax is not levied during the first five years after the disclosure of profit, then – 50% of the rate
Land tax	According to the cadastral value of the land plot and its designated purpose		For the period of construction, but not more than three years	According to the cadastral value of the land plot and its designated purpose
Real estate tax	1%		Is not levied	Is not levied
Value added tax	20%	Is not levied	Is not levied	20% (50% of the rate for goods of own production and for those that are import-substituting)
Assignments to payroll fund	35% of the wage and salaries fund	Assigned from the national average		35% of the wage and salaries fund
Individual income tax	12%	9% for everyone up to 2027	9%	According to the rates of 12%
Customs duties and levies	According to Belarus legislation	Is not levied	Is not levied	Is levied
Local taxes and levies	According to Belarus legislation	Is not levied	Is not levied	Is levied

Transition to the sixth technological mode should be facilitated by promoting the development of breakthrough singular technology through the establishment of the centers for technological crystallization of the sixth technological mode.

This requires the following government incentives:

1. To revise the legislation of the CIS nations for abolishing internal and external barriers to innovation responsiveness: elimination of political corruption by cancelling international (including confidential) agreements that impede the development of new and high technology.

2. To declare, at least for a 20-year period, the entire territory of each country of the CIS a special economic zone for the development of new and high technology – the offshore high-tech, and to optimize the regional (local) tax policy.

3. To create the register of investment projects based on the new and high technology

assessment criteria. The criterion adopted in the Republic of Belarus can be taken as an example [8].

4. To provide state support to the creation of infrastructure in the centers for breakthrough technology crystallization.

5. To create centers for common use of sophisticated technological equipment.

6. To promote the development of small and easily adjustable industries, focused on the limited resources of our countries with a low threshold of access to the world hi-tech markets.

7. To stop the outflow of personnel, to organize their training and retraining for new and high technology.

8. To organize cooperation between the CIS countries and developed countries of the world in the field of technology, information and education.

9. To shape public opinion concerning the necessity of innovation development of the country.

Prerequisites for funding and its sources

- direct and indirect (tax) government support;
- attraction of internal and external resources under exceptionally favorable tax conditions taking into account a higher risk of investments in the established directions, than that of investments in innovation;
- cooperation with MNCs on the terms advantageous for our countries;
- creation of specialized development banks with the issue of “long-term” money with minimum interest rates for purchasing technological equipment and construction of infrastructure and centers for common use;
- introduction of tax amnesty for “runaway” capital from offshore zones to transform “monetary treasures” in the working national means of payment; this measure is a real chance to save the accumulations in case of transition to some other world currency like amero and so on. The research conducted by the Tax Justice Network shows that the volume of offshore money can reach 32 trillion US dollars. Billions of dollars out of Russia (798), Ukraine (167), Kazakhstan (138), and Belarus (75) have been transferred to offshores [9].

A path of implementation

The first steps. One of the ways to choose promising innovation projects can be the creation of a world map of breakthrough singular technology. It can be drafted by analogy with the world map of promising technologies developed by Quid. It is a map of the world progress with tips. Which technology will be an instant success, and which would be a waste of effort? Which idea should be supported financially? The authors of the map, believing that it will help find the answers to these questions, have created a program which, using certain algorithms, systematizes knowledge about different companies, their products and experiments. The Quid software works with patents, news, websites of firms, laboratories, organizations, their press releases,

research publications, employee lists and vacancies, documents on government grants, posts in Twitter and so on. From all this, the software retrieves key words and phrases that describe the main ideas of projects (working groups, including start-ups), their relation to a certain field of knowledge and technology. These key phrases (hundreds per company) can be considered as genes. Accordingly, it turns out that every company has a unique set of technological genes, but different companies can have many common genes as well.

When comparing these genetic codes, one can sometimes find the links that have been previously overlooked; the bundles of lines work according to the “principle of gravitation” – the more threads of similarity between the companies – the stronger their attraction to each other. Thus, similar enterprises and projects form large clusters (engineering, finance, physics, computer science, biochemistry, design...), which, in turn, are subdivided into sections. The Quid database grows by 120 thousand documents every day. No man can read all of them, and, therefore, no man can find any patterns, coincidences and intersections, it is only computers that are able to do that. They derive something useful from these tangles of linkages. Within the rules invented by people, Quid shows interest in companies and organizations that are located at the intersection of fields. Interesting things often happen here, that could potentially lead to a breakthrough. And it is only one point on the “genetic map” of world technology, while there are many thousands of them all in all. The most interesting thing happens when the points begin to emerge one by one in some blank space [10].

We should see *our goal* in the development of an advanced map of civilizational processes that is based on promising technology and breakthrough singular technology. Our countries have accumulated enough national wealth to finance all the promising and singular technologies.

We can take the Resolution of the Council of Ministers of the Republic of Belarus as a basic document on the criteria for assessing new and high technology [8].

Immediate landmarks. As we have mentioned above, humanity is standing on the threshold of a paradigm change or, in other words, a series of science-and-technology revolutions that will cause a change in the set of beliefs, value systems, technical equipment, etc. No doubt, this factor must be considered in the road map of civilizational processes in the CIS nations. Revolutionary breakthroughs are expected in artificial intelligence technology, molecular nanotechnology and molecular biotechnology.

The mind, consciousness, human brain and the whole mental process do not fit into the classical theories of information transmission and processing. Working (information) temperature of the brain has proved to be significantly lower than the thermal noise originating from physiological functioning of the brain with power consumption of 20 W. The cerebral cortex alone contains 10^{10} neurons, and each neuron has an average of 10^4 connections, at a clock frequency of 100 actuations (counts?) per second. It is 10^{18} operations per second with power consumption of just a few joules, which is close to thermodynamic limit. The thermodynamic limit is determined by the work performed in the synapses, and is approximately 10^{17} operations per joule.

IBM experts are trying to design a complete computer model of human brain functioning using their own supercomputer Blue Gene. At present, this model uses 147456 parallel processors of the supercomputer.

According to the IBM experts’ forecasts, to make a mathematical model capable of reproducing what is in the head of each person will require the resources of 880 thousand processors designed according to the von Neumann architecture. IBM is planning to achieve such value of computing power not earlier than by 2019. Unfortunately,

these systems with exaflop productivity will consume no less than 100–500 MW, which is comparable with the power consumption of a small city. But it is these machines that can be compared in performance with the human mind, consciousness and brain. It is a question of energy consumption and reliability of these machines, which limits the operation of modern supercomputers to a few dozens of hours.

Several groups of American scientists participating in the program “Ubiquitous High-Performance Computing” under the U.S. Defense Advanced Research Projects Agency (DARPA) are trying to solve these issues. Their goal is to create a computer complex, which would operate at the speeds in the petaFLOPS range, and consume not more than 57 kW of power.

We have to engage in this process immediately; otherwise we will fall behind forever.

The second direction (research area) of technological singularity can be a research into the mechanism of energy of supernovae as the basis of the new clean energy.

It is connected with femtotechnology – a new research field in science. In 2011 Russia began to develop femtotechnology as a mega science, in comparison to which nanotechnology will be yesterday’s science. As V. Putin points out, successful solution of large-scale research issues “is not just a matter of national prestige; they promote the concentration of resources in priority areas and, in fact, they facilitate a breakthrough into the future, first in fundamental knowledge, and then – in technology” [13].

We believe that nano- and femtotechnology can become one of the main driving forces that can bring Belarus, Russia and other CIS countries to a new development level by creating new materials and devices in electronics, energy production and transport. This will facilitate the reformation of the world markets and at the same time handle a large number

of environmental issues, which cannot be solved by modern technology. In the future, the development of femtotechnology will create fundamentally new sources of clean energy. Note that the modern approach to obtaining energy by controlled nuclear fusion in the plasma has insurmountable fundamental problems that prevented the artificial Sun to be lighted up on the Earth, although the attempts have been going on for more than 40 years. And we will have to wait another 40 years, according to the international program ITER.

The energy femtotechnology can “shut down” nuclear and thermonuclear energy, the scourge of which is life threatening neutrons and radioactive isotopes.

On the other hand, femtotechnology opens a new class of information technology based on gravitational interactions. The 19th century was the century of studying and using sound waves. The 20th century was the century of electromagnetic waves. The 21st century should be focused on the development of gravitational waves, which have already been discovered for stars and galaxies in the form of jets. Only an in-depth development of femto-physics (internal structure of atoms) will allow us to find new information channels [14].

At present, it is most relevant for the CIS countries to develop nano- and femtotechnology for the most energy-intensive industries – power engineering and transport as well as for the electronic industry.

Conclusion

The world faces the changes in technological and economic paradigms that are inextricably linked to each other.

Economic paradigms are connected with the processes of globalization, alignment of the economies of developed and developing countries that leads to alignment of the prices for products and labor services. So far, developed countries, by inertia, are willing to maintain overconsumption at the expense

of developing countries with the help of international financial and technological mechanisms by issuing their own currencies and through technological advantages. This mechanism causes a withdrawal of additional value from developing countries in the form of inflation-emission tax of 4% of the world GDP. Excessive selfishness of the “golden billion” countries is impeding the development of the CIS countries. The policy of the developed countries in the sphere of technology financing has caused their transition from the stage of real innovation to the stage of financial wealth. They are trying to preserve their level of consumption and their power by the uncontrolled emission of currency, which leads to further robbery of developing countries due to the high interest rate on the loan capital.

A collective demand to eliminate offshore zones abroad, which will make the “fugitive” capital work for the people of its country, should become a short-time objective of the CIS nations.

The establishment of internal development banks on the basis of accumulated national wealth should promote the long-term breakthrough projects, first of all, nanotechnology and femtotechnology, nuclear (atto) technology, new materials, energy saving technology and green energy, and biotechnology.

This can become a reality, if we unite our efforts for an efficient cooperation within the CIS and with other economies of the world.

We are living in the time of change. But this should not prevent us from seeing a reasonable, moral and spiritual future of humanity, based on the understanding of the achievements and prospects of science, the future that recognizes the possibility and desirability of fundamental changes in human life through advanced technology seeking to eliminate the suffering and aging of people and to greatly enhance their physical, mental and psychological capabilities.

In the course of time, technology should become cleaner and more efficient. Such spheres as nano-, femto- and biotechnology, will provide the tools for a comprehensive restoration of the environment and for new clean energy. It is only science and technology that will allow humanity to overcome the deadlock and reach progressive development, avoiding the catastrophic consequences of global risks.

We can predict with a high degree of probability that in 2020–2025 the development of humanity will go through a number of points of singularity:

- Further development of nanoelectronics will lead to the creation of 3D neurochips that will provide the shift from von Neumann’s computers to neural computers for wide use. This would liberate man from routine production and management processes.
- Femtotechnology will open the energy source of supernovae, which will make it possible to create small, harmless power installations available to each inhabitant of the Earth. New sources of energy will play an

important part in the development of natural resources: sand, carbon dioxide, etc., which are available to everyone. Using nanotechnology together with these sources, one can create a wide range of new construction materials. In addition, it will be possible to solve the problem of clean water shortage.

- Femtotechnology will make it possible to solve many tasks of nanotechnology, which cannot be solved at the present-day level of science, for example, the problems of friction that causes deterioration and destruction of mechanisms and transport systems. On this basis it will be possible to create new types of transport systems, and a new class of hypersonic aircraft, which will increase the communication capabilities of mankind.
- Genetic engineering and biotechnology will be used by factories that will produce unlimited number of protein from all available resources (water, carbon dioxide, sunlight).
- On the basis of cell technology (stem cells and other) it will be possible to create “spare parts” for man, which will make life longer and enhance its quality.

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Organizational-economic maintenance of innovation activity in the region: comparative assessment*



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Abstract. The article proposes the approach to evaluate the organizational-economic maintenance of innovation activity in the regions in quantitative and qualitative indicators, as well as the method to calculate the assessment of regulatory support of this activity. It justifies the author’s approach of comparative efficiency evaluation of innovation legislation and regions’ innovation development level. The article gives the qualitative estimation of regulatory support of innovation development in the regions that are innovation leaders. It singles out key directions to develop regulatory support of innovation activity, which encourage RF subjects’ innovation activity.

Key words: innovation activity; innovation policy; regulatory support; region.

Development of competitive industries, capable of assimilating innovation technologies, is one of the socio-economic development directions of the RF subjects.

In this regard, one considers organizational and economic support of innovation processes at the regional level as an independent object of study, which includes regulatory support of innovation activity, institutions and mechanisms of their functioning.

The regulatory support is the key condition of government assistance to the country’s economic development and its regions in this direction.

At present, the state is making great efforts to create the legal base for innovation activity. At the federal level the following important documents have been approved: the Strategy for Innovation Development of the Russian Federation till 2020 [1], long-term sector development strategies, state programs to support industries [2], the complex program “Creation of Science and Technology Parks in the Sphere of High Technologies in the Russian Federation” [3], Priority Directions in Science, Technology and Technique Development, List of Critical Technologies of the Russian Federation” [4].

* The research is carried out with the help of Doctor of Economics, Professor M.I. Berkovich.

What is more, the activities of the leading Russian innovation development institutes are prescribed by normative legal acts. The federal laws on state support of innovation activity, the country's industrial development, public-private partnership are drafted (but not adopted).

The Ministry of Economic Development of the Russian Federation presents the classification of innovation infrastructure objects, which consists of three main parts:

1. Production and technological infrastructure, that includes:

- science and technology parks, including research-and-production complexes, providing a wide range of services to small and medium enterprises in the innovation sphere, business-incubators, innovation and technology centers, science and technology parks in the high technologies sphere, science parks, academic parks;

- territories of innovation development, including SEZ of a technology-innovative type at the regional level, science cities, innovation cities (being built and existing);

- other objects of innovation infrastructure, supporting the commercialization of research results, including cluster development centers, common use centers, engineering centers (prototyping centers), technology transfer centers, certification centers and testing laboratories (centers), that monitor whether innovation (high tech) products meet established requirements or not.

2. Information and expert-consulting infrastructure, including information centers (centers/institutes of scientific and technological information, industry forecasting centers of scientific and technological development), subcontracting centers, European Information Correspondent Center in Russia (EICC-Russia), the Russian office of the Entrepreneurship Europe Network (EEN-Russia) and the associations (agencies) to

support entrepreneurship and other organizations, member of the regional EICC-Russia affiliation.

3. Financial infrastructure, including funds for venture investment development assistance for small and medium enterprises in the scientific and technological sphere (non-commercial enterprises), venture capital funds (regional venture capital funds, investing into small enterprises in the scientific and technological sphere, seed/start-up funds), guarantee funds [5].

At the same time most Russian regions are developing their own normative-legal base, regulating the implementation of innovative activity. Its availability is analyzed in 17 regions of the Central Federal District (CFD) (except Moscow). The normative legal acts of these regions are structured by five main areas: the innovation law; the legal act, regulating the development and functioning of the innovation infrastructure in the context of innovation infrastructure objects, the normative-legal act, stipulating allocations to innovative enterprises; the legal act, contemplating the functioning of the advisory body on state regulation issues of innovation system development; the regional target programs, aimed at innovative activity development (*tab. 1*).

The table shows that the given regions have adopted the regulatory legal acts on financial assistance for innovative enterprises; almost all the regions have approved innovation laws, and the advisory bodies' activities, concerning innovation policy, have legal basis. The normative legal base, promoting innovation infrastructure development, is not significant. Only 3 regions have normative legal acts, that regulate the creation and functioning of technology development special economic zones at the regional level, 4 regions – science cities, 1 region – cluster development centers, 2 regions – engineering centers, 3 regions – information centers, 7 regions – agency of entrepreneurship support, 2 regions –

Table 1. Institutional support of innovative activity in the Central Federal District regions

№	Oblast	Regulatory acts, stipulating development and functioning of innovation infrastructure													Target programs to develop innovation activity						
		Production and technological										Information and expert-consulting				Financial			Investments funding		Advisory body for innovation policy
		Business incubators	Science and technology parks	Special economic zone of a technical innovation type	Science cities	Innovation cities	Cluster development centers	Common use centers	Engineering centers	Technology transfer centers	Certification centers	Information centers	Subcontracting centers	Agency of entrepreneurship support (EIGC-Russia, EEN-Russia)	Funds to support small and medium enterprises	Fund for venture investment and medium enterprises	Guarantee funds	Investments funding	Advisory body for innovation policy		
1.	Belgorod	+	+	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+	-	
2.	Bryansk	+	-	-	-	-	-	-	-	-	+	-	-	+	-	-	+	+	-	-	-
3.	Vladimir	+	-	-	+	-	-	-	-	-	-	-	-	-	+	-	+	+	+	-	-
4.	Voronezh	+	+	-	-	-	+	-	-	-	-	-	-	-	-	+	+	+	+	+	+
5.	Ivanovo	-	+	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	-	-	+
6.	Kaluga	+	+	-	+	-	-	-	-	-	-	-	+	+	-	+	+	+	+	-	-
7.	Kostroma	+	+	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	-	-	-
8.	Kursk	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	-	-	-
9.	Lipetsk	+	-	+	-	-	-	-	-	-	-	-	-	-	+	-	+	+	+	+	+
10.	Moscow	+	+	+	-	-	-	-	+	-	-	+	-	+	-	+	+	+	+	+	-
11.	Orel	-	+	-	-	-	-	-	+	-	-	-	-	-	+	+	+	+	+	-	-
12.	Ryazan	+	-	+	-	-	-	-	-	-	-	-	-	+	-	+	+	+	+	-	-
13.	Smolensk	-	-	-	-	-	-	-	-	-	+	-	-	-	-	+	+	+	+	-	-
14.	Tambov	+	+	-	+	-	-	-	-	-	-	-	-	+	-	-	+	+	+	+	-
15.	Tver	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	-
16.	Tula	+	+	-	-	-	-	-	-	-	-	-	-	+	-	-	+	+	+	-	-
17.	Yaroslavl	+	+	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+	+	-	+

Note: "+" – existence of a normative legal act in the region; "-" – absence of a normative legal act in the region. Source: legal-reference system "ConsultantPlus: regional legislation".

venture capital funds, investing into small and medium enterprises. The normative legal acts, contemplating the creation and functioning of innovation cities, common use centers, commercialization technologies centers, certification centers and subcontracting centers are not approved in the Central Federal District.

The assessment of regulatory support of innovation processes is carried out in points (using weight coefficients) in order to develop the most perspective development directions of the innovative activity legal base. The method to calculate this assessment was developed on the basis of the method, assessing the use efficiency of the federal budget funds, allocated for capital investments [6]. The method is intended to estimate the use efficiency of federal budget funds, allocated for capital investment, for investment projects, that are planned to be fully or partially financed by the federal budget. The efficiency estimation is based on the integral efficiency estimation and the efficiency estimation on the basis of 9 qualitative and 5 quantitative indicators.

The assessment of regulatory support is based on the four following quantitative indicators, characterizing the existence (absence) of the following normative legal acts:

- 1) regional law on innovation activity;
- 2) legal act, regulating the innovation infrastructure activities, including:
 - 2.1 production and technological infrastructure;
 - 2.2 information and expert-consulting infrastructure;
 - 2.3 financial infrastructure;
- 3) act, providing financial support for innovative companies;
- 4) act on the advisory body's activities, concerning innovation policy.

The assessment of regulatory support (Ars) on the basis of quantitative indicators is calculated by the following formula:

$$Ars = \sum Ki \times Bi,$$

where: Ki – a point to estimate the quantitative indicator “ i ”;

Bi – a weight coefficient of the quantitative indicator “ i ”;

i – a number of quantitative indicators, “ I ” is 1, 2.1, 2.2, 2.3, 3, 4.

The weight coefficient for each quantitative indicator was calculated by means of the expert estimations method. The experts, developing the region's innovation policy, were leading specialists of the executive authority, managers of the existing innovative enterprises; representatives of scientific community (Ph.D. in Economics and Doctors of Economics), dedicated to research of innovative development. The indicator “work experience in the sphere under analysis” (not less than 5 years) was chosen to reveal the experts' competence.

The expert evaluation of the normative legal support of innovation processes in the regions of the Central Federal District is presented in *table 2*.

