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FROM THE CHIEF EDITOR

Dynamics of the RF President's activities approval by the region's population

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August 14, 2012 marked the first one hundred days of the third Vladimir Putin's presidency in Russia. Hundred days report has become a tradition in the world as a landmark date when some results of top-ranking politician's activity are summed up.

Most experts are of a unanimous opinion that "the third advent" of Putin took place in the conditions when domestic and foreign-policy situation in Russia cardinally differed from its position during two previous terms of Putin's presidency[1]. He faces a range of new challenges, the main of which is a need to change and select a new scenario of our country's development.

The first hundred days of the third Vladimir Putin's presidency are characterized, on the one hand, by the clear priorities of medium-term national development perspective, and, on the other hand, by the increased reliance on the national-oriented elite (D.O. Rogozin was appointed to the post of Vice-Premier in charge of military-industrial complex; S.Yu. Glazyev was appointed to the post of Presidential Adviser responsible for coordinating work on developing Eurasian integration; V.V. Medinskiy was nominated as the Minister of Culture and I.R. Kholmanskikh became the Presidential Envoy in the Urals Federal District).

There is a rule in the expert and the scientific community around the world to assess the efficiency of government activity, including the authorities of higher rank, through sociological measurements that allow experts to identify the share of people who approve (or do not approve) the authorities' work. In this case, as a rule, data collection is carried out simultaneously by some factors which are the main powers that influence the results of measurements.

[1] The differential characteristics of the current socio-economic situation in the country were described in detail, for example, in the following work: Glazyev S., Ivanter V. Makarov V., Nekipelov A., Tatarkin A., Greenberg, R., Fetisov G., Tsvetkov V., Batchikov S., Ershov M., Mityayev D., Petrov Yu. On the strategy of Russia's economic development. Economics of contemporary Russia. 2011. No. 3. It is necessary to note that the situation in the country during the third V.V. Putin's presidency and his previous presidential terms is characterized in the article by many Russian political scientists and such well-known writers as N. Starikov, A. Prokhanov.

ISEDT RAS has been using these basic approaches for assessing presidential activity in opinion polls since 1996[2]. The Institute has accumulated the comprehensive materials covering the period from 1996 till 2012. The database accumulated over 16 years is actually unique: as far as we know, other academic institutions in the regions of the country do not have the similar system databases.

The figures attached present graphs that show the degree of the RF President's activity approval by the Vologda Oblast's population in 1996 – 2012.

Figure 1 shows that the degree of approval of the President B.N. Yeltsin's activity dropped multiply below the figures that were permissible for the Head of the state by the end of 1999. Therefore, his voluntary resignation and entrusting the duties of the President, according to the Constitution of the Russian Federation, to Prime Minister Vladimir V. Putin were immediately approved by the majority of population. In March 2000, most people, who took part in the Presidential election, voted for Vladimir V. Putin as the President of the Russian Federation.

Social tension reduced in Russian society during **the first term of V.V. Putin's presidency** (from early 2000 to April, 2004). There was a negative mean power correlation dependence[3] between the level of approval and the share of people with low "patience reserves". The share of positive characteristics of the RF President's activity increased significantly in the category of 20% the most prosperous people in the Oblast (by 13 percentage points, up to 82%, *fig. 3.*), as well as among young people (aged from 18 to 30) and middle-aged population (30 - 55 years) (by 11 percentage points, *fig. 4*).

In general, the population made special mention of Putin's successful work in solving key problems of the country against the background of the previous Head of the state Boris Yeltsin's failed results.

The second presidential term of Vladimir V. Putin was marked by the increase in support for his work. The share of positive assessments increased from 67 to 82% in April 2008 as compared with June 2004.

The share of people, who identified themselves with the "poor" and "extremely poor", reduced from 53 down to 43%; the share of people with low "patience reserves" decreased (from 19 down to 14%). The average income was higher than the cost of living by more than a third.

Social tension continued to reduce in the society in that period *(fig. 2.1 – 2.3)*. And besides, the decline in the share of people with low "patience reserves" and the share of the "poor" and "extremely poor" was directly related to the increase in the level of the RF President approval (there was a strong negative correlation dependence, R = –0,7).

[2] The polls are held six times a year in Vologda, Cherepovets, and in eight districts of the region (Babayevsky District, Velikoustyugsky District, Vozhegodsky District, Gryazovetsky District, Kirillovsky District, Nikolsky District, Tarnogsky District, 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 populations, the proportions between the inhabitants of settlements of various types (rural communities, small and medium-sized city), age and sex structure of the adult population of the region. Sampling error does not exceed 3%.

[3] Correlation dependence is a statistical relationship between two or more random variables. In this case, variation in the value of one variable is accompanied by the systematic changes in the values of other variables. It is measured by the correlation coefficient R (the Pearson correlation coefficient). The sign of the correlation coefficient R indicates the direction of relationship (direct - in the case when R is positive and inverse if it is negative), the value of R determines the strength of correlation (weak at R < 0,3; mean if R varies from 0.3 to 0.5; strong if R is more than 0.5).

The level of approval increased significantly in the category of 20% poorest people in the Oblast (by 23 percentage points, up to 80%), it became closer to the indicators for the groups of well-off people and people with middle-sized incomes (by 83%, see *fig. 3*). The positive assessments of the President's activity continued to increase among middle-aged and elderly persons and people with low "patience reserves" *(fig. 4, 5)*.

In general, the share of people, who assessed V. Putin's work as positive, increased during two terms of his presidency (from 63 up to 82%, or 1.3-fold). Population assessments became more correlated with the real activity of the RF President and his domestic and foreign policies. His international activity was recognized as successful.

The degree of the President's activity approval reduced in **the period of Dmitriy A. Medvedev's presidency** (May 2008 – April 2012): the share of people who approved it decreased from 71 to 50%.

In the period from June 2008 to April 2012 there was a decline in the share of people who recognized D. Medvedev's activity as successful in such important areas as: foreign policy (from 55 down to 43%); establishment of order in the country (from 50 down to 35%); defense of democracy and citizen rights protection (from 40 down to 27%); economic development and improvement of population's financial condition (from 40 down to 29%, fig. 6 – 9).

Thus, a significant decrease in Dmitriy Medvedev's popularity in his presidential term was caused by not only the consequences of the global economic crisis, but the growth of unresolved economic and political problems in the country.

Vladimir V. Putin's authority, political experience and his practical actions during **the first hundred days in the third presidency** has already led to positive changes in population's assessments.

According to the recent ISEDT RAS sociological measuring (*table 1 – 3*) in June 2012,

Table 1. Estimation of power activity
(How do you assess the current activity of..?)

Vertical power structure	Approval in % to the total number of respondents								Dynamics indices, Aug. 2012 to 8 months 2008		Dynamics indices, Aug. 2012 to June 2012	
	8 mnth. 2008	Aug. 2011	Oct. 2011	Dec. 2011	Feb. 2012	Apr. 2012	June 2012	Aug. 2012				
The President of the RF	75.0	62.1	56.6	51.7	47.3	50.3	54.5*	53.7*	**0.72**		**0.99**	
The Chairman of the Government of the RF	76.4	60.4	59.1	52.9	52.6	51.7	49.5**	48.5**	**0.63**		**0.98**	
The Governor of the Vologda Oblast	57.8	49.5	47.7	41.9***	37.7***	37.7***	44.7***	45.3***	**0.78**			**1.01**

Vertical power structure	Disapproval in % to the total number of respondents								Dynamics indices, Aug. 2012 to 8 months 2008		Dynamics indices, Aug. 2012 to June 2012	
	8 mnth. 2008	Aug. 2011	Oct. 2011	Dec. 2011	Feb. 2012	Apr. 2012	June 2012	Aug. 2012				
The President of the RF	9.3	19.7	29.0	35.7	35.7	33.3	28.9*	31.1*		**3.34**		**1.08**
The Chairman of the Government of the RF	10.4	21.4	24.7	32.7	32.0	33.1	31.5**	34.5**		**3.32**		**1.10**
The Governor of the Vologda Oblast	19.9	24.4	32.1	36.1***	33.8***	32.6***	31.8***	32.7***		**1,64**		**1,03**

* Data for June - August 2012 - the beginning of V.V. Putin's presidency
** Data for June - August 2012 – D.A. Medvedev's activity as the Prime Minister of Russia
*** Data from December 2011 relate to the activities of the Vologda Oblast Governor O. A. Kuvshinnikov

Table 2. What party expresses your interests?

Party	In % to the total number of respondents								Dynamics indices, Aug. 2012 to 8 months 2008		Dynamics indices, Aug. 2012 to June 2012	
	8 mnth. 2008	Aug. 2011	Oct. 2011	Dec. 2011	Feb. 2012	Apr. 2012	June 2012	Aug. 2012				
United Russia	40.5	33.7	29.8	26.1	26.0	28.3	31.9	31.4	**0.78**		**0.98**	
KPRF	6.8	10.0	12.1	13.4	10.1	11.4	10.0	9.5		**1.40**	**0.95**	
LDPR	7.7	7.5	9.1	9.2	9.1	9.5	7.7	6.7	**0.87**		**0.87**	
A Just Russia	5.0	2.7	5.6	13.9	10.2	8.2	4.6	5.6		**1.18**		**1.22**
Other	1.4	2.4	3.1	4.6	3.1	3.2	2.8	2.3		**1.36**	**0.82**	
No party	20.1	28.9	28.1	23.9	25.7	28.6	31.5	33.2		**1.65**		**1.05**
It's difficult to answer	13.7	14.8	12.2	9.0	15.8	10.8	11.6	11.1	**0.81**		**0.96**	

Table 3. Estimation of social condition

In % to the total number of respondents								Dynamics indices, Aug. 2012 to 8 months 2008		Dynamics indices, Aug. 2012 to June 2012	
8 mnth. 2008	Aug. 2011	Oct. 2011	Dec. 2011	Feb. 2012	Apr. 2012	June 2012	Aug. 2012				
What would you say about your mood in the last days?											
Usual condition, good mood											
70.2	66.7	64.7	64.2	62.9	63.4	69.0	71.3		**1.02**		**1.03**
Feeling stress, anger, fear, depression											
22.1	24.1	29.4	30.2	33.5	30.2	23.4	23.3		**1.05**		**1.00**
What statement, in your opinion, suits the current occasion best of all?											
Everything is not so bad; it's difficult to live, but it's possible to stand it											
81.0	73.2	73.9	78.6	74.9	76.5	77.3	73.2	**0.90**		**0.95**	
It's impossible to bear such plight											
10.9	11.3	15.8	14.1	18.1	16.8	13.6	17.0		**1.56**		**1.25**
Consumer Sentiment Index											
107.5	92.9	88.5	85.6	89.8	90.1	93.4	92.3	**0.86**		**0.99**	
What category do you belong to?											
The share of people who consider themselves to be poor and extremely poor											
39.8	40.8	44.6	41.9	43.2	43.6	45.0	44.2		**1.11**	**0.98**	
The share of people who consider themselves to have average income											
50.7	46.2	41.8	42.2	44.9	46.5	45.3	43.4	**0.86**		**0.96**	

the share of respondents in the Vologda Oblast, who approve the President's activity, has increased by 4.2 percentage points, and the share of people, who do not approve the President, has reduced by 4.4 percentage points. There was also a positive dynamics in people's assessments of their social status. However, according to the August survey, the indicators (approval/ disapproval of the President's activity, social status) declined slightly.

It appears that one of the significant factors decreasing the values of a number of indicators on the August survey is a fact that during his first hundred days of presidency Vladimir V. Putin did not clearly define the structure of promised real steps to change the current system of social injustice that had formed in the country over the past 20 years (side effect of the 1990s privatization, flat rate of taxes, inadequate luxury tax, declaring of state officials' incomes

and other acute problems). The priorities of oligarchic clans, corrupt elites and bureaucracy still remain the basis of this system.

People expect Vladimir Putin's real actions to bring the current economic and political systems to the requirements of the social state, whose policy is aimed at creating conditions for worthy life and free development of an individual, in accordance with Art. 7 of the RF Constitution.

The problems of forming the basic conditions for the transition of RF governmental system to the standards of social state that are settled in the leading European countries were considered in a number of works[4].

There were informative publications on this subject in our Journal[5]. These articles deal with the real actions that are recommended by national-oriented experts to the President of the RF to ensure the stable and sustainable development of our country.

This issue contains the text of academic report by Academician S.Yu. Glazyev and Professor V.V. Lokosov at the meeting of RAS Presidium that deals with the assessment of the critical threshold values of the indicators of the state of Russian society and their use in the socio-economic development management.

The authors, carrying out a more detailed analysis of the situation, based on the system of indicators reflecting the fundamental social and economic processes, proves that Russian society and economy are on the verge of breakdown.

In scientists' opinion, "*wide-scale export of capital, having reached for the 2 decades the astronomical value of $ 1 trillion; brain drain that is also devastating for the economy and society; the loss of the most part of scientific, industrial and human potential are the consequences of unsatisfactory performance of market self-organization mechanisms and state regulation institutions*. **Actual self-estrangement of the ruling elite from the society and depriving the overwhelming majority of citizens of exercisable rights to participate in management processes impede the feedbacks between the society and the state. The latter conforms to the oligarchic interests and becomes a tool of receiving the administrative markup by a corrupt bureaucracy, protected from liability to the society thanks to the existing political system"** [6].

[4] See, for example: Gubanov S. System choice of Russia and living standards. Economist. 2011. No. 11; Ivanova L. On the strategy of neo-industrial modernization. Economist. 2012. No. 2; Mikulskiy K. Modernization of the Russian economy: the need and the opportunity. Society and Economy. 2011. No. 11 – 12; Senchagov V. Objectives, priorities and risks of financial system modernization in Russia. Federalism. 2012. No. 2, etc.

[5] Makarov V.L. Historical examples of various methods for recovery from crisis. Economic and social changes: facts, trends, forecast. 2011. No. 1 (13); Greenberg R.S. The contours of the global world: denoting future. Ibid.; Ivanter V.V. On the problems of Russia's way out of the economic crisis. Ibid.; Petrakov N.Ya. Forword to the monograph "Problems of Market Economy Development". Ibid. 2011. No. 2 (14); Ilyin V.A. The influence of the metallurgical corporation owners' interests on the national and regional development. Ibid. 2011. No.3 (15). P. 14 – 38; Povarova A.I. The influence of the metallurgical corporation owners' interests on the financial performance of the head enterprise (the case of OJSC Severstal). Ibid. 2011. No.5 (17). P. 36 – 51; Tatarkin A.I., Lavrikova Yu.G. Programmed project modernization of the federative structure in Russia. Ibid. 2011. № 6 (19). The articles of the following authors were published in the latest issues of our journal: Glazyev S.Yu. Why is Putin. Economic and social changes: facts, trends, forecast. 2012. No. 2 (20); Yakunin V.I. Post-industrialism: the experience of critical analysis. Ibid.; Collapse of the global pyramid. Interview with RAS Academician S.Yu. Glazyev. Ibid. 2012. No. 3 (21); Tatarkin A.I. Development of the economic space of Russia's regions on the basis of cluster principals. Ibid.

[6] Glazyev S.Yu., Lokosov V.V. Assessment of the critical threshold values of the indicators of the state of Russian society and their use in the socio-economic development management. Bulletin of the Russian Academy of Sciences. 2012. Vol. 82. No. 7. P. 600. *(Note: The text was set in bold by editors).*

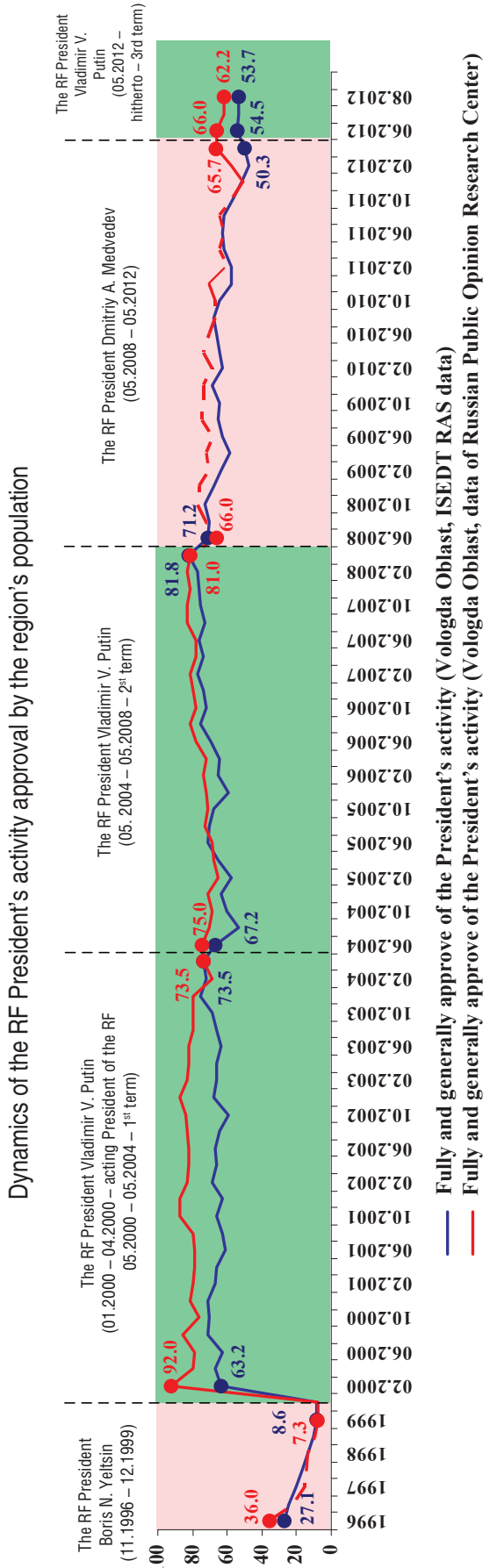

Fig. 1. Dynamics of the level of the RF President's activity approval (in % to the total number of respondents)

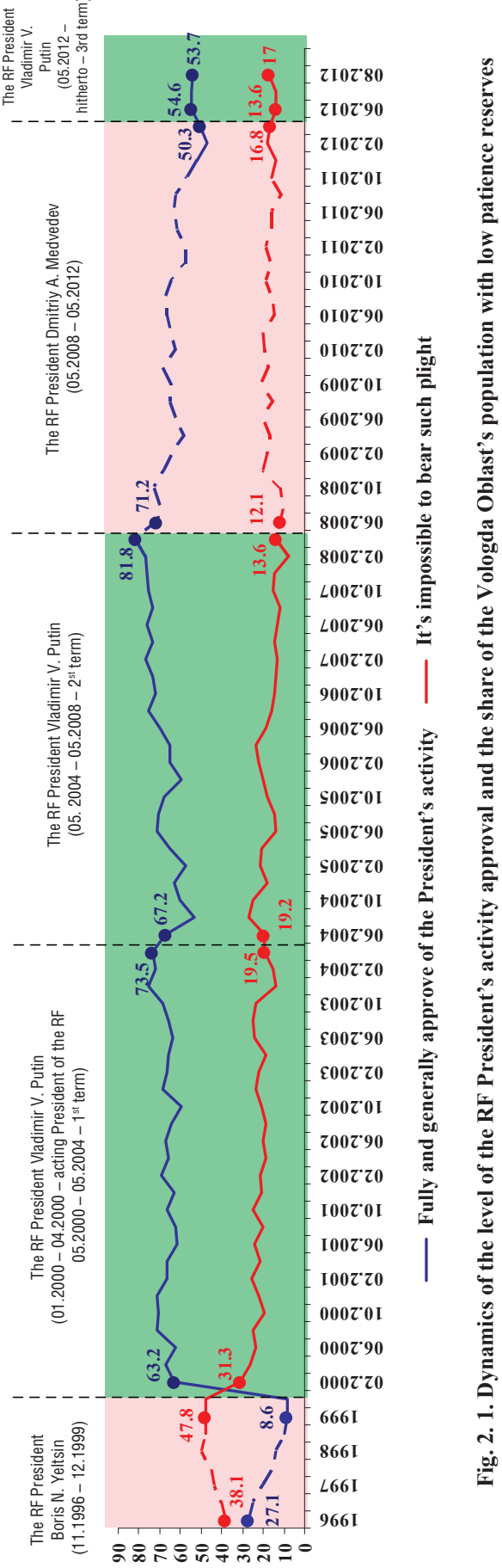

Fig. 2. 1. Dynamics of the level of the RF President's activity approval and the share of the Vologda Oblast's population with low patience reserves
(in % to the total number of respondents)

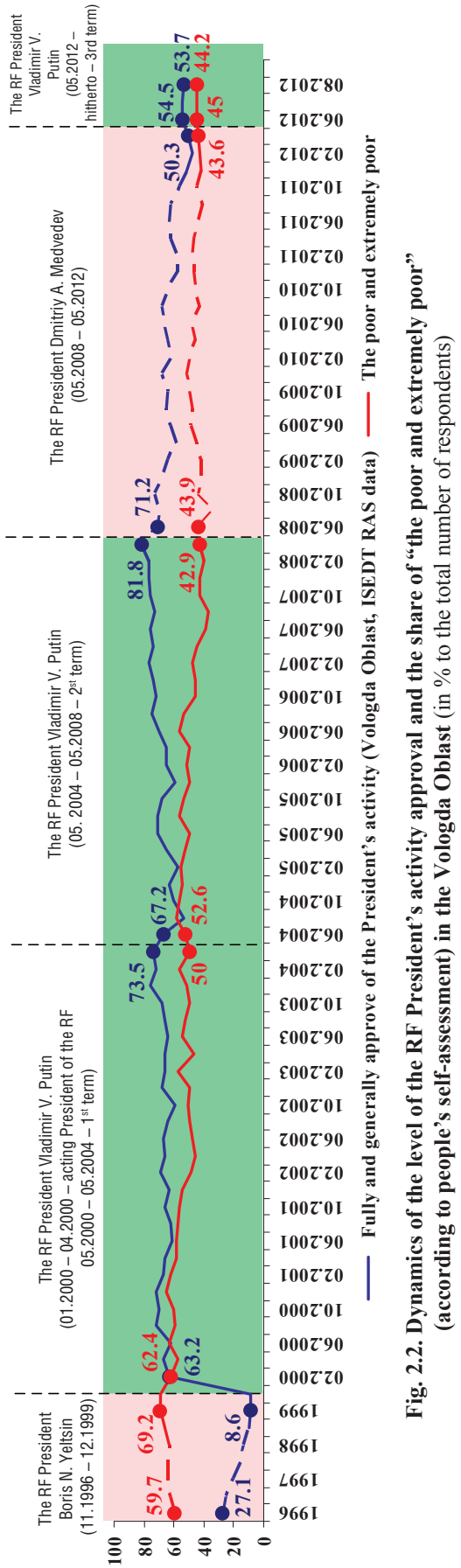

Fig. 2.2. Dynamics of the level of the RF President's activity approval and the share of "the poor and extremely poor" (according to people's self-assessment) in the Vologda Oblast (in % to the total number of respondents)

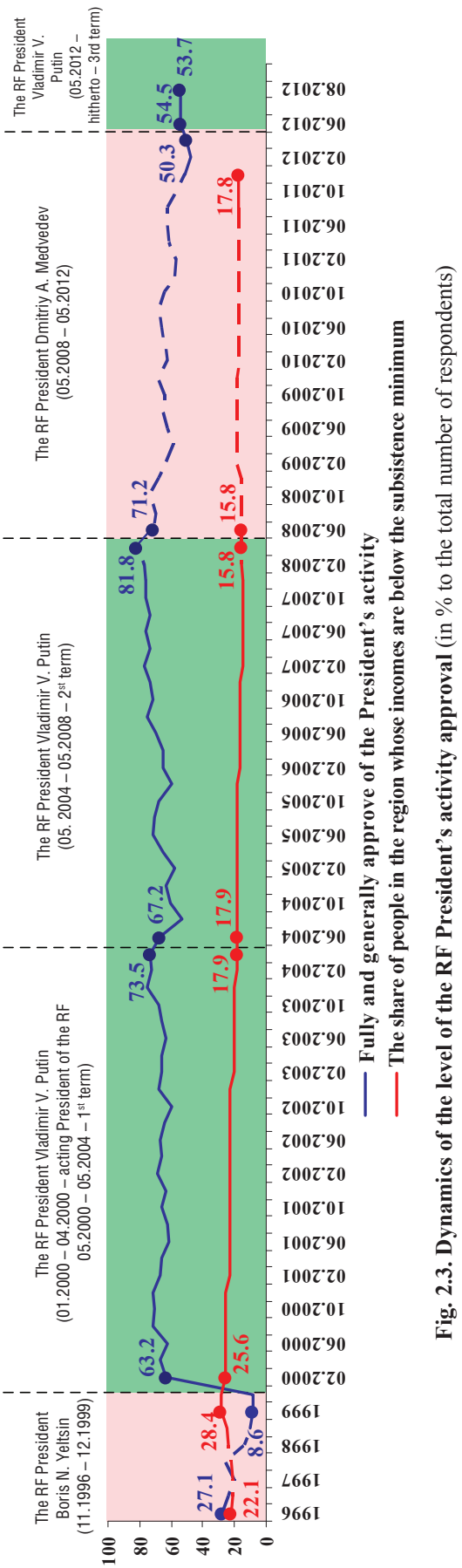

Fig. 2.3. Dynamics of the level of the RF President's activity approval (in % to the total number of respondents) **and the share of people in the region whose incomes are below the subsistence minimum** (according to the data of State Statistics; in % to the total population)

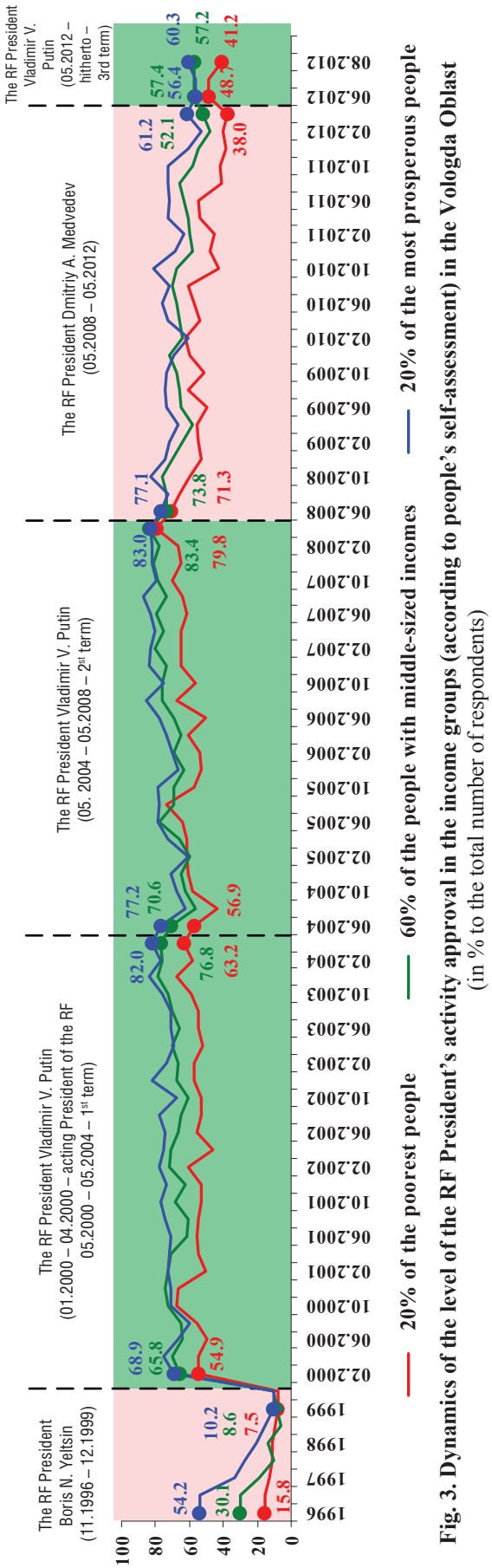

Fig. 3. Dynamics of the level of the RF President's activity approval in the income groups (according to people's self-assessment) in the Vologda Oblast
(in % to the total number of respondents)

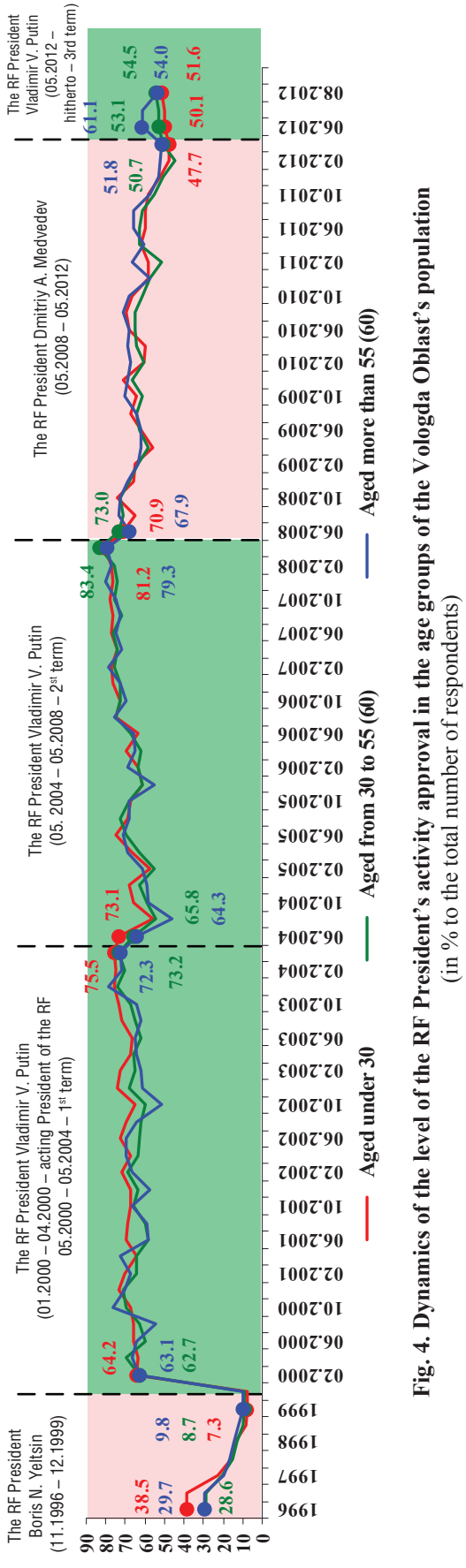

Fig. 4. Dynamics of the level of the RF President's activity approval in the age groups of the Vologda Oblast's population
(in % to the total number of respondents)