Table 2 shows that the most significant forms of regulatory support of innovative activity are the normative legal act, regulating the activities of production and technological innovation infrastructure (0.25), the regional law on innovative activity, as well as the normative legal act, contemplating the provision of financial support to innovative companies (0.2).

The possible values for each indicator are ranked according to the number of regional normative legal acts, adopted to regulate innovative activity (*tab. 3*).

Table 3 indicates that the maximum total value of points, that can be assigned to the region, is 19 ($K1_{max}=1$, $K2.1_{max}=10$, $K2.2=3$, $K2.3=3$, $K3_{max}=1$, $K4_{max}=1$).

The total value of points for each subject of the Central Federal District is presented in *table 4*.

The table shows that in the CFD regions less than half of the maximum possible num-

Table 2. Weight coefficient values of the assessment indicators of regulatory support of innovation processes in the CFD regions

Assessment indicator	Value
1. Existence of the regional law on innovation activity	0.20
2. Existence of normative legal acts, regulating activity of innovation infrastructure objects in the region, including:	
2.1. Objects of production and technological innovation infrastructure	0.25
2.2. Objects of information and expert-consulting innovation infrastructure	0.10
2.3. Objects of financial innovation infrastructure	0.10
3. Existence of the regulatory act, contemplating the provision of financial support to innovative companies	0.20
4. Existence of the normative legal act, regulating the activities of the advisory body to innovation policy	0.15
Total:	1.00

Table 3. Allowed values of the quantitative indicators of regulatory support of innovation activity in the regions, points

Symbol	Admissible valuation	Requirements to define points for each indicator evaluation
K1	0÷1	1 is assigned to the region, where the law on innovation activity is adopted 0 is assigned to the region, where the law is not approved
K2.1	0÷10	10 is assigned to the region, where the normative legal acts, regulating the activities of the maximum possible number (10)* of objects of production and technological innovation infrastructure, are approved 0 is assigned to the region, where these acts are not adopted
K2.2	0÷3	3 is assigned to the region, where the normative legal acts, contemplating the activities of the maximum possible number (3)** of objects of information and expert-consulting innovation infrastructure, are adopted 0 is assigned to the region, where these acts are not adopted
K2.3	0÷3	3 is assigned to the region, where the normative legal acts, regulating the activities of the maximum possible number (3)** of objects of financial innovation infrastructure are approved 0 is assigned to the region, where these acts are not adopted
K3	0÷1	1 is assigned to the region, where the regulatory acts, stipulating the provision of financial support to innovative companies, are approved 0 is assigned to the region, where these acts are not adopted
K4	0÷1	1 is assigned to the region, where the normative legal acts, regulating the activities of the advisory body for innovation policy are approved 0 is assigned to the region, where these acts are not adopted
<p>* 1. Business incubators. 2. Science and technology parks. 3. Special economic zone of a technical innovation type. 4. Science cities. 5. Innovative cities 6. Cluster development centers. 7. Common use centers. 8. Engineering centers. 9. Technology transfer centers. 10. Certification centers</p> <p>** 1. Information centers. 2. Subcontracting centers. 3. Agency of entrepreneurship support (EICC-Russia, EEN-Russia)</p> <p>*** 1. Funds to support small and medium enterprises. 2. Fund for venture investment development assistance for small and medium enterprises. 3. Guarantee funds.</p>		

ber of normative legal acts, regulating the innovative activity, is adopted. The Moscow, Voronezh and Kaluga oblasts are leaders by the number of points. It should be noted that the maximum score among the regions was 12 points (63% of the maximum possible), that testifies insufficient elaboration of the

regulatory support system of innovative activity. In particular, the functioning of information, expert-consulting and financial infrastructures is regulated to a lesser extent. The outsider regions by the total number of points in 2013 are the Ivanovo, Kursk and Smolensk oblasts.

Table 4. Values of the quantitative indicators of regulatory support of innovation activities in the CFD regions, points

Oblast	Total points	Regulatory acts in innovation infrastructure			Law on innovation	Financial support of innovation	Advisory body for innovation policy
		Production-technological	Information and expert-consulting	Financial			
Belgorod	7	2	0	2	1	1	1
Bryansk	6	1	2	1	1	1	0
Vladimir	7	2	0	2	1	1	1
Voronezh	8	3	0	2	1	1	1
Ivanovo	4	1	0	1	1	1	0
Kaluga	9	3	1	2	1	1	1
Kostroma	5	2	1	1	0	1	0
Kursk	3	2	0	0	0	1	0
Lipetsk	6	2	0	1	1	1	1
Moscow	12	5	2	2	1	1	1
Orel	7	2	0	2	1	1	1
Ryazan	7	2	1	1	1	1	1
Smolensk	4	0	1	2	0	1	0
Tambov	7	3	1	0	1	1	1
Tver	5	1	0	1	1	1	1
Tula	6	1	1	2	1	1	0
Yaroslavl	5	2	0	1	0	1	1

The limit (maximum) value is set to 100% or 3.65 in absolute terms. The compliance of the numeric value to the established limit value indicates the maximum degree of elaboration of regulatory support of innovative activity in the region. According to the calculations, the numeric value can range:

- from 65% (2.37) to 100% (3.65), indicating a high degree of elaboration of regulatory support of innovative activity in the region;
- 30% (1.09) to 65% (2.37), revealing the average degree of elaboration of regulatory support of innovative activity in the region;
- below 30% (1.09), proving a low degree of elaboration of regulatory support of innovative activity in the region.

The comparative assessment of regulatory support of innovation activities and the corresponding rating of the Central Federal district regions is presented in *table 5*.

According to the value of the integral estimate of innovation processes regulatory

support in the CFD regions, the leader among the 17 surveyed subjects is the Moscow Oblast. The Kaluga Oblast takes second place, the Voronezh Oblast – third place. Nine regions of the Central Federal District have the average degree of elaboration of regulatory support of innovative activity, eight regions – the low level.

One should make a comparative analysis of the region’s position by the integral estimate and key indicators of its focus on innovation – the enterprises’ innovation activity and the share of innovative products, labor, services in the total volume of the products, shipped by the enterprises in the region [7] (*tab. 6*).

Table 6 shows that direct dependence between the indicators is missing: the regions, leading in the regulatory support of innovative activity in quantitative aspects (the Moscow, Kaluga, Voronezh and Tambov oblasts), have a low level of innovation development.

It can be explained by the fact that the development of innovation activity in the region is not mostly influenced by the available

Table 5. Comparative assessment of regulatory support of innovation activities in the CFD regions

CFD region	Calculation of integral estimate	Value of integral estimate	Region's position in the ration
Belgorod	$1 \times 0.2 + 2 \times 0.25 + 0 \times 0.1 + 2 \times 0.1 + 1 \times 0.2 + 1 \times 0.15$	1.25	5
Bryansk	$1 \times 0.2 + 1 \times 0.25 + 2 \times 0.1 + 1 \times 0.1 + 1 \times 0.2 + 0 \times 0.15$	0.95	7
Vladimir	$1 \times 0.2 + 2 \times 0.25 + 0 \times 0.1 + 2 \times 0.1 + 1 \times 0.2 + 1 \times 0.15$	1.25	5
Voronezh	$1 \times 0.2 + 3 \times 0.25 + 0 \times 0.1 + 2 \times 0.1 + 1 \times 0.2 + 1 \times 0.15$	1.50	3
Ivanovo	$1 \times 0.2 + 1 \times 0.25 + 0 \times 0.1 + 1 \times 0.1 + 1 \times 0.2 + 0 \times 0.15$	0.75	9
Kaluga	$1 \times 0.2 + 3 \times 0.25 + 1 \times 0.1 + 2 \times 0.1 + 1 \times 0.2 + 1 \times 0.15$	1.60	2
Kostroma	$0 \times 0.2 + 2 \times 0.25 + 1 \times 0.1 + 1 \times 0.1 + 1 \times 0.2 + 0 \times 0.15$	0.90	8
Kursk	$0 \times 0.2 + 2 \times 0.25 + 0 \times 0.1 + 0 \times 0.1 + 1 \times 0.2 + 0 \times 0.15$	0.70	10
Lipetsk	$1 \times 0.2 + 2 \times 0.25 + 0 \times 0.1 + 1 \times 0.1 + 1 \times 0.2 + 1 \times 0.15$	1.15	6
Moscow	$1 \times 0.2 + 5 \times 0.25 + 2 \times 0.1 + 2 \times 0.1 + 1 \times 0.2 + 1 \times 0.15$	2.20	1
Orel	$1 \times 0.2 + 2 \times 0.25 + 0 \times 0.1 + 2 \times 0.1 + 1 \times 0.2 + 1 \times 0.15$	1.25	5
Ryazan	$1 \times 0.2 + 2 \times 0.25 + 1 \times 0.1 + 1 \times 0.1 + 1 \times 0.2 + 1 \times 0.15$	1.25	5
Smolens	$0 \times 0.2 + 0 \times 0.25 + 1 \times 0.1 + 2 \times 0.1 + 1 \times 0.2 + 0 \times 0.15$	0.50	11
Tambov	$1 \times 0.2 + 3 \times 0.25 + 1 \times 0.1 + 0 \times 0.1 + 1 \times 0.2 + 1 \times 0.15$	1.40	4
Tver	$1 \times 0.2 + 1 \times 0.25 + 0 \times 0.1 + 1 \times 0.1 + 1 \times 0.2 + 1 \times 0.15$	0.90	8
Tula	$1 \times 0.2 + 1 \times 0.25 + 1 \times 0.1 + 2 \times 0.1 + 1 \times 0.2 + 0 \times 0.15$	0.95	7
Yaroslavl	$0 \times 0.2 + 2 \times 0.25 + 0 \times 0.1 + 1 \times 0.1 + 1 \times 0.2 + 1 \times 0.15$	0.95	7

Table 6. Comparative analysis of the Central Federal District regions ratings by the level of regulatory support of innovation activity, enterprises' innovation activity and the share of innovation products, works, services

CFD region	Rating of regulatory support of innovation activity	Rating of enterprises' innovation activity	Rating of share of innovation products, labor, services
Belgorod	5	10	11
Bryansk	7	12	6
Vladimir	5	4	4
Voronezh	3	11	8
Ivanovo	9	13	17
Kaluga	2	7	9
Kostroma	8	15	13
Kursk	10	3	12
Lipetsk	6	1	3
Moscow	1	13	5
Orel	5	8	16
Ryazan	5	6	15
Smolensk	11	14	14
Tambov	4	13	10
Tver	8	9	7
Tula	7	2	2
Yaroslavl	7	5	1

Calculated according to: Federal State Statistics Service: section "Science and innovations", data of 2012. Available at: http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/science_and_innovations/science/

sufficient regulatory base of innovation development at meso- and macro levels, but by the mechanisms for its implementation.

It is possible to single out the following tools: availability of significant financial resources and clear rules of their formation and distribution, a management level in the region. They can manifest themselves in various forms, such as: enterprises' participation in financing regional innovation programs, grants support of scientific organizations; establishment of special economic zones, providing favorable conditions for doing business in the form of benefits for resident enterprises, including those, engaged in innovation activity.

Particularly, the basic documents of the Yaroslavl Oblast are the program for modernization and innovation development of the industry in the Yaroslavl Oblast for 2011–2013 [8] and the program “Development and support of innovation activity in the Yaroslavl Oblast for 2012–2014” [9].

The programs are aimed at technological upgrade of enterprises' production facilities, development of innovation infrastructure, information and human capacity in the field of innovation, provision of subsidies and grants to innovation enterprises. Their benefits in 2012 are the following: 405.2% of the program of modernization and innovation development of the industry in the Yaroslavl Oblast for 2011–2013 (compared to 55.6% in 2011) and 98.4% of the program “Development and support of innovation activity in the Yaroslavl Oblast for 2012–2014” have been implemented [10]. Such high results of the first mentioned program are achieved due to multiple allocations to innovation industrial enterprises from extra-budgetary sources.

In the Tula Oblast, the key documents, stimulating innovation activities, are the Government resolution on grants [11] and the Governor's decrees on prizes in the field of science and technology (B.S. Stechkin,

K.D. Ushinsky, S.I. Mosin prizes); agreement between the Tula Oblast and the Russian Foundation for Humanities (RFH) and the Russian Foundation for Basic Research (RFBR) on the provision of grant support to regional innovation enterprises, ensuring the scientific research development. So, in 2013 the joint RFBR grant amounted to 950 thousand rubles [12]. The government has been supporting the grant for 2 million rubles annually for more than 10 years that demonstrates innovative enterprises' concern in it. In 2013 eighteen innovative enterprises received government grants [13].

In the Lipetsk Oblast the law “About Special Economic Zones of the Regional Level” [14] regulates the process to set up special economic zones of the regional level as objects of innovation infrastructure in the region. The participants get state supported tax benefits (income tax is 13.5% for 7 years, property tax – 0% for 7 years, transport tax – 0% for 10 years), reduced land lease (0–0.6% for 5 years). The region has 10 zones. By the end of 2013 the number of participants was 39, the disbursed investment volume – 14.96 billion rubles, the number of jobs created – 1179, the volume of production – 15.68 billion [15].

Thus, the leading regions' experience (the Lipetsk, Tula and Yaroslavl oblasts), the specific innovation environment and the unique models of the regions' innovative development help to single out the following priority directions to develop regulatory acts of innovative activity, ensured by constant financial support:

- 1) promotion of industrial enterprises' innovation development on terms of co-financing by the public sector and interested enterprises (the Yaroslavl Oblast);
- 2) encouragement of enterprises' innovation development by creation of regional special economic zones, providing tax and other incentives to residents (the Lipetsk Oblast);

3) promotion of innovation enterprises' development in the research and education complex by financing the results of their intellectual activity by means of grants and prizes (the Tula Oblast).

Thus, the leading regions can encourage innovation activity in the country, in particular, by means of transferring the accumulated experience as directions to develop institutional provision and the management system as a whole.

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Knowledge work and transnational networks in Lithuanian public sector



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Abstract. International and transnational student mobility is becoming a global strategy of young persons' career, and in this regard Lithuania is not an exception. Nevertheless, we lack studies in the analysis of the mechanisms and processes of the integration of mobile culturally privileged persons in the labour market of their country of origin, as it is these mechanisms and processes that allow mobile persons to increase their value in the labour market of their country of origin and to be in the forefront of the creation and transfer of innovations. In order to bridge this academic gap of studies on mobility/migration, this article deals with the "returning to Lithuania" experiences of the citizens of Lithuania who completed Bachelor's or Master's studies abroad. The main question of this study is how the mobility/migration experience helps in developing human, social and cultural capital and how the returnees act as the agents of innovation in their country.

Key words: knowledge work, transnational networks, student migration, innovation, Lithuania.

Introduction

International migration encourages the emergence of innovations [20, 24], thus studies on the connections between migration and innovations are mainly focused on high-technology and/or knowledge-based sector innovations and their connection to the migration of highly-qualified personnel [25].

On the other hand, innovations are also created indirectly "below" or in sectors that are less knowledge-based, e.g. the public

administration sector, while the input of mobile highly-qualified personnel as innovation carriers to public administration has faced less analysis thus far because "only migrating entrepreneurs are considered to be the heroes of capitalism" [26; 24].

Due to this fact this article will focus on the experiences of persons (young people) who acquired higher (Bachelor's and/or Master's) education abroad and returned to Lithuania

and who, at the time of research were working in the public sector of Lithuania¹. It is assumed that these employees as a “cohort of innovators” can use their knowledge to contribute to the development of this sector in Lithuania. The present study is based on qualitative participatory observation and interviews with 15 people who had acquired their higher education abroad and in 2012–2013 worked in the branches of institutions of the public sector of Lithuania (the Ministries of the Republic of Lithuania or their departments). The **aim of the study** is to reveal the personal migration/mobility trajectories of the citizens of Lithuania who acquired a Bachelor’s or Master’s degree education abroad while paying more attention to the decision of a particular individual to return to his/her country of origin, to analyse how the mobility/migration experience helps in developing human, social and cultural capital and how the encounter of “brought over identities” shaped in other countries and “local identities” influence the creation of innovation. The study also raises the question of whether these persons are the source of “uncommon knowledge” [24], what innovations they create, what is the level of the extremeness of their innovations and how they increase organisational (bureaucratic) effectiveness [31; 37]. In Lithuania, there is a lack of studies which could reveal the aspects of the connection between the **transfer of knowledge and innovation** and migration and innovation through **interhuman-interinstitutional relationships** as well as investigate the migration experiences/mobility of highly-qualified persons and new ways of global life in the world with no borders. Taking into consideration the aspects mentioned above a study on persons who acquired a Bachelor’s and/or Master’s education abroad and returned to Lithuania was conducted.

¹ The research was financed by the Research Council of Lithuania, according to the “Implementation of post-doctoral fellowships in Lithuania” project (Contract No. 004/25).

The returning migrants/mobile persons (students) in this article are defined as persons returning to the country of their citizenship after some time spent as international migrants (short-term or long-term, students) in another country and planning to spend at least one year in their country of origin (see [27]). The persons who acquired higher education abroad (Bachelor’s or Master’s degree) are those who left Lithuania to study a full programme of full-time and/or part-time studies in a non-Lithuanian higher education institution(s).

The article comprises 3 parts: the first part focuses on research on students’ international mobility/migration and analyses the relevant statistical data. The second part provides a theoretical conceptualisation of the role of mobile servants/migrants in the innovation creation process and discusses the complexity of migration/mobility of international highly-qualified personnel. The third part presents the results of qualitative empirical study.

The Determinants of International Mobility of Lithuanian Students

The movement of Lithuanian people from one country to another continues to be a major influence on the country’s society. The 2011 Census data [29] revealed that since 1990 when Lithuania regained its independence almost 670 thousand people or 18 percent of the country’s total population had lived abroad for longer than one year. Of these 670 thousand the majority were aged 25-40, were economically active and one fifth of them were highly skilled/ or had tertiary education. The return migration and immigration have been rather insignificant with respect to maintaining “healthy” levels of population growth. The return migration in the period of 1990-2011 did not exceed 110 thousand persons and non-EU immigration levels were never high [17]. After Lithuania joined the EU it became an exporter of its workforce, with a significant proportion being well-qualified and highly skilled.

Since 1990 the policy debate on highly skilled and knowledge workers leaving Lithuania has centered around the *brain drain* phenomenon. It is generally agreed that the emigration of the highly-skilled from the country has been encouraged by political, economic and social changes that started after the reestablishment of independence. A demographic misbalance, differences in wages, outdated technical and scientific infrastructure, and structural changes in scientific institutions all helped to predetermine the departure of high-skilled labor to other countries. With the development of the economy, especially after 2004 the country was affected by the globalization of economic activity, which was in many aspects related to the changes in the Lithuanian labor market and membership of the European Union. In Lithuania, the “brain drain” phenomenon poses a serious threat not only to the socioeconomic development, but also to the development of a middle class. Although fierce debates exist over the term of social class, for illustrative purposes, we can note that using E. Wright’s typology (education, autonomy at work and earnings) of measuring social class, it is possible to state that the Lithuanian middle class is small and makes up 12 percent of the total population [32]. Compared to Western countries where the middle class, calculated by the following criteria, makes up more than 50–60 percent of the population. The abundance of doctors, engineers, IT professionals and other knowledge workers is a precondition not only for economic growth but also enables a country to create a stable democratic society, whereas emigration complicates the middle strata development and “facilitates” the development of bureaucracy, corruption and irresponsible governance, [15, p. 23]. Despite the fact that Lithuania is no longer considered a country in transition by some authors, the trends in middle strata development remain blurred (see [19]) for a quantitative comparative account on social

class developments in Lithuania and other European countries) i.e. the middle strata development interferes with the advantages of globalization (free movement, cheap flights, international labor regulation) as well as purely *homo economicus* value orientations at an individual level.

A study (commissioned by the Lithuanian Ministry of Education and Science and carried out by the Lithuanian Social Research Center in 2009) focused on the immigration policies and practices relevant to non-EU researchers, doctoral students and highly skilled employees in Lithuania was carried out in 2009 (see [34]). The study included researchers and scholars, who had lived in Lithuania for more than 6 months and who were working under an employment contract or were full-time doctoral students at a university or research institute in Lithuania.

The study revealed that there was no accurate data on highly skilled persons in Lithuania. According to Statistics Lithuania, 174 permits of residence were issued in 2008 to the non-EU citizens coming to Lithuania for training and study purposes and more than 1,200 permits of residence were changed (prolonged). Thus, the total number of non-EU nationals in Lithuanian higher education could be estimated at about 1,500. However, highly skilled persons “dissolve” in the overall immigration statistics. According to Statistics Lithuania there were 5976 individuals with a doctor’s degree in 2006, 0.5 percent of which were foreigners (including EU and non-EU, permanent and non-permanent residents).

On the basis of these figures it can be estimated that there were up to 30 non-EU researchers (including doctoral students) in Lithuania in 2006. Given the fact that the total number of those possessing a doctor’s degree did not change drastically (in 2008 there were 6326) we can imply that the number of foreign researchers has not changed a lot since then. The study of non-EU researchers also proposed

a typology of the highly skilled persons coming to Lithuania. This typology (see also [34]) revealed that early stage researchers/PhD students from non-EU countries mainly came to Lithuania to gain international experience/“improve their” CV or were attracted by money/scholarships (origin state allocated funds, or exchange, double degree, competitions and other programs as well as project funding). It also revealed that local recruitment procedures are not oriented to the international job market. Lithuania as a country of immigration was often chosen not only as a place to carry out research but also for economic reasons. The study shows as well that the entry of researchers from developed countries into Lithuania to a large extent was determined by cost of living differences, whereas immigration from developing countries was highly instrumental (e.g. to obtain a residence permit or a nationality and freedom to “move” to another EU country, or arriving from countries with a relatively expensive and lower education level, with the aim of returning to the country of origin). The non-EU researchers often had “unsafe” jobs on fixed-term contracts, short-and medium-term visits were the most characteristic feature of highly skilled immigration in Lithuania. International recruitment and selection procedures were not common inside universities and research centers.

To sum up the latter study revealed that non-EU researchers in Lithuania “learned” to become the “invisible” social group [34]. The “recipe” of their integration into the broader context of Lithuania was “to be invisible”. Contacts with the majority of Lithuanian society were limited to professional and working relationships with the exception of spouses and close friends. Their contacts with the symbolic (citizenship) or social institutions of the country were self-limited as non-EU researchers in Lithuania automatically set themselves apart from the rights and obligations

to the host country, i.e. they felt they were tolerated, accepted, economically and socially and they felt more or less safe, but they did not belong and considered themselves migrants *par excellence* [34].

When knowledge and highly skilled workers arrive in a country, their arrival results in a chain effect i.e. skilled immigrants can help employers to attract more highly skilled workers thus, there is no need for additional spending on education [9; 13; 14; 21]. The relevance of studies on students’ international mobility/migration is influenced by the fact that after Lithuania entered the EU in 2004, the unrestricted movement of the citizens of Lithuania in the EU and the world began. Educated and qualified people as well as young people who leave to study are a part of this movement. In 2009-2010 full study programmes – Bachelor, Master and Doctoral studies – in the EU member countries were studied by more than 7 thousand citizens of Lithuania. This made up 3.5% of the total number of students studying in Lithuania (ŠMM 2010). Among Lithuanians the most popular members of the EU, in terms of studying, were the United Kingdom (2,325 students), Germany (1,274 students) and Denmark (911 students). In respect of the study cycle more than two thirds of students studied in Bachelor studies and in Master and Doctoral studies – 18.9% and 4.6% respectively. In comparison to other members of the EU, Lithuania was above the EU average in the number of people studying abroad. In 2008 1,458 citizens of the Republic of Lithuania studied in non-EU countries, most of them – in Russia (841) and the USA (495) (ŠMM 2010).

According to the data from the Universities and Colleges Admissions Service of the United Kingdom (UCAS), 682 citizens of Lithuania were admitted to the first cycle studies in 2008, in 2009 – 895 (out of 1,061 study applications), in 2010 – 1,515 out of 2,146 applicants (UCAS 2010). In accordance to UCAS, in 2011 there were more than 4 thousand young citizens of

Lithuania who studied full study programmes at the universities of the United Kingdom. Taking into consideration the forecast of the Ministry of Education and Science, due to the demographic situation – low birth rate and migration – in 2023 there will be 40% less pupils who finish secondary schools than in 2010. Thus, it is likely that the number of people who come to study or conduct scientific research will not warrant the appropriate “turnover” of intellectual capital because there are more highly-qualified people who leave Lithuania than there are those who come [16; 28; 33]. Therefore, the mobility of students turns out to be the initial stage of the loss of human capital which eventually turns into permanent emigration [5]. These younger age educated citizens will be participants of the labour market for another 40–50 years, thus their departure may affect not only the sectors of the knowledge economy, but the system of pensions and social security as well.

Aidis and Krupickaitė [1; 2] investigated the factors that influence students who finish their studies to look for a job outside of Lithuania. This was the biggest in scope quantitative research on students’ migration/mobility and their attitude towards emigration in Lithuania which was mainly focused on the peculiarities of the emigration of the academic youth, its factors and arising problems.

Over two stages of research (in the academic year 2004–2005 and 2005–2006) 2,394 (1,252 and 1,142) students from the majority of Lithuanian higher university education institutions, and in 2006–2007 another 661 students from higher non-university education institutions were surveyed. One of the most important conclusions of the research was that the attitude of quite a significant part of Lithuanian students is close to the world’s prevailing tendencies of transnationalism; however there are only few preconditions in the country to form cyclic migration flows [1].

To sum up, it is possible to state that while analysing both general and highly-qualified personnel’s migration/mobility three closely inter-related research areas may be distinguished: macro, intermediate level analysis and analysis of the individual causes and consequences of migration (common to all residents, less often to a particular group of society or sector), investigation of residents’ attitude towards emigration and certain research on immigration topicality. In summarising the research and studies conducted in Lithuania it can be observed that there is a lack of studies which could reveal the migration experience/mobility of highly-qualified persons and which would investigate new ways of global life in the world with no borders. Taking into consideration the above-mentioned factors, a study on persons who acquired a Bachelor’s and/or Master’s education abroad and returned to Lithuania was conducted.

The role of mobility and migration in the innovation creation

David Hart [13], who analyses the way in which mobility/migration contributes to innovation, suggests the analysis of the expenditure (input) and output of the human capital, i.e. migration is understood as an input to the national innovation system, or said in another way, young people who come to the country as students (more than the older work personnel) are tied with the institutional, organisational, legislative and political-cultural context of that country, and thus their input in the infrastructure of innovation is greater.

In other words, Hart [13] states that the policy and model (assimilation, multicultural or open society-civic) of the accepting country’s national identity may well be important in the innovation “output”, i.e. the further the “advance” of the country is from the extreme assimilation and ethnic enclave identity policy model, the more optimal is the convergence of the innovation potential and the open and multicultural context of a country.

The origination of innovation correlates to the cultural diversity in a positive way, i.e. a labour force which is culturally diverse determines the origination of innovation [21; 30]. For example, Stuen, Mobarak and Maskus [30], who investigated employees from overseas who were working at the universities of the USA, conclude that national diversity among scientists (not just being a foreigner per se) was the determinant factor in the increase in the amount of innovation. Richard Florida (2005) also favours these conclusions and suggests that cultural diversity is the most important factor which attracts the workers who belong to the “creative class” to a certain country or region. Novelty/innovation supplementation model means that the arrival of educated people to the country creates a flow of knowledge to certain sectors or areas as well as the adjacent sectors and areas in the country while the primary consequence of such flow of knowledge is innovation [14].

For instance, Hunt and Gauthier-Loiselle [14], who analysed the non-economic merits of migrants in the U.S., calculated that 26% of the USA scientists who received Nobel prizes in 1999-2000 were migrants (notwithstanding the fact that there were only 12% of immigrants in the General Register of Immigrants). These authors also calculated that when the number of immigrants who possess a higher education increases by 1%, the number of patented inventions for one resident of the USA increases by 6% on average. According to Hunt and Gauthier-Loiselle [14], the number of patents for one resident may increase due to the fact that the local scientists use the brought in knowledge of the immigrants and this constitutes a critical mass of specialists in a field of a certain area, while the flow of knowledge eventually contributes to the innovation of other secondary areas, e.g. management and enterprise [14].

Another migration and innovation model may be described as the mass immigration of highly-qualified personnel model.

This model states that mass immigration is regulated through visa programmes, whereas the continuous flow of immigrants is maintained by the “infrastructure of attraction”, i.e. the exceptional conditions that exist to study or conduct scientific research in that country. For instance, people who are exclusively talented in the fields of arts, science, education, business or sports; emeritus professors and researchers, heads and managing directors of international companies, representatives of professions that urge studies of a Doctoral or Master’s degree, or talented personnel in the fields of arts, science and business, as well as investors who create workplaces and whose investments are no less than 1 million dollars (this amount may be less if investments are being made in rural areas or in places suffering from high unemployment) and this investment creates no less than 10 new workplaces, are distinguished as the preference target groups to receive an employment-based immigrant visa of the USA (see also [17]).

Quite a number of authors take the aspect of infrastructure of attraction as a basis for their analysis of the input of students to the infrastructure of innovation. Chellaraj, Maskus and Mattoo, for example, have determined that the increased number of foreign students in the Master’s degree programmes of the universities of the U.S. formed a positive correlation to the increase of the number of registered patents and inventions [7]. Likewise, foreign students contribute very much to science production: e.g. if there is a 10% decrease in the number of foreign doctoral students in the universities of the USA, the number of journal articles in the fields of physical and engineering sciences and their citation level decreases by 5–6% [30]).

The model of creative class, which has been developed by Florida, is also worth mentioning [12]. This model suggests that the gathering of the personnel who have immense knowledge in a particular area in a certain country or region attracts other experts of similar thinking to that country or region.

In this way the concentration of human capital and synthesis of ideas create the cycle of innovation encouragement and economic growth. The critical mass of personnel of a particular field in a country acts as a magnet which attracts creative potential. In literature we may also find attempts to analyse the transfer of knowledge and innovation in respect of the qualitative aspect, i.e. to investigate mobility/migration as a culture of knowledge acquisition and display [37]. These processes may be analysed while adjusting distinct methodologies which focus more on qualitative categories as the qualitative aspect is the one which allows us to identify the methods and networks of people's interaction as well as the "being here" context. "Being here" may be described as the interaction of the global and local social (individual, ethnic, professional) identities in a particular place (country, workplace, transnational network). Here also the discourse of transnationalism arises when the local knowledge of the local communities experience the impact of transnationalism which determines the change of identities as well.

According to the human capital migration model, migration is a way for an individual to increase their human capital, and this changes both their attitude and view towards inter-human-interinstitutional relationships and relationships in general. Migration as an investment in human capital is paid back in the future to the individual(s) as well as to the society (OECD 2008). Moreover, migration functions as a "spiral of social mobility": moving out to move up [11]. In such cases researchers are more interested in exceptional cases, unique stories, structural boundaries and "thresholds" instead of the statistical "mathematics" of migration according to Favell [11].

Thus in the next section the analysis of "returning to Lithuania" experiences of the citizens of Lithuania who completed Bachelor's

or Master's studies abroad is presented, with the aim to answer the question on how the mobility/migration experience helps in developing human, social and cultural capital and how the returnees act as the agents of innovation in their country.

Post-return to Lithuania experiences of mobile Lithuanian students: a qualitative case study

The informants of the qualitative case study were the young people born between the years 1983 and 1990 who had acquired their Bachelor's and/or Master's degree qualification abroad and returned to Lithuania: eight men and seven women; 7 of them had acquired only a Bachelor's degree, 7 – both a Bachelor's and a Master's degree, and 1 person had gained only a Master's degree from universities in Australia, Belgium, Denmark, the Netherlands, Sweden, the United Kingdom and the USA (quite often the Bachelor's studies took place in one country and the Master's studies in a different country). Twelve participants of the study completed social sciences, one – humanities, one – physical sciences, and one person had completed technology sciences.

The selection of the informants of the study took place over several stages. Since the general numbers of the return migration of the Lithuanian students to different cities and places of Lithuania are not known and there is no exact statistical information regarding the education level of those who return, participants of the programme "Kurk Lietuvai" („Create for Lithuania“) – 12 people in total – were selected for the survey while applying the criterion of the accessibility of informants (Creswell and Clark 2003). These people returned to Lithuania by using the young professionals' programme (JPP) "Kurk Lietuvai", which was administrated by the public institution "Investuok Lietuvoje" ("Invest in Lithuania"). This initiative is a professional development

programme in Lithuania, intended for the citizens of Lithuania who have completed higher education studies (Bachelor's and/or Master's) abroad, and gives the opportunity to acquire employment in the state institutions of Lithuania by means of a tender. The remaining four informants of the study were identified by the informants themselves who had already participated in the study. All 15 participants of the study worked in public state institutions (in addition one interview was carried out with a person who worked in private sector, nevertheless, due to the different particularity of this interview, it is not analysed in this article). 12 of the informants left Lithuania for studies after they had finished secondary school, 2 informants - when they were 14-16 years of age and 1 person - at 9 years of age (their departure was influenced by family circumstances - their parents/guardians left to work in another country or concluded a marriage with a citizen of another country: *"I was 10 years-old, so I guess there was no option"* 4Z).

In most cases the participants of the study had completed social sciences. The study is based on the methodological holistic approach making it possible to get out of the "study room" and into the "field" of the study (Shalinsky 2006) and spending no less than several months outside while performing interviews as well as participating in the informants' lives, registering any changes in their lives and formulating inductive theoretical insights while applying empirical data.

Thus, besides the common layers of analysis - the general context and analysis of the reasons for migration, this article focuses on **specific-institutional and cultural context**, e.g. the analysis of **employment relationships** of the public sector and their innovative behavior. The approach of Orfila-Sintes and Mattsson [23, p. 381; 24] was taken as a basis, in which it states that innovation is "something new and obviously better and that it can be new only

in the context of a separate company but not necessarily new in the entire sector or market". Further the essential insights of the study are presented.

The empirical analysis: are the best and brightest staying on to work?

The periods of life which were spent abroad while studying by the informants is not a significant enough reason to call their migration experience as migration in the classical sense: the interviews with them reveal that this experience is taken as especially valuable in acquiring new social capital (e.g. working in a definite sector; a worthwhile relationship with the specialists of a certain field) and social-cultural (life and daily routine in some certain cultural diversity) contexts, i.e. "culturalised" and "implanted knowledge" [37]), nonetheless informants do not consider departure to study as migration. For them departure is a certain part of a career path of the trajectory of vertical social mobility, which marks their identity with the features of a cosmopolitan and global lifestyle which is quite often juxtaposed to the Lithuanian cultural context, which is seen by the informants as unvaried and closed, but nevertheless predictable and culturally safe at the same time. For the informants, regardless of the country in which they live or have professional interests, the territory of the country does not coincide with community in the ethnic, political or professional sense. The informants look at the construction of their identity through a ternary prism: namely, where they lived and where they were earlier (what was their identity), where they are now and how identity is constructed right here, right now (in a short, average or longer period of time) and thirdly, where they will "move" further: *"[...] For me it is interesting to know the Lithuanian culture, and later I will be looking somewhere else, maybe in Lithuania, maybe in the Dominican Republic – I really liked it there [work and holidays of 3 months], no matter*

where” (1T had lived in the United Kingdom since the age of 16). It seems that the younger the informants were when they left Lithuania, the more they tend to express a transnational attitude, i.e. the more varied is the experience of mobility and the younger the person was when he/she left and if they succeeded better in studies, work activities or work/practice, placements in companies and the easier it was for them to adjust and to adapt, the less important for them is the place where they are living/working. Quite often the informants left with people accompanying them while to others departure was an experiment, a minor venture which could also be influenced by the impact/opinion of the surrounding people: *“when I learned that I had entered [the university] there was like “well, maybe I should go”[...] but there also were friends who [insisted] “let’s go”* 5P. The informants were not “the best and the cleverest” and claimed that they were not high achievers when they were schoolchildren. Likewise, the desire for specific knowledge of a certain field was not the most important reason to leave. For the informants, departure was more of an impetus for new social experiences due to their active character marked with the features of leadership, i.e. informants stress an active relation with environment, curiosity, interest in other cultures and the experience of previous trips (with family, for holidays, etc.) as strong factors in choosing to study abroad. The departure of a part of them was also determined by the social status of their parents and the economic capital of the family, though this was not the primary aspect for any of the informants.

Interhuman-interinstitutional relationships: work ethics and criticism of the “doing things national way”

Studying abroad and competition among students developed their self-discipline and, according to the informants, instilled “western-like” work ethics: *“I guess I wouldn’t be where I am now. [...] The ability to analyse,*

work in stressful [environment], and doing so independently” 3V. After returning to Lithuania, the developed work ethics for most of the returners turned out to be the most hurtful and ironic “encounter” with the subjective reality of the public sector of Lithuania: *“One thing I cannot get used to is the presence of heads. When you do not decide yourself, instead you have to agree with one, then another, tra ta ta ta ta... Abroad, if you get a task it is your responsibility as to how you will accomplish it; of course you may consult, ask, but the responsibility is yours”* 3V. It is important to notice that the criticism of the informants towards the “doing things national way” is quite frequent, ironic and playful. The informants try to understand them and to look for the underlying reasons that can ground such manifestations of Lithuanianness. For example, the following story became the object of long discussion among several informants:

“I watched a coach near Žaliejai lakes working with schoolchildren, some 10–15 years old adolescents. I can see they are preparing for a competition, so seriously. And we are sitting on a bench next to them. A child is sitting in a kayak, ready to row and he [says]: Hey, coach, how do I go, how and what should I do? Then the coach says to the child – but the child asked so nicely, wanted some piece of a good advice – remember only a piece of sh... can float, you are rowing”. This was the answer. You lose your self-confidence automatically. This is school...” 1T.

Regardless of the criticism, the informant tried to explain and understand why the coach acted the way he did. Other informant relates:

“A primary teacher talks to a child: “You, moron, how many times do I have to tell you [...]”. Just imagine – you are being traumatised for four years. And this is the primary [school], and later this all increases. [...] one man against the system is little able to do anything” 2G.

Such and similar observations are quite a repetitive topic, which the informants discuss in an informal environment. The thing which is interesting about this is that at the beginning

of communication the informants try to avoid examining these topics with “anyone”, but later after more inter-confidence has arisen, the informants eventually broach these subjects. Quite a number of informants have faced the insights of paternalism in the state institution where they worked: “if you are active and you want to do something, you are put down quickly: ‘Ah, you are young, don’t poke your nose in or we will make sure that you don’t poke your nose into other people’s business’” 6M. When talking about their first day at work the informants ironically notice the “coffee-sitters” disregard to privacy (e.g. some of the informants were made to feel decidedly unpleasant by the curiosity of their colleagues about their personal life – family and relatives), too familiar interaction, older or higher by rank employees treating others as younger, weaker, less understanding and knowing colleagues which need to be cared for. Quite a number of informants emphasise the paternalistic-like management attitude of higher employees towards the younger, as a nursling and incompetent, although frequently informants feel to have better educated social skills (ability to communicate, represent the organisation, constructive discussion, rely on scientific facts instead of opinions) and some special (especially foreign languages) competence:

“Maybe to her [manager] I do not seem authoritative, because I am much younger, but she feels free to do so, she is always dissatisfied about everything, everything is wrong, all [my] suggestions are bad [...]. “I still don’t like the mentality, [...] the underestimation of a person, even if they have achieved something, like, you are young, like get out of here” [...] 5P.

Another informant recounts:

“Speaking about respect for people, when being in one country not to be as a dog to a dog... I miss the warm communication, understanding and support for one another – this is what I miss most often, even in my workplace. You know, everywhere [in other countries as well] is

competence, but we [in Lithuania] show it right away, but somehow our body language shows, if you don’t like someone you may show it right away. As far as I noticed, in other countries you may understand it from the body language but it is not so much on display. More subtle, maybe everything is at some higher level. The processes [of all people] in the brain are the same “I don’t like that [person], I don’t like the other one” It could be that not showing this helps to improve the level of communication, maybe you don’t like your colleague, but you must try to start liking them at work, somehow. Or maybe this veiling is even better? Or possibly even the straightforward Lithuanian “I just don’t like you and that’s it” is good. You know, I don’t know which is actually better, but perhaps I am used to the other [Western-like way of communication] one more” 1T.