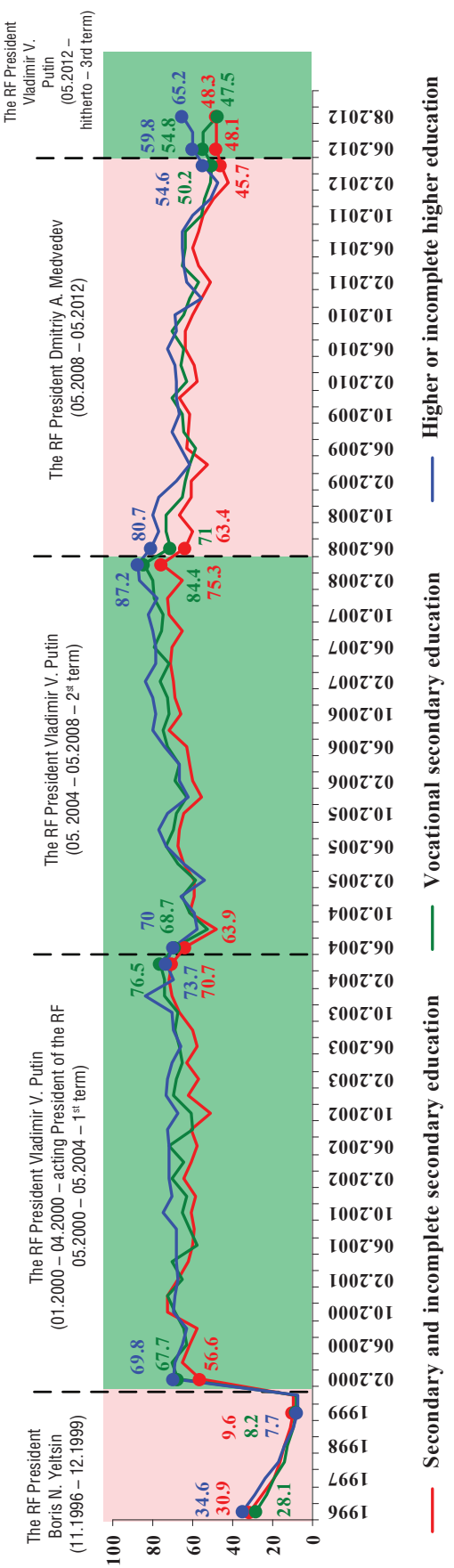

Fig. 5. Dynamics of the level of the RF President's activity approval in the educational groups of the Vologda Oblast's population
(in % to the total number of respondents)

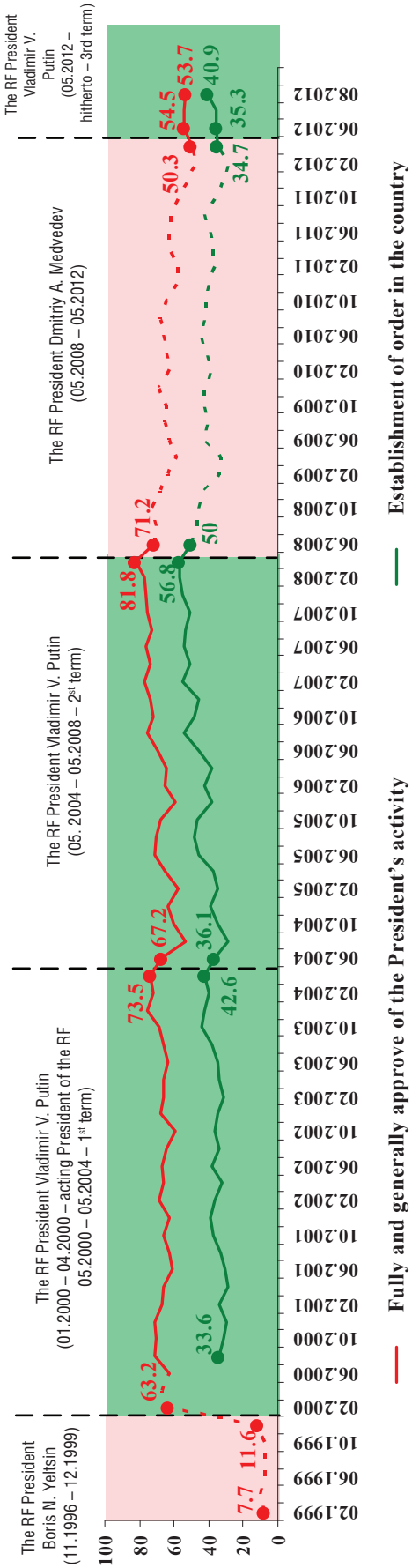

Fig. 6. Dynamics of the level of the RF President's activity approval and positive assessments of his work in establishing order in the country by the Vologda Oblast's population (in % to the total number of respondents)

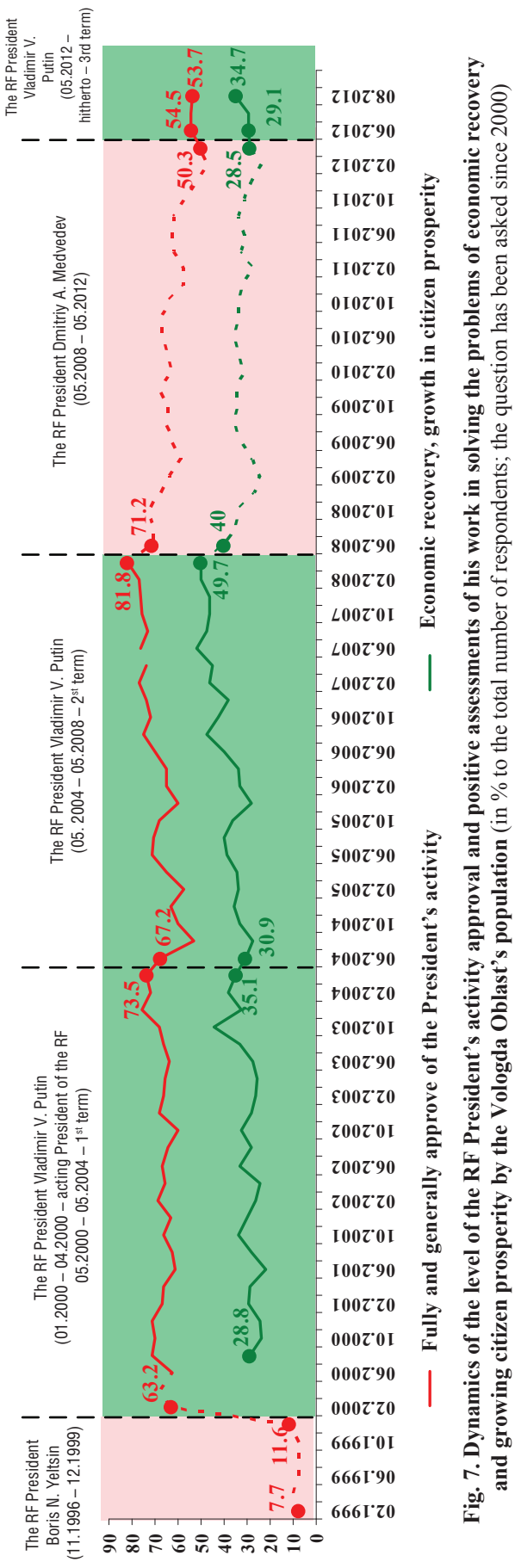

Fig. 7. Dynamics of the level of the RF President's activity approval and positive assessments of his work in solving the problems of economic recovery and growing citizen prosperity by the Vologda Oblast's population (in % to the total number of respondents; the question has been asked since 2000)

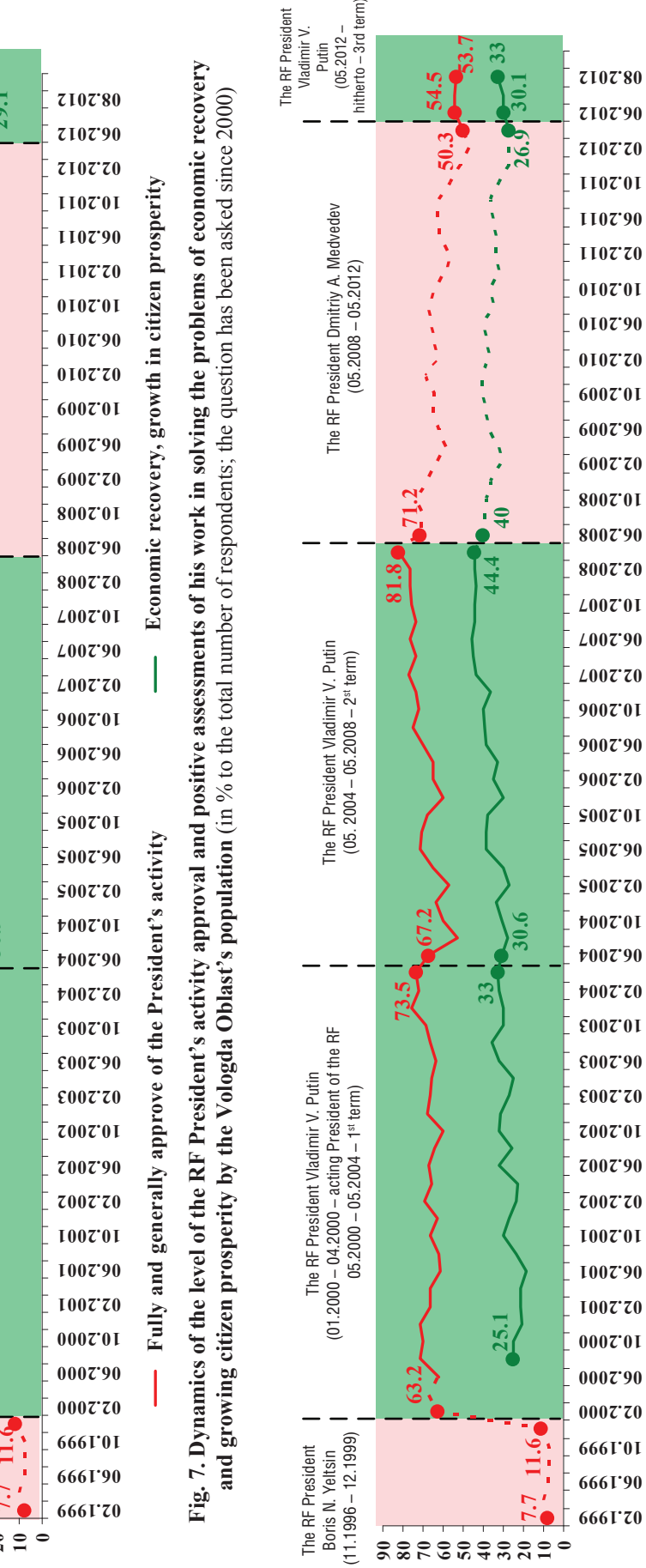

Fig. 8. Dynamics of the level of the RF President's activity approval and positive assessments of his work in defending democracy and citizen liberties by the Vologda Oblast's population (in % to the total number of respondents; the question has been asked since 2000)

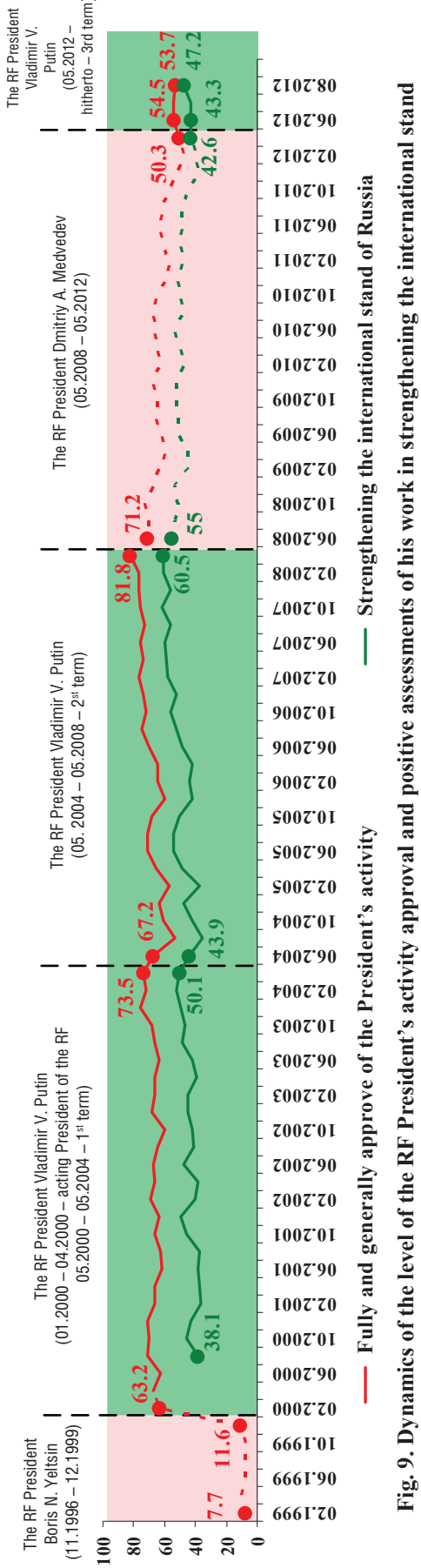

Fig. 9. Dynamics of the level of the RF President's activity approval and positive assessments of his work in strengthening the international stand of Russia by the Vologda Oblast's population (in % to the total number of respondents; the question has been asked since 2000)

The first ten articles according to the frequency of their viewing for the recent 12 months (September 2011 — August 2012)

Rating	Article	Total time of reading for the recent 12 months, minutes	Total time of reading, for the whole period, minutes	Number of views for the whole period	Number of views for the recent 12 months	Number of views for the recent 3 months	Average time of viewing for the whole accounting period, minutes	Issue	Release date	Authors
1	Modernization of the Russian economy as the imperative of the country's prospective innovative development	5060	5060	179	179	22	28	No.16	August 2011	Kondakov Igor Anatolyevich
2	Threats to the region's economic security and the ways to overcome them	1921	2474	133	96	7	19	No.14	April 2011	Uskova Tamara Vitalyevna Kondakov Igor Anatolyevich
3	Fiscal federalism and inter-budget relations in the Russian Federation	1907	2534	184	134	14	14	No.13	March 2011	Avetisyan Ishkhan Artashovich
4	The post-crisis economic development and prospects of innovation activity in the Tomsk Oblast	1209	1209	42	42	3	29	No.15	June 2011	Myakota Ekaterina Aleksandrovna Vorobyov Aleksandr Grigoryevich Putilov Aleksandr Valentinovich Zhiganov Aleksandr Nikolayevich
5	Methodology of the comparative estimation of the scientific and technical potential of the region	1101	2908	163	73	5	18	No.12	December 2010	Zadumkin Konstantin Alekseyevich Kondakov Igor Anatolyevich
6	Agriculture on the European North: All-Russian agricultural census results	1035	2032	131	80	1	16	No.11	September 2010	Ivanov Valentin Aleksandrovich Ivanova Elena Valentinovna
7	Demographic problems of the Republic of Belarus and their solutions	725	725	50	50	16	14	No.16	August 2011	Shakhotko Lyudmila Petrovna
8	Intellectual resources as the factor of the innovational development	677	3153	161	42	7	20	No.11	September 2010	Ilyin Vladimir Aleksandrovich Gulin Konstantin Anatolyevich Uskova Tamara Vitalyevna
9	Investment process in the region: the new century – old problems	641	1207	78	36	3	15	No.11	September 2010	Gubanova Elena Sergeyevna Vorontsova Tatyana Vladimirovna
10	Programmed project modernization of the federative structure in Russia	621	621	22	22	2	28	No.18	December 2011	Tatarkin Aleksandr Ivanovich Lavrikova Yuliya Georgievna

* Account of the site's viewing has been carried out since 2009, December, 12.

Assessment of the critical threshold values of the indicators of the state of Russian society and their use in the socio-economic development management*

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The method of critical (threshold) indicators of studying and constructing the objects and their functional relations has been long and successfully used in various fields of scientific knowledge. It is applied most effectively in technological developments, for example, in mathematical justification of machines reliability: threshold loading parameters for a technical object are calculated, the excess of which leads to its breakdown. When carrying out such calculations, as a rule, a set of simulation conditions is used, in which the conformity of objects to the required parameters is assessed empirically.

* The following text was published in the journal "Bulletin of the Russian Academy of Sciences" (vol.82. 2012. No.7) under the heading "From the RAS Presidium". The editorial board of the journal made the following introductory statement to the text: *"Judging by the officially published indicators, Russia's socio-economic development seems relatively positive, especially in comparison with that of the 1990s. However, a more detailed analysis of the situation, based on the system of indicators reflecting the fundamental social and economic processes, proves that Russian society and economy are on the verge of breakdown. This issue was highlighted by Academician S.Yu. Glazyev and Professor V.V. Lokosov in their academic report at the meeting of RAS Presidium. They proposed a new approach toward the assessment of the socio-economic system condition. We publish the extended text of their report and the materials of its discussion (in the narrative).* [Note. The present issue provides the text without discussion materials.]

The method of critical threshold indicators has been successfully applied in the study of living systems: in medicine – for diagnostics of a human organism condition, in ecology – when determining the biosphere pollution degree. It is present indirectly in the widespread methods of microeconomic analysis when assessing the companies' financial condition, making up ratings of economic agents and calculating insurance risks.

In the social sciences, this method was intriduced not long ago. In 1994, at the Institute of Social and Political Studies of RAS (ISPS RAS) an idea was put forward to apply the method of critical threshold indicators for the study of society, and a scale of 20 such indicators was developed [1, p. 556-568][1]. In 1996, by order of the RF Security Council Secretary, the system of economic security indicators was developed and approved [2], which was discussed and received the recommendation of the Department of Economics of RAS. In 2000, the Section for Economic and Social Security of the Scientific Council under the RF Security Council approved the list of 19 indicators and the corresponding threshold values [3]. Since then, these parameters have been used in evaluating Russia's economic security; a lot of interesting studies in this field have been published [4, p. 36-38].

However, at present, there is no unanimous opinion concerning the justification of critical threshold values of socio-economic condition indicators, as well as the very set of the latter, which is connected with the absence of a general theory of socio-economic systems stability. Scientific schools have different views on what has to be and what actually is going on in economic and social system, consequently, they have different estimations of socio-economic processes regarding their causes and management purposes.

For instance, the libertarian doctrine considers the export of capital and brain drain to be the natural peculiarities of an open socio-economic system, and it is no use trying to eliminate them, as it will cause the deviation from the optimal distribution of resources under global competitiveness. On the contrary, the modern evolutionary paradigm, based on analyzing actual processes of reproduction and competition of national socio-economic systems, considers the export of capital and brain drain the result of "failures" in market mechanisms and flaws in the functioning of state regulation institutions that should be eliminated by the socio-economic development management system.

The authors' viewpoint is based on the comprehensive interdisciplinary approach to the study of the dynamics of Russia's condition regarding its self-reproduction and development ability as an integral social system. Accordingly, the state of the economy and society as dynamic systems is characterized by various indicators, reflecting their reproduction and development ability.

The indicator's value is regarded as *critical threshold,* when going beyond its limits indicates the emergence of a threat to the functioning of an economy and society's life due to the disturbance of the regular flow of the processes reflected by this indicator. As a rule, the critical threshold indicator is determined as a figure, exceeding (in case of an increasing indicator) or decreasing (in case of a declining indicator) of which is the evidence of the system's entering the risk zone. It would be correct to define two critical threshold indicator values, marking the boundaries of the range of values permissible for the system's normal functioning and development. For example, usually, critical threshold value of birth rate is determined as the minimally acceptable for the simple reproduction of population. At the same time, as Chinese experience proves, under certain conditions, the society can be interested

[1] The idea of developing the system of critical threshold indicators of Russian society's development was proposed by V.V. Lokosov.

in stabilizing and even reducing population size, which causes limiting the number of children in a family. A similar situation occurs in connection with the widely used inflation rate: its value shouldn't exceed the critical threshold indicator, reflecting the transition of an economy to the state of turbulence, but at the same time, inflation reduction below zero may cause troubles in reproduction processes in the economy.

One should also distinguish between the indicators and their corresponding critical threshold values, determining a system's *simple reproduction* ability and a system's *development ability*. Going beyond the limits of the former means that the system loses its self-preservation ability, which causes a threat of its destruction or transition to a qualitatively new stage. Going beyond the limits of the latter reflects the system's loss of competitiveness, which can cause a threat of its submission to or absorption by another socio-economic system. Extended reproduction may seem to indicate sustainable development, but in actual global competitive environment it may not prevent from its collapse under the influence of external challenges and threats. This idea is obvious due to our historic experience, however, it is often ignored in traditional econometric and sociometric studies, based on extrapolation of established trends without considering the limits of real socio-economic systems sustainability.

We study the *reproduction of a socio-economic system* in the unity of its demographic, social, cultural and axiological, industrial and technological, natural resource and macroeconomic components. All these subsystems should form a harmonious relationship and ensure the balanced reproduction of a social system as a whole, which is achieved by the proper functioning of relevant institutions.

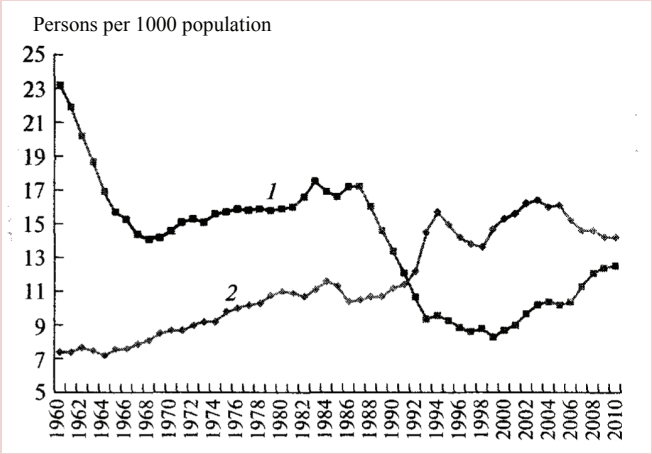
The use of critical threshold values of the indicators in socio-economic development management should be based not on ideological doctrines, but on a pragmatic, systematic approach. It claims that the society is a system, in which the connection between its elements is based on certain regularities and is supported by established reproduction processes, but all the same, it is exposed to the uncontrolled external influence and internal stresses. Each of its subsystems performs vitally important functions, and disturbing even one of them can result in instability, unpredictability and uncontrollability of the whole system. The indicators, reflecting the performance of these subsystems, have critical threshold values, the reaching of which sharply increases the chances of these systems' collapse or their transition to a new stage that poses a threat to the security of the society in general.

Society management should be scientifically grounded, based on the mathematical modeling of social processes, calculation and prediction of the consequences of decisions taken. For this purpose it is necessary to carry out systematic measurements of a range of socio-economic condition indicators and reveal the threats to social and economic security by determining their relation to critical threshold values analytically. The value of the critical threshold indicators is established on the basis of specific studies, expert assessments and mathematical modeling.

The characteristics of the results of Russia's socio-economic condition indicators measurements, systematized by the authors according to the social, economic and management subsystems, in relation to critical threshold values, will be given below.

The condition of the society. Demographic processes are the most studied and easily interpreted ones. Here the level is considered critical threshold if its reaching makes the maintenance of a simple population reproduction impossible. *Figure 1* shows that, according to these indicators, Russian society has already been

Figure 1. General indicators of birth rates and death rates in the USSR and Russia in 1960 – 2010



1 – born; 2 – died

Source: Demographic yearbook of Russia. 2010. Moscow: Rosstat, 2010.

beyond the critical limits for a long time. The graphs representing population birth and mortality rates form a kind of "demographic cross", which reflects the transition from an extended reproduction towards a narrowed one, started in 1990s.

Both key demographic indicators – birth rate and death rate – have been far beyond the critical values for a long time *(tab. 1)*. This leads to a steady decline in the number of population. According to demographic forecasts, if current trends remain unchanged, it may have been reduced to 127 million people by 2030 with the prospect of further reduction.

The population's health condition is also unsatisfactory, which is reflected by such indicator as average life expectancy. Despite the recent-years increase, it is still below critical level, which, according to our estimations, is 75 years (judging by the present-day views on a normal life expectancy regarding healthcare opportunities and creative activity period, as well as worldwide average values of this indicator). Though average life expectancy is a demographic indicator, it characterizes the condition of a society in general, reflecting the level and quality of life of population.

Demographic indicators are among the few that have objective and accurate threshold values, beyond which a society faces reproduction decrease that leads to its weakening up to extinction or absorption by other social systems. Not all indicators of the society's condition have such objectively accurate critical threshold values: the latter can largely depend on the state of public consciousness, historical conditions, traditions and values, and even genetic peculiarities of the representatives of a given society.

For instance, demographic statistics, in addition to population's physical reproduction indicators, uses the notion of its mechanical reproduction that differs from the former by the balance of migration. To a certain extent, narrowed population reproduction mode may be compensated by the inflow of immigrants, as it is happening in today's Russia.

However, as historical experience proves, if this inflow exceeds a certain level, the society can face tension arising out of ethnic or even civilization conflicts that contain a threat of a social system disintegration or absorption (an example can be found in the separation of Kosovo from Serbia, which caused enormous

Table 1. Indicators characterizing the reproduction of human potential in Russia

Indicator	Critical threshold value	Actual condition, 2010	Actual value compared with the critical threshold value
Birth rate (per 1000 population)	22	12.5	1.76 times less
Mortality rate (per 1000 population)	12.5	1.2	1.14 times more
Natural increase (per 1000 population)	12.5	-1.7	Population decline
Migration gain (persons per 1000 citizens)	1.1	1.3	1.2 times more
Share of migrants (in % to the number of population)	3	9	3 times more
Labour productivity (thousand $ per an individual in prices and according to the purchasing-power parity):	27.9	15.4	1.8 times less
in % to the world average	142	82	1.7 times less
in % to the developed countries	50	25	2 times less
Labour productivity growth rates, % annually	12	5.9	2 times less
Population lifespan, years	75	68.7	6.3 years less
Incomes gap between 10% of the wealthiest and 10% of the poorest population groups, times	8	16.6 (40 including hidden incomes)	2.08 times more
Gini coefficient (degree of deviation of actual distribution of monetary incomes from their equal distribution between the country's citizens)	0.3	0.4	1.3 times more
Share of population with incomes below the subsistence level, %	7	12.6	5.6 % more
Share of population spending less than $ 2.5 a day, %	0.5	17	34 times more
Share of homeless and other declassed population groups (in % to the total number of population)	1.5	15	10 times more
Unemployment rate according to the methodology of the International Labour Organization (ILO)	5.0	10.2	2.04 times more
Crime rate (number of recorded crimes per 100 thousand population)	1000	1839	1.84 times more
Basic required level of consumed kilocalories a day	3000	2564	14.5% less
Share of imported medicines, %	45	81	1.8 times more
Level of satisfaction with the obtained education (in % to the total number of population)	40	24	1.67 times less
Level of satisfaction with medical service (in % to the total number of population)	40	14	2.86 times less
Conventional rate of depopulation (birth/death ratio)	1	1.25	1.25 times more
Social homogeneity level (in % to the total number of population)	65	9–12	5.4 – 7.2 times less
Ration of per capita monetary incomes to the subsistence level, times	3.5	3.3	1.06 times less
Total fertility rate (average number of children born to one woman in her child-bearing years)	2.15	1.55	0.72 times less
Population ageing coefficient (share of individuals older than 65 years to the total number of population, %)	7	12.9	1.84 times more
Human Development Index (HDI), points	0.800	0.719	by 0.081 points less
Alcohol consumption rate (litres of absolute alcohol per capita)	8	15.5	1.94 times more
Share of drug consumers, %	3.5	7	2 times more
Number of suicides (per 100 thousand population)	20	23.4	1.17 times more
Mental disorders prevalence rate (per 1000 population)	360	354	Within the normal range

damage to Serbian society). It is impossible to determine the critical threshold value of the share of immigrants in the population: it can vary significantly depending on the ethnic composition of immigrants, assimilation potential of the hosting society and its system of values.

In such cases, the critical threshold values are determined empirically on the basis of analyzing the existing social experience. For instance, it was found that in German army the number of immigrants from the former Soviet republics should not exceed 10% of the total number of military personnel [5], and in Holland the share of immigrants living in an apartment building, should not exceed 10% of the number of native residents. These facts lead to the conclusion, that in European society the share of people, different in some important socio-cultural characteristics, should not exceed 10%, otherwise the integrity, manageability and socio-cultural security of the entire community are under threat. Though this critical threshold value is not clearly justified, it is taken into account in the practice of social management. In Russia the share of immigrants (taking into account expert estimates of illegal immigration) among the working age population is approaching 10%, and in Moscow – 15%, which already causes a certain social tension.

In general, as table 1 proves, Russian society has long been living in critical threshold conditions, which concerns not only the physical reproduction of population but also the standard of living. This is evidenced by the suicide and alcoholization statistics.

According to the World Health Organization (WHO) estimates, the critical level of suicides is defined to be 20 suicides on 100 thousand population. In Russia this indicator is almost twice as high. At the regional level it is 3.5 – 4 times higher: for example, in the Republic of Altai, the Chita Oblast, the Kirov Oblast, the Arkhangelsk Oblast, Udmurtia and Bashkiria it equals 69 – 85 suicides per 100 thousand inhabitants. It should be noted that in tsarist Russia this indicator was 3 suicides per 100 thousand people.

Alcohol and drug abuse is also a distinctive feature of the population's unsatisfactory living standard. The critical threshold value of pure alcohol consumption per capita, the excess of which leads to society degradation and prevailing of mortality over birth rate, is considered to be 8 litres per year. In present-day Russia this figure reaches 15 litres. According to WHO estimates, if the disease covers 11% of population, it is qualified as a critical pandemic and poses a threat to the preservation of society. In Russia, the share of people suffering from alcoholism and drug addiction already exceeds 11%. The society's excessive criminalization also proves its degradation: crime rate in Russia exceeds the critical threshold value more than twice.

Going beyond critical threshold values by the level of suicide and alcoholism indicates demoralization of society and the loss of axiological landmarks. The share of the homeless and other social groups, drawn from a normal social life, points to the fact that the amount of population, which lost the basics of life, went beyond critical limits. According to sociologists' estimates [6], more than 15% of Russians are living on the social "bottom", where basic moral values and constraints are lost. This is caused mainly by the loss of working opportunities and the meaning of life – the share of people who found themselves in a state of long-term unemployment and did not have a chance to self-actualize, far exceeded the maximum critical level.

According to the calculations based on the International Labour Organization methodology, the share of the unemployed among economically active population twice exceeded the maximum critical level established by the Scientific Council of the RF Security Council.

The critical level is exceeded by one more indicator widely used for describing social inequality – the incomes gap between 10% of the wealthiest and 10% of the poorest population groups. According to international standards, Russian society remains poor: the share of individuals with incomes below $ 2.5 per day exceeds the critical value more than 30-fold. In fact, Russian society is splitting by income level, ethnic composition, qualification and education level into the isolated groups, potentially hostile towards each other. This provokes social conflicts, reduces human potential and impedes its development.