Quite often the informants described themselves as the “troublemakers” of the organisation or “irritants of bureaucracy”: they were blunt in expressing their opinion, had arguments to defend their position or opinion on one or another matter and so they often felt undesirable and unpopular. One informant says: “They are shaking me off, do not want me [...], because I asked an inconvenient question [while representatives of the controlling organisation were present]” 6M. On the other hand, instead of anger and entering into work conflicts, the informants try to find the reasons for the paternalistic style of management, i.e. they analyse and evaluate their experiences and encounters with the “heads”, and discuss them with those who share their opinion – friends, colleagues and so on. Nonetheless, observations on the national work style have a humorous tone. The informants sneer and ridicule or sometimes even create caricatures of their managers. Frequent “minor incidents” at work (Bourdieu et al. 1993) are rallied, mocked at, wondered at and compared with experiences acquired in a foreign country. Almost all the informants stress and have noticed the

closeness of the public sector personnel, the automatic functioning and absence of interest in the activities of the entire organisation: *“You call [the organization] ask a question and the secretary replies “I don’t know anything about that” 2G. The informants are rather critical towards the competence of the personnel of the public sector: “What gets on my nerves the most, the first and foremost thing [...] there is no aptitude for what they do. It is dreadfully lacking [...] instead of sticking to [expert] recommendations, they go along with their personal opinion, there is no way to talk them round” 4Z. The workplace meetings and the personnel’s inter-discussions for quite a few of the informants seem as a real “feast” of social and objective incompetence:*

“Someone [from the employees while addressing the manager] accidentally said their name. And she [says]: I am not [name], I am the Director. I didn’t actually hear that, my colleague told me about it... but if this is the kind of stories spreading [in the organisation] about the manager? [...] and later, whether you want to or not, you have to respect this person... [...] Those meetings put me off my stroke for the whole week. The professionals gather together [says ironically]. You may call [them] as you want. We should be discussing relevant topics. [...] such nonsense becomes apparent, but to my mind we should be discussing and searching for some truth [...] It is so eerie. If you ask for some advice – you face the world as it was a hundred years ago [...]. And then I say to myself “really? Is this everything that you have got?” 2G.

The informants act straightforwardly and do not avoid sharp discussions, they make bold decisions regarding change in a job because they consider themselves more competitive in the Lithuanian job market when compared to the majority of other persons. Nevertheless, in summing up it is possible to state that regardless of the bureaucracy irritants that are experienced due to their style of behaviour and developed social skills, the informants eventually became the informal team leaders,

the “inspirators” and informal motivators of both the younger and their senior (managers) colleagues. Due to their emotional stability (clearly understandable tasks), self-discipline (responsibility, work ethics) and willingness to cooperate and collaborate they successfully “saved” (financial and time) the resources of the organisation. Thus, the new practices of work that they brought in eventually improved the working atmosphere and allowed a more effective employment of resources. After some time these practices became a “new standard” of work teams and were informally discussed (coffee-klatched) by the employees who had been working at the institution for a longer time.

Determinants of the plans of return migration

The plans regarding the returning of the informants are not clear; they do not think that they have returned once and for all:

“As when I went and worked in Turkey for 3 years and then returned to the UK, returning to Lithuania for me is a kind of placement” For me it is interesting to know the Lithuanian culture, and later I will be looking somewhere else, maybe in Lithuania, maybe in the Dominican Republic – I really liked it there [work and holidays of 3 months], no matter where” (1T had lived in the United Kingdom since the age of 16 while residing in Lithuania had plans to go to India, but moved to Slovakia in 2013).

Almost all informants stated that they were welcome and had job offers abroad: *“I know that one [financial] corporation in London will wait for me for one more year” (7R, left for London in 2013). Almost all of them also had job offers from Lithuanian employers: “many a time I was asked to work for them but I don’t know how it would be [in reality] if I went and said that I want to work with them” 8MD. Thus it is possible to conclude that job offers from Lithuanian employers were more declarative in comparison to job offers abroad and it turns out that the determinant factor for the informants to return to Lithuania was **faster social mobility:***

“I would be a tiny fish in a huge pond in New York, whereas here I can become a huge fish although the pond is quite small” 8MD; “If the economics here is of the size x, there it is of the size 20x, but the person of my age has much more to do here than in Australia” 4Z; In my opinion, if you are clever it is better to make your career here. [...] I’ve seen how hard it is to compete there [abroad] [...] unless you are a “target” [on a target list] of five [higher education institutions of England] for you to get [...] if we take the biggest banks, there are 250 people who get those biggest banks jobs. So you have a 1% [possibility] of getting there. And then I realised it is really hard to compete. Not exactly that hard but if you go and make your career, will you do it in a short time? You won’t do it in a short time. I think that here [in Lithuania] I can compete with the majority 7R; “I am average in England, in Lithuania I can quickly become a highflyer” 1T.

Likewise it is possible to state that the diploma/degree of a foreign university gives the informant more “life chances” in Lithuania and a competitive advantage in the Lithuanian labour market due to several reasons: (a) the acquired objective and social competences developed while studying; and (b) social inequality “thanks” to which education abroad acquire the status of uncommon, valuable and desirable goods in Lithuania: *“It is better to complete studies of anything abroad instead of being actually an exclusively talented student in Lithuania [...]” 2G.* Although the economic factors of returning should also be considered to be an important catalyst of returning, they were not the dominant ones (together with the economic factors, the informants also mentioned the non-economic reasons of returning):

“This question will be purely professional. I shall watch my income grow by 30% [...]. By another 30% – the kind of job that I get [...]. Even if I got 100 thousand dollars but had to sit in the corner and type – I would definitely not choose this option. A person

needs to have position, to make decisions. And maybe 30% would be consideration of the cultural thought, to live somewhere else” 4Z.

Some of the informants were “forced” to stay in Lithuania longer by personal circumstances: *“Love keeps me here [in Lithuania]. This is the biggest thing because, if we had taken the initial plan I would have worked in Lithuania until June and I would have left then back [to the European city] for work” 3V.*

In summing up, it is possible to claim that the dominant factors of returning are faster social mobility in Lithuania and a willingness to transfer the knowledge which has been acquired abroad to a subjectively, individually described “local” social field of Lithuania, where informants hope for subjectively comprehensible changes of innovations: *“I wanted to apply my knowledge. The system there only needs to be maintained, whereas in Lithuania the system still needs to be created. And I want to contribute to the creation of this welfare” 6M.*

Conclusions

The study on the young people who had acquired their education abroad revealed the exclusive complexity of the phenomenon of the highly-qualified personnel migration and confirmed that mobility in the 21st century is based on innovation, communication and culture [5], rather than affection to a particular territory. Analysis of the experiences of informants deals with the global lifestyle of the informants, the world with no borders and global consciousness [5]. Thus, departure and studying abroad for the informants is not emigration in its classical sense and therefore it is not a conclusive phenomenon. More likely it is **migration as a “social spiral”: moving out to move up** [11]. This analysis revealed several “hidden” social facts regarding the informants and a number of possible hypotheses for future studies on the sector of public administration in Lithuania.

The return of the informants is clearly innovative in nature, i.e. returning people challenge the pre-existing norms of the country of origin (in this case, Lithuania) as well as the ways of doing something and thinking [6]. Despite this, the **paternalistic style of management** which pierces organisations of the public sector is the aspect which prevents the transfer of new innovations; secondly, (a) the too high qualification of the informants or (b) their incapacity to apply their knowledge/competences, or (c) the immunity of the public sector to knowledge, or (d) all of these aspects together may act as a push factor or are an obstacle for the appropriate use and development of human capital of the returnees; and thirdly, a **diploma/degree of a foreign university gives the informants more “life chances” in Lithuania and a competitive advantage in the Lithuanian labour market** due to: (a) the acquired objective and social competences developed while studying; and (b) social inequality “thanks” to which education abroad acquires the status of uncommon, valuable and desirable good in Lithuania. Thus, it is possible to question if this is why the informants feel twice as privileged in Lithuania while at the same time the paternalistic style of management prevents them from using the privilege of human capital to its fullest and pushes them away from Lithuania? On the other hand, due to their “bureaucracy-

irritant” style of behaviour and developed social competences, quite frequently the informants eventually became the informal team leaders, the “inspirators” of both the younger and the senior (including managers) colleagues. Due to their emotional stability (clearly understandable tasks), self-discipline (responsibility, work ethics) and willingness to cooperate they also successfully “saved” the resources of the organisation and “broke” the paternalistic hierarchic structures, with certain exceptions. Thus, it is possible to state that the new practices of work that they brought in eventually improved the working atmosphere and allowed a more effective employment of organisational resources. After some time these practices became a “new standard” of polite behaviour of the other team members and “brought cultural innovation” to the public sector in a definite though very local field. Nevertheless, it is too early to talk about a massive *flow* of the “brought in” cultural *innovations* to all fields of the public sector as it requires a more significant returning to Lithuania of the people with higher education and a wider extent of the field research. Although the study presented was more exploratory in nature, hopefully, the insights that have been introduced may be valuable in the shaping of problems and hypotheses of new research on mobility/migration and knowledge transfer.

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Assessment of mutual influence of economic and ecological processes*



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Abstract. The article considers two issues: the assessment of the influence of economic development on the environment and the assessment of the impact of climate change on the development of certain economic sectors. The authors used methods of statistical analysis and economic-mathematical modeling. The article reveals differences in the dynamics and defines the nature of the relationship between GRP per capita and emissions of harmful substances into the atmosphere (including greenhouse gases) for Russia's regions. It is shown that the dynamics in some regions in 2000–2011 corresponds to the environmental Kuznets curve. The factors that affect the reduction of anthropogenic impact were determined. Several models for estimating the impact of changes in climatic conditions on the productivity of various crops were designed and tested.

Key words: economic growth, environmental Kuznets curve, greenhouse gas emissions, climate change.

* The research is carried out under the RHSF project No.12-22-18005a/Fin.

At present, the consistent trends can be observed in the increase of environmental risks of economic development; moreover, the effect has a bilateral nature. The research into the problems of climate change, the causes and effects of global warming is reflected in many domestic and foreign publications. Regardless of the diversity of opinions, one can consider the impact of economic growth on climate change quite reasonable. In turn, possible changes in climate can have different positive and negative economic, social and environmental effects. High rates of economic growth in our country are, as a rule, typical of resource-producing regions, the economy of which is based on resource-extracting and resource-intensive industries. Their desire to achieve greater levels of economic development leads to the depletion of natural resources and enhancement of anthropogenic impact on the environment. Therefore, in modern conditions, it is necessary to study and forecast mutual influence of economic and ecological processes. The research into the influence of these factors on the regions' economy and ways of adaptation is carried out under the project No. 12-22-18005a/Fin, which is supported and funded by the Russian Humanitarian Science Foundation.

The most important task consists in assessing and forecasting the impact of the economy on the environment, including greenhouse gas emissions. Accordingly, there is an opposite effect: climate changes, natural disasters become more frequent; it affects the economic development, and there emerges the necessity to assess the impact of climate change on certain economic sectors, mainly on agriculture.

The studies, carried out at the end of the 20th century in the field of environmental economics and natural resources management, proposed an inverted U-shaped form of relationship between the level of pollution and gross domestic product (GDP) per capita; this relationship is known as the

environmental Kuznets curve (EKC). The suggested hypothesis assumes that alongside GDP growth (gross regional product – GRP – for regions) per capita up to a certain level, the amount of pollution per capita increases at first and decreases afterwards. The estimated reduction in environmental load is explained not by a simple flow of time, but by a set of factors [1, 2, 8, 12], including the change in the consumption patterns of the population, effective ecological policy on a micro-, meso- and macro-level, structural changes in the economical and technological modernization of production. According to the hypothesis, the economic growth may become a solution rather than a source of the problem [13].

The major criticism and contradiction of the EKC model is connected with the possibility of developed countries to transfer their ecologically harmful industries to underdeveloped countries. In this case, the EKC hypothesis is true only for developed countries [6]. Moreover, the EKC model may be advantageous for those countries, where economic activity is accompanied by environmental pollution, as it can be assumed that with a certain level of development being achieved, the environmental situation begins to improve. In this connection, a number of authors have suggested that EKC cannot be a global model, but may exist in individual countries [5, 16]. Another drawback of the EKC model is that it does not take into account a critical level of anthropogenic impact and opportunities of the assimilation potential in the territory. The achievement of the income level that corresponds to the inflection point in EKC can require much time, and the peak of pollution can occur much earlier. C. Tisdell [15] suggests that, in this case, the inflection point of EKC can not be achieved in any case. The improvement of the environmental quality is possible only if the amount of negative impact does not exceed the assimilation potential of the territory. Besides, many types of pollution tend

to accumulate in the natural environments, and when their concentration becomes critical, environmental quality may deteriorate. As a result of such a cumulative effect, pollution will grow even beyond the inflection point of EKC, when the volume of waste production is reducing, but still accumulating. This fact casts doubt on the possibility of using EKC when making forecasts for many countries and regions.

The empirical studies of EKC lead to contradictory results. They were mostly carried out separately for well-known regulated types of pollutants, and the majority of evidence of an inverted U-shaped relationship applies to such atmosphere pollutants as suspended particles, sulfur dioxide and carbon monoxide. There are certain estimates of greenhouse gas emissions for the majority of developed and developing countries [7, 9]. For example, the estimate of the time series models by the emissions of carbon dioxide, sulfur dioxide and nitrogen oxide separately for the Netherlands, Germany, the UK and the USA shows that economic growth has a positive impact on the dynamics of these pollutants.

According to the traditional EKC model, the level of pollution grows until GDP per capita reaches the amount of 5–8 thousand US dollars; then the pollution volume begins to decline and may reach a pre-industrial level. Some politicians regard it as an opportunity to choose priorities – first economic growth and then environmental protection. It should also be noted that the maximum point varies greatly. For instance, in works [11, 14], according to the study of sulfur dioxide, the inflection points of EKC were obtained at 3.1 and 101.2 thousand US dollars in the 1990 prices, respectively; it can be explained by several reasons including the use of different data sets. A number of recent empirical studies, confirming the EKC hypothesis, show that the curve's level reduces and shifts to the left, because the economic growth is accompanied by a lower

level of pollution growth in the early stages of industrialization, and the inflection point of EKC is achieved at a lower income level [6].

The absence of EKC for greenhouse gas emissions can be explained by the fact that they cause a global effect, not a local one. The EKC hypothesis, as emphasized above, is most often confirmed for developed countries, as for developing countries, they are becoming leaders in global greenhouse gas emissions in recent years. Thus, according to B.N. Porfir'ev, since 2007, the world economy growth by 45% has been provided by the BRIC nations (Brazil, Russia, India and China), their share in total emissions of greenhouse gases is increasing, thus, their role in solving this problem is becoming more important [3].

Many foreign researches prove that the level of GDP is not the only factor influencing the change of the anthropogenic impact on the environment. Changes in a sectoral structure, technology and production scales, degrees of economical openness, a state regulatory role in the sphere of environmental protection and ecological standards have also a paramount importance. Therefore, the single-factor models, such as a Weibull function, are rarely used in the research of eco-economic processes. They do not take into account the influence of several factors, state regulation, in particular, which, as it was revealed in works [6, 11], is a dominant factor in the pollution reduction. The countries and regions, where economic policy is aimed at rapid income growth and employment, can cause serious harm to the environment if the relevant environmental standards are not introduced.

The recent studies confirm that the technological changes are determinants. The analytical model, presented in the work [10], shows that it is modernization that produces an effect of emissions reduction and leads to the EKC appearance when economy is developing. In Spain, for example, the technological changes have fully compensated

the growth of production volumes for sulfur dioxide emissions, but for a number of other pollutants the modernization effect was considerable, but still much less than the scale effect [12]. The research [7] has indicated that the form of pollution dependence on GRP can be different and is defined by the country particularities, such as technological progress, activity of structural changes and influence of external shocks. The calculations, performed in the work [9], have led to the conclusion that for Canadian regions there is no pollution dependence on GRP but there is dependence on population and technologies, as well as on an industry share, an export share, an import share, a crude oil price and on other factors.

As the work [2] reveals, for the Russian Federation and its regions the process of modernization and economy restructuring, significant in many Russian regions, has the most essential influence on the change of ecological indicators. The boost in a service sector and decrease in the industry share, which is the main pollutant, have provided a significant part of the environmental load reduction in the Russian Federation and its regions.

The assessment of an economical development impact on the environment was made by functions, in which economical development was described by the indicators, used in forecasting. It gives an opportunity to evaluate the effects of different investment decisions. To study eco-economic processes, we used multiplicative functions with constant and changing factorial elasticities, constructed by the type of production functions, sometimes taking into account neutral environmental progress:

$$Z(t) = A(t) \times U_1^\mu(t) \times U_2^{-\eta}(t) \times U_3^\nu(t), \quad (1)$$

where: $Z(t)$ is an analyzed ecological index;

$A(t)$ – neutral environmental progress;

$U_1(t)$ – a factor that reflects the economical development and, as a rule, has a negative influence on the environment (GDP, investments in the

economy, investments in new construction and others);

$U_2(t)$ – a factor that reflects the environmental activity and has a positive impact on the environment (environmental investments and others);

$U_3(t)$ – a factor that reflects the change of the existing industries and has, as a rule, a positive impact on the environment (investments into modernization upgrade and others);

t – a year;

μ , η and ν – constants (factorial elasticity).

The impact of economical development on greenhouse gas emissions in the Russian Federation.

While considering the ecological situation in Russia, we can note that in the 1990s the economical impact on the environment decreased rapidly with the slowdown in production, in the 2000s the decline became slow, but some indicators of the environmental load increased slightly (*fig. 1*). So, since 2002 the GDP growth has been accompanied by a slight rise in greenhouse gas emissions.

To estimate the relationship between environmental and economic indicators approximately, it is worthwhile to modify these graphs, constructing them as dependency of environment pollution indicators on GDP dynamics. As a result, the graph distinguishes two periods in almost all cases (*fig. 2*).

Figure 2 shows that in the 1990s GDP and greenhouse gas emissions decreased approximately with the same pace. In the 2000s the GDP volume went up, then in 2008–2009 it went down and since 2010 it has been growing again. The volume of greenhouse gas emissions in this period is almost identical to the GDP fluctuations, but much slower. In this situation it can be assumed that the environmental measures, equipment upgrade and structural shifts in the economy contributed to the enhancement of ecological situation in the 2000s. But the graph does not correspond to the ECK.

Figure 1. Dynamics of GDP and indicators of the environment pollution in Russia, % to 1990

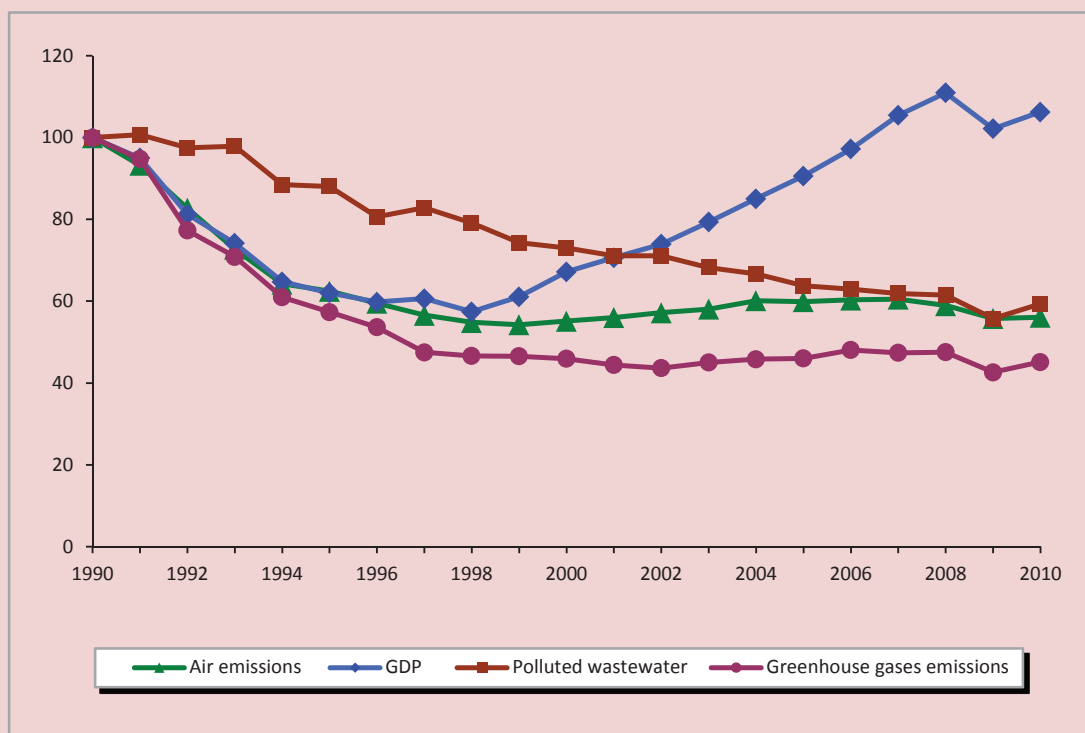
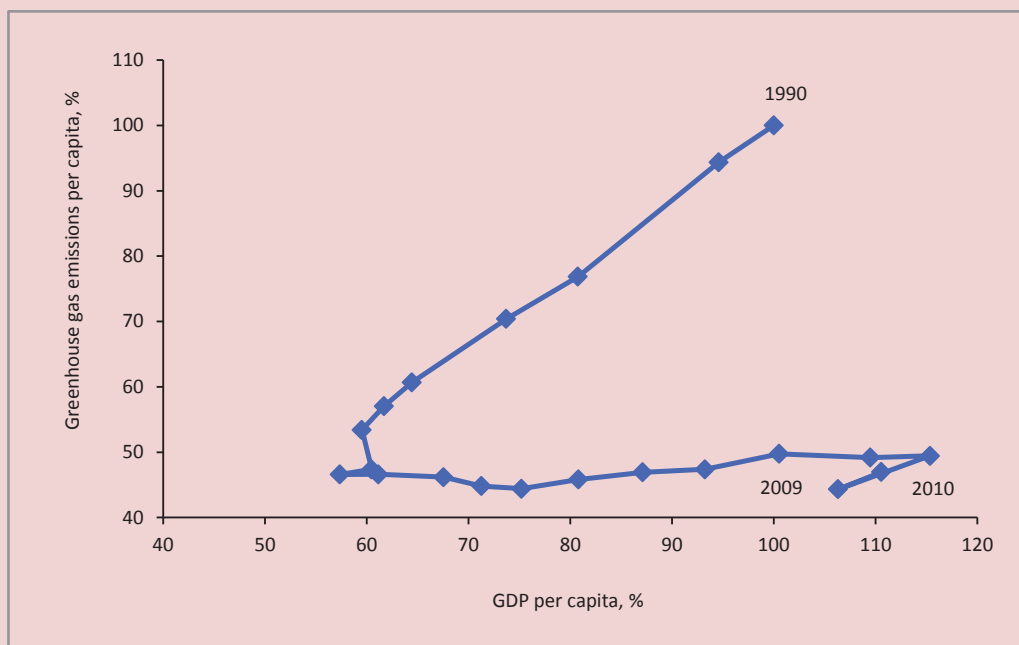


Figure 2. Changes in greenhouse gas emissions per capita, depending on the dynamics of Russia's GDP per capita, % to 1990



The calculations were made by means of functions in order to determine the effect of different factors (1). Unfortunately, the information on greenhouse gases for the regions is missing and the calculations were made only for the Russian Federation. According to the calculations, the investments impact in the air protection is insignificant. Apparently, the structural changes in the economy and modernization have the main positive influence. The changes take into account neutral environmental progress in the function (1) (with good statistical characteristics $R^2 = 0.99$, and $F = 838$):

$$E(t) = e^{0.536} \times X_1^{0.766}(t) \times e^{-0.049 \times t}(t), \quad (2)$$

where: $X_1(t)$ – GDP;

$E(t)$ is greenhouse gas emissions;

$\mu = 0.766$, $\eta = 0$.

The economical growth increased greenhouse gases emissions, but modernization and structural changes in the economy reduced them by 4.9% annually. As a result, in the 2000s the GDP growth exceeded the rates of greenhouse gas growth dramatically. To determine the modernization impact the calculations were carried out by means of functions (1) with the investments allocations into modernization. In the end the influence of investments on the atmospheric air protection turned out to be inconsiderable and the impact of modernization – meaningful (in case of good statistical characteristics: $R^2 = 0.85$, $F = 38.2$):

$$E(t) = e^{2.6} \times X_n^{0.304}(t) \times X_m^{-0.052}(t), \quad (3)$$

where: X_n – cumulative investments in new construction;

X_m – cumulative investments in modernization;
 $\mu = 0.304$, $\eta = 0$, $\nu = -0.052$.

As the result, the growth of cumulative investments in new construction by 1% increased emissions by 0.3%, and the rise of

cumulative investment in modernization by 1% reduced emissions by 0.05%.

EKC of Russian regions. As in the 1990s almost all Russian regions experienced an economic decline, accompanied by the decrease of anthropogenic load on the environment, time series of this period can not be described by the EKC. Therefore, the study covers the period of 2000–2011, when most regions of Russia had economic growth, providing different effects on an ecological index. The graph of dependence of the greenhouse gas emissions on GDP per capita (fig. 2), which distinguishes two periods, reveals it. In the 1990s the amount of emissions declined alongside with the GDP, and in the 2000s the GDP growth was followed by a slight increase in the greenhouse gas emission. Therefore, we can conclude that the EKC hypothesis, concerning greenhouse gas emissions, was not confirmed in the 2000–2011 economic growth period.

The analysis of the emissions dependence on stationary sources and economical development makes it possible to single out four main forms of connection: the economic growth is followed by the emissions (direct linear); the economy growth leads to emissions reduction (reverse linear); U-shaped or N-shaped forms of connection; an inverted U-shaped form (ECR).

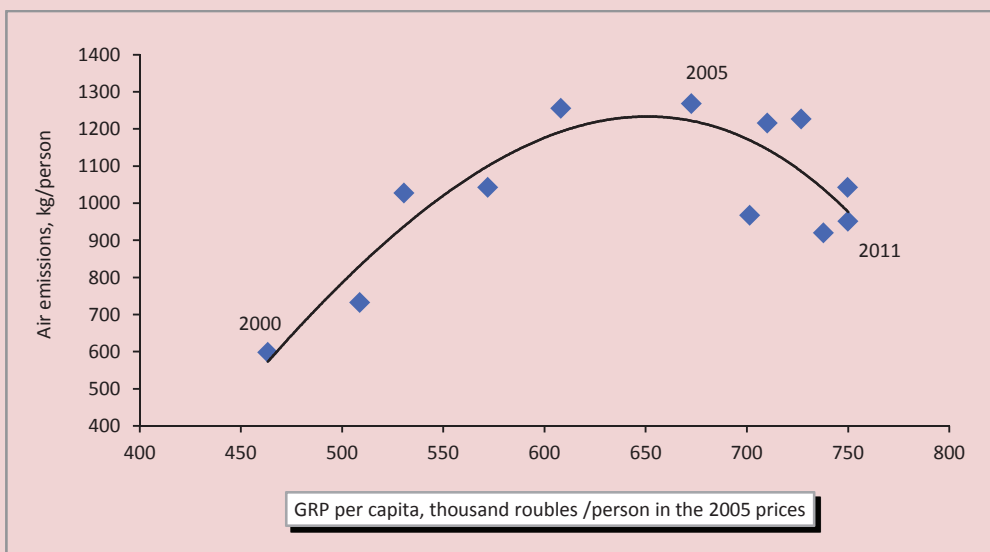
The EKC hypothesis on the emissions from stationary sources into the atmosphere can only correspond to 19 regions of the Russian Federation. The classical EKC is characteristic for Tyumen, Orenburg, Chelyabinsk, Leningrad, Novgorod, Saratov oblasts, Kamchatka, Perm and Khabarovsk krais, and Chukotka Okrug, the Altai and Udmurt republics. The maximum point for these regions was observed in the period of 2003–2005, with the average GRP per capita of more than 100 thousand rubles, or 8–12 thousand US dollars at purchasing power parity (PPP) being re. For the Republic of Altai and the Udmurt Republic the inflection point is achieved at lower income levels – 45.3 and 84.6 thousand rubles, respectively.

The highest levels are characteristic for the Tyumen Oblast where till 2005 the economy growth was accompanied by intensive emissions into the atmosphere; in 2006–2011 the level of pollution decreased by 25% while GDP per capita increased by 12% during this period. The inflection point corresponds to 672 thousand rubles per person (42.5 thousand dollars per person at PPP) and 1268.7 kg per person of polluting substances emissions into the atmosphere (fig. 3).

The preliminary graphs analysis of the Russian regions for a one-year period (“cross-section”) shows that the connection between economic growth and pollution is rather ambiguous. The maximum point for each region is different and, probably, for most of them it is not reached yet. The structure of the regions groups have changed in 2000 and 2010. The differentiation of environmental indicators went up, while the revenue level went down slightly [4]. The statistical analysis confirms these data: the emissions variation coefficient into the atmosphere increased from 1.25 in 2000 to 1.31 in 2010, and GRP per capita

decreased from 0.81 to 0.79. Thus, the trend, calculated for a later time period at higher levels of economical development, suggests that regions pass the same stage of development at higher levels of differentiation of environmental indicators. Thereafter, the EKC maximum point is shifting up and to the right. **The climate change and the regional economy.** The problem of global climate change is most relevant for such industries as agriculture. The study of the USA and Canada regions has shown that more Northern regions can increase crop yields improving climatic conditions and choosing more productive and heat-demanding crops and, at the same time, in the southern regions the conditions can worsen. The research of the current climate change was carried out on the agriculture of separate RF regions. The models to identify the impact of various factors, primarily of temperature and precipitation on the yield of various agricultural crops are constructed. The calculations by means of the data of separate regions of Northwestern Russia are performed. To assess this impact, the system description of the processes is prepared, and

Figure 3. Changes in emissions into the atmosphere per capita from stationary sources in the Tyumen Oblast in 2000–2011, depending on the growth of GRP per capita



the specific features of regional development are studied, the main factors, determining the change of agriculture indicators, particularly of crop yield, are singled out and described, factors and yields data are gathered and analyzed, indicators graphs to identify current dependencies are constructed.

To estimate the climate change impact on agriculture we used models, based on regression equations, where the yield in different regions is considered depending on the selected factors: climate, farming, soil conditions, socio-economic characteristics, a management level, a technological level and peculiarities of a particular culture. Yields equation by regions were built according to the time series for the same region, "cross-sections" – by regions for a one year period, according to panel data.

For regions linear and multiplicative functions were taken into account while calculating:

$$Y(t) = A \times t + B + C \times T^2(t) + \\ + D \times T(t) + E \times R^2(t) + F \times R(t) + \\ + G \times M(t) + H \times X(t) \quad (4)$$

$$Y(t) = A(t) \times (T_0^2 - T^2(t))^\mu \times \\ \times (R_0^2 - R^2(t))^\eta \times M^\nu(t) \times X^\sigma(t) \quad (5)$$

where: T_0 – optimum temperature,

T – deviation from the optimal temperature,

R_0 – optimal precipitation,

R – deviation from the optimal amount of precipitation,

M – volume of fertilizers in comparison to 1990,

X – socio-economic and other characteristics.

Parameters $\varepsilon_1 = \mu$, $\varepsilon_2 = \eta$, $\varepsilon_3 = \nu$ и $\varepsilon_4 = \sigma$ are factor elasticities. They indicate the change in the yield, with a relevant factor having risen by 1%. In the first case, the optimal parameters are defined in the course of calculations, in the second – in the course of preliminary graphs analysis and experts consultation.

Some climatic characteristics are taken into consideration. They are average temperature, sum of active temperatures and gross precipitation for different periods (for a year, for a season, between harvesting periods, from seeding to harvesting, for June, July and for the third decade of June). Since the time series are short and the number of factors must be minimal, one can use a hydrothermal factor for different periods, in practice there is the best connection with yield during the period from seeding to harvesting. The agro-technical indicators are the use of mineral and organic fertilizers per hectare of crops. The socio-economic parameters take into account a state of agriculture in the region (volume and dynamics of investments in agriculture), a level of economical development of the regions, dynamics of economical development of the regions (GRP in comparable prices) and some other features. The problem is to consider soil characteristics of the region. The soil-ecological index and other indicators are calculated for local territories and it is difficult to calculate an average one for the region as a whole. The impact of changes in the amplitude of temperature fluctuations has not been studied yet. Some information was obtained from the data book of the Federal State Statistics Service and data from various departments. In addition, the information, collected by the institutes of the RAS, was taken into account.

Russian Central and Northern regions, particularly the Northwestern Federal District regions, were expected to gain profit by analogy with the results, obtained for American regions. This hypothesis approbation has shown that for certain crops (grain) the profit is insignificant, and it is much less than the losses of the southern regions for the given cultures. For other crops warming leads to yields growth within 5–10%.

Conclusion. Time series analysis testifies that the EKC hypothesis of greenhouse gas emissions and pollutants, emitted from

stationary sources, for the majority of Russian regions is not proved. It is obvious that a significant part of the regions is still far from the EKC maximum point by main indicators of an environmental impact; and the potential economic growth can be accompanied by the increased environmental degradation. In the framework of the EKC model it can be argued that with the GRP growth the level of contamination decreases in highly developed regions and grows in inefficient regions. This conclusion on Russian regions coincides with the results of international research. However, if foreign studies have shown that recently the EKC level have reduced and shifted to the left in majority of developed and developing countries, but the picture is quite opposite for Russian regions. The economic growth is accompanied by higher levels of pollution, and the inflection point is achieved at a higher level of GRP. Thus, the curve level for Russian regions increases slightly and moves to the right.

According to the calculations, one can conclude that with continued warming the agricultural production does not rise automatically, but the expected warming creates potential for the growth with certain efforts being required to use it.

First of all it is necessary to increase financing of agricultural science. Yields boost, due to warming with traditional cultures preserving, is to be negligible, not exceeding 10%. The higher management level and transition to more modern technologies can benefit greatly. The positive influence is exerted by the change in the sown areas structure, the transition to late-grown and more productive varieties and to new, more heat-loving crops. It requires increasing investments in agricultural science. The regions adaptation to expected climate change and focus of the agricultural science on adaptation projects are required to take advantage of opportunities and minimize expected losses.

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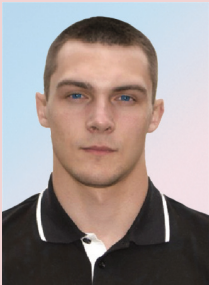
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UDC 336.143(470.12), LBC 65.261.3-18(2Rus-12)

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Sustainability as the basic principle of responsible budgetary policy



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Abstract. The author touches upon rather critical issues of management of the regional budget system sustainability. The prospect to studying this issue is confirmed at the highest level – by the RF President. The article indicates that the main components of the budgets financial sustainability concept are the following: the territory's self-sufficiency (independence), its solvency, income and expenditure balance.

The swot analysis of the public finances state in the Northwestern Federal District regions has revealed lowering independence of the territories, debt burden deterioration in the post-crisis period and the unsolved problem of income and expenses imbalance. The study shows the territories' capacity constraints to find additional financial resources, although the anti-crisis instruments of the budget process (regional reserve funds) are not used in full measure. The analysis has resulted in the development of directions to stimulate the regional budget system sustainability, such as the modernization model of fiscal federalism, strengthening and development of tax potential, improving the budget expenditures efficiency and encouraging the use of regional reserve funds potential. According to the author, the timeliness of these measures is to be achieved through continuous financial situation monitoring in the RF subjects.

Key words: Public finance, consolidated budget of the region, balance, financial sustainability, directions and methods to enhance the budgets' financial sustainability.

In modern conditions, characterized by high volatility of global commodity markets and increasing influence of globalization processes on the regional economy, the issues of management of territorial budgets' financial

sustainability are becoming critical. Their limited revenue opportunities, the state's increased social obligations, including the execution of the RF President's decrees of May 7, 2012, make this problem even more acute.

The interest of domestic and foreign scientists has increased substantially in the context of the 2008–2009 world crisis, which limited the enterprises' access to capital market. The result was a reduction in volumes of industrial production, while the budgets of all levels lost a considerable part of tax revenues.

In this regard, in the 2014–2016 Budget Policy Address to the RF Federal Assembly V.V. Putin identified the country's key challenge as “to ensure long-term sustainability and stability of the budget system as basic principles for unconditional fulfilment of all state obligations even in the conditions of weak external environment” [1].

Financial sustainability of the budget system is well studied, especially in the sphere of microeconomics. The financial and economic state of an economic entity indicates its efficiency and investment attractiveness.

Meso- and macroeconomics are characterized by a significant number of different approaches to define the concept, due to the growing interest in the study of financial budgets sustainability and the relatively small amount of time to develop a common approach.

So, the researchers B.A. Raizberg, A.G. Lobko, L.S. Lozovskaya and E.B. Starodubtsev equal categories “financial sustainability of the budget” to “financial sustainability of the economic entity”.

The scientists A.V. Grachev, L.V. Davydova, L. Pikman and A.S. Gromov consider this category from the point of view of balance sustainability and development sustainability. However, it must be seen in the dynamics, that is, by dividing by the time aspect. This approach is shared by such Russian scientists as T.V. Doronina, R.R. Akhmetov, S.M. Karataev, N.I. Yashina and others [15].

Systematization of the theoretical foundations of financial sustainability indicates the following components:

- territory's self-sufficiency (independence) to implement the full range of authorities;

- solvency, i.e. the ability to fulfil commitments at the expense of resources, available in current and long-term periods;

- revenue and expenditure balance under the influence of external and internal factors.

The methodological basis of this issue is rather vast, that is why the researchers can agree on the parameters number to determine the financial sustainability level and on the information base for their calculation. The following questions are in focus: Should a researcher be limited only to budget system indicators? Should the analysis be supplemented with the indicators of financial sustainability of individual enterprises or single industries branches or with the indicators of socio-economic development of the territory?

In our opinion, the calculation of the coefficients, used in budget analysis, is enough to determine the level of the territorial budget's financial sustainability. At the same time, the indicators of socio-economic development are useful for factor analysis of the changes in the development of administrative decisions to minimize risks to the budget's financial stability and to find ways of its improvement. It is worthwhile to consider the indicators of financial state of individual companies or industries, if the territorial budget system is heavily dependent on one source of budget revenue.

In the framework of formation of fiscal policy and budget indicators principles the researchers V.B. Iyashvili and M.E. Chichelev [5] point out to the fact that a good budget is not the one that provides the maximum amount of budget expenditures, but the one that contributes to improving living standards (comfortable life environment) of the community members by creating conditions to achieve the best possible result, as the citizens' financial security depends on the product volume, they produce [5]. Therefore, the amount of GRP can be an indicator of the territory's socio-economic development.

Due to objective and subjective conditions of economic environment the Russian regions have different levels of economic development. At the end of 2011, the differentiation of the Northwestern Federal district regions by GRP per capita was more than by 3 times (the maximum value was in the Komi Republic, the minimum – in the Pskov Oblast). This indicator was below the national average by 1.2–2.1 times in half of the regions, while in the Vologda Oblast it only amounted to 103.8% of the 2006 level in real terms for the analyzed period. This indicates stagnation of the regional economy and, consequently, its revenue opportunities (*tab. 1*).