Maintaining the existing trends of human potential degradation deprives Russian society of even a simple reproduction ability, not to mention the sustainable development ability. Meanwhile, one can't accurately determine the period within which these trends will become irreversible, as the maximum duration of exceeding the critical threshold indicators, after which it would still be possible to preserve the society, has not been scientifically estimated. There is a significant time lag between the condition of critical threshold pressures and transition to the "point of no return", when the changes become irreversible and turn into the self-sustaining process of socio-economic system's destruction.

The condition of Russian society long ago overcame the threshold value on many parameters without obvious signs of the social system disintegration. As a matter of fact, this disintegration is already going on, but it is not perceived by the ruling elite, which tries to ignore the decay of basic social subsystems and reproduction mechanisms – the family, intergenerational continuity, cultural and moral values. Absence of open manifestations of wide-scale conflicts creates an illusion that the disease will pass away on its own, and stepping beyond the critical point is temporary and harmless.

The critical threshold values should be interpreted taking into account integration interrelations of a social system. There are at least three important features of the society's functioning that should be considered when creating and using the system of critical threshold indicators of its development: the compensatory mechanism of interaction between the structures and elements of the social system, the synergy effect and the "domino principle" [7, 8]. The latter works as a "chain reaction" of the destructive social power release after the collapse of institutions uniting the society, due to the termination of its reproduction mechanisms. In this case, the situation resembles the course of pathological brain diseases that become evident after the destruction of more than half of its cells. Up to this point a person looks normal, although the nervous system functioning indicators have been exceeding the critical threshold values for a long time. When the disease reveals itself, brain degeneration becomes irreversible and incurable.

Historical experience shows that the collapse of a social system usually occurs unexpectedly for the majority of ordinary citizens, as well as for the ruling elite. This can be explained by the nonlinearity and fundamental complexity of social processes. They can continue for a long time with the excess of critical values of main indicators unnoticeably for public opinion till the system reaches the bifurcation point, when the disintegration of its linking reproduction mechanisms takes place, and after that, either transition to a new stage, or absorption by more viable systems, or collapse.

The key role in determining the possible duration of the society's functioning beyond the limits of critical threshold values of indicators characterizing its condition belongs to the selective ability of the management system. It should be sufficient for the timely detection of emerging threats, their neutralization,

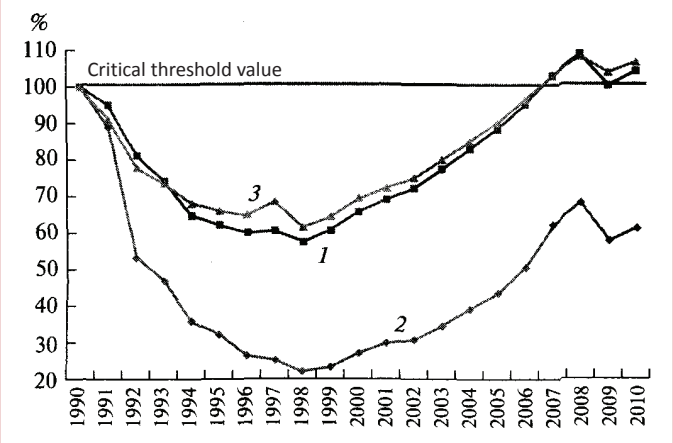
halting the destructive processes, overcoming the arising restrictions and opening up new development prospects. The characteristics of the management system's condition has its own critical threshold level as well. According to well-known researchers C. Jung [9, p. 115] and M. Dogan [10, p. 151], if more than 40% of the population are extremely unsatisfied with the socio-political organization of the society, and believe that the current political system must be radically changed, then the existing political regime loses its legitimacy and the likelihood of its collapse increases greatly. This does not imply the inevitable collapse of the entire social system, but makes it highly vulnerable to external and internal threats. According to ISPS RAS data, if in the 1990s, this figure exceeded 40%, then by 2008, its value decreased to 20%, and then again went up, and it is currently close to 30%.

The condition of the economy. The indicators of the society's condition are to the large extent determined by the condition of its economy. Russian economy has been already deteriorating for a long time, including its structure, industrial, technological and investment potential. Although, Russian economy reached the 1990 pre-reform level according to GDP volume and labour productivity, it still lags behind it by 40% regarding the volume of fixed capital expenditures *(fig. 2)*. This means that during the last two decades, the economy has been working "flat out" – due to excessive exploitation of production capacities, created in Soviet times.

Surpassing the 1990 production level regarding GDP volume doesn't indicate the recovery of economic potential, its quality has deteriorated significantly: the share of machine-building and other branches of manufacturing industry and material production in general dropped sharply, meanwhile, the share of circulation sphere and export-reoriented raw material industries increased *(fig. 3)*. Energy extraction volume significantly exceeds that of the Soviet period, while the volume of machinery and equipment production is 40% lower [11].

The economy functions in the unity of labour, natural resource, industrial-technological, macroeconomic and institutional subsystems *(tab. 2)*. During the Soviet period, the natural resources subsystem maintains the limited production mode, which is characterized by the ratio of natural resource stocks increase and their extraction volume.

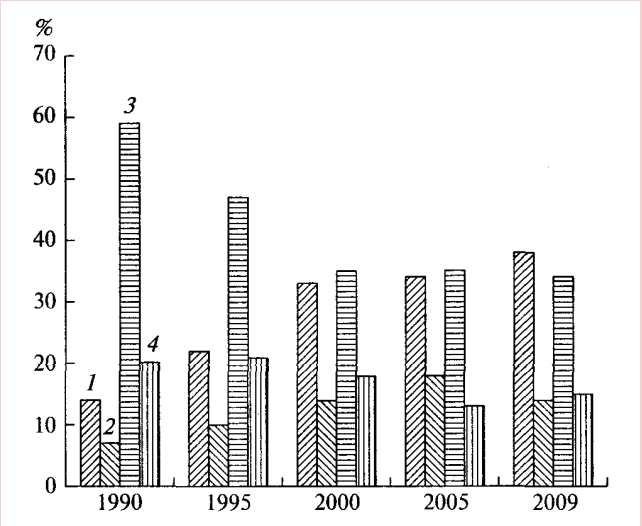
Figure 2. Growth rates of basic economic indicators in the USSR and Russia in 1990 – 2010, in % to 1900.



1 – GDP; 2 – fixed capital expenditures; 3 – labour productivity

Source: Statistical Yearbook of Russia. Moscow: Goskomstat, 2001; Statistical Yearbook of Russia. Moscow: Rosstat, 2009.

Figure 3. Sector dynamics of GDP structure in the USSR and Russia in 1990 – 2009, %



1 – transaction sector (finances, trade, real estate business, renting); 2 – export-oriented sector (fuel and energy complex and metallurgy); 3 – domestic-oriented sector (machine building, processing industry, transport, communication, construction, agriculture); 4 – other.

Source: National economy of the USSR in 1990, Rosstat data, the authors' calculations.

Table 2. Indicators characterizing the reproduction of economic potential in Russia

Indicator	Critical threshold value	Actual condition, 2010	Actual value compared with the critical threshold value
Volume of fixed capital expenditures, in % to GDP	25	20.4	1.23 times less
Depreciation of fixed assets, %	40	78	1.95 times more
Share of mechanical engineering in the industry, %	25	14	1.79 times less
Share of processing branches in the industry, %	70	64.8	0.93 times less
Share of unprofitable organizations (in % to the total number of functioning organizations)	25	27.3	1.1 times more
Production profitability, %	15	11.4	By 3.6 lower
Return on the assets, %	12	6.8	By 5.2 lower
Inflation rate, %	15	8.8	Within the normal range
Social inflation rate, %	15	24	1.6 times more
Share of domestic production in the formation of meat resources and meat products on the internal market, %	70	61.3	By 8.7 lower
Share of material production in GDP, %	66	32	2.06 times less
Level of monetization (M2) for the end of the year, in % to GDP	50	12	4.17 times less

This ratio has been below the maximum critical level (which is equal to 1) for virtually all types of minerals for a long time. Nevertheless, the provision of Russian economy and society with raw materials doesn't arouse much concern for the time being, due to the considerable amount of previously discovered and developed mineral deposits, vast land and water resources.

The condition of production and technological subsystem is characterized by supercritical depreciation of fixed assets. According to official statistics, their depreciation rate equals 50%, but, by expert estimations, physical depreciation of fixed assets in many economic sectors, including basic ones, reaches 80%, which greatly exceeds the critical value.

The latter, in the conditions of the present-day scientific and technological progress, is estimated at 35%, including 25% for the active side, and 40% for the liability side of fixed assets. Although, when these values are exceeded, the economy retains its extended reproduction ability, it loses its competitiveness, lagging behind other countries in science and technology level and efficiency.

Russian economy has been already functioning in reduced reproduction mode for a long time, many vitally important branches of machine-building and processing industries have actually ceased to exist. The share of mechanical engineering in the industry decreased twice in relation to the critical threshold level estimated at 25% by the Non-Governmental Council for National Security of Russia. In total, the share of manufacturing branches in the industry fell by 8% below the critical threshold level, estimated at 70%. Degradation of Russian industry is reflected in the share of Russian high-tech products in the world market, which decreased to 0.2%.

The loss of the economy's independent self-development ability is proved by the share of equipment import that more than twice exceeded the critical limit, which means the production processes' reorientation toward the foreign technological base. This also causes the loss of the country's self-development ability and its involvement in unequal foreign economic exchange, fraught with the danger of national wealth outflow.

The excess of the 35% share of imported goods in the populations' overall consumption means that the country has fallen into critical dependence on the outside world. Meanwhile, the 25% import share for foodstuffs is considered the critical threshold level, its further increase will pose a threat to the country's food security. According to both indicators, Russia has been below the critical threshold level for a long time. This fact has not been taken into account yet due to the sustainable high positive balance of payments and excessive foreign exchange reserves that cover the country's need for imports manifold, given the existing level of purchasing power.

In the conditions of high openness and in the absence of a target-oriented development policy, Russian economy has actually split into two sectors: domestic, which is deteriorating, and export-oriented (mainly raw materials), which, regarding the reproduction mechanisms, is acquiring enclave features and is moving toward the financing at the expense of foreign sources. As a result, Russian economy, which specializes in exports of raw materials in exchange for finished products, acquires the features of a colony, which leads to unequal foreign economic exchange and deprives it of the independent self-reproduction and development ability. This is reflected in the share of primary commodities in export, which significantly exceeds the critical threshold value that we estimate at 40%. The big share of energy exports regarding their production volume, that equals 2/3, indicates the actual degradation of manufacturing industry. Due to this fact and also the reorientation towards the foreign technological base and a high level of imports of consumer goods, Russian economy finds itself in the grip of foreign dependence that determines its evolution in accordance with the needs of the external market, rather than internal development *(tab. 3)*.

Of course, many of the indicators stated in table 3 are of a relative nature. In the vast majority of countries, their values go outside the critical limits. However, they characterize the immunity of a national economy to external and internal threats. For Russia, as a great power, which played a leading role in world development for most of its thousand-year history, this stability is of fundamental importance.

The sustainably high positive balance of payments and manifold excess of the critical level of foreign exchange reserves volume are

often perceived as the signs of a sustainable and independent external economic position of Russia. However, the cause-and-effect analysis in the macroeconomic and foreign economic subsystems interaction mechanisms proves the opposite. The positive balance of payments in Russia is the result of deteriorating economic structure that acquires the raw material specialization, systematic undervaluation of the ruble regarding its equilibrium value, curbing of the final demand at the expense of restricting the money supply through sterilizing a part of the budget revenues.

In other words, monetary and foreign exchange policy mechanisms have made Russian economy dependent on the interests of raw materials exporters and international speculative capital, and critically dependent on the global market situation. This dependence is aggravated by the binding of money supply to the growth of foreign exchange reserves, as a result, Russian economy reproduction is guided by the external demand for its goods and the supply of foreign credits. At the same time, along with foreign exchange reserves growth and large-scale export of capital, external indebtedness is increasing, and the dependence of Russian economy on external credit is going far beyond critical limits. And though the share of foreign banks in Russia's bank assets hasn't reached the threshold value, the ratio between foreign credits to Russian corporations and money supply greatly exceeds the critical limit, that we have established on the level, ensuring the protection of the country' banking system against external shocks (see table 3).

Accordingly, even though the values of the indicators, traditionally reflecting the country's foreign economic condition (balance of payments, the volume of state foreign debt to GDP, the coefficient of foreign exchange reserves sufficiency, etc.) are favourable, in reality, the country's economy is extremely dependent on foreign creditors and global prices for energy and raw materials.

This can be supplemented by "offshoring" the property rights for the key Russian enterprises, as well as the significant share of depositary receipts in their authorized capital reaching 60% for the basic branches of economy, this figure exceeds 5-fold the critical threshold value established on the basis of objective requirements to the selective capacity of national economy management system. The share of foreign investors in the ownership structure of free-floating stocks in the Russian market permanently exceeds the critical threshold value calculated taking into account the requirements to market stability towards the fluctuations of foreign speculative capital inflow.

Artificial reduction of all mechanisms of money emission to foreign currency purchase significantly narrowed the developmental opportunities of Russian banking system. The reproduction of the economy is not supported by its financial subsystem. Banks do not possess lending opportunities, sufficient for the economy development, which is reflected in the indicators of the ratio between the loans to the non-financial sector and GDP, which are 3-5 times lower than in developed countries. The overall volume of the economy monetization throughout the post-Soviet period remains substantially lower than the critical threshold level essential for ensuring the smooth circulation of capital estimated by the experts at 50% of GDP. At the same time, Russian financial system remains a donor to the global economy. By providing its foreign exchange reserves to the external environment at 2 – 3% per annum, our enterprises and banks attract foreign credits at 7 – 8% per annum. Financial system experiences a considerable loss of resources due to unequal foreign economic exchange. This is the result of the economy split into the internal sector determining the reproduction of economic and human potential, and external raw materials and financial sectors oriented at the export

Table 3. Indicators, characterizing the external economic dependence of Russia

Indicator	Critical threshold value	Actual condition, 2010	Actual value compared with the critical threshold value
International reserves sufficiency index (in % to the 3-month volume of goods and services import)	9	20.4	2.3 times more
Volume of aggregate foreign debt (in % to GDP for the end of the year)	25	32.5	1.3 times more
Share of imported equipment in the domestic demand, %	30	65.6	2.18 times more
Share of imported foodstuffs in GDP, %	25 – 30	32	1.07 – 1.28 times more
Share of import in the material production, %	25	94	3.76 times more
Share of foreign capital in the investments, %	25	36	1.44 times more
Amount of foreign liabilities of commercial banks and other sectors, in % to GDP	25	29.5	1.18 times more
Share of overdue and unrecovered foreign loans (in % of the total volume of received loans)	25	50	2 times more
Share of foreign investors in ownership structure of free-floating stocks, %	30	60	2 times more
Share of foreign credits to M2, %	20	36.4	By 16.4 more
Trade balance deficit: according to the balance of payments methodology, %	15	Surplus 26.3	Within the normal range
GDP in % to the global volume	7,5	2.5	3 times less
per capita, %	100	107	Within the normal range
GDP in % to the volume of EU states	25	10	2.5 times less
per capita, %	75	35	2.14 times less
Volume of foreign currency in % to the ruble money in the national currency	10	50	5 times more
Volume of foreign currency in cash in % to the volume of cash rubles	25	100	4 times more
Share of expenditures on the foreign debt servicing (in % to the total volume of federal budget expenditures)	20	1.9	Within the normal range
Ratio of foreign trade turnover to GDP, in %	30	41.6	By 11.6 more

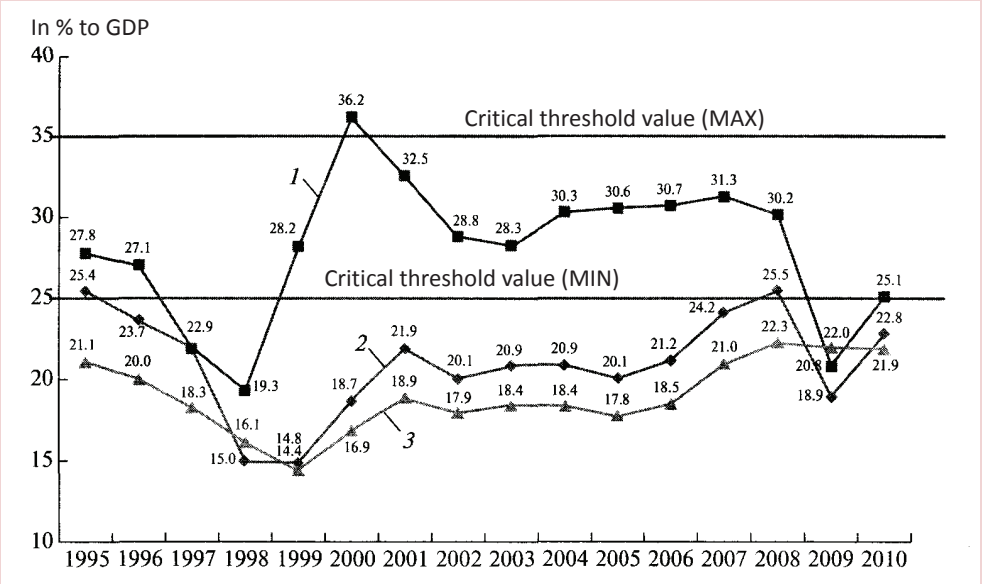
of capital and not actually involved in the mechanisms of reproduction of the inwardly oriented sector of the economic system, ensuring its vitality.

The underdevelopment of the banking system and the absence of mechanisms of its refinancing by the Central Bank are among the main causes of the extremely low standard of accumulation, which has long been significantly below the level necessary for simple reproduction, and also 1.5 times lower than the savings rate *(fig.4)*. At the same time, inflation reduction to an acceptable level in the absence of banking system refinancing mechanisms doesn't allow to improve the investment activity to a regular level.

The internal reproduction mechanisms do not provide for the maintenance of the existing economic potential, not to mention its development. The existing price structure impedes the opportunities for the simple reproduction of manufacturing industries and construction, the major part of production is unprofitable or distressed, and this makes it impossible to invest in the renewal and modernization of their assets. For example, the profitability of such key branches, as mechanical engineering and construction, which determine the investment opportunities, is below the Central Bank refinance rate. This means that the loan capital for the reproduction of these branches is not available, which causes their narrowing and degradation.

Most of the indicators reflecting the state of Russian economy are outside the limits of the critical values, depicting its self-reproduction ability. It has been functioning in the limited reproduction mode, despite the existing opportunities of transforming accumulated savings into investments and directing the rich natural resources base to the technological development.

Figure 4. Gross capital formation and gross savings in Russian economy in 1995 – 2010, in % to GDP



1 - gross savings; 2 - gross capital formations; 3 - gross fixed capital formation

Source: National accounts of Russia in 2003 – 2010: statistical yearbook. Moscow: Rosstat, 2011

The situation is even worse with indicators, reflecting the development ability of Russian economic system and its competitiveness *(tab. 4)*. The share of innovation-active enterprises, the share of new products in the total volume of machine-building products and the relation of R&D expenditures to GDP in Russian economy is 3 times lower than the developed countries' level, which in this case should be considered as critical threshold. According to economy efficiency indicators, this gap is multiple.

Over the past two decades there has been a significant decline in the Russian science and technology potential, its share in the global system has reduced sharply. After a 20-fold drop in the early 1990s, the volume of R & D expenditures increased and stabilized at a low level – just over 1% of GDP, which ensures neither reproduction, nor preservation of the existing scientific and technological potential. Given the present-day rates of knowledge accumulation, the total volume of which is doubled every quarter of the century, the cessation of scientific research for one year leads to a depreciation of the existing knowledge by 25%. Lagging behind the world level of institutions, that form the intellectual potential *(tab. 5)*, makes it difficult to overcome the degradation tendencies and create the necessary conditions for sustainable economic development. The share of Russia in the global knowledge economy has declined to a marginal level.

Under the current state of affairs, the prerequisites for restoring the economy's normal reproduction capacity are absent: the rate of accumulation is at an extremely low level, that we estimate at 25%, and the indicators of labour productivity increase are lagging 6-fold from the critical threshold value, set with regard to the necessity of overcoming the Russian economy's backwardness in the foreseeable future. Stepping on the path of sustainable development requires, according to our estimates, the increase of saving rate, as a minimum, up to 35%. It can be achieved, because the volume of savings in the economy 1.5 times exceeds the volume of investments, and there are other reserves,

Table 4. Indicators reflecting the competitiveness of Russian economy

Indicator	Critical threshold value	Actual condition, 2010	Actual value compared with the critical threshold value
Share of innovation-active enterprises, %	40	9.3	4.3 times less
Share of processing industry products in the export, %	50	23	2.17 times less
Dispatched innovation products (in % to the total volume of industrial products)	15 – 20	1.7	8.82 – 11.76 times less
Share of innovations, in % to GDP	3.2	0.9	3.6 times less
Share of new kinds of products in the total volume of mechanical engineering production, %	7	2.6	3.7 times less
R&D expenditures, in % to GDP	3	1.5	2 times less
Unit indicators of energy consumption (tons of petroleum per $ 1 thousand of GDP):			
overall energy resources expenditure	0.15	1.65	11times more
electricity expenditures	0.02	0.17	8.5 times more
oil and gas expenditures	0.10	1.16	11.6 times more
Losses of natural resources during extraction (in % to the total volume)	3 – 8	10 – 65	3.3 – 8.1 times more
Average annual rate of labour productivity increase, %	6	1	6 times less
Share of Russian high-end technologies in the world, %	12	0.3	40 times less
Share of intellectual property in the business worth, %	25	10	2.5 times less
Share of state expenditures on ecology, in % to GDP	5	0.8	6.3 times less

Table 5. Russia's position among 58 countries in the rating of institutes forming labour potential (according to the Global Competitiveness Report data for 2007 – 2008)

Point of comparison	Russia	China	India	USA	Germany	Japan
Correspondence of education system with the requirements of competitive economy	43	32	26	16	20	23
Quality of education in the fields of mathematics and natural sciences	27	37	10	30	26	20
Quality of higher education	35	49	39	5	20	22
Quality of primary education	30	32	46	23	22	21
Education expenditures	44	55	39	24	32	47
Availability of Internet in schools	38	32	39	11	20	22
Quality of business schools	49	54	8	6	24	47
Scope of the training of companies' employees	54	41	29	11	9	4
Availability of local research and education centres	49	34	28	2	3	6

which are not used due to many reasons, including a large-scale outflow of capital.

When assessing the above stated measurement results, it is necessary to note, that, despite their limited character, they objectively reflect the socio-economic condition of Russia. For a long time, the country has been far beyond the critical values for the majority of indicators, characterizing the reproduction and development ability of the economy and society. This indicates the presence of actual threats to the national security, and the remaining time for their neutralizing and restoring the country's sustainable development ability is wearing out. At the same time, taking the measurable indicators out of the critical threshold values area is not a goal in itself. The society and economy are changing constantly, and their performance is of non-linear and non-equilibrium character. The technological structure of the economy and intellectual structure of the society is transforming quickly. Trying to provide the stability by maintaining a simple and even extended reproduction of the existing social and economic subsystems in the conditions of rapid structural changes in the world economy is clearly not enough for successful or just sustainable development.

When grounding the conclusions of the conducted analysis and objectives of sustainable socio-economic development, it is necessary to take into account the patterns of modern economic growth. Today, it can be considered proven, that the world economic development is uneven, forming a sequence of long waves, connected with the change of technological modes [12]. This shift is accompanied by dramatic changes in the technological structure of the economy.

Under the current global crisis, the transition to the new (sixth) technological mode is taking place. In this connection, the policy of Russia's modernization and development should set the goal of a prompt formation of the new technological mode. According to the estimates, up to the present time, the period of the "embryonic development" of this mode has been passed [13]. After a few years, it will reach the exponential growth, and, as a result, the next long wave of economic development will begin.

The nucleus of a new technological mode is the complex of nanotechnologies, bio-technologies, information-communication and social technologies. Although, today, the world remains in the state of depression and crisis turbulence, the complex of industries, defining a new technological mode, is characterized by the sustainable growth rate of 35% per year. Taking these facts into account and relying on our available capabilities and science and technology potential, one should aim to concentrate the resources in these areas specifically. It is necessary not only to renew the basic funds, but to focus primarily on the technological structure modernization, to invest in the development of principally new directions, which nowadays become the drivers of economic growth and the formation of the sixth technological mode. After the world overcomes the economic depression, and the long wave of development begins, the countries, that managed to become leaders in the economic sectors crucial for the new technological mode, will gain huge advantage and provide for long-term sources of super profits (intellectual rent) by building scientific and technological superiority.

The revealed regularities in the long-term economic development allow for grounding the strategy of Russian economy priority development in conditions of the new technological mode advancement [14]. For Russia, where industry and science have considerable resources in a number of areas crucial for establishing the sixth technological mode, the possibility of developing the perspective trends of global economic growth before other countries is opening up.

The condition of the management system. Although the indicators of Russia's socio-economic condition have improved greatly compared to those of mid-1990s, when their list was formed for the first time, the observed values of most of them exceed the critical threshold level. The country came out of the critical zone regarding the indicators of the state financial system's condition, but it remains within the boundaries of the critical value according to the indicators reflecting the industrial-technological sphere condition, human and scientific-technological potential. The investment and innovation activity indicators remain extremely low, as well as other indicators reflecting the efficiency of the economy and its development capacity.

The recovery of Russian economy's expanded reproduction and modernization ability requires taking into account the regularities of the long-term economic development and working out the right strategy along with its efficient implementation mechanisms. This requires a qualitative improvement of the management system, tackling the extreme corruption, shadow activity and losses. The latter, measured for Russian economy in general, account for about half of GDP, many times exceeding the maximum critical value, which corresponds to modern ideas about effective management of the economy.

According to the estimates of V.M. Simchera [15], the level of overall national economic costs in the Russian Federation on the account of interindustry balance manifold exceeds the GDP volume, which testifies to the negative contribution of the management system in economic growth *(tab. 6)*.

As a result of the poor condition of the management system, Russia's resource potential efficiency usage coefficient is more than twice below the critical threshold value, including the agricultural land usage coefficient [16]. Wide-scale export of capital, having reached for the 2 decades the astronomical value of $ 1 trillion; brain drain that is also devastating for the economy and society; the loss of the most part of scientific, industrial and human potential are the consequences of unsatisfactory performance of market self-organization mechanisms and state regulation institutions.

Actual self-estrangement of the ruling elite from the society and depriving the overwhelming majority of citizens of exercisable rights to participate in management processes impede the feedbacks between the society and the state. The latter conforms to the oligarchic interests and becomes a tool of receiving the administrative markup by a corrupt bureaucracy, protected from liability to the society thanks to the existing political system. It results in the extremely high level of administrative-corrupted markup in the price of expense allocated resources given extremely low salaries and innovation activity.

Table 6. Estimations of the Russian economy management quality

Indicator	Critical threshold value	Actual condition, 2010	Actual value compared with the critical threshold value
Level of economic losses, in % to GDP	7	50	7.1 times higher
Level of economic losses, $ billion:			
at the ruble exchange rate	105	750	7.1 times higher
at the purchasing-power parity	175	1250	7.1 times higher
Level of economic losses, in % to GDP	0.8	1.2	1.5 times higher
Russia's overall resource potential efficiency usage coefficient (% of GDP to national wealth, i.e. the overall monetary volume of natural, labour, gold and currency and intellectual resources)	75	18	4.2 times lower
Actually developed potential efficiency usage coefficient	18	9	2 times lower
Share of rent and profit in the price for raw material resources, %	25	65	2.6 times higher
agricultural land usage coefficient, %	100	50	2 times lower
Share of shadow economy, in % to GDP	25	45	1.8 times more
Share of "off-the-books" salaries, in % to reported salaries	25	39.6	1.58 times more
Differentiation of RF subjects:			
according to GRP per capita, times	5	21.1	4.22 times higher
according to monetary incomes, times	5	6.5	1.3 times higher
Index of confidence in official information	100	18	5.56 times lower
Citizens' distrust of the governing bodies, protest actions, corruption level, rating of business environment, export of capital and profit	35	85	2.43 times higher
Share of corruption and shadow economy, in % to GDP	5	40	8 times higher
Federal budget deficit, in % to GDP	3	4.2	1.4 times higher
Russia's overall economic losses coefficient, in % to GDP	7	50	7.1 times higher
Volume of aggregate foreign debt (in % to GDP for the end of the year)	60	6.5	Within the normal range
Share of citizens supporting the radical change of the political system, %	40	31	Within the normal range
Level of satisfaction with the activity of executive power bodies of the RF subjects	40	30	1.3 times lower
Level of population confidence in the central government authorities	50	39	1.28 times lower
Level of population confidence in the army	40	46	Within the normal range

Extremely high level of corruption reflects the inability of state authorities to solve the complex tasks of socio-economic development, connected with the necessity of implementing the large-scale projects and concentrating resources on breakthrough directions of science and technology progress. In these circumstances, it is hardly possible to expect the increase in the business and innovation activity, which is proved by the state of business conditions.

Business circles respond to the state by tax evasion, capital flight, transfer of property rights to offshore areas: the share of the "underground" economy in GDP, the share of the export of capital to the volume of profit generated by the economy, the share of assets in the basic economic sectors, transferred to offshore areas greatly exceed the critical threshold values. Similarly, the citizens respond to their removal from participating in management by the distrust towards the state authorities (see table 6). In other words, state institutions pretend to govern, and citizens pretend to submit.

At the same time, commonly used indicators of state management condition are quite satisfactory. The Russian state possesses a balanced budget, a moderate debt, the exchange rate of the ruble demonstrates stability, the nominal volumes of GDP are growing well along with the incomes of citizens who rarely resort to any form of protest actions. The country's top leadership was surprised to face the rallies of those dissatisfied with the results of 2011 – 2012 parliamentary and presidential elections. However, even a cursory analysis of the relatively small number of indicators reflecting the state of the economy and society shows that the basic mechanisms of their reproduction function in conditions of extreme stress.

The analysis given above proves the necessity of official establishment and systematic measurement of the set of critical threshold indicators reflecting the social development, which will allow receiving accurate information concerning the results of decisions taken and use it in follow-up activities.

Expert testing of the critical threshold indicators method should be expanded by simulation of the social processes designing and modeling based on the analysis of statistics, empirical data, probability analysis and making up graphic representations of threats. Elaborating the method of critical threshold indicators reflecting the society's development can become an important step towards the incorporation of social sciences into the modern Russian society management system. The system itself needs radical modernization, aligning with the objective complexity of Russia's socio-economic development goals.

The transition to the target-oriented development policy, backed by adequate monetary, industrial, scientific-technological and structural policy is necessary for implementing the opportunities of priority development and removing the economic condition indicators out of the critical threshold zone. The list of measures aimed at ensuring the priority development of Russian economy was developed by the scientists of the Section of Economics of the Social Sciences Department of RAS. This list was submitted to the RF Government and published in the journal "Economics of contemporary Russia" [17]. It should be supplemented by measures aimed at expanding the opportunities for citizens' participation in the society management, as well as the creation of effective mechanisms ensuring the decision-makers' responsibility for the objective results of the conducted socio-economic policy. Radical changes are also necessary in the state policy in the sphere of education and culture that should focus on the consolidation of Russian society, harmonization of prevailing moral values and landmarks of creative activity.

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Directions of socio-economic modernization of Russian regions

According to the author, if modernization is carried out without a thorough consideration of the country's social and territorial peculiarities, it can lead to the uneven distribution of "modernization" effects resulting in even greater imbalances of territorial development as compared to already existing ones. Long-term strategies and development plans, aimed at the socio-economic system modernization, should be based on the available potential of the regions. The notion of "socio-economic potential of modernization" is introduced, which includes not only a set of resources, but also qualitative characteristics of the regional systems. Socio-economic modernization is a set of interrelated directions, including the industrial policy activities, development of scientific-technical and innovation potential, improvement of social infrastructure, etc.

Modernization, socio-economic potential, space, regions, regional policy, strategic planning, public-private partnership, industrial policy, regional innovation systems, human development.

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At present, the concept "modernization" is widely used in political debates, periodicals, scientific studies and is interpreted in various ways: as an upgrade, reform, development, positive changes, etc. According to a classical definition, modernization (from Greek "modern" – the newest) is perfection, improving, renovation of an object, bringing it in line with new requirements and standards, technical conditions, quality indicators.

Russian experts have developed several concepts of the country's economy modernization: the concept of long-term development of the Russian Federation for the period up to 2020; the strategy "Innovation Russia – 2020" [10]; "2020 Strategy: New development model – new social policy" (group of V.A. Mau – Ya.I. Kuzminov) [20]; priority development strategy by S.Yu. Glazyev [5; 6]; the strategy of interactive modernization by V.M. Polterovich [17; 18; 19]; the strategy of the economy balancing and domestic demand stimulation by R.I. Nigmatulin [14; 15]; the strategy of innovation-technological breakthrough by A.A. Akayev [1; 2; 3; 4], etc.

In general, the participants of the discussion on the issue of modernization that is going on in the Russian scientific and expert community agree that the main Russian socio-economic development objectives include the establishment of a genuinely democratic socially-oriented state with a strong innovation economy, capable of providing its citizens with the high level and quality of life, as well as maintaining the country's competitiveness in the global economy.

Most experts and designers of Russian economy modernization strategies believe the efficient strategy of achieving these goals should envisage: the creation of innovation economy; ensuring a high level of human capital; conducting the efficient social and industrial policy; the improvement of institutions' quality; improvement of the business and investment climate; existence of a strong and efficient state; expansion of private initiative and free competition; organization of interaction between the state, business and society in solving modernization tasks.

The most disputable issues are the following: what should be done in the first place: accelerating economic development rates or curbing inflation; what kind of modernization should be the first to implement: institutional (improvement of institutions) or technological (promotion of economic growth); what type of demand we should orient at: domestic or foreign.

Deciding between the two modernization alternatives: "from above" and "from below" is also very important. In case of choosing the first one, the state's role is reduced to strict regulation, redistribution of gross domestic product in its favor, concentration of the resources necessary for wide-scale investment in the economy reconstruction, definition of branch-wise priorities and strengthening of administration. Choosing the second alternative implies the leading role of lower economic levels – enterprises and their corporate associations, market forces, private initiative, here the state's task consists in creating the conditions for proactive economic activities.

The common feature of these two alternatives lies in insufficient consideration of the spatial factor, determined by a wide set of the country's territorial peculiarities. Meanwhile, the long-term development strategies and plans, aimed at the socio-economic system modernization, should be based on the existing potential of the regions.

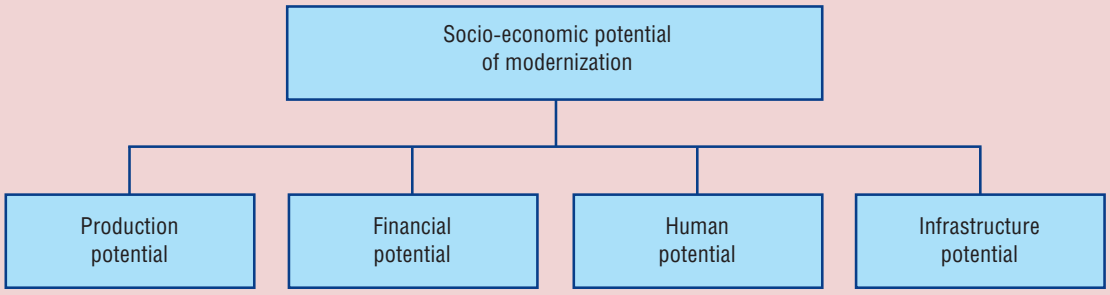
Modernization of national economies can be effected by using the state's and private business' own resources (creative type), as well as by attracting foreign investments, new knowledge, developments and technologies (adaptive type). It seems that Russian regions require mixed-type modernization with the smooth and efficient usage of advanced foreign achievements and their own scientific and innovation potential capabilities.

Choosing the specific modernization type for a certain territory should be preceded by a detailed analysis of the region's socio-economic potential. It should cover such aspects as the production base condition, technologies development level, professional competence level of the various categories of human resources, existing science and technology potential, financial resources of the territories, etc.

In this connection, it seems appropriate to use the concept of *"socio-economic potential of modernization"*, which includes the very set of structural elements of the socio-economic potential, which can be used for achieving modernization goals. The concept of *"socio-economic potential of modernization"* includes not only a set of resources, but also qualitative characteristics of the regional systems themselves. These characteristics show the extent with which the existing system of industrial relations, development priorities, social policy in the regions are aimed at solving modernization tasks. The structure of the socio-economic potential of modernization is presented in *figure 1.*

In our opinion, the concept of management of socio-economic potential of modernization should be based on the following principles: potential is a dynamic characteristic, and can be traced only in the process of its use; the use of the socio-economic system potential should be accompanied by its constant increase; the processes of using and gaining potential are continuous, and they complement each other.

Figure 1. Structure of the socio-economic potential of modernization of the regions



The determining peculiarity of the region's modernization potential consists in the priority of both the achieved level of the most important volumetric parameters and the dynamics of economic and social development of a given territory. This essentially distinguishes the region's potential modernization ability from its general economic development level characterized only by static (level) indicators, such as, for example, the gross regional product.

The analysis conducted by the group of ISEDT RAS scientists in the framework of the project "Socio-humanitarian potential of Russia's modernization" (project supervisor – Academician N. Petrakov) revealed insufficient preparedness of the majority of Russian regions for the implementation of modernization transformations [9]. The main obstacles for their implementation include: the insufficiently high level of per capita GDP in most RF regions; the significant depreciation of fixed assets in Russia on the whole, as well as significant regional differentiation according to capital-labor ratio; the low level of fixed capital expenditure; the lack of financial support to science and R&D, the low degree of innovation activity, which is the reason for a low research intensity of production; uneven labour resources distribution, resulting in the surplus or shortage of working population in different regions; the low level of life expectancy, population ageing; the high level of socio-economic differentiation of the population.

In relation to the country's socio-economic modernization tasks, it is expedient to eliminate the shortcomings of the present state regional policy, improve the methodological tools of regions' socio-economic development management.

The general economy dynamics and sectors development dynamics at the federal level are the most important for establishing the indicators of the regional industrial and social spheres development. On the other hand, the national macroeconomic indicators in the strategic perspective will be achieved as a result of the country's regional socio-economic systems functioning. However, due to the differences in the level of resources availability and their utilization extent, the contribution of a given region to Russian economy on the whole will have its quantitative and qualitative characteristics.

The study of the existing management practice showed a number of shortcomings of the state regional policy in modern Russia. The most notable of them are as follows:

– the absence of the single scientifically grounded planning system of socio-economic development of the country and its subjects, as well as the lack of clear coordination synchronization mechanisms of the regional, municipal and branch-wise development strategies;

– power centralization and concentration of significant financial resources at the federal

level do not encourage regional authorities to improve management efficiency;

– the set of regional development management tools is limited, and reduced mainly to the budgetary transfers and federal target programmes, modern tools and management techniques are being implemented very slowly;

– the policy of socio-economic development leveling does not produce tangible results, the remaining regional heterogeneity continues to exert considerable negative influence on the structure and efficiency of the economy [22, p. 22].

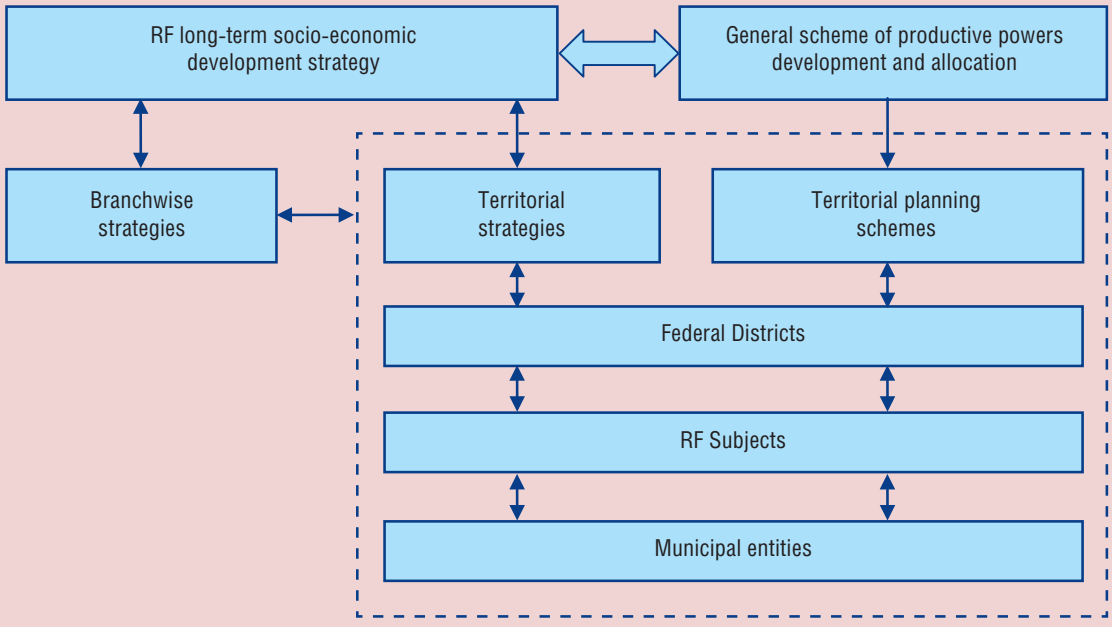
Comprehensive socio-economic modernization of the regions requires the state regional policy updating, strengthening of the state regulation, introduction of modern effective forms and methods of influencing the socio-economic processes, as well as the qualitative change of the management system.

The main condition for increasing the regions' socio-economic development management efficiency in the direction of their modernization is the establishment of a strategic planning system, including macro-, meso- and micro-levels. It is necessary to create the spatial-sectoral system of programme socio-economic development management *(fig. 2)*.

Providing the necessary potential for comprehensive modernization of socio-economic systems in individual regions can prove to be a difficult task (with the possible exception for some most developed RF subjects). Therefore, interregional cooperation based on the interaction and specialization of different regions, is quite important. In this connection, it is considered expedient to increase the role of macro-regions (i.e. the Federal districts of the Russian Federation) in the regional management system.

In the macro-regional framework, many economic tasks can be solved more efficiently, the most important ones from the viewpoint of modernization strategy are the following: large-scale target projects and programmes implementation; financial, material, labour and other resources mobilization and their efficient use; development of inter-regional production integration; establishment of the systems of

Figure 2. Spatial-sectoral system of strategic management of the regional socio-economic development



corporate industrial-commercial organizations (corporations, companies, associations, etc.), R&D and manufacturing complexes closely connected with small businesses, large and diversified territorial-economic complexes and regional (zonal) markets with significant commodity resources and market infrastructure for the promotion of market flexibility and sustainability; establishment of firm inter-district market relations; efficient regulation of the science and technology progress, natural resources usage and protection, establishment of priority directions of production intensification and resource conservation; definition of regional and sectoral restructuring priorities, investment activity, establishment of the system of state support to underdeveloped regions and reorganized enterprises; establishment of rational and sustainable economic proportions and relations that contribute to the single national economic space stability.

The basic scheme of implementing these tasks is presented in *figure 3*. The peculiarity of the scheme consists in its orientation toward nationwide objectives and characteristics of modernization reforms.

In recent years, the RF subjects have carried out the conceptual strategic (and in many territories – programme) research on the regions' socio-economic development for the period up to 2020. It is relevant to adjust them for the purpose of linking the modern condition of regional economy with the country's long-term development strategy, promoting the implementation of the socio-economic development modernization scenario.

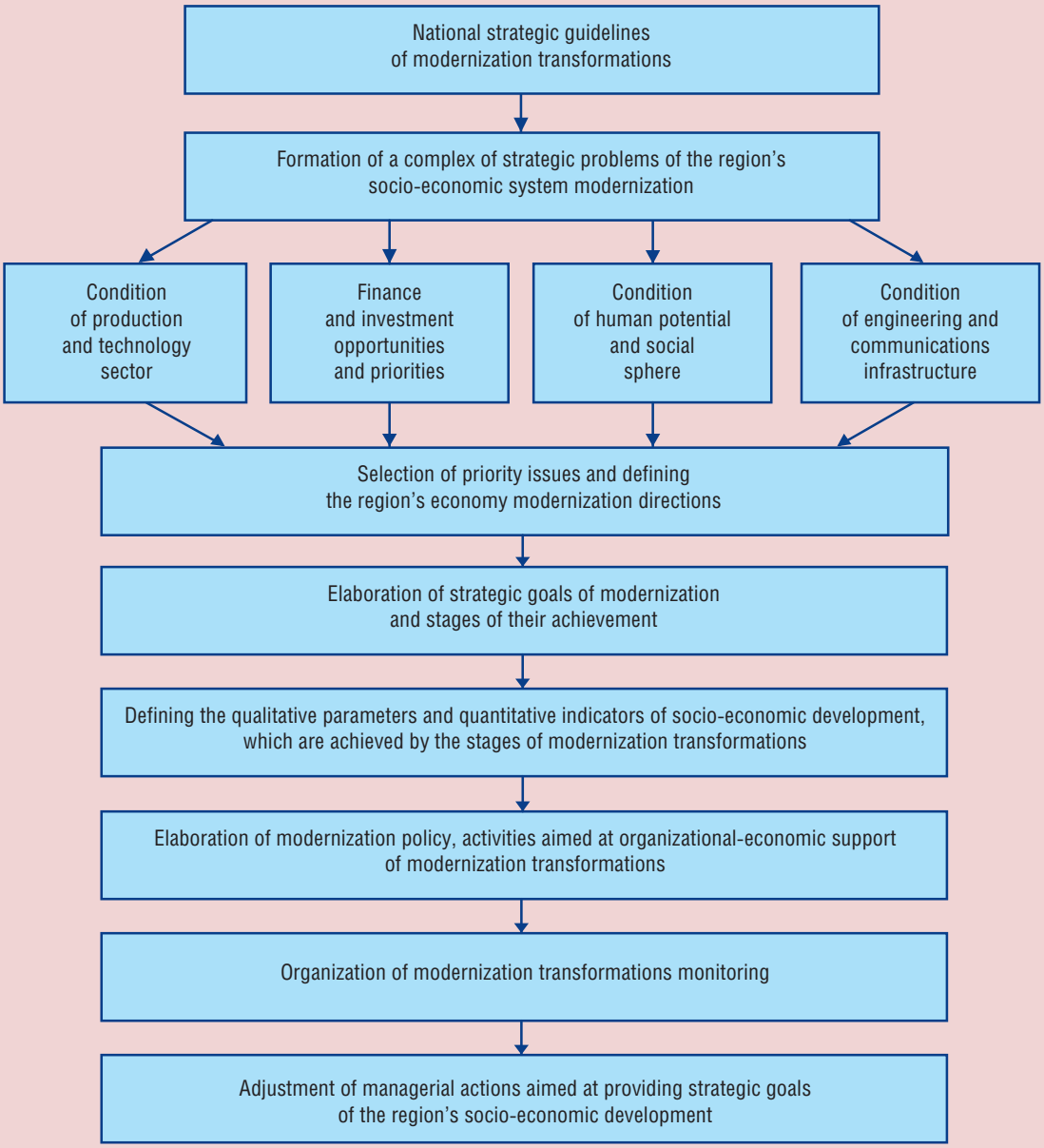
In the regions, it is necessary to create a multi-level planning system as an effective method for implementing strategic objectives and development priorities. This system includes strategic, tactical and operational levels of planning, and it is based on the regular monitoring *(fig. 4)*. In this respect, it is considered appropriate to combine the process of medium-term and short-term plans (programmes) elaboration (programmes), i.e. to create a system of continuous planning, including the elements of tactical (medium-term) and operational planning.

The essence of continuous planning consists in working out a single document – a comprehensive plan (programme) of a region's development for 5 years. Thus, the plan (programme) considers the first year in detail, with the monthly (quarterly) distribution of activities and planned indicators, the second year is described more widely (with semi-annual distribution of activities and indicators), the third and subsequent years – without quarterly distribution and in annual parameters. When drafting the plan (programme) for the next year, the activities for subsequent years are specified and complemented. Thus, the continuity and sustainability of the strategy implementation planning and management are ensured.

The institute of public-private partnership possesses considerable potential for implementation of the regional socio-economic systems modernization tasks.

The development of efficient institutions of cooperation between the state and business is one of the prerequisites for conducting successful economic policy, increasing the investment and innovation activity, improving the country's competitiveness as well as developing industrial and social infrastructure. Such cooperation will promote the GDP growth rate, improve the efficiency of public sector regarding its compliance with economic development requirements, reduce costs at all levels when implementing infrastructure projects. In addition, this cooperation promotes the improvement of the quality and increases the availability of socio-economic infrastructure and production factors, capital, labour, technology, and also the development of inter-firm cooperation, stimulates export and attraction of foreign investments.

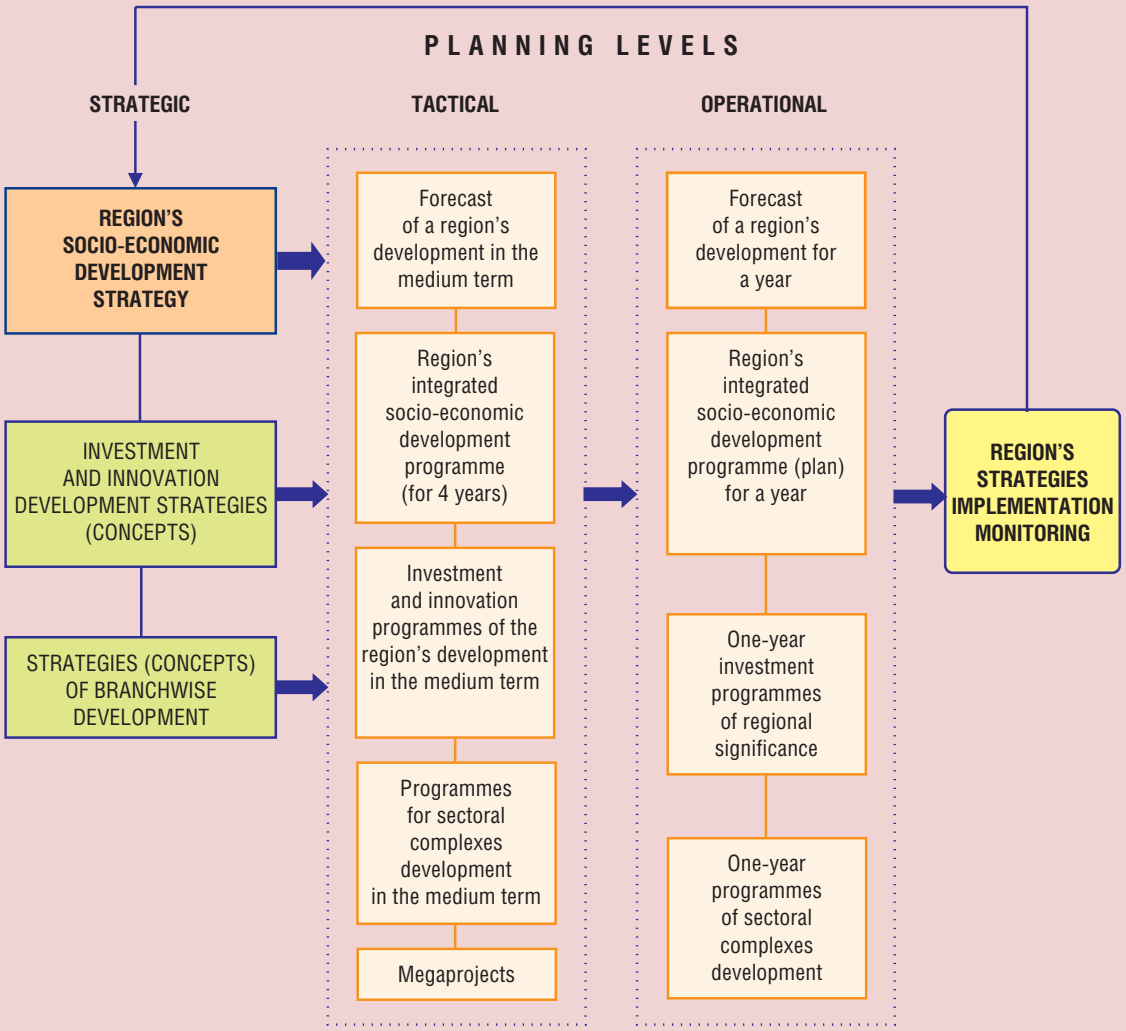
Figure 3. Basic scheme of defining the goals of socio-economic systems modernization and the complex of activities aimed at their achievement



Public-private partnership (PPP) is the form of interaction, most efficient for achieving the socio-economic modernization goals. Given the variety of definitions, PPP usually means a mutually beneficial medium- and long-term cooperation between the state and business, implemented in different forms (from the contracts on performance of works, share sales up to advisory cooperation between the government and business associations) that is aimed at solving political and socially-important tasks at the national, regional and local levels.

Implementation of projects based on the cooperation between authorities and business is an important step toward the elimination of infrastructure restrictions for growth, establishment of new or modernization (technical, technological upgrading) of the existing enterprises, creation of new development

Figure 4. Multilevel system of regions' socio-economic development planning [21, p. 254]



guidelines, promoting the increase of the regions' socio-economic development, expanding the range and improving the quality of services.

The process of creating and using PPP mechanisms in Russia is only at its initial stage. Expanding the partnership between business and authorities is possible through the creation of favourable conditions for the development of business environment. Along with the implemented measures, stimulating business for efficient investments, great importance is attached to practical steps toward the development of public-private advisory institutes, elaboration of partnership plans, expansion of the national, sectoral and regional business associations' activities. Accordingly, the partnership relations between the state and business should be developed at the territorial (regional, municipal) and sectoral levels.

An important condition for PPP development is the solution of a number of organizational issues, including [16]:

- extending the access of enterprises to financial resources (launching the mechanism of using the investment fund resources; increasing the capital of development banks; providing the state support for the formation of venture capital funds; increasing the effectiveness of leasing support mechanisms);

• elaboration of long-term and medium-term programmes of economic development institutions functioning (investment, venture and guarantee funds, large investment banks and state corporations, institutions of supporting small and average business, etc.), improvement of their activity;

• development of information and methodological tools of government and business interaction: the formation of the legal base promoting the efficient development of authorities and business relations; consulting management bodies on the issues of organizing PPP projects, the development of an appropriate methodology; information support of PPP projects market, including the PPP projects database maintenance; monitoring and extension of the most successful experience of employers' and executive power bodies associations in the sphere of socio-economic modernization, their competitive co-financing of the implemented projects; participation in elaborating and selecting the programmes of improving professional skill of state and municipal management staff on the issues of PPP projects organization and management.

Achieving the following goals will promote the development of cooperation between business and authorities on the issues of economy modernization at the sectoral and regional level: removing infrastructure restrictions on economic growth; development of high-tech productions of manufacturing industry and agro-industrial complex; support of exporting industrial high-tech products; expanding the innovation and industrial potential of small- and medium-sized businesses.

These tasks can be solved through the formation and further development of special economic zones, industrial parks, subcontracting mechanisms, the creation of industrial clusters, etc.

Public-private partnership is an efficient tool for attracting private investments to handling economic modernization issues. Regarding the potential of this institution, it can be stated that the further development of mutually beneficial cooperation can become the basis for increasing the resources usage efficiency and solving the problems of the progressive socio-economic development of territories.

The decisive importance in the realization of the regions' socio-economic modernization is attached to neoindustrialization. The target-oriented industrial policy is the most optimal organizational-economic form of its implementation.

Analysis of foreign experience in industrial policy implementation shows that, at various times, different tools of government incentive became the driving force of industrial development. Choosing a particular group of mechanisms of implementing the government objectives aimed at improving the country's competitiveness depends on its initial socio-economic condition. Meanwhile, the concept of state industrial policy in some countries is based on the principle of creating favourable conditions for the development of priority industry sectors.

The basic tools of regional industrial policy implementation include: the creation of conditions for improving investment climate; establishment of a favorable tax regime; provision of benefits on the loan rates to enterprises and simplification of the credit system as a whole; increase of R&D funding; development of the state policy oriented toward innovations and scientific-technical progress.

The world and domestic practice possesses a wide range of methods, which can be presented in several functional groups: structural, investment, financial and credit, foreign economic, scientific-technical, fiscal, price.

The most efficient are the following methods of regulating the regions' industry: the application of direct and indirect regulation measures (level of tax burden, foreign investment,

restructuring procedures, privatization of state enterprises, prices for resources and industrial goods); the introduction of measures for attracting investments in the region's industry; the study of experience of innovations introduction in the industry of other developed countries; commercialization of technologies, innovations, and developments; financing of fundamental research and R&D, as well as the development of infrastructure at the expense of regional budget funding; the formation and maintenance of demand for industrial products through state orders and purchases.

The development of science-intensive productions at the regions' industrial enterprises; implementation of measures for stimulating innovation activities in the industry; promotion of the industrial clusters formation; development of a regional normative legal base of the investment activity; monitoring of the investment activity; regions' participation in the federal target programmes; support and development of a region's investment-attractive image; improvement of human resources potential of the industry; promotion of establishment and development of corporate universities; establishment of multiple-access centres (MAC); development of technologies commercialization processes; improvement of the enterprises' financial condition; improvement of budget, tax, credit, and investment policy instruments; development of the population's entrepreneurial activity; creation of attractive image of an entrepreneur; development of the system of online information and advisory services; development of a network of centres of small business; improvement of the export potential of small enterprises' production; facilitating the access to non-residential real estate.

The most important condition of the regions' socio-economic modernization is the implementation of a regional innovation system management model that takes into account the peculiarities of present condition of the economy in the Russian regions, where the process of generating innovation ideas and the experience of their promotion are not coordinated properly.

The transformation of scientific and technical potential into the key element of ensuring quantitative and qualitative economic growth, as the experience of developed countries shows, is possible only with the formation of a global-scale competitive national innovation system (NIS). This system represents a set of interrelated organizations (structures), engaged in the production and (or) commercial realization of knowledge and technology, and a complex of legal, financial and social institutions, which ensure the interaction of educational, scientific, entrepreneurial and non-profit organizations and structures in all spheres of economy and social life.

National innovation systems cannot function efficiently without the relevant regional innovation systems (RIS). Experience of RIS formation in the Sverdlovsk, Tomsk, Novosibirsk Oblasts and some other RF subjects proves that the characteristics and peculiarities of regional models of innovation systems depend on the level of scientific and technical potential in a given region, demand for innovations on the part of the regional national economy branches, as well as the interest of regional power and management bodies in the development of innovation activity. While in the majority of regions the innovation structures are fragmented, which does not allow to support innovation processes at the stages of innovations generation, commercialization and implementation. Besides, most of the worked out programmes and other documents, determining the development of regional innovation systems, were adopted relatively recently – after 2000. Therefore, it is still difficult to assess their efficiency from the strategic viewpoint.

The need for a transition to creating regional innovation systems is based on the necessity to solve the following tasks: the formation of a

regional innovation strategy, including inter-departmental and inter-regional strategies; creation of a favorable economic and legal environment for innovation activity, including intellectual property protection; provision of an integrated system of innovation activities promotion; formation of a large-scale innovation activity infrastructure; development of cooperation between scientific organizations, industry and other economy sectors; improvement of mechanisms of providing state support to the commercialization of R&D results; development and organization of innovation activity monitoring system.

The organizational and economic support of the regions' scientific-technical potential modernization in present-day conditions can be carried out in three main directions.

Firstly, through direct and indirect state support, including the allocation of budgetary funds for the development and implementation of innovation development modernization programmes and benefits for its participants.

Secondly, through a more efficient use of the resources of entrepreneurial, banking, financial structures, assets of the industry, region, as well as by attracting investments from other regions of the country and from abroad. However, in any case, the regions should make tangible investments in the transformation of scientific-technical potential and innovation activity. This refers to a possible legal establishment of fixed rate of expenses from the regional budget on science development for a sufficiently long period, as well as the guaranteed volume of financing of medium-term and long-term projects, included in the innovation programme and capable of efficiently stimulating the regions' socio-economic development.

Successful modernization is possible only with the improvement of human potential quality, which, in turn, requires a change of existing principles, directions and mechanisms of the social policy implementation in the regions.

The success of modernization directly depends on the social environment development level, its susceptibility to the processes of improving the existing or introducing new technologies, products and services, implementation of new principles of economic life organization, new management models and mechanisms, etc. Modernization a priori affects the axiological and motivational environment of individuals and large social groups. Examples of the most successful "modernization breakthroughs" in history have been associated with significant qualitative changes in the condition of human resources. These changes occurred under the influence from above (the state implemented large-scale programmes of social development, promoted the formation of appropriate institutions, etc.), as well as from below (the needs and attitudes of citizens changed, the level of enthusiasm and social mobility increased significantly, etc.).

Today, in modernization issues, major attention is paid to the objectives of human development, because it provides competitive advantages to the economies with an advanced technological mode. In this regard, human potential development issues are of a global nature. Most developed countries have to reform their social systems, responding to the modern challenges: ageing population and the increase of social burden on the able-bodied part of the citizens, urban population increase, the change of value orientations of the main social groups.

In connection with the necessity of transition to the modernization development model, both at the national and regional levels it is necessary to carry out socially oriented institutional policy [13]:

1. The substantial increase of attention to social innovations, bringing of existing at the regional (local) level formal and informal norms, rules and traditions in the social sphere in compliance with the present-day requirements. Socially oriented institutional policy implies the inclusion of social innovations

into all spheres of life, with a clear definition of the governing structures' functions taking into account the use of modern science-based mechanisms and instruments.