The RF subjects' economic development, being a key factor of budgets' independence, has a significant impact on their financial sustainability. The analysis has showed that the territories' financial independence is reducing everywhere. It is reflected in the declining share of their tax and non-tax revenues. The most critical situation in the Pskov Oblast: its budget is set by half at the expense of uncompensated receipts. The development strategies of the Komi Republic and the Novgorod Oblast are also of concern, as the share of own revenues has decreased by more than 20% in these regions for 2006–2012 (*tab. 2*).

At the same time, one of the indicators of fiscal sustainability is annual revenue increase. Among the subjects of the Northwestern Federal district such growth has been reported in the Pskov and Leningrad oblasts for the analyzed period. In other regions the growth of own revenues has been unstable due to 2008–2009 crisis.

However, the most dynamically developing area of the Northwestern Federal district, the city of Saint Petersburg, has not increased its revenue in real terms for the same period. However, in the Murmansk Oblast, with the economic growth of 111%, the ratio of own revenues has increased by 23.8%. This discrepancy is partly due to the population growth in Saint Petersburg (109.8% to the 2006 level) and decline in the Murmansk Oblast (90.3% to the 2006 level). But the problem is that for 2006–2012 the capital of the Northwestern Federal district has created conditions for tax revenues which, in accordance with existing legislation, are to be transferred to the Federal budget (mainly, VAT and excise duties). The similar situation is observed also in the Kaliningrad, Leningrad, Arkhangelsk oblasts and the Republic of Karelia, where tax revenues, received into the Federal budget, have increased in real terms (*tab. 3*).

Table 1. Gross regional product per capita in the NWFD regions (in the 2011 prices, thousand rubles)

NWFD region	2006	2007	2008	2009	2010	2011	Change 2011 to 2006., %
Komi Republic	355.3	365.1	394.7	380.8	414.6	484.9	136.5
Saint-Petersburg	270.5	335.0	376.1	353.6	370.6	420.6	155.4
Arkhangelsk Oblast	262.8	303.0	290.8	300.7	321.3	361.0	137.4
Murmansk Oblast	294.9	332.6	331.3	290.8	310.8	329.0	111.6
Leningrad Oblast	243.7	259.9	283.9	291.8	303.9	326.5	134.0
Vologda Oblast	254.6	281.2	300.4	215.3	235.1	264.2	103.8
Kaliningrad Oblast	171.0	219.1	240.6	208.6	220.9	243.8	142.6
Novgorod Oblast	175.6	188.3	222.9	211.4	212.5	236.0	134.4
Republic Of Karelia	194.8	224.8	220.4	187.7	198.0	223.0	114.4
Pskov Oblast	111.7	124.5	132.4	125.6	136.5	152.9	136.8
NWFD	249.1	288.8	312.4	289.7	307.3	345.3	138.6
<i>RF</i>	243.9	278.7	298.4	258.7	279.9	316.6	129.8

Source: data of the Federal state statistics service (<http://www.gks.ru>).

Table 2. Own revenues of the consolidated budgets of the NWF D regions (per capita)

NWF D region	2006		2008		2010		2012		Change 2011 to 2006, %		
	Thousand rubles	Share, %*	Thousand rubles	Share, %*	Thousand rubles	Share, %*	Thousand rubles	Share, %*	Thousand rubles	Growth rate, %	Share, p.p.
Saint-Petersburg	67.0	87	81.8	88	66.7	85	67.6	82	0.6	100.9	-5.0
Komi Republic	50.0	97	55.0	91	51.2	88	64.5	76	14.5	128.9	-21.0
Murmansk Oblast	46.1	89	55.4	74	58.7	83	57.1	74	11.0	123.8	-15.0
Leningrad Oblast	31.4	87	40.8	85	40.8	91	45.8	82	14.4	145.9	-5.0
Arkhangelsk Oblast	26.5	77	38.1	72	35.7	71	43.5	71	17.0	164.5	-6.0
Republic Of Karelia	29.1	80	36.2	70	38.3	78	37.7	63	8.6	129.3	-17.0
Vologda Oblast	38.1	87	50.3	93	33.6	88	36.6	72	-1.5	96.1	-15.0
Novgorod Oblast	24.0	82	33.1	78	30.7	85	36.0	60	12.0	150.4	-22.0
Kaliningrad Oblast	28.5	77	34.8	67	32.0	73	35.6	62	7.1	125.0	-15.0
Pskov Oblast	17.7	70	22.0	67	22.4	68	24.9	55	7.2	141.0	-15.0
NWF D	45.5	86	56.2	83	49.3	83	52.9	76	7.4	116.3	-10.0
<i>RF</i>	36.9	82	46.1	79	39.4	76	44.9	73	8.0	121.6	-9.0

* The share of own revenues in total revenues of the RF subjects.
Source: calculated on the basis of the reports on execution of RF subjects' budgets and local budgets. Available at: <http://www.roskazna.ru/reports/mb.html>

Table 3. Dynamics of taxes, duties and other mandatory payments, received into the Federal budget, on the territory of NWF D regions (in the 2012 prices)

NWF D region	2006		2008		2010		2012		Change, 2012 to 2006		
	Billion rubles	Share, %	Billion rubles	Share, %	Billion rubles	Share, %	Billion rubles	Share, %	Billion rubles	Growth rate, %	Share, p.p
Kaliningrad Oblast	18.5	44	26.8	49	22.6	53	48.5	63	30.0	262.2	19.0
Komi Republic	86.7	67	90.2	65	76.2	53	64.9	56	-21.8	74.8	-11.0
Leningrad Oblast	39.4	44	42.6	41	36.0	13	59.2	43	19.8	150.4	-1.0
Saint-Petersburg	141.7	36	131.5	29	111.1	29	167.0	37	25.3	117.9	1.0
Arkhangelsk Oblast	5.8	18	2.9	9	2.5	17	7.5	19	1.7	130.0	0.9
Vologda Oblast	15.6	27	29.1	34	24.5	14	6.7	15	-8.9	42.9	-12.0
Republic Of Karelia	3.1	15	3.3	14	2.8	9	3.3	15	0.2	108.0	0.0
Pskov Oblast	2.4	19	1.5	11	1.2	18	1.9	13	-0.5	80.0	-6.0
Murmansk Oblast	13.2	28	12.3	23	10.4	42	5.7	13	-7.5	43.1	-15.0
Novgorod Oblast	3.2	19	5.6	23	4.8	19	2.8	13	-0.4	86.8	-6.0
NWF D	329.2	32	345.9	30	292.1	33	406.0	39	76.8	123.3	7.0

Source: calculated on the basis of the report on accrue taxes, duties and other obligatory payments to the budget system of the Russian Federation, no.1-NM of Russian federal tax service.

The reduction in the share of the regions' own financial capacity, the policy of revenues centralization in the budget system at the federal level, accompanied by a regular review of expenditure obligations of lower management levels (an increase of delegated expenditures) [3, 10], has led to that the country's average real deficit has not fall below 30% after the crisis. Moreover, this indicator was above the 80% level in Arkhangelsk (2009), Pskov (2009, 2011 and 2012) and Kaliningrad (2009). The level of more than 15% is already evident of budget systems' instability [15], in

2012 it was recorded in Murmansk, Vologda, Arkhangelsk, Novgorod, Kaliningrad, Pskov oblasts, republics of Komi and Karelia (*tab. 4*).

What is more, the problem of imbalanced consolidated budget is not solved in half of the Northwestern Federal district regions: the revenue growth rates are lagging behind expenditures growth rates. Expenditure obligations are not supported by corresponding revenues. In 2006–2012 this situation was indicated in Murmansk, Pskov, Leningrad, Kaliningrad oblasts, republics of Karelia and Komi (*tab. 5*).

Table 4. Real deficit of consolidated budgets in the NWFD regions (in % of own revenue)

NWFD region	2006	2007	2008	2009	2010	2011	2012	Change 2012 to 2006, p.p.
Saint-Petersburg	-0.1	-8.2	-23.8	-31.1	-27.1	-25.0	-14.7	-14.7
Leningrad Oblast	-10.8	-14.3	-20.8	-27.6	-12.5	-14.9	-14.8	-3.9
Komi Republic	-3.6	-11.7	-15.4	-32.0	-17.5	-22.9	-20.9	-17.3
Murmansk Oblast	-26.9	-23.4	-40.5	-47.0	-19.5	-21.5	-32.1	-5.3
Vologda Oblast	-16.3	-18.8	-10.3	-67.1	-47.5	-45.2	-32.4	-16.1
Arkhangelsk Oblast	-35.8	-28.5	-56.7	-88.1	-56.5	-64.8	-34.7	1.1
Novgorod Oblast	-31.8	-31.3	-41.5	-57.1	-53.0	-36.7	-46.7	-15.0
Republic of Karelia	-39.5	-51.9	-53.8	-72.6	-46.8	-38.5	-47.6	-8.2
Kaliningrad Oblast	-33.4	86.7	-49.6	-79.9	-56.6	-64.5	-48.8	-15.4
Pskov Oblast	-33.8	-41.4	-52.4	-80.5	-72.3	-82.9	-84.7	-50.9
NWFD	-10.0	-15.6	-28.4	-43.2	-31.4	-30.7	-24.2	-14.2
<i>RF</i>	-7.9	-17.5	-27.2	-47.4	-33.3	-31.8	-30.7	-22.8

Source: calculated on the basis of the reports on execution of RF subjects' budgets and local budgets. Available at: <http://www.roskazna.ru/reports/mb.html>

Table 5. Ratio of revenues and expenditures growth rates of consolidated budgets in the NWFD regions

NWFD region	2007	2008	2009	2010	2011	2012
Murmansk Oblast	1.03	1.23	0.95	1.11	0.97	0.89
Pskov Oblast	0.95	1.45	0.94	1.01	1.01	0.91
Republic of Karelia	0.92	1.50	0.90	1.11	1.01	0.94
Leningrad Oblast	0.97	1.16	0.92	1.11	1.00	0.97
Komi Republic	0.93	1.11	0.99	1.04	0.96	0.99
Kaliningrad Oblast	1.00	1.37	1.04	0.87	1.08	0.99
Saint-Petersburg	0.92	1.03	1.03	0.99	1.02	1.00
Arkhangelsk Oblast	1.06	1.19	0.96	1.13	0.92	1.01
Novgorod Oblast	1.00	1.25	0.98	0.93	1.16	1.04
Vologda Oblast	0.98	1.19	0.86	1.01	1.00	1.08

Source: calculated on the basis of the reports on execution of RF subjects' budgets and local budgets. Available at: <http://www.roskazna.ru/reports/mb.html>

However, in the mid-term the situation can not only retain, but also worsen due to the necessity to execute the RF President's decrees of May 7, 2012 [11]. Only in the Vologda Oblast the lack of funds for their implementation in 2013–2016 is 17.7 billion rubles (9.2% of own revenues), with the planned annual deficit being 3.9–10.3% of tax and non-tax revenues into the consolidated budget of the region.

The execution of adverse budgets has led to covering the missing amount of the resources at the expense of borrowed funds [13]. As a result, the entire post-crisis period is characterized by the growth of the NWFD subjects' debt load. In relative terms, it has grown in Saint Petersburg (by 62 times), Pskov (by almost 40 times), Vologda (by 17 times) and Murmansk (by 12 times) oblasts most noticeably. In relation to the consolidated budgets' own revenues the debt load has exceeded 50% in Vologda, Kaliningrad, Novgorod oblasts and the Republic of Karelia (*tab. 6*).

The value, greater than 100% is critical for financial sustainability and it indicates the territory's insolvency [16]. So, as of October 2013, the public debt of the Vologda Oblast has exceeded a threshold level. It is obvious that the

trend of its debt burden growth will be reversed neither in 2014, nor in 2015. However, the cost of public debt management, which in 2012 reached 2% of the region's total expenditures, presupposes spending cuts in other budget items, including those of social orientation. It is the factor of social tensions growth and the reason of the failure to achieve the targets and indicators of socio-economic development.

The trends, observed in the development of the NWFD regions, determine less sustainable budgets in Vologda, Murmansk, Pskov oblasts, Republic of Karelia. In other subjects of the district the financial situation also deteriorated in the post-crisis period.

However, the significant obstacle to solve this problem is legislation. It, regulating the budget process of subjects and municipal entities in the Russian Federation, limits the regional authorities to increase financial resources in the territory.

According to the RF Budget Code, the regional socio-economic system can accumulate additional funds to finance its own authorities due to variations in the federal established rates of property tax at the regional (corporate property tax, transport tax) and

Table 6. Debt load of the NWFD regions

NWFD region	2008		2009		2010		2011		2012		Change 2012 to 2008, p.p.
	Billion rubles	%*	Billion rubles	%*	Billion rubles	%*	Billion rubles	%*	Billion rubles	%*	
Vologda Oblast	1.8	3.7	11.0	37.5	19.0	50.6	26.9	63.9	30.9	70.5	66.8
Kaliningrad Oblast	7.5	29.5	12.0	52.6	17.9	64.9	21.6	69.7	21.5	63.8	34.2
Republic of Karelia	4.1	22.2	7.4	42.1	10.2	44.8	9.7	35.6	12.5	51.9	29.6
Novgorod Oblast	2.8	16.4	4.7	28.2	8.9	49.2	10.0	46.4	11.5	50.9	34.5
Pskov Oblast	0.2	1.7	0.4	3.5	1.8	12.6	5.3	32.8	8.0	48.3	46.7
Arkhangelsk Oblast	5.4	14.7	11.1	35.7	15.6	38.4	20.6	47.2	24.7	46.9	32.2
Murmansk Oblast	0.8	2.4	7.3	21.0	9.6	22.2	6.0	12.6	10.2	22.6	20.2
Komi Republic	3.2	8.0	7.1	19.4	6.8	15.8	9.3	18.4	12.4	21.6	13.6
Leningrad Oblast	5.8	10.7	6.3	11.5	6.5	10.2	6.6	9.1	8.0	10.0	-0.7
Saint-Petersburg	0.3	0.1	1.8	0.7	6.6	2.2	8.5	2.5	21.3	6.4	6.2
NWFD, billion rubles	31.5	5.3	69.2	13.3	102.7	16.6	124.6	17.6	161.0	22.3	17
<i>RF</i> , billion rubles	599.6	11.8	1024.5	23.2	1265.5	24.4	1387.3	22.8	1596.8	24.9	13.1

* Ratio of the volume of state and municipal debts to the own revenues of the RF subject's consolidated budget.
Source: calculated according to the data of the Ministry of Finance of the Russian Federation. Available at: <http://www.minfin.ru/ru/>

local (property tax, land tax) levels, as well as due to the change of the taxation elements of special tax regimes. However, the share of the mentioned taxes in the consolidated budgets of the Northwestern Federal district subjects was not higher than 19% in 2006–2012. While the share of sub-federal taxes decreased in Kaliningrad, Pskov, Murmansk and Arkhangelsk oblasts, republics of Komi and Karelia (*tab. 7*).

Moreover, to accumulate additional financial resources in the territorial budget systems is possible by increasing the federal taxes base (excise duties and mineral extraction tax, personal income tax) and changing single items of taxation (income tax). The regional authorities can boost the budget revenue by raising the use efficiency of state and municipal property.

The uncompensated receipts from the Federal budget (grants and subsidies), from physical and legal persons, international organizations and governments of foreign states are only indirectly influenced by the public authorities, except for interbudgetary transfers, evaluating results of their activities (*figure*).

However, the experience of budget federalism construction in developed countries, such as Germany and the USA, shows that the distribution of revenues from the key income producing taxes (total taxes in Germany account for 70% of the tax revenues of the country's consolidated budget, in USA – about 75%) among all budget system levels is a more progressive mechanism, ensuring the revenue sustainability at all levels of authorities [6]. Such an approach is typical of other federal states, such as Australia and Austria. The distribution of tax payments stimulates each government level to create conditions, ensuring economic growth by means of additional production factors that results in tax potential development and additional financial resources for the authorities [14].

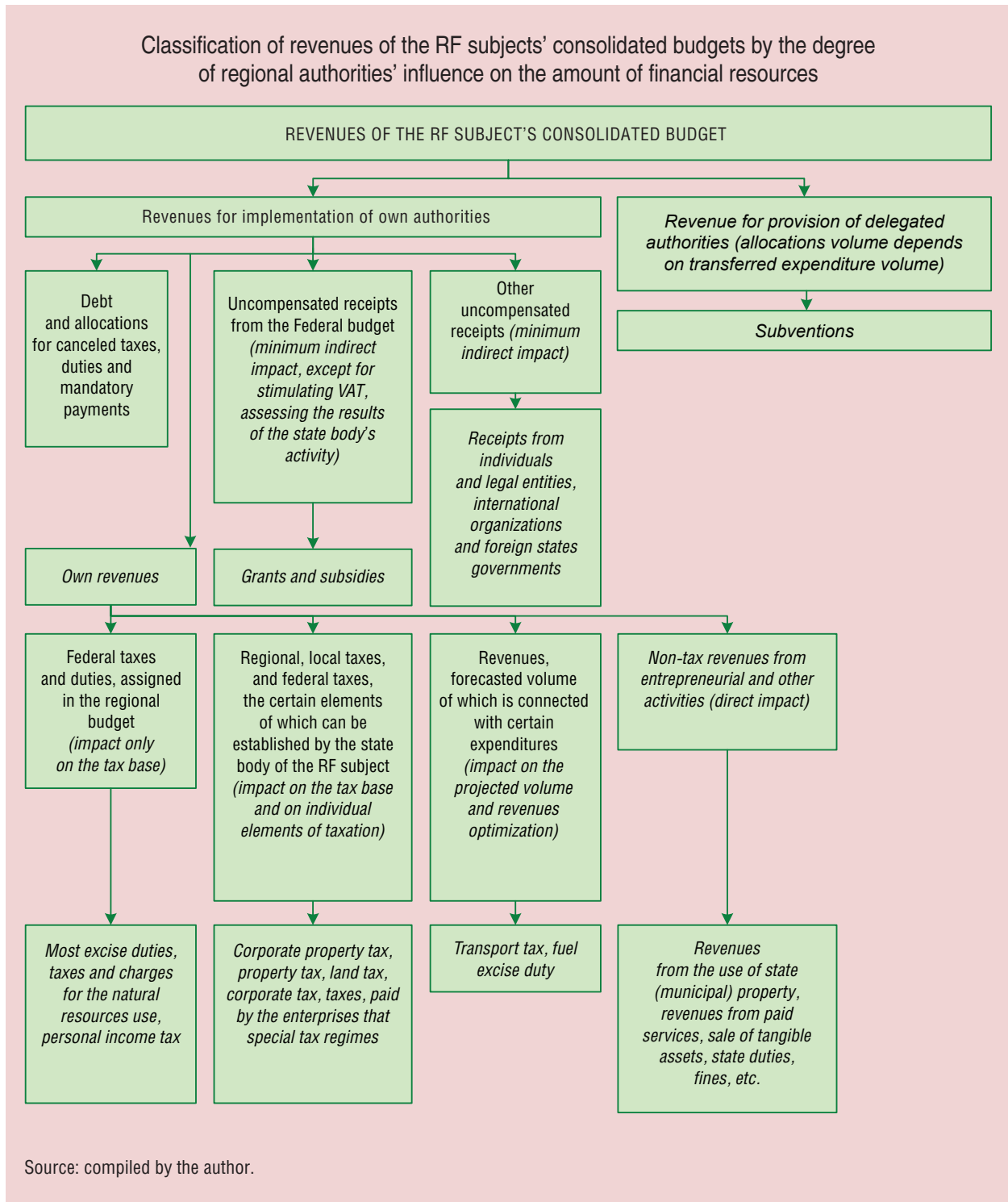
The analysis of the RF budgetary legislation has led to systematization of the used and actively implemented methods, aimed at improving the financial sustainability of territorial budget systems (*tab. 8*).

In conditions of increasing globalization, special attention should be given to such tool of increasing budgets' financial sustainability as the use of regional reserve funds [8].

Table 7. Share of regional and local taxes in the consolidated budgets of the NWFD regions, %

NWFD region	2006	2007	2008	2009	2010	2011	2012	Change 2012 to 2006, p.p.
Vologda Oblast	7.5	8.6	7.0	16.4	11.8	13.5	18.6	11.1
Leningrad Oblast	16.8	14.8	14.4	17.1	15.7	16.3	17.3	0.5
Kaliningrad Oblast	18.8	19.1	19.7	23.9	19.8	16.3	17.1	-1.7
Novgorod Oblast	13.7	13.3	12.5	14.5	15.4	12.2	14.0	0.3
Saint-Petersburg	11.9	11.2	10.8	13.4	11.8	10.6	12.6	0.7
Pskov Oblast	13.9	11.2	12.1	13.3	12.1	9.9	11.5	-2.4
Komi Republic	13.5	14.3	14.0	18.2	16.2	11.0	11.2	-2.3
Republic of Karelia	16.4	15.3	14.2	19.6	13.8	9.3	10.9	-5.5
Murmansk Oblast	9.8	8.2	9.7	10.8	8.4	7.5	9.1	-0.7
Arkhangelsk Oblast	10.4	7.0	5.1	8.4	6.4	8.9	7.7	-2.7
NWFD	12.1	11.9	11.5	15.4	13.3	12.0	13.6	1.5
<i>RF</i>	11.1	10.9	10.8	14.4	13.0	12.3	13.5	2.4

Source: calculated on the basis of the reports on execution of RF subjects' budgets and local budgets. Available at: <http://www.roskazna.ru/reports/mb.html>



In fact, these funds should serve as a tool for financial and economic policy of the region, promote its balance, smooth adverse fluctuations in budget revenues, retain and redistribute them in time, i.e. maintain the budget's financial stability in an acceptable range.

The reserve funds functioning in a separate administrative-territorial unit is widespread in world practice, for example, Alaska Permanent Fund (USA), the Permanent Wyoming Mineral Trust Fund (USA), Alberta Heritage Savings Trust Fund (Canada) [8].

Table 8. Methods to increase the financial sustainability level of territorial budget systems

Directions	Methods
Boosting management efficiency of sub-national budgets revenues	Implementation of scenario approach when developing budgets. Assessment of revenues shortages due to tax benefits provision. Variation of single items of taxation, leading to accumulation of additional revenues. Tax collection from defaulters, reduction and liquidation of the debt by its restructuring. Accumulation of non-tax revenues.
Management of medium-and-short-term budget planning	Extending strategic planning. Monitoring requirements of specific types and volumes of state and municipal services. Introduction of medium-term contracts.
Implementation of countercyclical fiscal policy	When drawing up the budget, it would be better to follow conservative scenarios of a revenue base and to use additional revenues in two directions: a) creation of regional reserve funds; b) decline in debt burden.
Optimization of sub-federal budgets' expenditures	Management of the budget result-oriented process: a) increase in efficiency of the use of register of expense obligations; b) separate planning of the existing and assumed obligations that are not considered to be long-term. Improving the management system of state-financed investment projects. Improving the targeting of measures of social support, provided to the population. Tightening the regime of budgetary funds' economy in the period of worsening economic conditions.
Management of public (municipal) debt	Annual analysis of the volume and composition of the debt, the impact on overall solvency. Evaluation of the budget's debt capacity. Refinancing of the current debt in order to optimize the debt portfolio structure. Ensuring regular payments on servicing and repayment of the debt. Restructuring of overdue accounts payable. Providing guarantees in the case of corresponding provision.
Source: compiled by the author	

However, until now this tool is not fully used in the RF regions. The reason for this is the lack of profitable opportunities to finance expenditure obligations, resulting in scarcity of territorial budget systems, which, even with uncompensated receipts from the federal center, reached 23% (in the Vologda Oblast in 2009) against its own revenues in crisis and post-crisis years.

According to statistics, in 2012 the reserve funds were established in 56 regions of the Russian Federation. Thus, in accordance with the Decree of the Ministry of Finance of the Russian Federation "On the Order of Monitoring and Quality Assessment of Regional Finances Management", one of the indicators, characterizing the quality of budget execution, is "the share of the reserve fund of the RF subject in the volume of budget expenditure of the RF subject" [10]. According to the analysis, this indicator in any of the RF subjects has not

exceeded 0.07% for 2006–2012. Moreover, in Leningrad and Murmansk oblasts the share of reserved funds in the total volume of budget expenditures has decreased, which indicates a reduction in the role of regional reserve funds to maintain the balance and sustainability of territorial budget systems.

The analysis has identified the following key directions to ensure budgets' balance, enhance their sustainability and reduce RF subjects' differentiation by their budget sufficiency:

- 1) modernizing a fiscal federalism model in order to ensure the growth of regional budgets' own revenues on the basis of enhancing tax and non-tax sources;
- 2) strengthening and developing the tax potential, based on the GRP stable growth;
- 3) increasing the effectiveness and level of budget expenditures planning;
- 4) maintaining the "excess profit".

The continuous monitoring of financial situation in the regions and municipalities will contribute to timely adoption of measures to manage sub-federal budgets sustainability. The sustainable budget replenishment will

eventually create conditions for solving both current and long-term state tasks at the expense of full resource provision of long-term programs of social-economic development of territories.

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The assessment of the regional tourism infrastructure development



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Abstract. The Russian Federation has a high potential for tourism, but, according to the World Economic Forum, it ranks only 63rd in the world in the rating of travel and tourism sector competitiveness in 2013. The obstacle to tourism development in the country and its regions is still an underdeveloped tourist infrastructure, the slow pace of development and improvement of its basic elements. The article discloses the tourist infrastructure concept in the region, defines its structure, summarizes methodological approaches to its assessment and reveals the advantages and disadvantages of the considered methods. It presents the author's method to estimate the regional tourism infrastructure development that has been approbated by the data of the Northwestern Federal District. The research has resulted in the regions' differentiation by the following development levels: high, above average, average, below average. The evaluation results have helped to indicate the key problems, hindering the regional tourist infrastructure development, and to formulate the basic directions of its improvement. The author presents the matrix of tourism development prospects in the Northwestern Federal District regions, based on the portfolio analysis method. Thus, the most important condition for the tourism development is to achieve optimal levels of infrastructure provision in the region; and the regional economic policy in the sphere of tourism should focus on tourist infrastructure development.

Key words: Regional tourist infrastructure, method, tourism development issues, Northwestern Federal District.

Nowadays the tourism development issues are in focus of the regional economy, as this industry is highly profitable and dynamically developing. The Northwestern Federal district (NWFd) is profitably located due to unique climatic conditions and presence of the largest cultural heritage objects [9].

The inbound tourist flow in the district amounted to more than 11.5 million visitors in 2011. The leaders in the tourist flow volume have recently been Saint Petersburg, Leningrad and Vologda oblasts. Their share accounts for about 80% of the total inbound flow in the Northwestern Federal District (according to

the 2011 data). Other regions are lagging behind significantly (*fig. 1*). However, the growing volume of tourist services in the Pskov Oblast and the Komi Republic reveal active tourism development there in recent years (*fig. 2*).

In the period under review (2007–2012) the tourism of the Vologda Oblast has developed significantly: the tourism revenues have been growing, the share of this industry in the regional GRP has been increasing. In 2012 the enterprises of tourism sphere and related industries assigned 225.5 million rubles to consolidated budget of the Vologda Oblast (*fig. 3*). For 2007–2012 the tourism revenues per capita had grown by 80% and reached 10811 rubles in 2012 [4]. The tourism role in the regional economy should be specially emphasized, as the share of industry in the gross regional product has increased by 1.2 percentage points to 4.2%.

The regional tourism development is closely connected with tourist infrastructure, which either acts as an obstacle for the industry development, or determines its positive dynamics. However, for most NWFD regions

the infrastructure problems cause decrease in the territory's competitive advantages in the tourist services market.

In this regard, it is important to find the approach of integrated assessment of the region's tourist infrastructure and develop the directions of its improvement.

The detailed study of the regional tourist infrastructure requires clarifying its definition, structure and problems, hindering its development.

The tourist infrastructure concept is not new but the scientific literature lacks its common interpretation. The ambiguity and vagueness of the concept "tourist infrastructure" is caused by its insufficient attribution to certain types of economic activity and uncertain range of tourist infrastructure objects.

One should agree with D.F. Vaselikh's definition of regional tourist infrastructure. According to him, it is "a combination of material objects, which are the carriers of various tangible and intangible properties that ensure the highest possible quantitative and qualita-

Figure 1. Tourist flow in the regions of the Northwestern Federal District in 2011

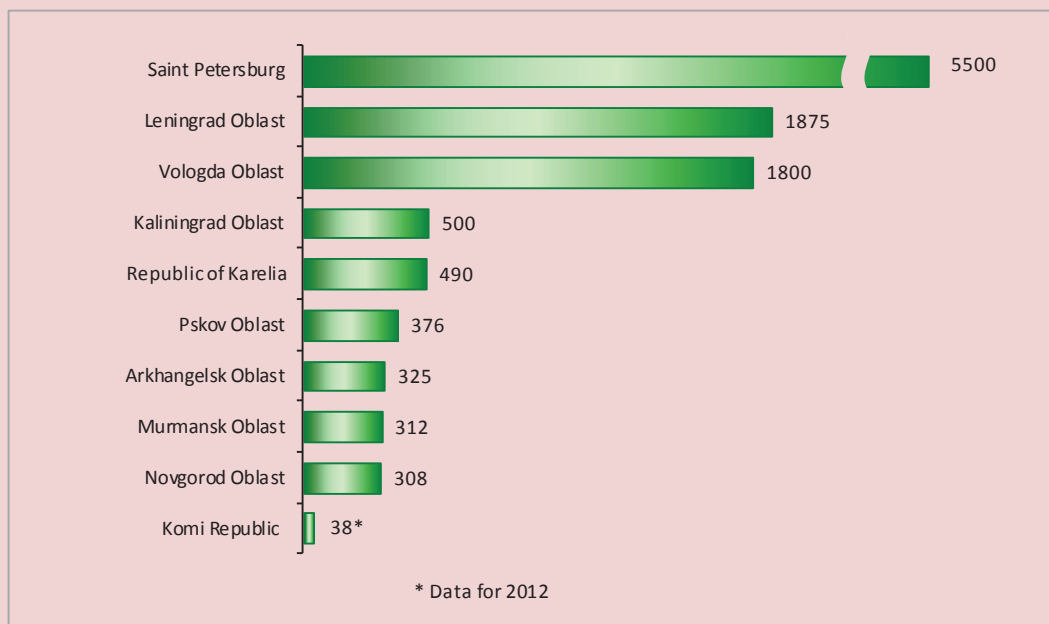


Figure 2. Tourist services volume in 2011

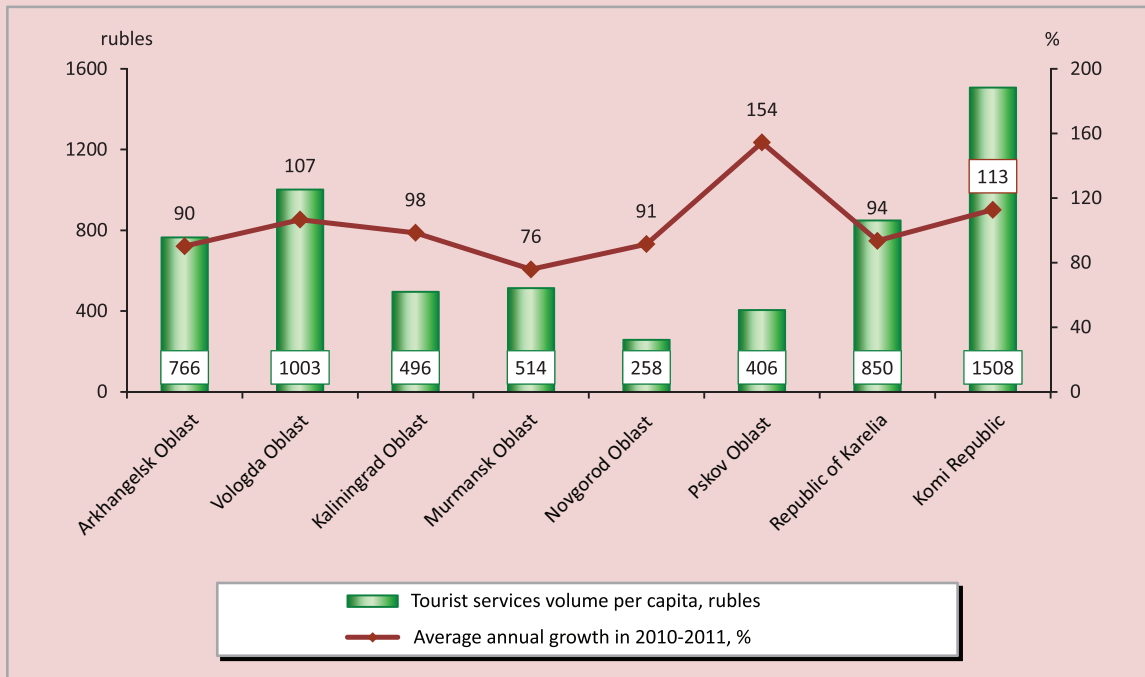
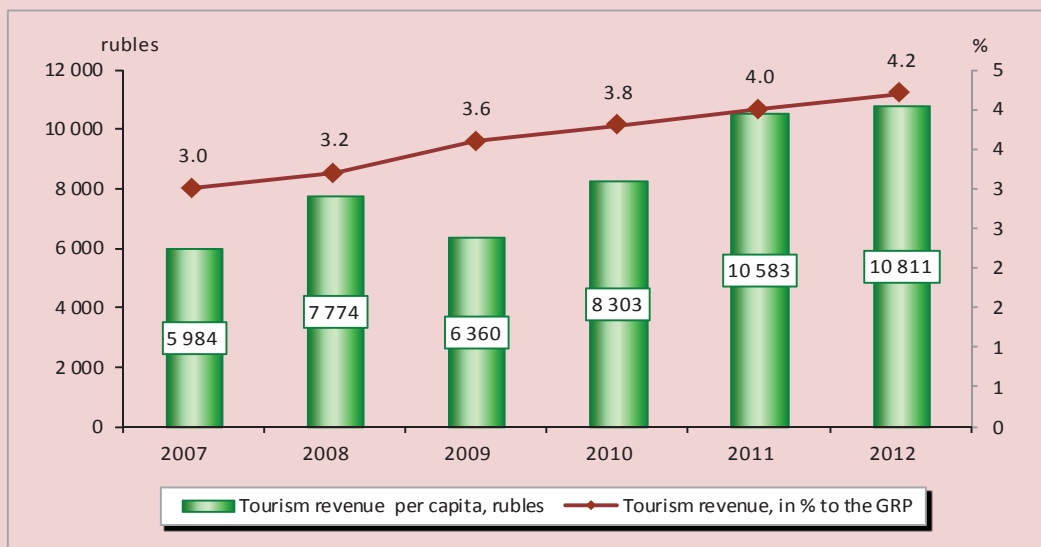


Figure 3. Total tourism revenue in the Vologda Oblast in 2007–2012, thousand people

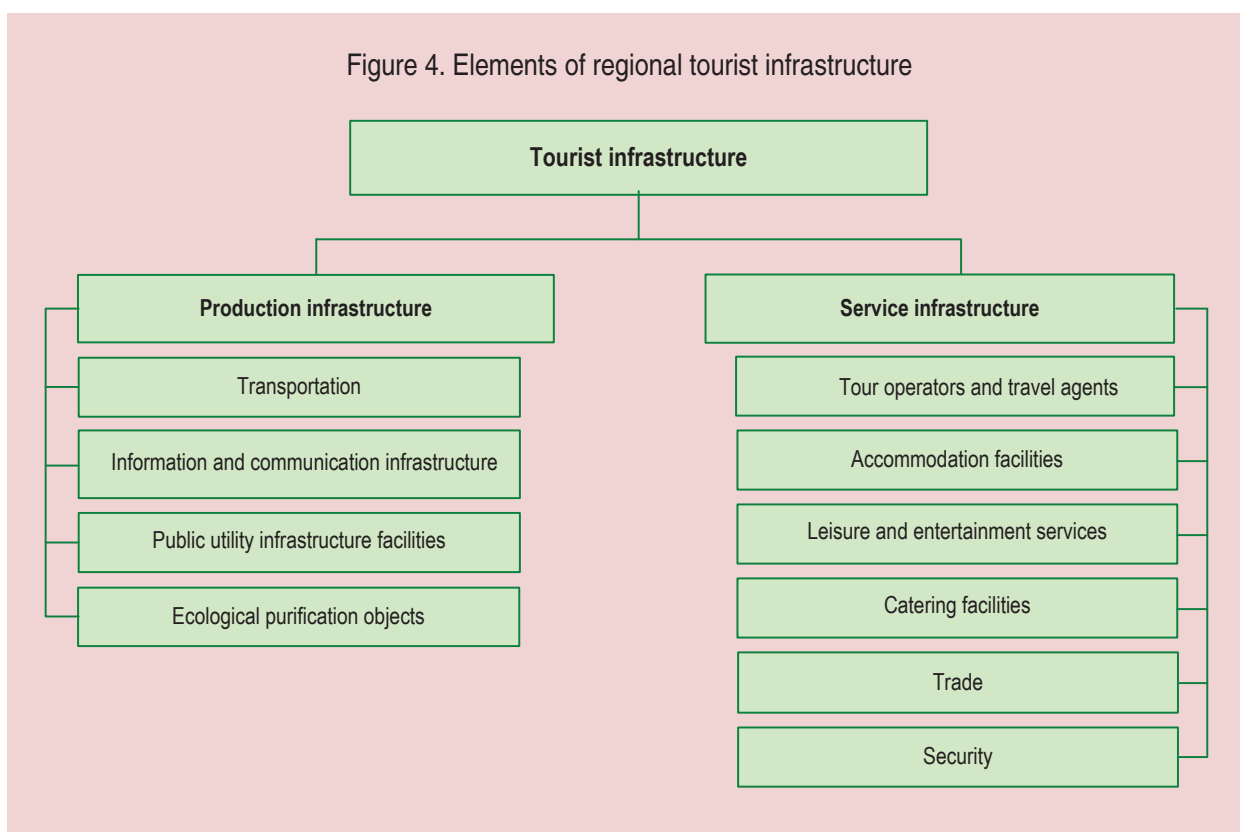


tive implementation of the tourists’ objectives in certain spatial-temporal parameters (in a particular place at particular time)” [3].

The results of theoretical and methodological analysis can determine the composition of the regional tourist infrastructure. It is a set of enterprises that create conditions to meet the

tourism needs, i.e. production infrastructure, and enterprises that directly meet different needs of tourists, i.e. services infrastructure (fig. 4). Therefore, the comprehensive assessment of tourist infrastructure development should be based on a thorough, coherent analysis of its elements [4].

Figure 4. Elements of regional tourist infrastructure



There are the authors' methods to directly assess tourist infrastructure development (for example, methods of V.S. Bogolyubov, I.G. Limonina, O.B. Evreinov, A.V. Kuchumov and others). Figuratively, these techniques can be divided into two approaches.

According to the first approach (I.G. Limonina, A.V. Kuchumov), the development of regional tourist infrastructure is evaluated through a combination of its elements. These methods single out "weak points" in the tourist infrastructure development in the territorial aspect, as well as provide an opportunity to conduct the comprehensive economic-geographical study of tourist infrastructure development in general, without reducing the significance of its separate elements. However, these methods have some disadvantages, as they do not clearly define the indicators system importance within each group of infrastructure elements, describing the current state of tourist infrastructure better. At the same time, some methods have incomplete composition.

The second approach representatives (V.S. Bogolyubov, O.B. Evreinov) estimate the regional tourist infrastructure through the analysis of its objects. The proposed model is very useful both for the annual and operational planning at tourist infrastructure enterprises and strategic business planning. However, the disadvantages are the following: the current system of statistical indicators can be appropriated at the regional level.

Summarizing the stated above, we can conclude that the most complete and objective method of tourist infrastructure estimation is that one, which is based on the existing tools and takes into account the official statistics indicators. In addition, this method can be supplemented by the qualitative indicators analysis of tourism infrastructure development, obtained by expert assessments and based on the survey results, conducted among tourists and enterprises of the tourism industry.