2. The adoption of determining value of the scale, sources and performance of social investment. The major source of social investments in modern Russia is the state (federal and regional) budget. At the same time, innovation approaches are necessary for involving business structures in the solution of the most acute social problems.

3. Institutional transformations in the regions should be oriented not towards the separate innovation activities, but towards the creation of broad institutional environment, the mass involvement of citizens in the creative activity in all spheres of life.

Modernization scenario implementation requires the reassessment by the state and society, of the role of investments in the social sphere. In the modernization conditions, human development should become the central link and target objective of the social policy including the social policy at the regional level. Consequently, the expenditures on the fulfillment of social obligations, especially in the areas of health, education, cultural policy, need to be considered the priority strategic investments.

In the regions it is necessary to create the target-oriented highly-qualified personnel training systems and implement the relevant organizational and economic mechanisms of increasing the efficiency of regional educational policy.

Modernization is inseparably linked with the provision of the regional economy with highly qualified personnel, capable of quick adaptation to the demands of jobs and labour market. Handling the problems concerning the training of employees possessing similar qualities is shifting more and more to the regional level. However, regional educational systems are not yet ready to provide the enterprises and organizations with qualified specialists, which is proved by the presence of a whole set of structural problems. This stipulates the objective necessity of restructuring the socio-economic subsystems of providing employees for the regions' economy [8].

There is also an urgent necessity for elaborating and implementing the new mechanisms of regional educational policy. The organizational-economic mechanism of increasing the regional educational policy efficiency, which includes a system of measures aimed at creating a unified and open educational space is considered promising, as well as the tools of science and education integration, functioning on a permanent basis.

It is expedient to implement the model of scientific and education space that can be defined as a highly organized environment equipped with multi-functional "package" of infrastructures, necessary for building human and intellectual potential of the territory, targeted socio-cultural reproduction of people, personality formation and development, attraction of business, capable of producing new kinds of high-tech, competitive products and introducing modern technologies in the industry.

In this regard, the subjects of scientific and education space include: education establishments (secondary, professional: secondary vocational education (SVE), elementary vocational education (EVE), higher professional education (HPE); supplementary education); scientific establishments (research institutes, academic institutes, design organizations and corporation departments); institutions of the innovation sphere (venture funds, science and technology parks, business-incubators, technology transfer centres, innovation and technology centres, etc.); integrated structures (basic departments, research and education centres, etc.); establishments of cultural sphere (museums, libraries, theatres, objects of historical tourism etc.); households (school-

children, university applicants, students and graduates of professional education system, highly qualified labor resources); business community (enterprises of the real sector of the economy, the associations, unions and public organizations of industrialists and entrepreneurs, chambers of commerce and industry, etc.); state bodies of power and administration (development strategies and programmes) [12, p. 172].

The application of organizational, personnel, information, scientific, methodological, economic and social measures is essential for the coordination of actions in the single educational space management sphere. It is expedient to establish the interdepartmental coordination councils in the regions, taking into account the fact that at the regional level there are education systems, relating to the different management levels [20]. The aim of their work is coordination of activities in the sphere of single scientific and educational space management for the purpose of increasing efficiency of qualified personnel training management for the regional economy. This will allow the regions to move more rapidly to an efficient system aimed at training of specialists of a new formation, as well as to establish a full-fledged partnership between science, education, authorities and business for the further development of the regional education system.

The proposed approach will allow the regional power bodies to solve the priority tasks of innovation development through the rational use of such non-material asset as human capital. It will ensure:

1. Improvement of forecasting the staffing requirements of the regional economy, formation and distribution of the state task and order on the personnel training, including the creation of a normative base of forming the state regional order to the system of vocational education, on the basis of which the volumes and directions of training in professional education institutions will be determined.

2. Increase in the demand for graduates of professional educational institutions on the regional labour market by organizing the information and career guidance campaigns on professions and specialities of the priority sectors of the economy; the conclusion of contracts with organizations on training, retraining and improvement of professional skill of the staff and on career guidance work, the increase of the prestige of demanded occupations and specialities.

3. Formation of effective territorial-sectoral organization of resources of primary and secondary vocational education institutions through the building of optimal structure of vocational education institutions, organization of efficient network cooperation between professional education institutions of all levels (school/ EVE/ SVE/ HPE) and their cooperation with employers (equipping the new resource centers at professional education institutions on the priority directions of economic development; modernization of professional education institutions in accordance with the needs of the regional labour market and employers' requirements).

These mechanisms will allow to direct the educational activity to the achievement of practical goals facing the regional economy; the opportunities for improving the quality of specialists' training and increasing the competitiveness of research and education institutions will expand significantly; the necessary prerequisites for the transition to an innovation-oriented economy will be established in the sphere of personnel training.

The necessary condition for modernization and qualitative economic growth, along with high intellectual potential, is maintaining the high level of public health, which requires improvement of the regional healthcare management systems.

The implementation of socio-economic modernization is based on high labour productivity, which, in turn, is based on the high level of public health. In this respect, modernization policy should be oriented

towards achieving the best indicators of the so-called "healthy longevity". The achievement of this goal requires the formation of high value of health, conditions for a healthy lifestyle and prophylactic activity of the population. In these conditions, the following two points are of crucial importance.

Firstly, the efficient solution of population health issues at the present time is possible only in the context of inter-departmental (functional, cross-sectoral) management, with the active involvement of civil society institutions in this process. The role of an individual who actively participates in his/her health management in daily routine and conditions, that require making individual choices, is recognized as significant.

Secondly, a key role in the healthcare system is attributed to the primary health care, which is an integral part of the national health system, performing its main function and being its main element, as well as the main element of the whole process of the society's socio-economic development.

The analysis of the regional healthcare system (based on the materials of the Vologda Oblast) showed that the healthcare structure has significant shortcomings that reduce the efficiency of spending of the funds, allocated for healthcare and limit the capacity of healthcare services to meet the citizens' demands and adequately respond to their expectations. In this respect, the restructuring of medical service should be carried out along with the process of healthcare modernization, consisting in technological equipping and staffing of medical services and the active introduction of compensatory mechanisms (day care facilities, ambulatory surgery centres, diagnostic and advisory services) [11, p. 143].

As an alternative to the existing methods of economic analysis, reduced to the assessment of the financial component of the health care system, we propose a methodology, based on a joint analysis of financial and demographic indicators in the structural (according to the main classes of diseases) and spatial (in context of the Vologda Oblast municipal districts) aspects of public expenditures and social results, expressed by the "years of potential life lost" (YPLL) indicator.

The essence of the methodological approach "costs – losses", tested on the Vologda Oblast data [11], lies in comparing the total costs of the budget and non-budget state funds on the financing of healthcare with the scope of demographic losses of the territory (the region as a whole and individual municipal entities) due to premature mortality. The use of such a mechanism in the monitoring mode will contribute to the improvement of scientific substantiation of managerial decisions making. The economic analysis results can be applied at all the main stages of the regional healthcare policy implementation: at its formation – as the basis for determining healthcare financing priorities; in the process of its adoption – as the proof of the financial claims objectivity; in its implementation – for the development of specific activities; finally, the tools of "costs – losses" analysis may be used to assess the results achieved, i.e. organizing a feedback mechanism.

Summing up the discussion of possible directions of the Russian regions' socio-economic modernization, it is necessary to note the following.

1. Socio-economic modernization is a set of interrelated directions, including the system of national interests, goals and priorities of social development, the problem of transformation of Russian economy, its institutional structure and socio-economic policy.

2. Implementation of modernization without a thorough consideration of the country's social and territorial peculiarities may lead to uneven distribution of "modernization effects", resulting in a greater, in comparison with the already existing, disproportions in the development of territories and further "fragmentation" of the country's social and economic space.

3. Long-term strategies and development plans, aimed at the regional socio-economic systems modernization, should be based on the existing potential of the regions and assessment of the balance of its development.

4. Modernization is a complex resource-intensive process, implemented on the basis of the combination of strategic planning theory and methodology, theories, concepts and methods of state and regional economy management.

5. The regions' socio-economic modernization process management is achieved through the formation of multi-level planning system, which includes strategic, tactical and operational forms and is based on regular monitoring.

6. The essential prerequisite for successful modernization is enhancing the role and place of the public-private partnership institution in the implementation of the regional socio-economic systems modernization, development of appropriate cooperation mechanisms between the state and business.

7. Crucial importance in the implementation of the regions' socio-economic modernization is attached to neo-industrialization, and the best organizational-economic form of its implementation is a targeted industrial policy.

8. The Russian regions require a mix-type modernization with the efficient use of both advanced foreign achievements, and their own research and innovation potential capacity.

9. The necessary condition of successful modernization is the establishment of the favourable environment of knowledge generation in the regions, based on the creation of regional innovation systems and the implementation of organizational and instrumental projects on modernization of science and technology potential.

10. Given the increasing importance of the social component (education and healthy longevity) as a successful modernization factor, the preservation and increase of human potential should become the object of priority investment.

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Socio-economic transformation of Russian society

There are radical changes in Russia, which cover all the aspects of public life. They cause problems in the society and provoke conflicts in various spheres of public life. The key moment that raises tension in the society is a population living standard. In the political system there is a transformation of property institution, public living conditions and socio-political structure of the society. These changes have entailed the evolution of population mentality. The analysis and management of transformation process in all the systems allows to reduce social tension.

Transformation, living standard, socio-political system, population mentality.

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Creating a stable state requires an analysis of changes in society. Radical changes have taken place in all the spheres of social life at the turn of the millennium in Russia. The transformation of the economic system has led to the changes in the socio-political system, as well as in the population mentality and society at large. The analysis and management of transformation in all the systems can reduce the social tension that promotes conflicts in various spheres of society's life activity.

Transformation of the economic system

The transition to a market economy was proclaimed as a target of the radical transformation of the economic system at the beginning of perestroika. In this process the state should champion the ideas of liberalization, privatization and macroeconomic stabilization. As a result, Russia was awarded the status of a market-economy country in 2002. However, achieving this goal in the initial stage of perestroika was followed by a decrease in production volumes and falling living standards of most people *(table)*.

The recovery period began in 1999, and it lasted until the beginning of the financial crisis in 2008. The amount of pre-reform GDP (102% to the level of 1989) was made in 2007.

Dynamics rates of Russia's macroeconomic indicators*

Indicates in fixed prices	Dynamics rates: the end of 1998 to1991, %
Gross domestic product	60.5
Industrial production	48.2
- extractive	67.2
- manufacturing	40.7
The amount of the executed construction works	31.0
All transport freight turnover	57.4
Agricultural production	50.7
Investment in fixed assets	24.8
Real disposable population incomes	52.5
* Official site of the Federal State Statistics Service. Available at: www.gks.ru.	

Real disposable incomes exceeded the level of 1991 by 9.8%. The production volumes of extractive industries accounted for 103.1% in relation to 1991. At the same time, the production volumes of manufacturing and agricultural sectors accounted for only 3/4 of the 1991 level (77.4 and 75.5% respectively). Investments in fixed assets decreased 2-fold as compared with1990 (56.6%). There was a significant lag in the machinery and equipment production (55.8% in relation to 1991).

It is a general situation. The dynamics of the main indicators of living standards is more interesting because it is a key factor that increases social tensions. Among the indices that reflect the living standard of population it is possible to point out such indicators as gross domestic product per capita in fixed prices, per capita population incomes, gross average monthly wages in comparable terms, the share of people with incomes below the subsistence level, a consumer price index for goods and services to the population, an unemployment rate.

GDP per capita is one of the main indicators of the country, determining the population living standard: income, health care, education, etc. The GDP size per capita shows the population living standard even more precisely through purchasing power parity (the value of all the final goods and services estimated at U.S. dollars in 2005).

Analyzing the dynamics of this indicator[1] for the period from 1993 to 2010, we can see that it decreased to 1998 inclusive in the early period (by 4.9% per year on an average). Then it steadily increased until the financial crisis in 2008; an average annual growth rate was 7.3% *(fig. 1)*. The financial crisis caused a drop in production and per capita GDP. Per capita GDP reduced by 7.8% in 2009 alone. However, it increased by 4% during the following year and slightly exceeded the level of 2007.

Average per capita population incomes. The main sources of income are:

- factor incomes: wages, income from property (rent, interest, dividends), entrepreneurial income (profit);
- transfer payments: pensions, benefits, scholarships, etc.;
- other incomes: insurance indemnity, foreign exchange proceeds, etc.

Average per capita population incomes in current prices steadily increased[2]. They grew 417-fold over the analyzed period, increasing annually by 42.6% on an average *(fig. 2)*.

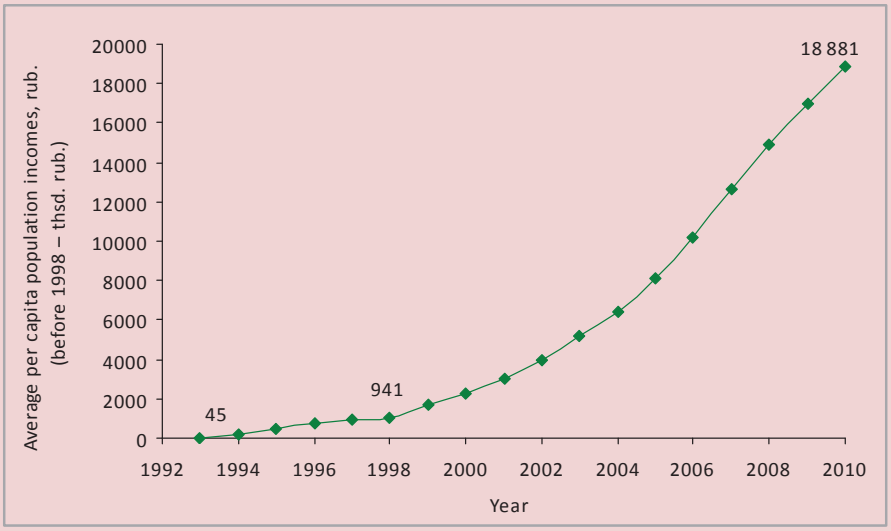
However, population incomes in current prices do not reflect their purchasing power. Real incomes of population are reflected clearly by an average wage index in hard currency.

[1] The database of the Statistical Division of UNECE // http://w3.unece.org/pxweb/?lang=14

[2] Official website of the Federal State Statistics Service // www.gks.ru

Figure 1. GDP per capita in prices and purchasing power parity (USA) in 2005

Figure 2. Average per capita population incomes



Average monthly wage in hard currency (U.S. dollars). Gross average monthly wage includes the total amount of wage in money term and in kind before tax deductions and social security contributions.

The dynamics of population incomes in hard currency *(fig. 3)* differs from the dynamics of income that is shown in figure 2. The average monthly wage increased in 1993 – 1997: it was 2.8 times higher at the end of the period than it was in 1993[3].

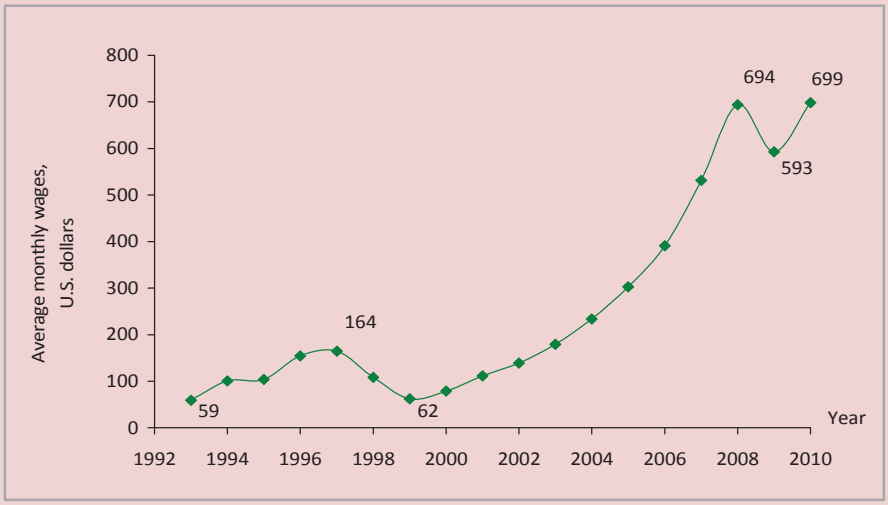
[3] The database of the Statistical Division of UNECE // http://w3.unece.org/pxweb/?lang=14

Then the average monthly wage was decreasing for 2 years because of the financial and economic crisis in 1998 (the default).

In 1999 the level of average monthly wage in hard currency was only 38% of the 1997 level. This index has been growing since 2000. The average monthly wage had increased by 11 times over the next few years before the financial crisis began in 2008.

There was a real population income increase against the background of sustainable economic growth.

Figure 3. Average monthly wages, U.S. dollars



The share of people with incomes below the subsistence level. Poverty is recognized as a global problem. There is no generally accepted method of determining a poverty level because the economic development level of different countries is diverse and uneven. The poverty rate is determined based on the minimum wage rate in most European countries. A typical European is considered poor if his/her income level is below 60% of the average wage. According to the UN methodology, a person can be called poor if his/her income level is $ 2 per day, and the people, who earn only $ 1 per day, are considered extremely poor. In Russia a person is recognized as poor, if his/her monthly income is less than the subsistence level, which is set by the Government on the basis of consumer goods basket cost.

As a rule, non-adapted citizens, unemployed people and immigrants with many children come under the heading of the poor in the West. In Russia disabled persons and pensioners are also included in this category. The peculiarity of Russia is the fact that more than 60% of the poor population is employed, i.e. the wages of these people do not cover the cost of consumer basket. It is important that highly skilled professionals (doctors, engineers, scientists) also lived below the poverty line, especially in the early years of perestroika. This erodes the middle class, which serves as the foundation of social stability.

The incomes of a third of the population (46.1 million pers.) were below the subsistence level in 1993 *(fig. 4)*. Then, these figures decreased until 1998 and dropped down to 21%[4]. The poverty rate rose again after the default in 1998 and accounted for 29% (41.6 million persons in 1999; 42.3 million persons in 2000). There was a steady decrease of this indicator in subsequent years. The poverty rate was equal to 12.6% (17.9 million) in 2010.

However, it should be remembered that the calculated poverty headcount depends not only on poor's income but also on the size of the consumer goods basket. Changing the set of products that are included in the consumer goods basket or reducing consumption rates also leads to the changes in the poverty headcount.

Consumer price index for goods and services is a key indicator of an inflation rate. It reflects the dynamics in the cost of consumer goods and services basket, changes in the cost of living in the country; it is an early indicator of consumer inflation and changes in the purchasing power of national currency.

[4] Official website of the Federal State Statistics Service // www.gks.ru

Figure 4. The share of people with incomes below the subsistence level

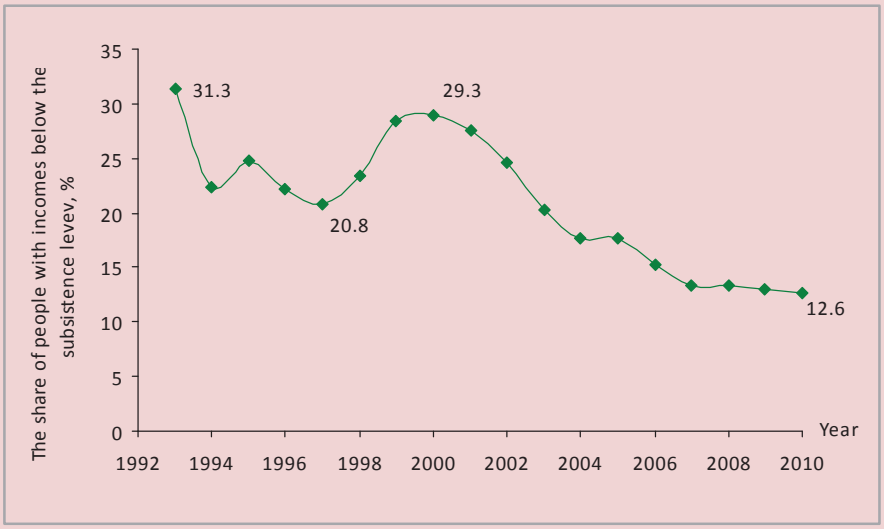


Figure 5. Consumer price index

The liberalization of prices for consumer goods and services caused hyper-inflation in 1992, when prices increased by hundred times a year. There was a 26 –fold increase in the prices for consumer goods and services in 1992[5]. The consumer price index was 940% in 1993 and 315% in 1994 *(fig. 5)*.

The rapid rise in prices led to the distortion of commodity-money circulation that was often replaced by barter. Liquid goods, whose intrinsic value did not depend on the government policy, especially freely convertible currency, began to be used as the equivalent of money. Monetary system degradation, devaluation of savings and debenture bonds caused the greater economic decline.

The inflation rate was reduced in the following years, but it remained rampant: 231% in 1995 and 111% in 1996. The financial crisis of 1998 provoked another rise in prices. The risks associated with nominal prices contracting were high under the runaway inflation, so

[5] Ibid.

freely convertible currency was still used often. High inflation rates influenced the behavior of households and firms; inflationary expectations were very important. Any price increase led to wage-push and cost escalation.

Economic growth and GDP growth per capita helped to reduce the consumer price index since 1998. It had been decreasing since 2000, remaining within 120-106%. The consumer price index increased by 2.9 p.p. only in 2007 and by 1.4 p.p. in 2008.

An unemployment rate shows the share of unemployed persons in the total number of employed people or in the number of the population group. Unemployment leads to the loss of revenue, it causes mental health problems, loss of skills, worsening of the crime situation and increasing social tension.

In the analyzed period, the unemployment rate increased till 1998 (13.2%, 8.9 million persons); it grew by 2.3 times over that period[6]. Since 1999 the unemployment rate had been steadily declining till 2007 when it accounted for 6.1% *(fig. 6)*. The unemployment rate increased slightly (by 2.3 p.p.) during the financial crisis, while it was still below the 1998 level.

Thus, there are three obvious periods in the transformation of the economic system:

- 1993 – 1998: the period is characterized by economic downswing, reducing the volume of per capita GDP, increase of a poverty rate, rising unemployment and high inflation rates;
- 1999 – 2007: there was an increase in economic activity, per capita GDP growth, decrease in poverty, unemployment and inflation rates;
- 2008 – 2010: the development of the financial crisis caused a new decline in economic activity and negative trends on the labour market. However, the negative tendencies of that period did not lead to the serious consequences, as in the first period.

[6] Ibid.

The changes in the economic system determine the systemic changes in political, social and cultural spheres.

Transformation of socio-political system

The fundamental changes in the socio-political system include the transformation of property institution, social living conditions and socio-political structure of society.

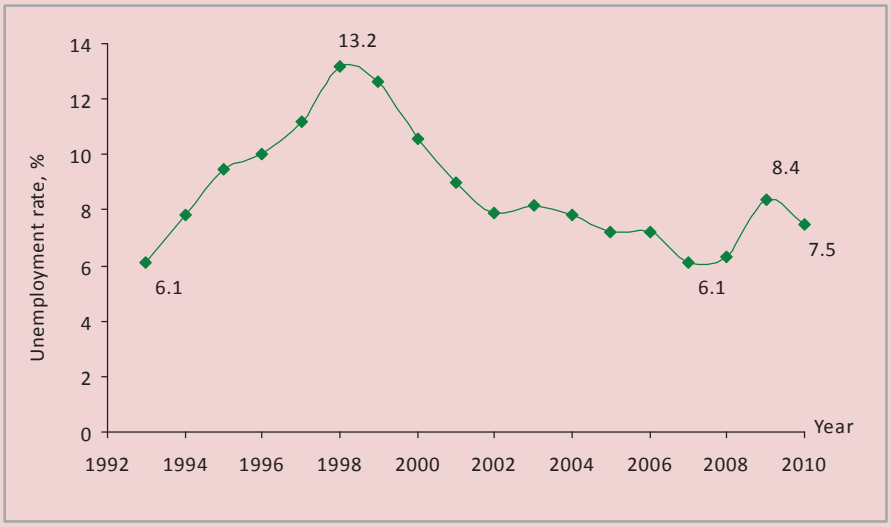
Transformation of property institution. The transformation of Russian society was accompanied by the redistribution of facilities and property rights. The property institution includes the behavior standards of certain persons in typical situations, which are fixed by the law or other social norms that define the standard of owner's behavior and the attitude of other members of society to him.

The interaction between business and government is a key problem in today's Russia. Despite most companies have been transferred into private hands, there is no system of their effective interaction in the country. The transformation of property institution requires the adoption of new laws and their hierarchical arrangement and agreement, as well as the changes in informal relationship between formal and informal institutions [12].

Private property in Russia does not have equal rights with the state property. This is based on the historical priority of public over private. According to O.E. Bessonova, the property institution in Russia are traditionally public-service and pro-government; and nobody have ever full rights to a proprietary subject matter. The state has property rights to all the types of tangible and intangible objects (land, labour, housing, services, positions) [2]. Government interference into private ownership is traditional for Russia, therefore, property owners tend to achieve their economic interests rapidly because they have no guarantee against possible expropriation.

There were some transformations of pro-governmental property institution through transferring ownership of many facilities to

Figure 6. The dynamics of unemployment, %



individuals or teams in crisis economic periods. The society was not involved in the distribution of significant property objects. At the beginning of perestroika, the most part of state property was divided among a limited number of persons; as a result about 15% of Russians owned 92% of national wealth [11].

At present, there is a fight for the opportunity to dispose the most important objects of property between the federal center, regional authorities and big business. You can see the diffusion of power in business, exclusion of an independent proprietor by the state-controlled owner in the Russian economy [3]. Property redistribution is being continued in the Russian industry. The largest banks of the country, natural monopolies and Federal subjects become the subjects of property. Regional authorities are trying to secure the legitimacy of their actions; some legislative acts that are passed by the Federal subjects contradict the Constitution of the Russian Federation and the Federal legislation.

On the other hand, entrepreneurs tend to be in power because they want to keep control of their business. The oligarchs are in power, at the same time, they control the appointments to key government posts.

The authorities do not strive for effective property rights, because in this case big business can be disaffected and their position will be precarious.

Thus, the property institution in Russia was formed as a result of a special type of the interaction between the government and business. Moreover, this interaction is based on different schemes – "white", "grey" or "black". "White" schemes are formed on the interaction only within the scope of the current juridical base. "Black" schemes involve the interaction within the scope of informal institutions, often in defiance of adopted legal norms. "Grey" schemes, which are the most common models in practice, include the informal interaction with the authorities in order to establish a special regime of legitimate business operation (lobbying their own interests, obtaining soft loans, export-import quotas, etc.). The close cooperation with the authorities allows business to have a competitive advantage. Besides, there are mutual interests of businesses and authorities. Creating the favorable conditions for business allows the government to shift most direct obligations of social responsibility onto business, and it needs financial support [12].

The transformation of property institution can be divided into several stages. The access to property depended on the position in Soviet Government at the initial stage of the perestroika, so top government officials had full control over economic activity in the country. Then, the property institution began to change due to the transformation of the political system. There was an opportunity to organize a business outside the structures of the Soviet regime. The state officials privatized the part of the government property that was within their control and under the full control of state power.

The following phase coincided with the beginning of privatization and lasted until 1999. It was the most dramatic period in modern Russian history. The variability of the schemes for business organization increased during this period; the "grey" schemes of business organizations appeared. The contradictions between business and government intensified, their relationships worsened. Entrepreneurs tried to participate in governance in order to be independent in businesses organization. Business tended to be supported by the state for security enforcement. There was a beginning of corruption.

In 2000, after the change-over in the presidency, the government had the opportunity to form institutional environment for their own purposes, and its relationship with business began to be pragmatic.

Socio-political transformation. Russian society has undergone a series of radical socio-political changes over the last two decades. The public assessment of socio-political situation in the country has altered in accordance with these changes[7]. If less than 8% of the population assessed the political situation in the country as successful and peaceful at the beginning of the analyzed period, more than half the population took the same views in 2010 *(fig. 7)*.

[7] Social study "Monitoring of social and economic changes" // http://sophist.hse.ru/db/oprosy.shtml?ts=15&en=0

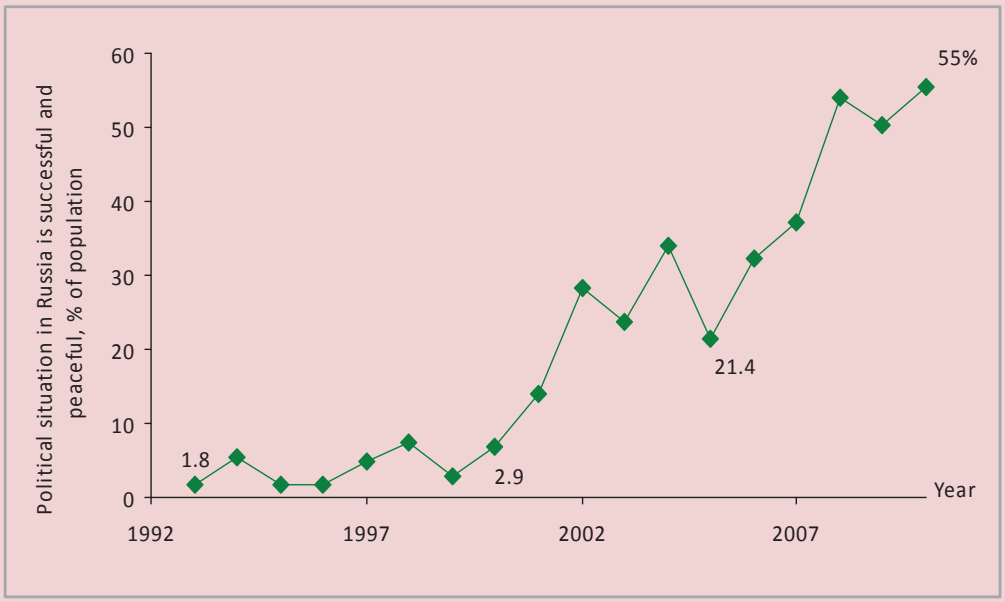
There was a need to adapt the political consciousness to changing economic conditions due to the transition to a new economic management. There were the problems of transforming political culture at the level of an individual, social group and the state as a whole. Political culture reflects the political consciousness and values prevailing in society. The transformation of political culture leads to the change in basic values. Purposeless and irregular transformation of society leads to various political conflicts at the state, ethnic, national and other levels.

The process of socio-political transformation means the radical restructuring in all the spheres of social relations, especially political, that is accompanied by the natural transition from one socio-political system to another one with the change of ideological orientation and social, economic and political changes in a society.

The transformation of the political sphere in Russia is characterized by the quality renewal of the political elite and monocratic features of executive power. On the one hand, it led to establishing mass centrist party organizations; on the other hand, it promoted the growth of social and political apathy among large groups of people because it was not interested in effective activity within the political system. This resulted in a lack of alternative social and political programs. In addition, there was a lack of constant "value core" in the society. These processes are characterized as social and political crisis [5]. Social processes are dependent on the interests of some persons, who regulate the transformation of the Russian socio-political system, due to a lack of ideological and value bases.

There was no shared sense on the development prospects of the state at all the levels of vertical power structure at the beginning of perestroika; the opposition character of some social groups intensified and the crisis processes

Figure 7. Successful political situation in Russia, according to the population assessments



in power were aggravated. The absence of the middle class allowed the economic and political elites to regulate economic processes.

The systemic transformation of Russian society's world outlook began in that period. The people, who dreamed of prosperity and democracy yesterday, thought about the ways to survive [4]. The impoverishment of people at large led to an increase in the number of marginalized groups, the spread of different types of deviant behavior, criminalization of interpersonal relationships, difficult inter-ethnic relations. All this made it difficult to create the conditions for forming self-sustaining civil society and constitutional state. There was an increase in the number of non-legal actions and social tension.

The population differed in understanding democratic values. In 2001, 50.5% of respondents considered the positive role of democracy as a particular world-view vision, value requirements of which were the base of the following social and political processes in Russia, but only 6.1% of respondents thought that their role was positive [14].

The results of sociological surveys show that respondents' views on democracy are different. Most respondents encourage democratic values verbally, but they put different meanings into the concept of democracy in different age groups. Young people focus on such values of democracy as freedom, human rights and personal independence. Citizen participation in governance and accountability close the list of values. The older respondents consider that responsibility and equality are more important for democracy [18].

Political parties, tracking their opinions of potential voters during the election campaign, pointed out the same values that unite a society: legality and order, stability, life of dignity, strong power, equality and justice. However, socio-political processes develop under the pressure of socio-economic and political contradictions. These contradictions cause the negative dynamic of socio-political system development, because the social and political institutions cannot work out the general programme on the base of common values for the majority of the population in order to join their efforts.

According to V.B. Iskhakov, the current developmental level of Russian society highlights the core values that have little impact on the socio-political processes in Russia. There is a predominance of two groups of values in the society united by the idea of stability, law and order. The society is tired of constant changes; it requires stability and social order.

However, this is necessary for some social, economic, and political groups for different purposes. The political and economic elite and state bureaucracy need stability to pursue a policy required by them and to establish stable relations in the economic sphere, where their relationship continues to be unstable. The power, which is represented by the President, is a source and guarantor of the stability of social relations for the society, so the voters, who are not interested in destabilizing the situation, casted their votes for the ongoing government policy. The most important values are the ideals implying the stability and social order, rather than the distant ideals of social and political world order [5].

These statements are confirmed by the results of a sociological poll conducted by the All-Russian Center for the Study of Public Opinion in the 2004. The concepts "order" and "stability" arouse positive feelings among 61% and 40% of respondents, respectively. For comparison, only 12% of respondents take the concept "socialism" as positive [6].

Declaration of stability and order as the fundamental values of social development influence the socio-political system that takes place in the transition period. It gradually acquires the characteristics of monocracy when the monopolistic power holders are the President and his political elite. The basic principles of monocracy are supported, in turn, by large and small socio-political groups.

Monocracy political governance during the transformation of socio-political system has its positive and negative sides. Positive effects include limiting the number of transformation regulators at the political level. The group of persons, who share common political, economic and other purposes, manages the transformation. However, this leads to negative consequences – to centrism. Centrism allows the political elite to maintain a stable position during the transition of social processes and to respond to public opinion, introducing the values, which enjoy the greatest support of the electorate, into their ideological construction [5].

The results of the poll that was conducted by the Russian Presidential Academy of National Economy and Public Administration in 2003, showed the great importance of the President in modern Russia. 66% of respondents, who answered the question "What do you think could help to solve your most exciting challenges of the current life in Russia?", indicated strong political will and President's power [9].

However, the socio-political system, which is characterized by the dependence of most things on some people, is not stable. Other political parties or groups will try to use force and pressure to achieve power and control. It is dangerous to be out of power in such a society.

Timeless, structural and peripheral values can also cause conflict situations. Timeless values that are in our subconsciousness (socio-cultural, religious, etc.) are considered to be controversial throughout the history of mankind, because they are objective basis for most spheres of society. Structural and peripheral values are caused by the specific features of a particular socio-political system. They include all the principles, rules and regulations that serve as the foundation of the relationship between people, groups and nations within a single state. The dominance of purely national values in the social processes is felt by the ethnic minorities that have the status of political autonomies in Russia [5, 16].

Thus, there are some specifics in the socio-political transformation of Russian society. There are no historical analogies of the current changes, because they correspond to the inverse developmental model of socio-political system in the absence of a clear return policy to a stable state.

Socio-economic changes were dramatic for the economy and very painful for the society. Unskillful activity of reformers in the rash transition of a centralized state economy to a market economy led to the decline of key industries and caused discontent in the society. The rapid impoverishment of large social groups gave rise to social tension and fear, because most people did not understand the long-run objectives of their hardships. The people gradually lost their interests in the political processes, so they allowed the ruling elite to regulate the political and economic processes according to its own schemes. However, the society needs clear guidelines, which will contribute to achieving social, economic and political well-being of Russia.

The transformation of population mentality in Russia

Due to the transformation of ownership forms and changes in socio-political environment, socio-cultural conditions for people's living have changed, social inequality have become more acute and new social groups have emerged (entrepreneurs, freelancers, unemployed, etc.). All these changes have required the evolution of population mentality that is transformed more slowly than economic reality.

In this case, mentality is understood as a set of social and psychological attitudes that are inherent in the way of living in the country, mind habits, the ways of seeing the world, the views of people, who belong to any socio-cultural and ethnic communities, the way of thinking, which is based on a value system [1]. The mentality is formed in the process of obtaining education and life experience.

There is a personal mentality, group and national mentality with the predominance of collective mentality over personal one. Experts identify different types of national mentality: political, economic, social, ethnic, religious, etc. National mentality integrates the mentality of some strata and social groups within the nation state.

When the value system changes (their set or hierarchy), the mentality of total population and its social groups also changes. Transition periods in the socio-economic life of society are accompanied by the instability of social consciousness.

Sociological researches that were conducted at the end of the Soviet period identified the following priority values of the Russians: benevolent attitude, independence, creativity, sustainable future and good income. They were followed by such values as the respect for people, public benefit, debt to the state, non-hard working and professional development. These values characterized the stable Soviet society in the late Soviet period [8].

Economic transformations were accompanied by the changes in the awareness of social guidelines. The core values began to transform significantly already in the late Soviet period: so, labour was declared as the main value for a builder of communism, but the living standards of people depended slightly on their labour input. The values of socialist ideology were gradually displaced and substituted with new ones.

Traditional values were changed into the crisis forms of mentality during the transitional period. Many Russians had a feeling of void, loneliness, abandonment and frustration; they craved for inner life and integrity. The people did not feel immune from the new conditions in the country, facing the challenges of development; they had social fears and the sense of social insecurity. These feelings were caused by the structural collapse of the existing Russian mentality and the loss of social guidelines.

The Soviet-era values and guidelines that were the base of the Soviet mentality began to be denied. New Russian mentality with a new value structure was created; the ways and forms of reality understanding changed. The significance of self-sacrifice values reduced; there was a decrease in the traditional distribution of the values of freedom, independence and initiative. There was a beginning of such new features as the adoption of competition. There was a return to traditional values (family, health, material well-being).

Values link a man to a social system. There are several value systems in the modern Russian society (traditional, transitional and innovation), that form the appropriate mentality. Some of them are oriented to the common, collectivist forms of life, and others are aimed at the separate and individualistic forms.

The traditional mentality involves the adherence to the traditions; its values are regulated more tightly. Traditional mentality also prefers the "equality in poverty" rather than "inequality in wealth"; it waits for the paternal care of the state, a special attitude to the Russian statehood. The important components of Russian culture are also legal nihilism, public piety, self-restriction of political freedom and a sense of political responsibility. Innovative mentality involves less private relationships, active position in life, rationality and focus on personal achievements. The values of innovative mentality allow the collective subjects to have more freedom in life. There are no clear value orientations in transitional mentality; the image of the world is more chaotic and threatening, people hesitate in their choices [7, 10, 17].

Social researches of value components of the Russian mentality [7, 8, 15] prove that a man and a collective subject choose the new social values for self-determination, social roles, positions for identification; they focus on the new social and psychological qualities that are demanded by changing socio-economic conditions. There is a process of partial transformation of collective subject's mentality. At the same time, the base values don't change. Traditional values of health, family and work remain stable, but the meaningful content of these values differs a little bit from the traditional one.

Traditional mentality links the health to active lifestyle and sports. Currently, the leading value "health" does not combine with a healthy lifestyle. 60% of respondents associate the word "health" with the word "pills". The advertising of medicinal drugs stands this in bad stead.

Despite family values are priority, they have been also significantly transformed: their meaning and the programme of family relationships have been changed. Today's family includes the development of both spouses; both parents strive for personal growth, they distance themselves from each other. There is no such prerequisite as marriage registration for founding a family. "One common family purse" is replaced by the division of material incomes.

The value of "work" was traditionally linked to the value of "public benefit" in the professional field. Today, the purpose of work consists in achieving the personal financial well-being. There is a predominance of private purposes over public ones. There is a desire for "easy" money earned often due to unfair labour. There is a decrease in general professional education with an increase in ambition and low social competence. The change in the meaning of work has caused the changes in its value. The word "labour" is not associated with socially useful work but with incomes.

Friendly relations have become similar to friendship that is based on business utility rather than on personal sympathy. Relationships have become more distanced. The number of friends and time of meetings have been reduced.

Press, radio, television and the Internet are also the important tools to change the mentality of modern society. The Internet has increased the volume of information received; it has decreased the time of finding it. Information has become more accessible.

According to the recent polls, the priority values include the values of safety, health, family and paid work, and the problems of survival are in the first place.

The mentality transformation has caused a wide value gaps between young people and adults. The older generation has the traditional mentality, collectivism is inherent in it, and young people are characterized by individualism. The younger generation is ready to change, young people want to be active and mobile, and therefore, they are gradually losing the Russian mentality and acquiring the crisis mentality. Life goals of young people remain within their traditional values – education, work and family. Besides, career, material well-being and well-paid jobs, i.e. the material side of life, have become more important. Today young people focus on their own resources in solving problems. The general trend is an increase in the importance of personal values in comparison with the public ones [13].

Population mentality does not only unite the people, but it divides people into different groups, including ethnic ones. The most important feature of ethnic mentality is a growth of ethnic consciousness and simultaneous rupture of Russian national and cultural traditions. According to experts, domestic national wars on Russia's borders are defined as "the growth of ethnicity".

Thus, there are significant changes in the mentality of the Russians that reflect the failure of communist ideology, change of social status and social role of most people, while maintaining traditional values. You can see striving for a unifying national idea, which is valuable for most Russians.

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Socio-economic condition of the regions specializing in metallurgy: 2011 results

In 2010 ISEDT RAS scientists began their research on the problems of budget allocation sufficiency in the Vologda Oblast, which turned out to be the most vulnerable RF subject regarding the global financial crisis impact on the regional economy, where metallurgical production is the key development factor. The study of the tendencies and scope of crisis consequences determined the need to conduct a comparative analysis of the socio-economic condition in the Vologda Oblast and other RF subjects possessing major typological peculiarities of the regions specializing in metallurgy – the Lipetsk Oblast and the Chelyabinsk Oblast. The results of the analysis conducted in 2010 – 2011 were published by ISEDT RAS.*

The problem is being studying by ISEDT RAS this year. The article provides the analysis of the main socio-economic development trends in the regions specializing in metallurgy for 2011. The analysis serves as the basis for assessing the condition of territorial budget systems.

Regional economy, ferrous metallurgy, global financial crisis, financial results, industrial production, population's living standard.

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Metallurgy industry plays a key role in forming the final economic and financial results of the Vologda, Lipetsk and Chelyabinsk Oblasts. Ironworks cover 60% of industrial production on average; they ensure 60 – 80% of profits and 60 – 90% of export resources of the respective territories. The feature of the metallurgical complex is the fact that it serves as the main source of regional budgets, forming 50 – 70% of profit tax revenues.

As it is generally known, the global financial crisis hit firstly the export-resource regions, including the regions that focused on the ferrous metallurgy, as they were most closely dependent on the global economy. The demand for metallurgical products in foreign markets decreased by 4% in 2008 – 2009 as compared with 2007 primarily due to the crisis in the construction, tube-rolling and machine-building sectors that were the main consumers

* See: Ilyin V.A. The influence of the metallurgical corporation owners' interests on the national and regional development. Economic and social changes: facts, trends, forecast. 2011. No. 3 (15). P. 14 – 38; Povarova A.I. The influence of the metallurgical corporation owners' interests on the financial performance of the head enterprise (the case of OJSC Severstal). Ibid. 2011. No. 5 (17). P. 36 – 51; Ilyin V.A., Povarova A.I., Sychev M.F. The influence of the metallurgical corporation owners' interests on socio-economic development: pre-print. Vologda: ISEDT RAS, 2012.

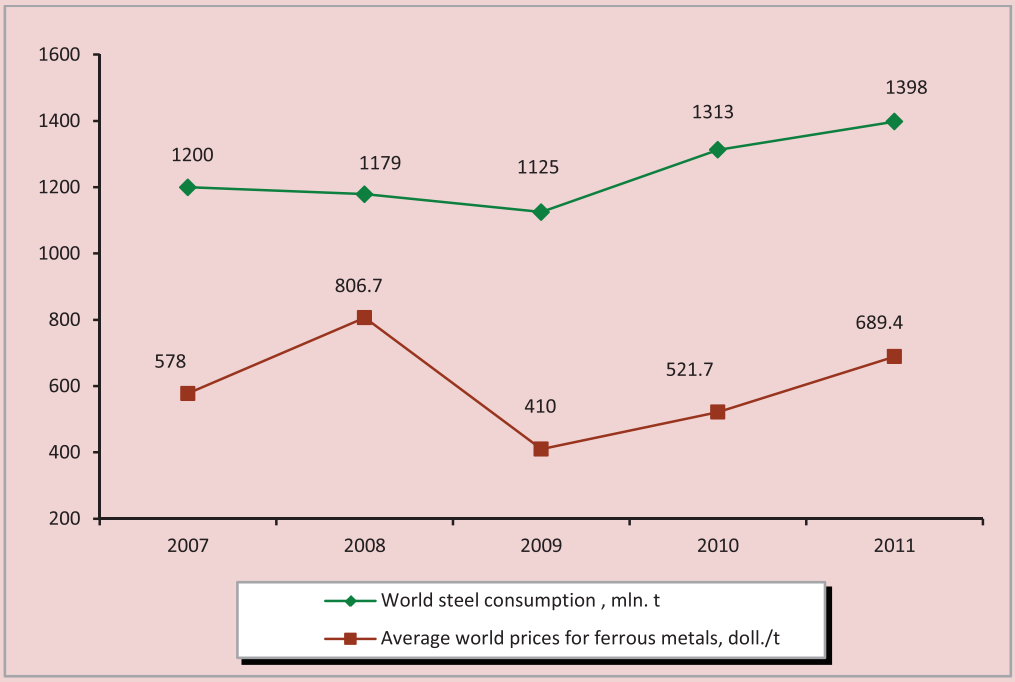
of steel products. Export prices for ferrous metals, which exceeded 800 U.S. dollars per ton in 2008, dropped to 410 U.S. dollars or half as much *(fig. 1)*.

The deterioration of the global economic situation was accompanied by the intensive cutback in metallurgical production. According to the results of 2011, the crisis decline in steel output was restored only in the Lipetsk Oblast (*table 1*) due to a significant increase in the production capacity of Novolipetsk Steel (NLMK) in the framework of the programme on enterprise's technical modernization.

The sharp decline in key sectors of production in 2009 (13 – 18%) did not allow the Lipetsk and Chelyabinsk Oblasts to reach the pre-crisis growth rates of industry in general. The level of industrial production was restored in the Vologda Oblast, where the decline in the steel industry was not so sharp (9.8%) and the timber industry output[1] significantly increased *(table 2)*.

Investment recession was stronger than industrial decline in most subjects of the Russian Federation, and not only in the regions that specialized in the metallurgical industry.

Figure. 1. Dynamics of the world steel consumption and world prices for ferrous metals in 2007 – 2011



Source: Analytics. World prices. Available at: www.metaltorg.ru

Table 1. Steel production in the RF subjects in 2007 – 2011, mln. t

Subject	2007	2008	2009	2010	2011	2011 to 2007, %
Vologda Oblast	11.9	11.1	9.5	11.1	11.35	95.4
Lipetsk Oblast	9.1	8.5	8.5	9.3	9.76	107.3
Chelyabinsk Oblast	20.0	18.2	15.2	17.7	17.8	89.0
Russian Federation	72.37	68.7	59.36	66.9	68.5	94.7
Sources: Russian Statistics data, ISEDT RAS calculations.						

[1] According to Russian Statistics data, in 2011 the production index was equal to116.7% in the pulp and paper industry and 109.5% in woodworking.

Table 2. Production index in the RF subjects in 2007 – 2011, % to previous year

Subject	2007	2008	2009	2010	2011	2011 to 2007, %
Vologda Oblast						
Industrial production	104.9	95.3	90.5	111.1	104.7	100.3
Metallurgy production	105.9	91.5	90.2	113.8	105.2	98.8
Lipetsk Oblast						
Industrial production	103.7	100.1	85.0	110.7	102.9	96.9
Metallurgy production	102.3	95.2	86.7	108.3	104.0	95.1
Chelyabinsk Oblast						
Industrial production	112.5	96.3	80.1	112.2	106.3	92.0
Metallurgy production	107.3	90.2	81.8	117.7	105.2	98.0
Russian Federation						
Industrial production	106.8	100.6	90.7	108.2	104.7	103.4
Metallurgy production	104.5	97.8	85.3	112.4	102.9	96.5
Sources: Russian Statistics data, ISEDT RAS calculations.						

Table 3. Actual volume index of fixed capital expenditures in the RF subjects in 2007 – 2011, % to previous year

Subject	2007	2008	2009	2010	2011	2011 to 2007, %
Vologda Oblast	103.8	85.9	71.5	96.9	153.4	91.3
Lipetsk Oblast	129.8	118.4	93.7	116.5	106.9	138.2
Chelyabinsk Oblast	126.9	113.8	79.4	99.2	106.2	95.2
Russian Federation	122.7	109.9	84.3	106.0	108.3	106.4
Sources: Russian Statistics data, ISEDT RAS calculations.						

This was caused by narrowing of the investment sector – construction, machine building and building materials production. The most significant reduction in investment, which began in 2008, took place in the Vologda Oblast *(table 3)*.

The results of 2011 indicate that the investment crisis in the Vologda and Chelyabinsk Oblasts have not been completed yet. There is a significant increase in investment in the Lipetsk Oblast due to the implementation of large-scale projects[2].

One of the factors that caused the strongest decline in fixed capital expenditures in the Vologda Oblast was the decrease in public investment from the Federal budget *(table 4)*.

According to the table, the Federal Government assigned the minimum amount of investment resources to the Vologda Oblast that was damaged by the crisis consequences more than other regions; the total investment amount from the Federal budget was cut almost in half for 2008 – 2011. At the same time, the Federal investment to the Lipetsk Oblast was doubled at the peak of crisis. There was also an increase in the investment from the Federal budget to the Chelyabinsk Oblast.

However, a key factor in the investment crisis was a sharp deterioration of the financial performance of business entities due to a lower demand for industrial products and a lack of circulating assets amount necessary for mutual settlement of accounts and payments.

[2] According to the Lipetsk Oblast's Government data for 2011, 31 participants with investment potential of 60 billion rubles and large-scale projects in the field of machine building, machine tool building and electric-power industry were registered in 8 special regional economic zones. The Lipetsk Oblast has been in the group of leaders with minimal risk investment for seven years (it ranks third among the RF subjects in 2001). The share of investment in the GRP exceeds more than twice the average national index and it accounts for more than 41% (in the Russian Federation – 19%).

Table 4. Investment from the Federal budget to the RF subjects in 2008 – 2011

Subject	2008		2009		2010		2011		
	bln. rub.	%*	bln. rub.	%*	bln. rub.	%*	bln. rub.	in % to 2008	%*
Vologda Oblast	2.7	0.4	3.1	0.3	2.6	0.3	1.5	57.5	0.1
Lipetsk Oblast	7.1	1.0	12.6	1.4	15.9	1.7	9.8	137.0	0.9
Chelyabinsk Oblast	10.0	1.4	9.0	1.0	10.0	1.1	11.2	112.1	1.1
Russian Federation	701.2	100.0	917.2	100.0	915.1	100.0	1056.1	150.6	100.0

* The share in the total investment from the Federal budget to the RF subject.
Sources: Russian Statistics data, ISEDT RAS calculations.

This affected to the utmost the metallurgical regions where enterprises and organizations lost 52 – 62% of pre-crisis profits in 2009. Despite the improvement of profit dynamics, these regions could not compensate for its crisis decline in the subsequent two years. On the contrary, the recession increased in the Vologda and Chelyabinsk Oblasts in 2011. At the end of the year, the profit of the real sector of economy in the Vologda Oblast was 60% lower than the level of 2008. Business entities in the Chelyabinsk Oblast lost the same amounts of profit *(table 5)*.

Certainly, both financial performance and production volume of industrial enterprises in these regions are directly dependent on the situation in the metallurgical industry.

The collapse in prices for ferrous metals, which began in the second half of 2008, was so severe that the leading ironworks in the Vologda, Lipetsk and Chelyabinsk Oblasts could not reach pre-crisis sales even in 2011. This revolutionary changed the final financial performance of metallurgical enterprises *(table 6)*.

The net profit of Cherepovets Iron and Steel Complex (ChMK) decreased by 41 billion rubles, and it amounted to slightly more than 3% of its volume in 2007. Severstal has a net loss at the end of two subsequent years.

Magnitogorsk Iron and Steel Works (MMK) lost 80.5% of net profit in 2008, that result didn't allow the company to restore the level of 2007, and it had a negative net financial performance by the end of 2011.

Novolipetsk Steel (NLMK) was profitable in 2007 – 2011, but the net profit was two times lower in 2011 as compared with 2008.

The deterioration of ironworks' financial performance was caused by both instable market conditions and high debt load due to the escalation of borrowing in the period from 2008 to 2009. Credit and loan liabilities increased by 6 times at the end of 2011 as compared with 2007, and loan servicing expenditures reduced NLMK and MMK's taxable profits by 3.5 billion rubles and ChMK's profit – by more than 10 billion rubles.

The slump in profit, of course, led to a sharp decline in profit tax revenues and created a direct threat to regional budgets' revenues (*table 7*).

Metallurgical enterprises, which were the main sources of territorial budget's profit taxes before the crisis, became the leaders in the profit tax revenue decline in 2009. So, profit tax accounted for only 5 – 10% of the 2008 level in the Vologda and Lipetsk Oblasts. Metallurgical enterprises of the Chelyabinsk Oblast did not pay profit tax to the regional budget at all; on the contrary, the regional budget returned them overpaid taxes formed during the crisis.

In 2011, the losses of the crisis period were not recouped in the metallurgical industry. Profit taxes in the metallurgical regions were not even equal to a half of their amount in 2008.

Industrial and investment downturn led to a slowdown in economic growth in the RF subjects. At the end of 2011, only the Lipetsk Oblast managed to overcome the crisis fall of

Table 5. Income of profitable organizations of the RF subjects in 2007 – 2011, bln. rub.

Subject	2007, bln. rub.	2008		2009		2010		2011		
		bln. rub.	in % to 2007	bln. rub.	in % to 2008	bln. rub.	in % to 2009	bln. rub.	in % to 2010	in % to 2007
Vologda Oblast	75.8	99.5	131.3	37.7	37.9	43.8	116.2	41.9	95.7	42.1*
Lipetsk Oblast	69.2	104.9	151.6	39.0	37.2	51.5	132.1	57.8	112.2	55.1*
Chelyabinsk Oblast	138.5	68.7	49.6	66.4	96.6	76.8	115.7	53.8	70.0	38.8
Russian Federation	6.4	5.4	84.4	5.8	107.4	7.35	126.7	8.55	116.6	133.6

* In % to 2008, when the maximum amount of profit for 2007 – 2011 was gained.
Sources: Russian Statistics data, ISEDT RAS calculations.

Table 6. Key operating and financial performance of metallurgical complexes in 2007 – 2011

Indicators	2007	2008	2009	2010	2011	2011 to 2007, %
Cherepovets Iron and Steel Complex						
Sales, thsd. t	10707	10044	8701	10142	10457	97.7
Net profit, (loss), bln. rub.	42.1	38.6	1.4	(39.6)	(1.9)	
Indebtedness under credits, bln. rub.	26.2	127.2	141.1	147.8	158.5	+6.0 p.
Interest payment, bln. rub.	2.4	4.7	8.8	10.8	10.3	+4.3 p.
Magnitogorsk Iron and Steel Works						
Sales, thsd. t	12205	10911	8764	10245	10645	87,2
Net profit, (loss), bln. rub.	51.7	10.1	27.4	24.4	(1.7)	
Indebtedness under credits, bln. rub.	17.2	24.2	39.3	72.9	107.7	+6.3 p.
Interest payment, bln. rub.	1.2	1.1	1.6	2.3	3.5	+2.9 p.
Novolipetsk Steel						
Sales, thsd. t	9127	8927	9518	9508	8933	97.9
Net profit, (loss), bln. rub.	40.2	71.7	24.0	32.4	34.7	86.3
Indebtedness under credits, bln. rub.	19.4	63.5	62.0	78.6	105.9	+5.5 p.
Interest payment, bln. rub.	0.1	2.0	2.1	3.2	3.7	+37.0 p.

Sources: Annual Reports of OJSC «Severstal», ОАО «ММК» и ОАО «NLMK» for 2007 – 2011. (According to Russian Accounting Standards).

Table 7. Profit tax of metallurgical production to the RF subjects' consolidated regional budgets in 2008 – 2011

Subject	2008		2009		2010		2011		
	bln. rub.	%*	bln. rub.	%*	bln. rub.	%*	bln. rub.	in % to 2008	%*
Vologda Oblast	11.1	51.0	0.6	12.5	4.4	41.0	4.3	38.7	35.8
Lipetsk Oblast	12.1	72.7	1.3	26.0	4.5	48.0	5.6	46.2	50.7
Chelyabinsk Oblast	13.2	43.3	-4.4	0	3.7	19.5	4.4	33.3	21.0
Russian Federation	125.0	7.1	8.5	0.8	71.6	4.7	77.3	61.8	4.0

* The share in the total profit tax of the RF subjects' consolidated budgets.
Sources: Russian Statistics data, ISEDT RAS calculations.

the gross regional product (GRP) by increasing investments in fixed assets. There was an acceleration of GRP dynamics in the Vologda and Chelyabinsk Oblasts in 2011. However, in 2009 the strongest decline in GRP was recorded in these regions that did not allow them to recover their pre-crisis growth rates – the GRP of the Vologda and Chelyabinsk Oblasts increased by 6% in 2011, and it reduced by 13 – 14% in 2009 (*table 8*).

In 2011, the minimum level of consumer inflation was fixed in the Russian Federation and its subjects; it was formed under the influence of both monetary factors (slowing the growth rates of money supply, which began at the end of 2010) and non-monetary factors (stable ruble-to-dollar rate, slow GDP growth, high yield of agricultural production).

Considering the dynamics of inflation processes for the period from 2007 to 2011, it is easy to note that in 2011 the main reason for their delay was a significantly lower rate of increase in food prices *(table 9)*.

The increase in consumer prices in the Vologda and Lipetsk Oblasts accounted for 5.7 and 4.7%, respectively; these figures were lower than the average index in the Russian Federation. As for the Chelyabinsk Oblast, the increase in prices for both food and nonfood products was significantly higher.

A rise in the cost for housing and communal services is the main basis for the inflationary rise in prices. There was a 1.7-fold increase in the cost for housing and communal services for the 2007 – 2011, when inflation rate grew by 1.4 times.

Table 8. Actual volume index of the gross regional product in the RF subjects for 2007 – 2011, % to the previous year

Subject	2007	2008	2009	2010	2011	2011 to 2007, %
Vologda Oblast	105.1	96.7	87.1	105.7	106.0	94.4
Lipetsk Oblast	108.0	103.6	93.5	104.0	105.6	106.4
Chelyabinsk Oblast	113.4	101.5	85.9	106.0	105.8	97.8
Russian Federation	108.3	105.7	92.4	104.6	104.3	106.6
Sources: data of Russian Statistics; Governments of Vologda and Chelyabinsk Oblasts; Administration of the Lipetsk Oblast.						

Table 9. Growth rates of consumer prices in the RF subjects in 2007 – 2011 (December to December of the previous year, %)

Subject	2007	2008	2009	2010	2011	2007 – 2011
Vologda Oblast						
All kinds of goods and services	*12.7*	*14.3*	*7.2*	*9.2*	*5.7*	*41.4*
Food products	16.4	17.6	4.4	12.9	2.6	42.2
Nonfood products	6.1	9.0	8.8	5.4	7.4	34.2
Housing and communal services	16.7	17.1	20.5	7.4	13.6	72.1
Lipetsk Oblast						
All kinds of goods and services	*13.6*	*16.0*	*8.7*	*8.1*	*4.7*	*42.7*
Food products	19.1	17.5	4.8	12.7	2.5	42.2
Nonfood products	8.5	12.2	10.8	4.1	7.3	38.9
Housing and communal services	14.3	21.9	20.2	13.9	7.2	78.9
Chelyabinsk Oblast						
All kinds of goods and services	*11.0*	*12.8*	*8.6*	*9.6*	*8.3*	*45.4*
Food products	16.1	16.1	5.3	11.5	5.3	43.5
Nonfood products	5.7	6.4	10.7	8.4	9.8	40.2
Housing and communal services	15.2	20.3	11.1	19.7	12.9	80.5
Russian Federation						
All kinds of goods and services	*11.9*	*13.3*	*8.8*	*8.8*	*6.1*	*42.3*
Food products	15.6	16.5	6.1	12.9	3.9	45.0
Nonfood products	6.5	8.0	9.7	5.0	6.7	32.5
Housing and communal services	14.0	16.4	19.6	12.95	11.7	75.6
Sources: Russian Statistics data, ISEDT RAS calculations.						

The rapid recovery of the consumer market was a distinctive feature of the period from 2010 to 2011 *(table 10)*. However, retail trade turnover in the metallurgical regions increased insignificantly in 2011 as compared with 2007 – by 2 – 9% vs. 16 – 20%.

Domestic consumer demand is mainly supported by the rapid growth in demand for consumer loans. The nominal volume of loans granted to the population in those regions of the Russian Federation in 2009 – 2011 increased by 3 – 4 times *(table 11)*.

The baseline engine of domestic consumer demand in the period of economic growth was the high dynamics of population's income.

The growth of average nominal monthly salary in the metallurgical regions was 23 – 27% annually. This trend was interrupted in 2009 – the growth rates of average wages dropped to 1.3 – 3.7% and they did not returned to the pre-crisis levels in 2010 – 2011 *(table 12)*.