The method basis is the index of regional tourist infrastructure, quantitatively chara-

cterizing the level of its development and it is an arithmetic average of ten indicators indices (fig. 5). These blocks reflect the state of structural elements of the tourist infrastructure in the region.

According to Figure 6, at the first stage of calculation of a regional tourism infrastructure index the various indicators are presented in the form of normalized data when the real values are compared with the best in the sample.

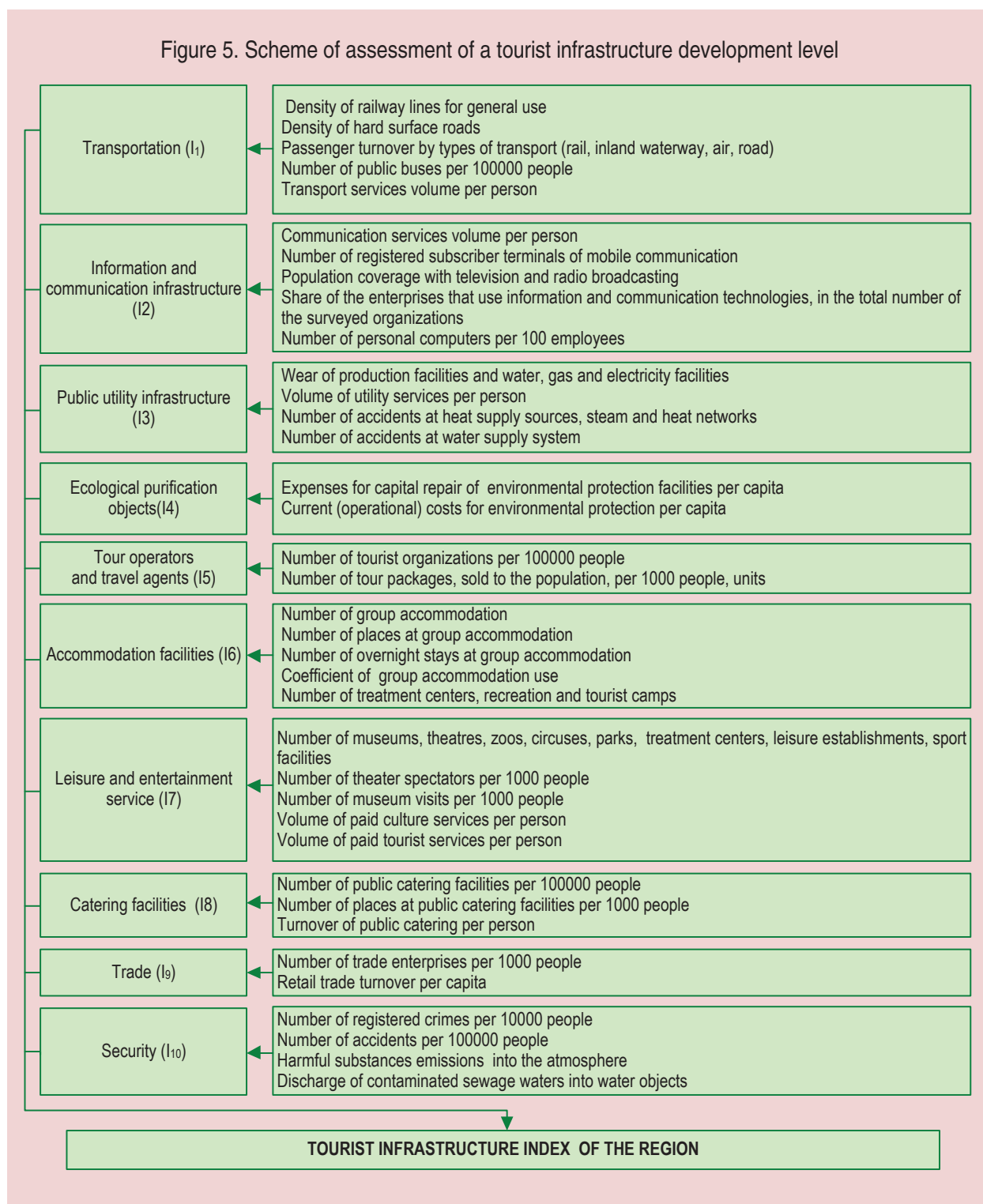
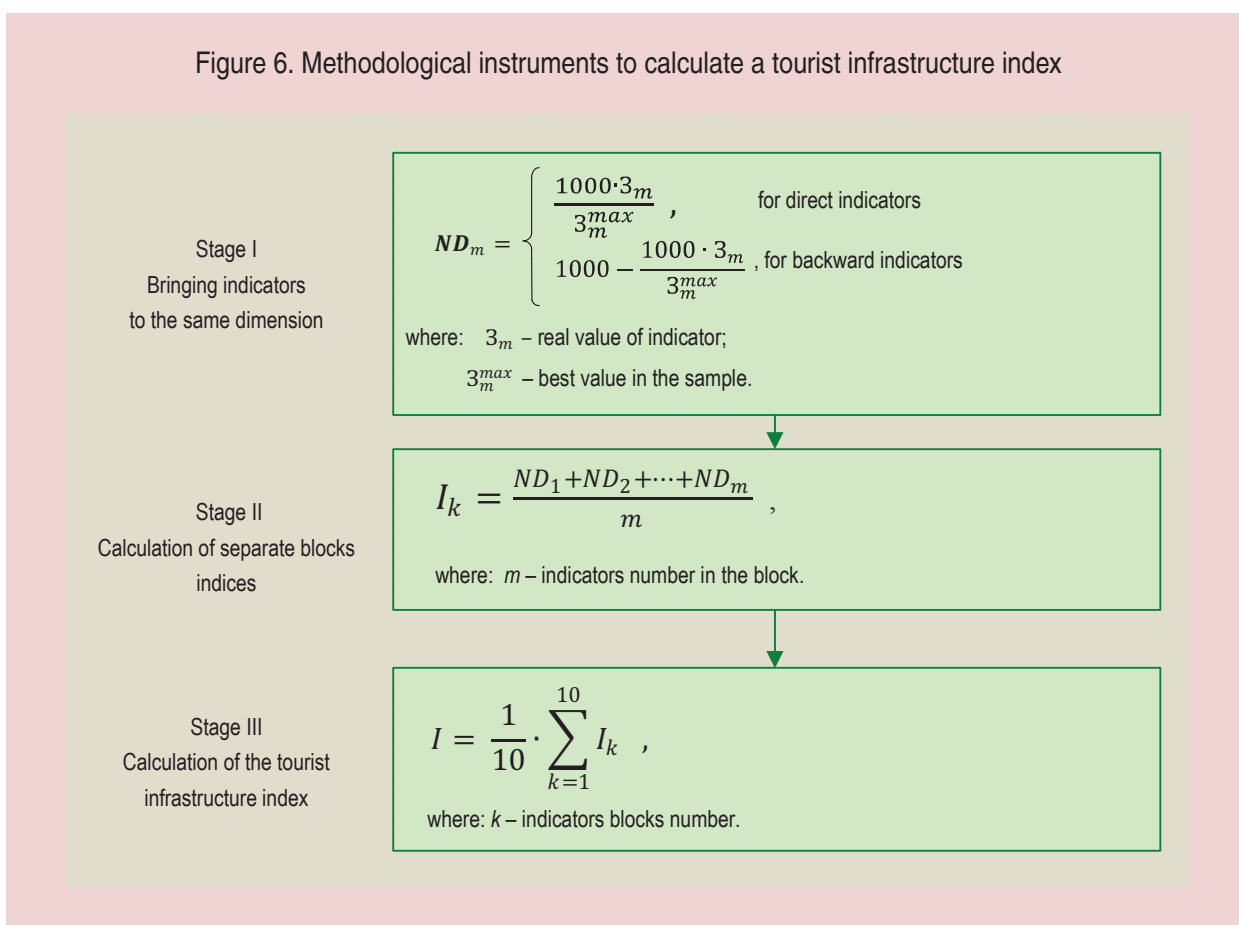


Figure 6. Methodological instruments to calculate a tourist infrastructure index



At the second stage the indices of individual blocks are calculated as the arithmetic average of the normalized indices values. At the final stage the integral index of tourist infrastructure is calculated.

The method approbation on the materials of NWFED subjects has resulted in differentiation of territories groups by the level of tourist infrastructure development (fig. 7).

The cell boundaries were formed, depending on the average value of the tourist infrastructure index in the Northwestern Federal District (tab. 1). According to the calculations, the average value of the tourist infrastructure index in 2011 was 488, maximum – 1000 (fig. 7).

The NWFED regions are distributed by the tourist infrastructure development level in 2011, according to the survey results (fig. 8).

The high level of tourist infrastructure development is recorded in Saint Petersburg,

a leader by most of the index components, except for the ecological purification objects and security block.

In the Murmansk Oblast the infrastructure development level is above average, due to the values growth of the indicators of public utility infrastructure facilities, ecological purification objects, information and communication infrastructure, catering facilities and trade.

The average level of tourist infrastructure development is identified in Novgorod, Kaliningrad, Archangelsk oblasts and republics of Komi and Karelia. The tourist infrastructure index value in these regions varies from 443 to 491.

The below average level of tourist infrastructure is observed in Leningrad, Vologda and Pskov oblasts, due to low rates by many index components.

Figure 7. Distribution of the NWFED regions, according to the tourist infrastructure index in 2011

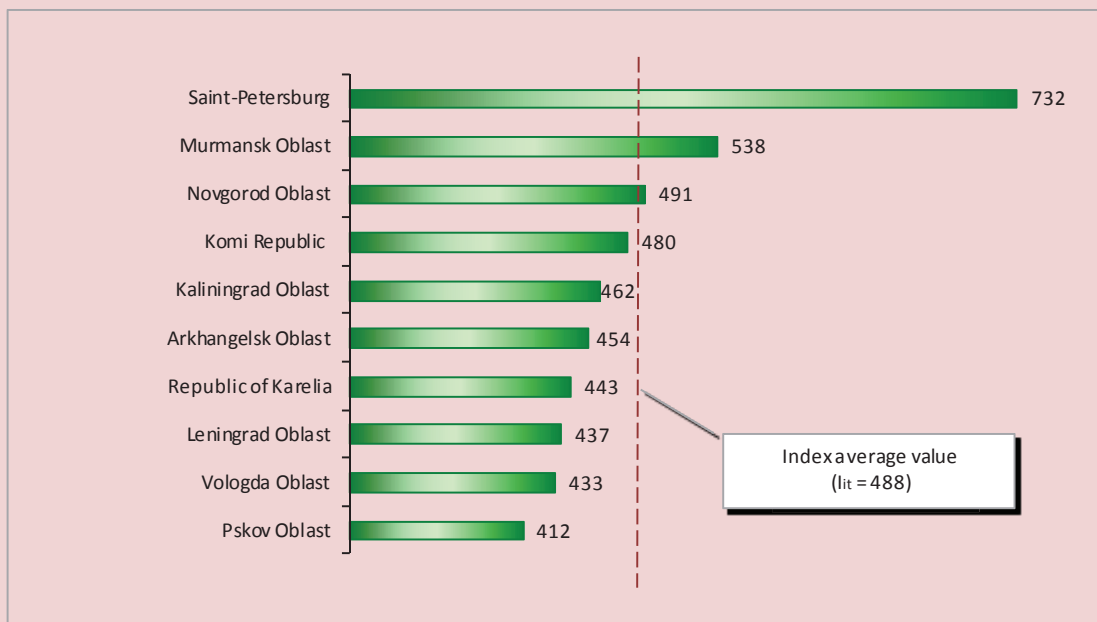
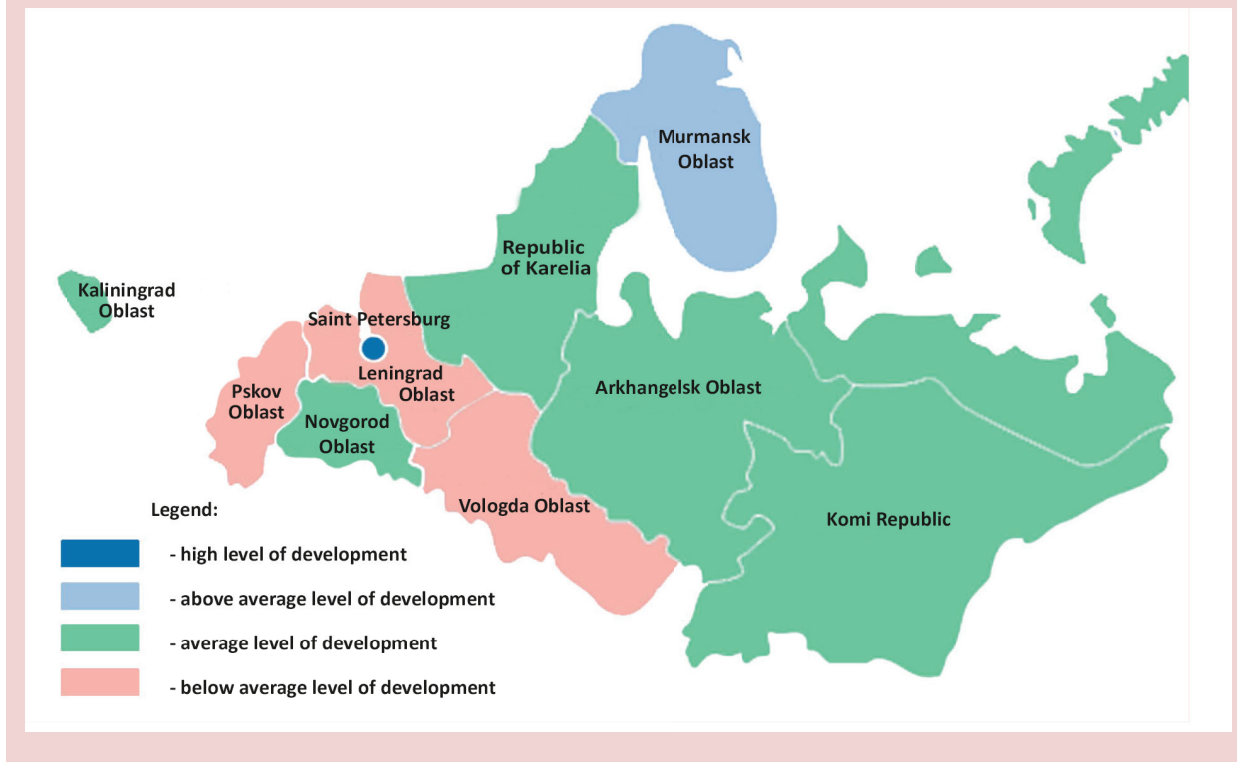


Table 1. Interpretation of threshold values for integral estimate of the tourist infrastructure development level

Group number (N)	Cell boundary		Tourist potential level
	Lower boundary	Upper boundary	
1	$\bar{I} - \frac{I_{max}}{2N} - \frac{4 I_{max}}{N}$	$\bar{I} - \frac{I_{max}}{2N} - \frac{3 I_{max}}{N}$	Very low
2	$\bar{I} - \frac{I_{max}}{2N} - \frac{3 I_{max}}{N}$	$\bar{I} - \frac{I_{max}}{2N} - \frac{2 I_{max}}{N}$	Low
3	$\bar{I} - \frac{I_{max}}{2N} - \frac{2 I_{max}}{N}$	$\bar{I} - \frac{I_{max}}{2N}$	Below average
4	$\bar{I} - \frac{I_{max}}{2N}$	$\bar{I} + \frac{I_{max}}{2N}$	Average
5	$\bar{I} + \frac{I_{max}}{2N}$	$\bar{I} + \frac{I_{max}}{2N} + \frac{I_{max}}{N}$	Above average
6	$\bar{I} + \frac{I_{max}}{2N} + \frac{I_{max}}{N}$	$\bar{I} + \frac{I_{max}}{2N} + \frac{2 I_{max}}{N}$	High
7	$\bar{I} + \frac{I_{max}}{2N} + \frac{2 I_{max}}{N}$	$\bar{I} + \frac{I_{max}}{2N} + \frac{3 I_{max}}{N}$	Very high

Note: I_{max} – the maximum value of the tourist infrastructure index, equal to 1000; \bar{I} – the average value of the tourist infrastructure index; N – the groups number, according to the tourist infrastructure level.

Figure 8. Distribution of the NWF D regions by a tourist infrastructure development level in 2011



It is critical to define the tourism development prospects by means of correlation of the tourism and recreation competitiveness levels and tourist infrastructure development in the region. For it, it is worthwhile to use the matrix, constructed on the basis of portfolio analysis method (*tab. 2*).

The leading NWF D region in tourism development is the city of Saint Petersburg, characterized by a high level of tourism and recreation competitiveness and tourist infrastructure development.

Very perspective regions are Murmansk, Kaliningrad, Vologda oblasts and the Republic of Karelia. To realize tourism development prospects in the Murmansk Oblast it is necessary to conduct a complex of measures, aimed at improving its tourism and recreation competitiveness. Kaliningrad, Vologda oblasts and the Republic of Karelia, having a sufficiently high level of tourism competitiveness, should pay more attention to enhancing a tourist infrastructure.

Achieving high performance in Leningrad, Novgorod, Pskov, Arkhangelsk oblasts and the Komi Republic is possible with significant investments in infrastructure projects and long-term encouragement of tourism and recreation competitiveness.

Thus, the matrix identifies correlation between tourist infrastructure and tourism development, singles out the regions, which should pay attention to tourist infrastructure development.

The problems, hindering the tourism infrastructure development in the regions, can be classified as following: infrastructure problems of the material and technological base and administrative-legal problems. The infrastructure problems include:

- insufficient development of production infrastructure, due to high expenses to construct the engineering infrastructure objects for tourism and recreation complexes (electricity network, water supply, transportation, treatment facilities);

Table 2. Matrix of tourism development prospects in the NWFD regions

		Tourist infrastructure development level			
		High	Above average	Average	Below average
tourism and recreation competitiveness level in the region	High	Saint Petersburg	–	–	–
	Above average	–	–	Kaliningrad Oblast	Vologda Oblast, Republic of Karelia
	Average	–	–	Novgorod Oblast	Leningrad Oblast
	Below average	–	Murmansk Oblast	Arkhangelsk Oblast	–
	Low	–	–	Komi Republic	Pskov Oblast

- moral and physical wear of the service infrastructure material base;
- ageing and wear of tourist infrastructure;
- uneven development of tourist infrastructure in districts and cities of the region;
- lack of necessary service infrastructure;
- weak information provision of the territory (absence of speakerphones, information stands and signs, including in foreign languages), and others.

The administrative-legal problems are presented by three groups:

1) problems of legal provision of tourism and recreation industry (particularly, tourist infrastructure);

2) low investment activity in the industry, lack of effective state encouragement mechanisms to invest in its development;

3) lack of highly skilled personnel.

Thus, this classification of the problems, hindering tourist infrastructure development, gives us an opportunity to single out two basic directions to develop and improve tourist infrastructure in the regions:

- upgrade of the material and technological base;
- development of the administrative regulation system.

Meeting the identified challenges in the framework of these directions will give incentives for tourist infrastructure upgrade in the regions and successful regional tourism development. These measures will contribute to the tourist inflow increase and, as consequence, to the revenues growth, development of related economy sectors and employment increase.

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Editor A.A. Sokolova
Make-up page T.V. Popova
Translators and Proof-readers A.A. Sokolova, O.L. Gagarina

Passed for printing May 12, 2014.
Date of publication May 15, 2014.
Format 60×84¹/₈. Digital recording.
Con. pr. sheets 24.0. Number of 500 copies. Order No. 145.
Price is open.

The journal is registered by the Federal Service
for Supervision of Telecom and Mass Communications (Roskomnadzor).
Certificate of registration PI FS77-49490 dated April 20, 2012.

Founder: Federal State-Financed Scientific Institution the Institute of Socio-Economic Development
of Territories of RAS (ISED T RAS)

Address of the Publisher and Editorial office:
56A, Gorky St., Vologda, 160014, Russia
phone (8172) 59-78-03, fax (8172) 59-78-02, e-mail: common@vscc.ac.ru