It should be noted that, despite the presence of the largest steel enterprises in the Vologda, Lipetsk and Chelyabinsk Oblasts, the average wage rate in these regions is below the average wage rate of Russia. The fact of the matter is that most people in these regions are employed in low-paying jobs. Thus, according to statistics, only 5.5 – 6.5% of working people were employed in the metallurgical production in 2011 where a wage rate was 1.3 – 1.8 times higher than the average wages in the economy. More than 40% of people were employed in rural economy, commerce and public sectors. Meanwhile, the wages in these industries amounted to 60 – 80% of the average wages in the regions' economy.

Table 10. Actual volume index of retail trade turnover in the RF subjects in 2007 – 2011, % to the previous year

Subject	2007	2008	2009	2010	2011	2011 to 2007, %
Vologda Oblast	118.0	108.5	89.4	116.3	106.0	119.6
Lipetsk Oblast	120.0	117.3	100.0	106.9	109.2	136.9
Chelyabinsk Oblast	119.1	120.1	93.0	100.8	101.7	114.5
Russian Federation	116.1	113.5	95.1	106.3	107.2	123.0
Sources: Russian Statistics data, ISEDT RAS calculations.						

Table 11. Loans to individuals in in the RF subjects in 2009 – 2011, bln. rub.

Subject	2009	2010	2011	2011 to 2009, times
Vologda Oblast	12.0	23.0	40.2	3.4
Lipetsk Oblast	9.8	25.0	29.5	3.0
Chelyabinsk Oblast	33.7	87.6	136.1	4.0
Russian Federation	2613.6	3649.1	5438.6	2.1
Sources: Russian Statistics data, ISEDT RAS calculations.				

Table 12. Average nominal monthly wages in the RF subjects in 2007 – 2011

Subject	2007		2008		2009		2010		2011		
	thsd. rub.	in % to 2006	thsd. rub.	in %to 2007	thsd. rub.	in %to 2008	thsd. rub.	in % to 2009	thsd. rub.	in % to 2010	in % to the RF
Vologda Oblast	12.9	121.1	16.1	124.8	16.6	102.8	18.5	111.9	20.7	111.5	87.9
Lipetsk Oblast	10.9	126.3	13.4	122.6	13.9	103.7	15.4	111.2	17.2	111.5	73.1
Chelyabinsk Oblast	11.9	127.2	14.8	124.6	15.0	101.3	17.4	115.6	20.2	116.5	86.0
Russian Federation	13.6	127.8	17.3	127.2	18.6	107.8	21.0	112.4	23.5	112.3	100.0
Sources: Russian Statistics data, ISEDT RAS calculations.											

The decline in the rate of wage growth had a significant impact on the dynamics of real population's incomes. Their growth in the pre-crisis period (more than 12% per year) slowed to 6% in the Lipetsk Oblast in 2009. The growth rates of real population's incomes turned into the negative values *(table 13)*.

In 2010, the crisis decline in real incomes was overcome by increasing pensions and benefits, financed from the Federal budget. Another decline in real population's incomes repeated in 2011, as a result of which the Vologda Oblast, where there was a reduction in population's income in 2008, could not restore their pre-crisis level.

The decline in population's incomes in the metallurgical regions, especially in the cities where the head facilities of the largest metallurgical holdings were located, was caused by not only the prolonged decline in production, but also by the fact that the owners of steel enterprises cut costs by reducing the number of workers during the crisis. The number of employees at Cherepovets Iron and Steel Complex decreased by 9.5 thousand people or by one-third for the period from 2007 to 2011. The total number of employees in Cherepovets reduced by 10.7 thousand people during the same period. It turned out that the people, who were discharged from ChMK, accounted for almost 90% of the total number of dismissed employees in the city. Staff reductions were not so large-scale at Magnitogorsk Iron and Steel Works and Novolipetsk Steel – by 13% on average, and the number of employees, who were dismissed on grounds of redundancy, amounted to 21 and 38% respectively *(table 14)*.

In addition, the decrease in population's incomes in the metallurgical regions was affected by the high level of concealed or involuntary unemployment *(table 15)*.

Table 13. Real disposable population's income of the RF subjects in 2007 – 2011, % to the previous year

Subject	Average growth rates for 2000 – 2007, %	2008	2009	2010	2011	2011 to 2007, %
Vologda Oblast	112.4	98.7	89.9	108.3	98.9	95.0
Lipetsk Oblast	112.6	109.0	106.0	102.0	100.4	118.3
Chelyabinsk Oblast	112.6	115.0	97.0	102.0	97.2	110.6
Russian Federation	111.9	102.3	102.1	104.1	100.8	108.7
Sources: Russian Statistics data, ISEDT RAS calculations.						

Таблица 14. Average number of employees in the metallurgical cities for 2007 – 2011, persons

Indicators	2007	2008	2009	2010	2011	Total for 2007 – 2011	
						Pers.	%
Cherepovets							
Total employment	141575	137479	125056	130057	130861	-10714	-7.6
Total employment at ChMK	32184	29507	24296	22905	22683	-9501	-29.5
Magnitogorsk							
Total employment	147013	146776	138150	135326	131509	-15504	-10.5
Total employment at MMK	25015	24123	22334	21612	21813	-3202	-12.8
Lipetsk							
Total employment	n/a	175931	165616	164485	163641	-12290	-7.0
Total employment at NLMK	35107	33227	31666	30566	30439	-4668	-13.3
Sources: data of Russian Statistics, the official websites of the Cherepovets Mayor's Office, Lipetsk Administration, Magnitogorsk Administration, the annual reports of OJSC "Severstal", "MMK" and "NLMK", ISEDT RAS calculations.							

There were the highest part-time employment rates in 2009. The Chelyabinsk Oblast was characterized by an increased level of concealed unemployment. Part-time employment reduced in the metallurgical regions in 2011 as compared with 2009, but unemployment figures remained high, thus, they proved that labour markets hadn't recovered yet after the crisis. The highest part-time employment rate was lower in the Vologda Oblast than in other two regions due to the high rate of made work and temporary employment (0.9% of the total employment in 2011 vs. 0.1% in the Chelyabinsk Oblast and in the country on the whole).

Low growth rates of real incomes did not allow a significant reduction of economic poverty *(table 16)*. In 2007 – 2011, 10 – 11% of the population in the Lipetsk and Chelyabinsk Oblasts lived below a subsistence level. The highest number of low-income people was registered in the Vologda Oblast; their number increased by 32 thousand or 17.5% for 2007 – 2011. That was a result of the crisis decline in real incomes (first place in Russia in 2009), high unemployment rate (6.7% vs. 6.3% on average in the Russian Federation in December 2011), as well as moratorium on the indexation and increase of salaries in the public sector at the expense of the regional budget in 2009 – 2010.

The crisis had worse influenced people's employment than their incomes. The demand for labour force reduced, firstly, in the manufacturing industry, and the experience of leading steel plants proved that fact. Increased unemployment rates became apparent in 2008, and that problem became stagnant in 2009 – 2010 *(table 17)*.

Table 15. Part-time employment in the metallurgical regions in 2009 – 2011
(% to the number of economically active population)

Subject	2009	2010	2011
Vologda Oblast	2.8	1.5	1.4
Lipetsk Oblast	2.9	1.9	2.2
Chelyabinsk Oblast	5.2	3.5	2.5
Russian Federation	2.7	1.5	1.4
Sources: Russian Statistics data, ISEDT RAS calculations.			

Table 16. The number of people in the RF subjects living below a subsistence level

Subject	2007		2008		2009		2010		2011		2007 – 2011	
	thsd. pers.	%*	thsd. pers.	%*	thsd. pers.	%*	thsd. pers.	%*	thsd. pers.	%*	thsd. pers.	%*
Vologda Oblast	182.1	14.8	193.1	15.8	224.7	18.4	208.0	17.2	214.0	17.8	+31.9	+17.5
Lipetsk Oblast	125.1	10.7	119.8	10.3	112.3	9.7	117.2	10.0	120.9	10.3	-4.2	-3.4
Chelyabinsk Oblast	410.8	11.7	375.4	10.7	382.4	10.9	361.5	10.4	392.8	11.3	-18.0	-4.4
Russia, bln. pers.	18.7	13.3	18.9	13.4	18.5	13.2	17.9	12.6	18.1	12.8	-0.6	-3.2
* In % to the total population. Sources: Russian Statistics data, ISEDT RAS calculations.												

Table 17. The total number of unemployed population in the RF subjects in 2007 – 2011

Subject	2007		2008		2009		2010		2011	
	thsd. pers.	%*	thsd. pers.	%*	thsd. pers.	%*	thsd. pers.	%*	thsd. pers.	%*
Vologda Oblast	27,0	4,1	38,6	5,9	53,1	7,9	52,0	7,9	47,0	7,3
Lipetsk Oblast	16,6	2,8	29,9	4,9	34,3	5,6	27,7	4,5	27,8	4,5
Chelyabinsk Oblast	44,3	2,5	82,2	4,4	150,7	8,0	143,9	7,6	127,7	6,7
Russia, bln. pers.	4589	6,1	4792	6,3	6373	8,4	5636	7,5	4870	6,5
* In % to the economically active population. Sources: Russian Statistics data, ISEDT RAS calculations.										

Labour market conditions slightly improved in 2011 due to the large-scale support for employment by the Federal budget. At the same time, regional labour market indicators were differentiated. The Vologda and Chelyabinsk Oblasts were characterized by more rapid unemployment growth during the crisis and slow decrease in the unemployment rate, which indicated the continuing problems of the labour market. The Lipetsk Oblast was characterized by one of the lowest unemployment rates not only among the metallurgical regions but also among other Russian regions. As discussed, the implementation of large-scale investment projects largely contributed to this due to the creation of new jobs[3].

In conclusion, it is possible to say that the impact of the crisis on the economy in the ferrous-metallurgical regions, which were largely dependent on the world market, was so deep that in 2011 the dynamics of the main indicators in those regions fell behind the country in whole. The analysis of production and financial performance did not allow us to say about overcoming the crisis in the industrial, especially in the steel, production and increasing investment in fixed assets. Problem areas include the financial condition of basic iron and steel enterprises, high rate of concealed unemployment and stagnation in population's incomes.

It is obvious, that non-diversified economy remains a long-term negative factor of the social and economic development of the Vologda, Lipetsk and Chelyabinsk Oblasts.

The deterioration of the main macro-economic parameters changed the situation in the public sector and affected the level of regions' budget allocation sufficiency. But this is a topic for the next publication.

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[3] According to the Government of the Lipetsk Oblast, in 2011, SEZ "Lipetsk" launched four plants with1.7 thousand jobs.

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Anti-innovations as a factor of macroeconomic instability (the case of derivative financial instruments)

The theory of innovative economic development is based on the concept of "innovation", which implies novelties that have a progressive impact on the development of a society. At the same time, human ingenuity often goes beyond the limits of public interest, giving birth to an intellectual product, which is not directly linked to the public progress. In this regard, such notions as "pseudo-innovation" and "anti-innovation" emerge, which transfer innovative topics from their constructive interpretation to their critical perception. Using the examples of derivative financial instruments, the article describes the process of transforming the innovation implemented to increase market reliability into its opposite, i.e. a significant factor of creating instability of modern financial markets.

Innovation, innovative development, financial markets.

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The theory of innovative economic development is based on the concept of "innovation". J. Schumpeter, the founder of the theory, defines it as a new scientific-organizational combination of production factors, motivated by entrepreneurial spirit.

The Austrian economist, in the early twentieth century, determined that innovations can be the instrument of counteracting economic downturns, and the source of increasing business profitability can be found not only in cost reduction and price manipulation, but also in the change of products in accordance with the changing demand and willingness of the market to accept a new product. In his work "the Theory of Economic Development", he noted, "Under the enterprise we understand the implementation of new combinations, as well as what these combinations are implemented in: plants, etc. We define entrepreneurs as business entities, the function of which is to implement new combinations and which function as its active element". J. Schumpeter describes an entrepreneur using such notions as initiative, authority, the gift of foresight, etc., citing a well-known definition by J.-B. Say: the function of an entrepreneur consists in joining and combining production factors [7, p. 169, 170, 171].

The "implementation of new combinations" in the Schumpeter theory refers to the following types of activities:

- creating a new good that was not previously known to consumers or achieving new quality of a good;
- introducing a new production method, emerging of which is not necessarily related to a scientific discovery, and may even lie in another form of commercial use of goods;

- access to new markets, where this industry has not yet been presented, regardless of whether this market existed previously;
- obtaining a new source of raw materials or semi-finished products, regardless of whether he existed previously, or was unavailable, or was not taken into account;
- conducting the necessary reorganization, such as achievement of a monopolistic position, as well as undermining the same position on the market of another enterprise [7, p. 159].

The followers of the innovation theory significantly expanded the understanding of innovations stated above, supplementing it with novelties in the field of technology, work organization and management, based on the use of advanced experience and scientific achievements (B.A. Rayzberg, L.Sh. Lozovskiy [4, p. 136]), setting up the production of new goods, introduction of new production methods or application of a new type of business organization and enterprise (K.R. McConnell, S.L. Bru [3, p. 391]), which are perceived by the consumer as fundamentally new or possessing certain unique properties (P. Kotler [2, p. 589]). Yu. Yakovets defines innovation as introduction into various fields of human activity of new elements (methods, ways), improving the effectiveness of such activities [8, p. 9]. Exclusively pragmatic approach is demonstrated by B. Twiss, who considers innovation as a process in which an idea or invention receives the economic content [5]. A. Akayev gives a similar interpretation and calls innovation the knowledge, embodied in a commercial product [1, p. 141-162].

Thus, the innovation is implied to be an object, not only put into production, but also effectively implemented in the market and making profit. As a result of a scientific dis covery or carried out research, the specified object qualitatively differs from its prototype.

Particularly important for understanding the notion of "innovation" is their classification, the correct construction of which is essential for elaborating the innovation management methods. One of the attempts of such classification is presented in *figure 1*, however, despite the potential advantages, it, like many others, can not claim to be thorough and widely recognized. The reason probably lies in the dynamics of innovative science development, which is being constantly supplemented with new scientific observations and definitions.

As a rule, when describing the innovations we are talking about novelties, having the purpose of public utility and exercising a progressive impact on the development of a society. At the same time, the limits of human ingenuity often go beyond the limits of public interests, giving birth to an intellectual product, which is not directly linked to the public progress. In this regard, such category as "pseudo-innovation" and "anti-innovation" emerge, that transfer innovative topics from their constructive interpretation to their critical perception.

Pseudo-innovation is a concept, introduced by German economist G. Mensch [11], who considers that the movement from one technological stalemate to another is done through the transition from basic innovations to improving ones and further to pseudo-innovations. The latter category summarizes the dead-end trends of human entrepreneurship and ingenuity, aimed at a certain improvement and extension of the agony created by the technologies, public institutions and systems, which are obsolete in their essence and doomed to leave the historical scene. In some cases, this may give a "new breath" to an outdated institution, bring it to a new stage of development. But usually they are guided by the conservatism of action, by force of habit and are doomed to failure because of social progress deceleration. Pseudo-innovations, as a rule, are realized on the final stage of the obsolescent system's life cycle, when the system has exhausted its potential in general; however, it resists its replacement by a more progressive system, it tries through imitation of updating to keep its place in the new emerging economic order [8, p. 16-17].

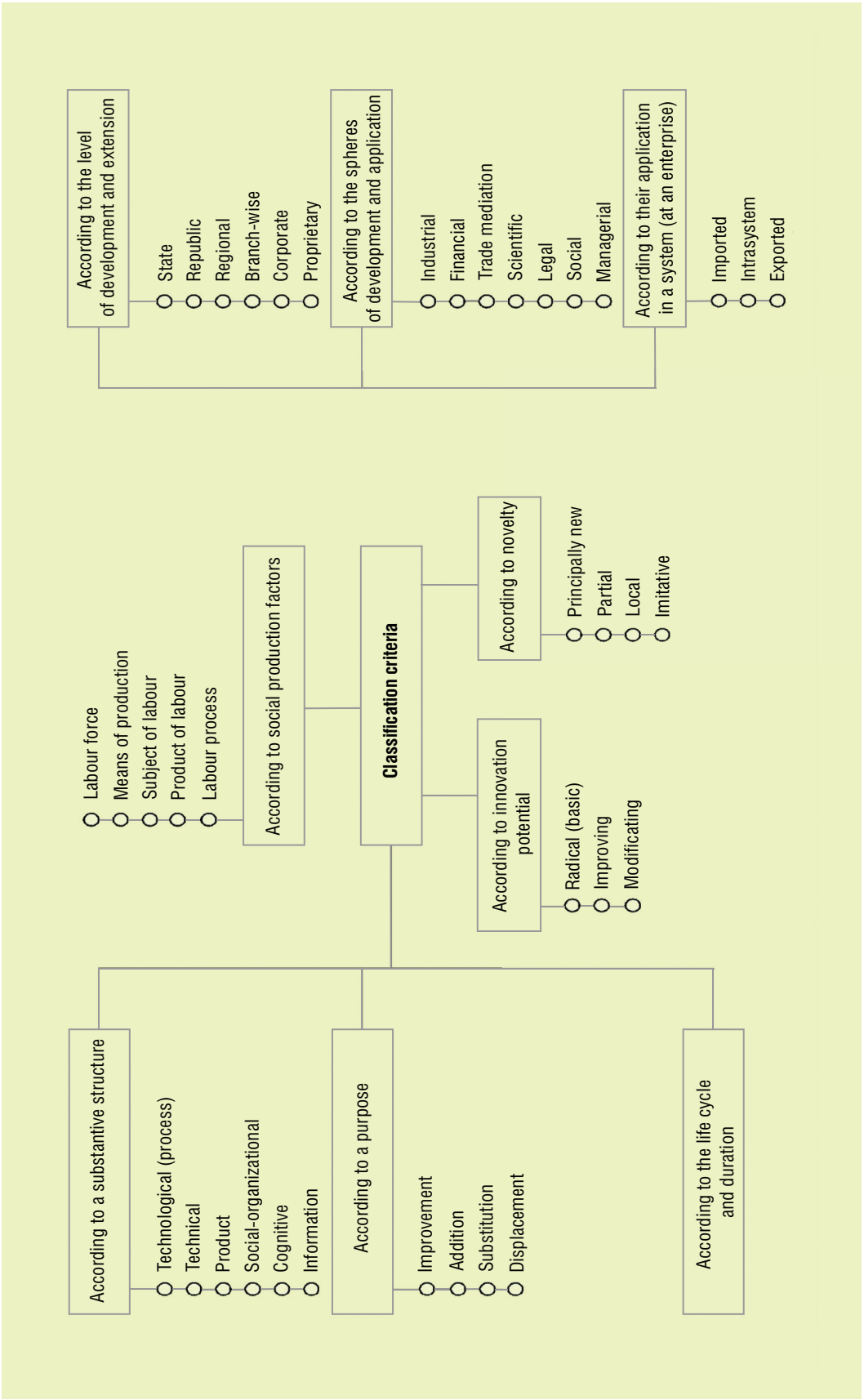


Figure 1. Extended classification of innovations

Anti-innovation is a category, introduced by Russian scientist Yu.V. Yakovets to determine the novelties that have regressive character, causing partial degradation in a certain field of human activity [8, p. 17].

These innovations, in contrast to other types of novelties, represent intellectual products, introduced in the economic practice, that have short-term economic effect, but in prospect they will exert an extremely negative impact on the dynamics of economic growth. One of the examples can be an introduction to the financial and stock markets of derivative financial instruments, which became tangible factors of macroeconomic instability over the past two decades.

The derivatives themselves and financing schemes, created on their basis, are just financial and legal instruments, which, like different methods of treatment, can bring benefit or cause harm. The latter is expressed in the uncontrolled growth of the volume of operations with secondary (derivative) securities, which undermines the stability of financial markets and in general has a negative impact on the stability of the world economic system. In addition, the corrupted nature of such an activity should be taken into account, when market participants carry out mutually exclusive activities: they create instability and sell insurance instruments against it.

The essence of the concept "derivative financial instruments" consists in creating a fictitious value "produced" from the main liquid asset, each new operation with which is issued by a new financial instrument, that stands farther and farther from the initial obligation.

The most common financial innovations are the following [6, p. 80-89].

• Interest-Rate and Cross-Currency Swaps – financial products, providing the opportunity to exchange money flow in the form of a floating rate, increased or reduced by some margin[1], by the cash flow in the same or different currency, expressed in the form of a fixed rate[2].

The first deals with the use of interest rate swaps were developed and carried out by the JPMorgan bankers in the mid-1980s. Special conditions, arising in regard to the rates of coupons on the floating rate notes, became the predecessors of interest-rate and currency swaps, largely influencing the demand for them. In conditions of prevailing low interest rates in the mid-1980s, large corporate borrowers felt the necessity to protect themselves from a potential increase of the reference interest rates in the future, which could result in higher costs for servicing their debt obligations linked to floating interest rates. In order to solve this problem, the investment banks, preparing the issue of securities for a client and collecting a syndicate of investors, began to organize issuing of bonds with floating rate, which have a maximum limit on the amount of the overall coupon rate.

• Basis swap is a financial instrument, which enables counterparties to exchange money flows, connected either with different reference rates, or with one and the same rate quoted for different terms. An example is the exchange of money flows linked to Libor in USD for 3 and 6 months, respectively.

• Credit Default Swap (CDS) – financial products, that redistribute the credit risks typical of some instruments (liabilities), including loans and bonds. The buyer of a credit swap acquires protection against credit risk, and the seller of the credit swap guarantees the security of the basic liability. Thus, the risk of default on the basic instrument is fully or partially transferred from the holder (lender or owner of the bonds) to the seller of the credit swap. However, the seller of the credit swap can also be subject to a certain credit risk, i.e. the risk of its failure to perform its obligations under the credit swap, so the buyer of a credit

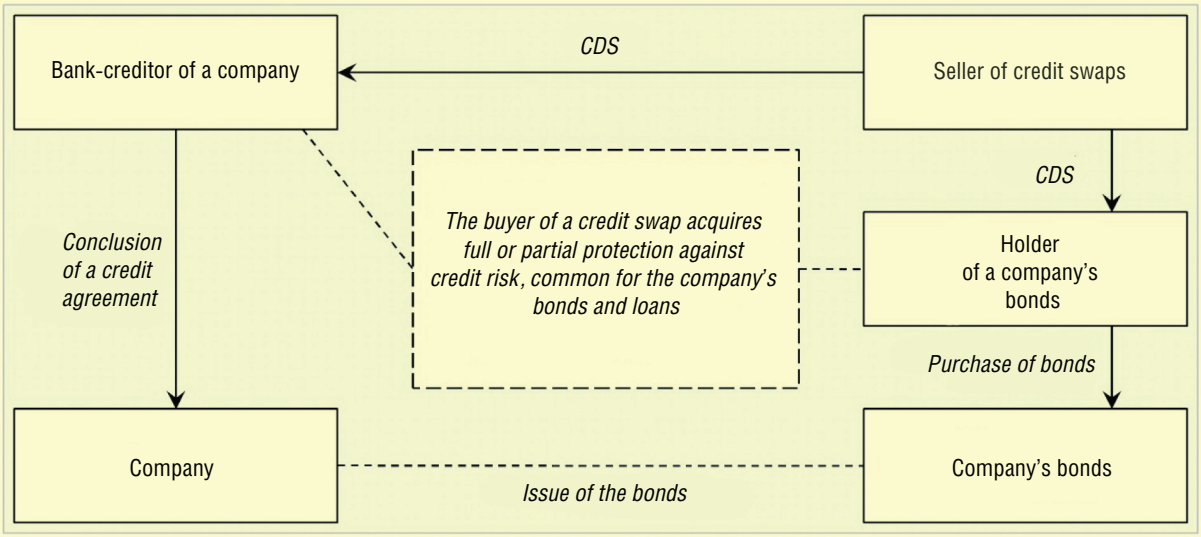
[1] For example, 3 months GBP Libor rate + 300 basic points.

[2] For example, 4% per annum in USD.

swap acquires protection against credit risks on the basic liability and assumes the risk of execution of obligations under the credit swap by its seller *(fig. 2)*.

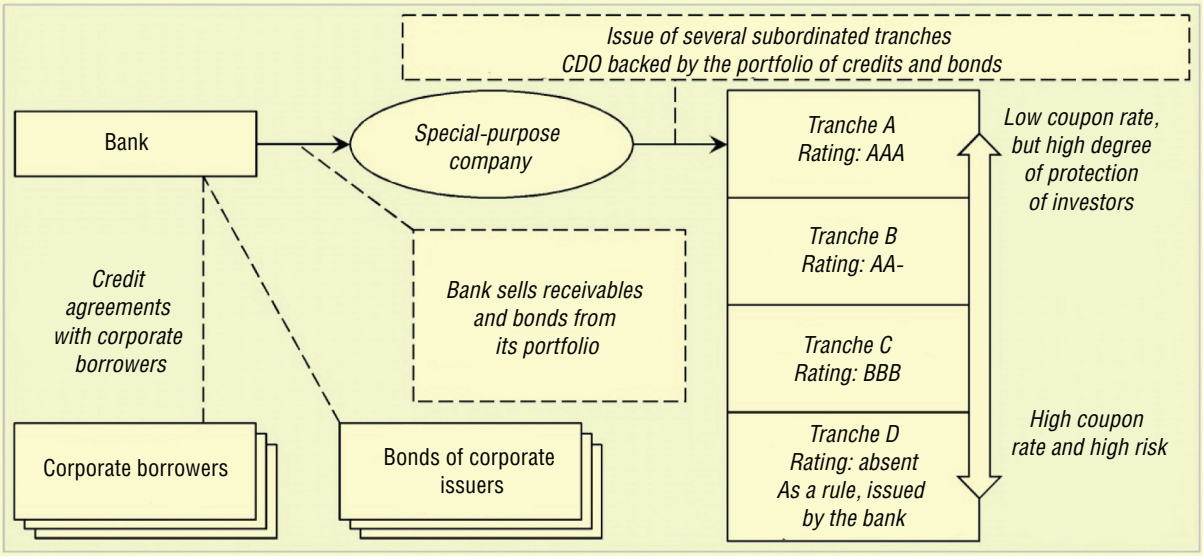
Collateralized debt obligations (CDO) – financial instruments, obligations under which are ensured by a certain portfolio of bonds, loans or other underlying assets (*fig. 3)*[3].

Figure 2. Examples of the use of credit default swaps (CDS)



Source (including fig. 3, 4): Financial crisis in Russia and in the world. Ed. by E.T. Gaydar. Moscow: Prospekt, 2009. P. 83, 84, 87.

Figure 3. An example of issuing collateralized debt obligations (CDO)



[3] A special case of CDO is Synthetic Collateralised Debt Obligations, obiligations under which are fully or partially secured by a portfolio of credit swaps and other derivative financial instruments, the price of which depends on the portfolio of other underlying assets.

As a rule, collateralized debt obligations are issued by several subordinated tranches. Junior tranches have higher risk of non-fulfillment of liabilities compared with the senior tranches, the obligations on which are executed in order of preference. Such a mechanism of risks redistribution allows the senior tranches to get high ratings of investment level, which exceed the ratings of the underlying assets.

Asset Backed Commercial Paper Conduits. The large investors' demand for derivative securities with a high degree of protection against credit risks and other specified parameters has led to the emergence of double and multiple repackaging of cash flows from the underlying assets. The technique of double repackaging consists in the selection of certain tranches out of the already existing CDO and other financial instruments, and in the issue of new securities backed by the selected tranche. The advantage of such schemes is achieving a higher level of diversification of the sector and country risks in relation to the basic issues of CDO.

Conduits that issued short-term commercial papers (maturing through 90 days) backed by medium- and long-term derivative instruments, including CDO, became a common example of double repackaging schemes in the U.S. and European countries.

To obtain high credit ratings for these commercial papers, banks-organizers of conduits provided these structures with credit lines for financing the possible liquidity gaps. At the same time, bank-organizer governed the composition of collateral portfolio for these commercial papers, adding or removing certain parts of the portfolio, which led to a change in the parameters of the incoming cash flow and the risk profile of collateral for commercial papers (*fig. 4*).

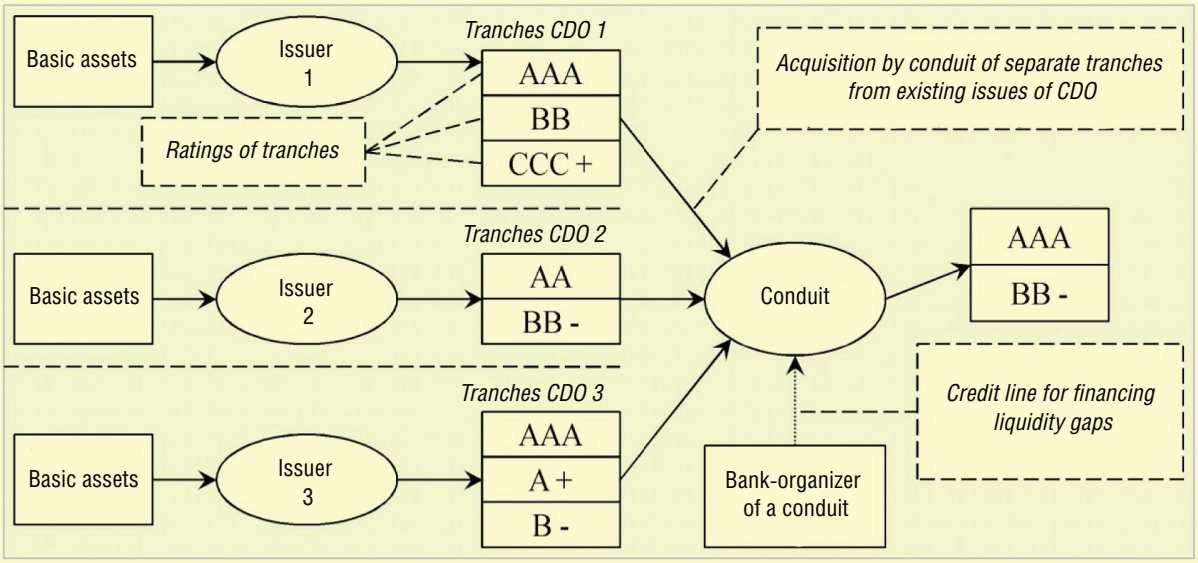
• Securitization represents the scheme of refinancing packages of similar rights of claims through the provision of loans or issued securities, backed by the above mentioned packages and loan support instruments introduced in such schemes. As a rule, securitization transactions are based on actual selling, in the course of which the originator (creditor Bank) transfers all its loans from its balance[4] to a Special Purpose Vehicle (SPV), which, in turn, for the purchase of a package, attracts financing through issuing the securities purchased by investors.

The structure of securing and subordination of tranches in securitization transactions is similar as compared to CDO transactions. From the rating agencies' viewpoint, the main difference between securitization and CDO lies in the fact that the ultimate borrowers in securitization, as a rule, have no credit ratings, that is why a most important factor here is reaching high level of portfolios diversification, analysis of the groups of borrowers' credit history (geographical, sectoral, income level, etc.) and modeling their behavior in stressful economic scenarios.

The most widespread refinanced portfolios are mortgage loans to individuals, including subprime loans. Securities issued in the course of such transactions are called Residential Mortgage Backed Securities (RMBS). In January – September 2007, the share of RMBS transactions accounted for about 54% [6] of the total volume of new issues of structured securities in Europe, which more that twice exceeded the volume of new CDO issues (24%) for the same period. Among other types of assets, financed through securitization, one should mention Commercial Mortgage Backed Securities (CMBS), car loans, lease payments, receivables (factoring transactions), credit card debt, future cash flows, etc.

[4] It should be noted that securitization is also possible without selling the assets from the balance sheets of banks. The so-called balance sheet securitization is used in some European countries including Germany. Lack of assets selling from the balance sheets of banks is also typical for issuing Covered Bonds, the credit quality of which is determined not only by the structure and security of a transaction, but also by the financial position of the bank that granted the loans.

Figure 4. Example of assets' double repackaging scheme



The above stated list is not exhaustive. The financial sector responded to the need for credit by offering the more diverse products. This pyramid of credit interdependencies including commodity futures and currency options, forward deals, charging instruments, swaps, repeatedly resold raw materials and mortgage contracts, bonds secured by mortgages of borrowers, etc. is becoming more and more vulnerable. Duplication, triplication has become a favorite method of increasing the liquidity of modern financial markets, moreover, often, under the guarantees of the state that is itself in debt and actively borrows both on internal and external markets.

Financial novelties introduced by investment innovative banks (definition by J. Schumpeter) and tested in the markets, are quickly spread by imitator banks. The emergence and spreading speed of the new investment products, as a rule, depends on the degree of their demand among market participants. In addition to the institutional conditions (legislation and regulation of demand for such products is largely determined by the macroeconomic situation and the current state of financial markets.

The main macroeconomic conditions of the pre-crisis 2000 – 2007 period, which determined the relevance of secondary financial instruments, include a very low inflation level in developed countries, low interest rates, high degree of macroeconomic indicators predictability, including the sustainable GDP growth rate. Despite the rapid growth in the volume of debt instruments, in particular, derivative financial instruments, along with price hikes for the basic assets, the above stated factors created an illusion among a number of investors and economists concerning the actual level of credit risk and the fair price of the assets.

As a result, the total volume of existing contracts envisaging derivative financial schemes, at the end of 2007 amounted to $ 60 trillion that was approximately 20 times greater than the total capitalization of the companies listed on the London stock exchange [10]. At the same time, financial transactions related to the securitization accounted for about $ 8.7 trillion at the end of 2008 [9]. Taking into consideration the high degree of interdependence between different markets, it is difficult to overestimate the threat lying in the potential risk of the chain non-fulfillment

of such obligations for individual participants of the financial market and the world financial system as a whole.

Derivative financial instruments have been functioning on their own for a long time already, causing the rapid growth of liquidity. The economic and political elite in the conditions of innovation financial boom obviously lost control over their movement, so the crisis situation in the world financial markets can be defined as "the revolt of financial innovations" against their creators [6, p. 166].

If this statement is true, than stiffening the rules, regulating financial markets functioning at both national and international levels, is inevitable. Given the rapidly increasing complexity of derivative instruments' structures and extremely high-speed copying of financial technologies on the market, it can be noted that the issue is becoming very acute, concerning the understanding by the state regulators of the influence of new derivatives of financial schemes on the markets and the responsibility of professional investors' associations for the consequences of their uncontrolled use.

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Study on open economy development of underdeveloped regions under counter-crisis background

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I. The open economy development is an inevitable choice for the rise of the underdeveloped regions.

The coming of the international financial crisis directly affects China's export-oriented economy. In the context of the macroeconomic regulation and control of expanding domestic demand, people have some disagreements over the understanding of the main opening-up strategy actively advocated since China's reform and opening-up. I believe that the open economy development is still an inevitable choice for the rise of the underdeveloped regions. The open economy development has a very important strategic significance to the underdeveloped regions either from the theory prospect or from the practice prospect.

1. The open economy is the urgent need for making the economy aggregate bigger and accelerating the rise.

To make an overview of the 30-year development history of reform and opening-up, the rapid growth of China's economy is closely related to the expansion of opening to the outside world. From the development course of the developed regions, the energetic open economy development is the only way to rapidly promote the economic strength. The broader the opening to the outside world is, the higher the economic development will be.

Taking Guangdong as an example, its average annual GDP growth rate was 13.6% from 1978 to 2007, due to the international financial crisis, its economy gradually transited from the high growth phase to the sub-high growth phase from 2008: its GDP growth rate was 10.4%, 9.7%, 12.4% and 10% successively from 2008 to 2011. The most successful experience for the rapid growth of Guangdong's economy is the energetic development of open economy.

The open economy will play a huge promotion and demonstration role in the economic growth of the underdeveloped regions, and is an economic growth engine for the underdeveloped regions. In recent years, Jiangxi Province takes the opening-up as the main strategy, accelerating the opening of industry, agriculture, infrastructure and service to the outside world; therefore, the open economy has achieved a major breakthrough and effectively promoted the sustained rapid economic growth. In 2010, the total import-export volume throughout the whole province reached 21.45 billion US dollars with an increase of 67.9%, surpassed Guangxi, Henan, Xinjiang, ranking No. 15 in the whole country, and No. 3 in central regions, which is 4.8 times of 2005, and the five-year average annual growth rate was 36.8%, ranking No. 1 in the whole country.

The foreign investments in actual use were 5.1 billion US dollars with an increase of 26.8%, which is double that of 2005, and the five-year average annual growth rate was 14.9%. The fixed investments in Jiangxi increased from 216.9 billion Yuan at the end of "Tenth Five-Year Plan" period to 877.5 billion Yuan in "Eleventh Five-Year Plan" period with an average annual growth of 32.3%, and the increments were mainly the attracting investment funds. The average annual growth rate of foreign investments in use was 16.1%, the average annual growth rate of more than 50 million Yuan of project funds from outside the province in use was 32.5%, and the attracting investments accounted for more than half of the fixed investments in Jiangxi Province during five years. In 2010, an average of 6.5 projects with the funds of more than 50 million Yuan were approved each day, an average of 8.4 projects were put into operation in the industrial park each day throughout the whole province, and the tax revenues brought by the open economy accounted for 50% of the total tax revenues and more than 40% of the total financial revenues throughout the whole province. As an underdeveloped region, Jiangxi proves once again that only the development of the open economy can massively absorb foreign investments to form a fixed investment growth mechanism.

2. The open economy is the objective requirement of the rapid advance of industrialization and urbanization.

The industrialization and urbanization of the underdeveloped regions with larger share of agriculture can be accelerated only through the opening-up and large-scale transitional industry transfer. The 30-year development history of the reform and opening-up in the coastal developed regions shows that the open economy development is an effective way of accelerating the industrialization and urbanization, Guangdong, Jiangsu, Zhejiang and other Provinces cost only 20 years to enter the middle and later stage as well as the final stage from the initial stage of the industrialization and urbanization through investment attracting, large-scale international transitional industry transferring, industrial cluster, industrial park, and specialized industrial town developing, rapid urban framework widening, as well as fast population concentrating, and the urbanization rate of these three cities reached 66.5%, 61.9% and 62.3% separately in 2011.

In the new century, Jiangxi accelerated the pace of opening-up, and the open economy had made great progress; the continuous acceleration of industrialization and urbanization realized the transition from the agriculture-oriented development pattern to the industry-oriented development pattern. In 2011, the whole province realized 561.19 billion Yuan of the industrial added value, accounting for 48.4% of the total output value, which rose by 21.4 percentage points compared with that in 2000; three industrial structures were optimized to 10.1:56.9:31.1 from 24.2:35.0:40.8, and the second industry rose by 21.9 percentage points in 2011. With the strong promotion of industrialization, the urbanization rate of the whole country increased from 27.7% in 2000 to 45.7% in 2011 with an increase of 18%.

3. The open economy creates a large number of employment opportunities of non-agricultural industries, and accelerates the transfer of agricultural surplus population.

Most of the underdeveloped regions are populated regions and agricultural regions with a large agricultural surplus population which need to be transferred to the secondary and tertiary industries. With the reform of China's economic structure and forms of ownership, the employment opportunities provided by the state-owned economic units are declining, and the employment opportunities provided by the private economy, non-public enterprises, and foreign-funded enterprises are continuously increasing, the Pearl River Delta, Yangtze River Delta and Min Delta regions with the

fastest-growing open economy not only solve the employment of urban residents, but also employ more than 100 million migrant workers through the development of the export-oriented economy. In 2011, Jiangxi Province newly employed and transferred 550,000 rural labors, and arranged 1.74 million people for employment in the industrial parks. It can say that the development of open economy and industrial park has become the important way for employment transfer of surplus rural labors in the underdeveloped regions.

4. The transformation from a resourceful province to an economic province can be realized through the open economy development.

Most of the underdeveloped regions are rich in resources, and are the important energy and material base in China. Taking Jiangxi as an example, Jiangxi is rich in mineral resources, and is a major non-ferrous, rare, and rare-earth mineral base in China; there are 33 minerals in 89 proved mineral reserves ranking top five in the country, among them, copper, tungsten, tantalum, gold, silver, uranium and other minerals rank first, rare-earth, selenium, lithium and other minerals rank second; copper, tungsten, uranium and thorium, tantalum and niobium, as well as rare-earth are known as "five golden flowers" in Jiangxi Province. The reserves of iron ore in Jiangxi are considerable, and there are large-scale manganese ores with good quality; the abundant surface water resources are a potential advantage of Jiangxi Province, the average annual precipitation is 1600 mm in the whole province, and the total runoff ranks seventh in the country. The theoretical reserves of hydroenergy are more than 6.82 million kilowatts in the whole province. There are 6.1089 million kilowatts of hydropower resources can be developed, occupying an important position in the country. However, the development of the underdeveloped regions based on the traditional mode has caused serious resource destruction and ecological environment deterioration over the years. Therefore, to completely change this situation, the open economy must be developed by making full advantage of the international and domestic resources and markets, as well as giving full play to the basic role of market in resource allocation, in order to achieve the best allocation of resources, give play to the best value of resources, and overcome the restrictions in fund, technology, market, management and other aspects, realizing the transition from the resourceful province to the economic province.

II. The underdeveloped regions shall make a path selection to further enlarge the opening-up.

Under the influence of the global financial crisis, China's export demand drops significantly, which has a great impact on the open economy. As for the underdeveloped regions, the global financial crisis not only affects the economic development, but also brings a great opportunity. In recent years, the development pace of the export-oriented economy of Jiangxi is relatively fast, and the achievements are significant. From the view of the horizontal comparison, there is still a wide gap between the underdeveloped regions and the developed regions, and the share of the underdeveloped regions in the entire economic system is still small. The insufficient development of foreign trade in the underdeveloped regions is still an important factor restricting the economic development and rise; on the contrary, it also shows that there is more room for development of foreign trade in the underdeveloped regions, especially in the post financial crisis era, the acceleration of opening-up by improving the economic openness, increasing the imports and exports, and utilizing the scale and level of foreign investments is still our important task.

1. The low cost advantage shall be kept up.

In recent years, the underdeveloped regions have largely undertaken the eastern industry transfer with the low cost advantages of lands, resources, and labors, making considerable

progress in the open economy. However, as the situation changes, the international and regional competitions of industry transfer undertaking become more and more fierce and China is facing the competition of India and the ASEAN countries. India, Vietnam and other emerging market countries are very similar to China in factor endowment, market potential, urban and rural structures and other aspects, but they have obvious advantages in the average labor costs. Some Southeast Asian countries are taking advantages of cheap labors and resources to attract the industry transfers of the developed countries and regions such as Europe, America, Japan, South Korea, Hong Kong, Macao and Taiwan. At the same time, the coastal developed regions tend to be cautious of some industry transfers outside the province to avoid the industrial hollowness in the process of industrial transformation and upgrading, and Guangdong, Zhejiang, and Fujian have tended to encourage the transfer of non-competitive industries to the underdeveloped regions in the province. All the above constitutes a tremendous competitive pressure on the underdeveloped regions, and the underdeveloped regions can remain invincible in the industry transfer undertaking only with the low cost advantage.

2. The investment environment shall be further improved by taking the simulation of the investment environment in the developed regions as the goal.

First, the foreign investment service system shall be optimized, to achieve the fast docking with the coastal economic rules. It is important to learn actively from all the effective policy measures in the developed coastal regions; it is important to cancel all the cancelled administrative approval items in the coastal regions, and the items which are not cancelled can be appropriately simplified with practice; it is important to resolutely break all the conventions and policy constraints hindering the open economy development. Second, the system of customs clearance for port services shall be optimized, to further improve the customs, inspection and quarantine, and other foreign-related institutions, simplify the customs procedures, improve the port function, and reduce the enterprise clearance costs. Third, the finance and taxation support shall be increased. The special fund for transitional industry transfer shall be established to support the credit guarantee institution for small and medium-sized enterprises to provide the credit guarantees for the industry transfer enterprises, and to open a green channel for credit aid.

3. The high-tech industry shall be cultivated and the advanced manufacturing industry shall be developed to avoid the long-term low industrial level in the process of industry transfer undertaking.

At present, the industry transfer from the developed countries and the developed coastal regions to the central and western underdeveloped regions is comprehensive, and the transfer of the high-tech industries and the advanced manufacturing industries is an inevitable trend of development. New material, new energy, and new appliance investments has begun to be centralized in the central and western underdeveloped regions, and the production base of the photovoltaic industry, high-tech products such as computers and communication equipment, as well as equipment manufacturing industry shows the gradual transfer trend to the central and western regions. The underdeveloped central and western regions shall make the long-term development plans for the high-tech industries and the advanced manufacturing industries, form the new ideas and mechanisms of the local industrial structure adjustment, and lay the foundation for the long-term industry upgrading and the economic structure optimization. Based on the existing strengths, and combined with the new characteristic of international capital flows, the introduction of the middle manufacturing sector shall be extended to the introduction of the sales,

research and development, the industrial chain shall rise to high point quickly, and the focus shall be centralized on the investments of multinational companies (especially the world's top 500 enterprises) and the promotion of the supporting industrial clusters.

4. The foreign trade product structure shall be optimized and the export scale shall be expanded.

The world economic slowdown brings greater pressure to the export expansion. Therefore, the underdeveloped regions shall turn crisis into opportunity, accelerate the adjustment of foreign trade structure, strengthen the market competitiveness, expand the export scale, and seek for the breakthrough with efforts. The first is to seek for the breakthrough in commodity structure. The adaptability of the traditional export commodities shall be adjusted by taking the market as the orientation and the technical innovation as the support, to accelerate the realization of the strategic change of export commodities from the general manufactured products to the high-tech, high value-added and deep processed products, and to improve the export proportion of the mechanical and electrical products as well as the high-tech products. The brand building shall be promoted, the large-scale export industry system shall be formed, and the market competitiveness of the products shall be strengthened. The quality and grade of the light industrial products, textiles and other products with a comparative advantage shall be improved, and the value added of the products shall be increased. The second is to seek for the breakthrough in market structure. According to the requirements of diverse and all-round developments, Europe, the Middle East, Africa, South America, Eastern Europe and Russia, Commonwealth of Independent States and other emerging markets shall be developed with great efforts while consolidating and developing Hong Kong and Macao, Japan, America and Southeast Asia markets.

5. The service outsourcing development shall be accelerated.

The service outsourcing and transferring has become an important part of international trade with an average increase speed of 20%, and the new mainstream form of international industry transfer. China has become the third largest international outsourcing base after India and the Philippines. To completely change the foreign trade situations of small scale, low profits and less value, the underdeveloped regions must stand on the forefront of the international trade development, seize the opportunity to accelerate transfer of international service, and take the outsourcing industry as a breakthrough, to vigorously undertake the international service outsourcing, rapidly expand the overall size of the outsourcing enterprises, and build the service outsourcing brand. It is necessary to accelerate the cultivation of large and medium-sized service outsourcing enterprises, undertake the service outsourcing businesses of multinational companies in China, improve the service development level, and expand the service trade scale. It is also important to support the service outsourcing enterprises to obtain the international certification and to explore the international market, create a public service platform of service outsourcing information, build an external service exchange platform, complete the intellectual property protection system of service outsourcing, and enhance the international competitiveness.

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Mechanisms of formation and implementation of organizational and managerial component of the region's human capital

The article is devoted to the study of mechanisms of formation and implementation of organizational and managerial components of the region's human capital in the conditions of transition to innovation type of economy. The algorithm of forming the organizational and managerial components of human potential in the conditions of transition to innovation economy is proposed.

Human capital, organizational and managerial component of the region's human potential, innovation economic development.

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Prior to discussing the issue concerning the formation and realization of organizational and managerial components of the region's human capital, it is necessary to make an introductory note regarding the use of such notions as "human capital" and "human potential". Without plunging into the details of scientific debates on these definitions, we express the author's point of view, which serves as the basis for future discussions. So, in our opinion, the concept of potential is clearly broader than the concept of capital, because, firstly, it includes not only the features that are relevant to the process of work and can be used in it – as in the category of capital[1], but also a person's qualities, used in nonproduction sphere (in private and public life, etc.).

[1] For instance, A.I. Dobrynin gives the following definition: Human capital is a "certain stock of health, knowledge, skills, abilities, motivations, generated as a result of investments and accumulated by an individual, which are purposefully used in a certain sphere of social reproduction (author's italics), contribute to the growth of labour productivity and production efficiency and thus affect the growth of earnings (income) of a given person" [4]. Human capital can be considered as a special "fund, the functions of which include production of labour services in the common units of measurement, and this fund, in this capacity, is similar to any machine as a representative of the capital goods") [4] (with a reference to Y. Ben-Porath [18, p. 352-365]); the team of scientists headed by L.I. Abalkin, who study the problem of Russia's strategic development in the new century, consider human capital as the combination of innate abilities, general and special education, acquired professional experience, creative potential, moral, psychological and physical health, and the motives of activity, that provide an opportunity to gain profit [15, p. 21-22].

Secondly, the essence of human, as well as any other capital lies in its *ability to reproduce itself* (i.e. multiply the assets invested in it). The essence of human potential consists in the ability to *develop* the bearer of this potential, i.e. a person, a group of people or, in our case, territorially limited society – regardless of the increase in its value or scope of the subsequent application. In this respect, human development is regarded as a bilateral process: on the one hand, as the *formation of properties* (strengthening of health, acquisition of knowledge, improvement of professional skills), and on the other – as the *use of the acquired properties* for production purposes or for the purposes of leisure, cultural activity, political activity, etc.

Thus, the author's position can be reduced to the following statement: the processes of formation and realization of human potential create the necessary prerequisites for its capitalization or transformation, in the conditions of social production/reproduction, into human capital.

The foregoing premises allow us to refer to the category of human potential, understood as the complexes of systems of universal (general) and specific (specialized) needs, abilities and aptitudes of different social communities to carry out socially important activities, basic social roles, functions, such roles and functions, which ensure both continuity and innovations in the development of vital social spheres, as well as in the society as a whole" [16, p. 19].

Traditionally, the structure of human potential comprises the following components and relationships between them: demographic component; health component; education component; labour component; cultural component; civil component; spiritually-moral component. Each of them can be related with the relevant socially important activities: the demographic component – activities related to the population reproduction; the health component – activities aimed at ensuring physical and mental health of the society; the education component – activities for creating "knowledge society"; the labour component – activities related to the production of material goods and various services; the cultural component – activities related to the production of spiritual benefits; the civil component – activities aimed at ensuring social order; the spiritually-moral component – activities related to the consolidation of the society on the basis of moral values [16, p. 20].

However, it is possible to classify the human potential components on other grounds as well, which, as a rule, reflect the specific objective of the study. So, with respect to the conditions of Russian society's transition to innovation economy, the following arrangement of human potential components seems quite acceptable: innovation, entrepreneurship, scientific-technical, organizational-managerial, competitive, forecast-analytical, labor and professional (suggested by O.I. Ivanov, Doctor of Economics).

Let us single out the organizational-managerial component of human capital and the basic mechanisms of its formation and implementation.

In this study, the organizational-managerial component of human capital is understood as the complex of needs, abilities and aptitudes of its bearers to perform activities on cooperation, coordination, optimization, direction and stimulation of the actions of social communities, organizations, groups in the transition to a productive and constructive functioning of the <*human potential*> under the innovation-type market economy, it is possible to speak about basic patterns, which form the objective basis for the submission of requirements to the system and technology of human potential organization and management.

These patterns can include the following positions.

- Compliance of a territorial/regional human potential management system with the requirements of its socio-economic development as related to setting goals, reflecting the peculiarities, the status and trends of development.
- Systemic character of the territorial/ regional human potential organization and management with regard to considering all the intrasystem relations, the correlation of subsystems and elements, the relations between the territorial/ regional human potential management system, and the organization and management of its socio-economic development, as well as between the territorial/ regional human potential management system and the organization and the external environment.
- Optimal combination of centralization and decentralization of the territorial/ regional human potential management, which is expressed in the correlation of the decision-making level and decision-implementing level (the higher the level, at which the decision is made, and the lower the step, for which it is intended, the higher the level of personnel management centralization, and vice versa); the human potential management centralization level should change according to the extent of socio-economic development of the territory.
- Compliance of the degree of complexity of the territorial/regional human potential management system with the level of the region's socio-economic system development (it is impossible to create a simple regional human potential management system for a complex system of a region's socio-economic system management).
- Side-by-side development of the region's socio-economic system with the development of the functions of the territorial/ regional human potential organization and management.
- Rationality in the number of territorial/ regional human potential management levels: the most efficient is the system with a minimum of necessary and sufficient number of management levels.
- Taking into consideration a combination of various impact factors in the process of territorial/regional human potential management and understanding, in this connection, the unity of action of the organization and managerial principles.

Let us have a look at the key mechanisms of forming and implementing the organizational-managerial component of human potential, relying on the viewpoint of a member of the International Academy of Sciences (Munich, Germany), Professor V.I. Knorring: "Management is a process, and **management system** is a mechanism of ensuring this process. Any dynamic process, in which people can participate as well, consists of separate procedures, operations and interrelated stages. Their sequence and correlation make the technology of management < ... > process" [9, p. 31-32].

At present, public and private sectors have a whole range of different kinds of mechanisms appropriate to the conditions of the country's transition to the innovation development. Let us define some of them: active and prospective, potentially interesting for implementation.

The mechanisms/organizational forms of innovation development coordination and management can, in particular, include the mechanisms described in the section "National innovation system: coordination model"[2] of the draft Strategy of innovation development of the Russian Federation for the period up to 2020 [6, p. 19]. They are as follows.

1. Accumulation of human potential in the sphere of science, education, technology and innovation. This task includes the increase of people's susceptibility to innovations –

[2] It should be noted, that in a subsequent edition of the document, this section is absent.

innovation products and technologies, the comprehensive expansion of the "class" of innovation entrepreneurs, the establishment of "tolerance" for risk in the society, the promotion of innovation entrepreneurship and scientific-technical activities. Adaptation of all levels of the education system for the purposes of creating knowledge, competences, skills and behavior patterns required for innovation society and innovation economy, establishment of the system of continuous education. The innovation economy needs an "innovation person" who is not only able to use scientific and technological achievements to the fullest, but also the one who is oriented towards the creation of innovations, their introduction in all spheres of public life.

2. Sharp, multiple increase in innovation activity of existing **business** and dynamics of the emergence of new innovation companies. Business must view innovations not as a "hobby", let alone as its obligation to the state, but as a behavior model crucial for the prospects of a company's development, increasing its efficiency, and taking leadership positions in the markets. Provision on its basis of the technological modernization of key sectors, determining the role and rank of Russia in the world economy, increase of labour productivity in all sectors.

3. Improvement of the country's "innovativeness" – large-scale introduction of modern innovation technologies in the activity of state governing bodies, the formation of "electronic government", rendering the majority of services into e-form, increasing the use of state order system for innovations stimulation. The state should ensure the formation of a favorable "innovation climate", including the creation of conditions and incentives for innovation activity, as well as favourable conditions for the use of innovations in all kinds of activities.

4. Formation of a balanced, sustainably developing R&D sector, which has the optimal institutional structure, ensuring extended reproduction of knowledge, competitive on the world market; rapid increase of the efficiency of "conductive" infrastructure ensuring commercialization of R&D results.

5. Increasing the openness of the national innovation system and economy, the degree of Russia' integration into the global processes of creating and using innovations, the expansion of the bilateral and multilateral international cooperation.

In the last few years, science and technology parks, special economic zones oriented towards the development and implementation of technology, technology transfer centres, resource centres became the most common organizational-managerial mechanisms of implementing and supporting the innovative activity of educational institutions.

Brief information on each of the forms is given below.

A science and technology park is a form of organizing innovation activities of educational institutions, scientific organizations, design and construction bureaus, innovation infrastructure organizations, industrial enterprises or their subdivisions, compactly located on a separate territory. The goal of science and technology parks lies in supporting high-tech business, usually in a certain area, as well as creating small hi-tech companies, but not the development of new technologies [10, p. 245].

A distinctive feature of science and technology parks is their close connection with higher education institutions and scientific-research organizations, having a corresponding infrastructure for innovation activity. As a rule, *science and technology parks are established on the basis of mutual agreements, concluded between educational institutions (scientific-research organizations), economic entities and state governing bodies (italics added - auth.).*

At the same time, science and technology parks don't substitute the work of higher educational establishments, research institutes, laboratories on the production of innovation technologies, but provide for cooperation and interaction between science, industry, entrepreneurship and regional and local authorities, in implementing the process of R&D *commercialization (italics added - auth.)* [2]. The purpose of creating science and technology parks is to gain opportunities for the innovation development of a certain territory, the use of R&D and technological potential of individual organizations (or groups of them) and enterprises, raising the level of people's employment and their incomes increase, the achievement of other socially important goals.

At the present time, the Russian Federation has not yet formed an integral normative legal base, regulating innovation activity, including the issues of creation and functioning of science and technology parks. In the absence of a normative legal base, many regions have chosen their own way by adopting their own legal acts, aimed at supporting innovation-investment activity, including science and technology parks. So, for example, in 2006, the Voronezh oblast adopted the Law "On science and technology parks in the Voronezh oblast". This law determines the procedure and conditions of obtaining the status of a science and technology park, as well as the legal framework of the state support of such parks in the region. Later on, similar laws and programmes have been adopted in the Saratov, Samara, Tomsk, Tyumen oblasts, the republics of Bashkortostan and Tatarstan.

As a rule, a modern Russian science and technology park is a joint-stock company, the founding members of which are:

- owner of the premises transferred to a science and technology park (as a rule, state governing bodies or local self-government);
- bank, funding the construction of the park's infrastructure
- educational institution, interested in implementing innovation R&D.

The analysis, conducted by the Association "Technopark" in 2007, showed that 92% of science and technology parks in Russia are established under higher education institutions, 4% – on the basis of industrial or academic research institutes and 4% – on the basis of industrial enterprises. According to the Ministry of Education and Science of the Russian Federation, at present, there are approximately 76 university-based science and technology parks in Russia.

Special economic zones (SEZ) are separate territories (usually, from one to several square kilometers) with a special regime of entrepreneurial activity (in terms of taxation, customs regulations and activities of the state control bodies), which are created to stimulate the socio-economic development of individual regions, as well as to achieve the general economic goals of the country, for example, the innovation development of the economy as a whole. They are oriented towards the development of processing industries, high-tech industries, production of new types of products, transport infrastructure [3, p. 89-95].

The Federal Law dated 22 July, 2007 No. 116-FL "On special economic zones in the Russian Federation" defines the following types: industrial and development zones (established for the development of processing industries), technological implementation zones, port zones, tourist and recreational zones.

Obviously, the greatest innovation orientation is more typical for technological implementation zones, that are aimed at creation and *realization of R&D products, promotion of their industrial application, including manufacture, testing and realization of pilot lots*, as well as creation of software products, data collecting, processing and communication systems, distributed computing systems and *rendering their implementation and maintenance services*.

One of the key criteria for assessing the expediency of establishing a technological implementation special economic zone is the developmental level of higher educational institutions and scientific organizations situated on the potential SEZ territory, carrying out R&D in the prospective spheres of the technological implementation zone.

Educational institutions in collaboration with the organizations-residents of SEZ can interact in the following directions:

- implementation of joint R&D projects on the basis of established structural subdivisions (laboratories, R&D, technology centres);
- realization of joint research projects without creating separate structural subdivisions (for example, conclusion of contracts on carrying out R&D);
- establishment of organizational structures promoting the creation of new legal entities (for example, science and technology parks, technology transfer centres, etc.);
- financing of additional education by a partner company (for example, creation of additional specializations, required at SEZ-based enterprises, development of new disciplines and special courses, additional target training of specialists for a certain enterprise, etc.).

At present, 16 special economic zones are to be established in Russia in accordance with the Federal Law "On special economic zones in the Russian Federation". Four of them, of a technological implementation type, are being created in four regions: Moscow (Zelenograd), Moscow oblast (Dubna), St. Petersburg and Tomsk. For instance, about 300 small and medium-sized innovation business enterprises have been created in Tomsk. Herewith, some innovation enterprises are formed around the city higher educational establishments (Tomsk State University and Tomsk State University of Control Systems and Radioelectronics are among top 10 Russian innovation universities).

Professors, research associates, post-graduate students and students participate in the activities of such enterprises. Information, communication and electronic technology, novel materials and nanotechnology, biotechnology and medical technology were chosen as the main directions of Tomsk SEZ development.

In general, technological implementation zones open up promising opportunities for better realization of scientific-technical and innovation potential of RF subjects and their municipal entities through the joint use of state-owned and private resources.

Technology transfer (commercialization) centres (TTC) are separate organizations or structural units (of a university, research institute, etc.), oriented towards gaining profit from the *use of R&D results*, obtained at state research institutions and private companies [10, p. 10].

Cooperation between budgetary organizations and private business in the process of establishing technology transfer through university-based centres allows to solve the whole range of tasks [3, p. 95]:

- collaborative determination of the priority innovation research directions by conducting the monitoring of requests for specific R&D performance and by involving high-tech enterprises into the initial stages of innovation cycle;
- improvement of higher education institutions' scientific potential and implementation of customer-oriented approach in carrying out the university R&D, when actual demands of industry and the state in high-tech products are taken into account;
- solving the problem of young specialists' employment;
- reduction of the load on the state budget, the use of flexible target co-financing system for university R&D.

The first technology transfer centres were fully funded from the Federal budget, but today they often successfully cooperate with authorities and business structures.

Due to the absence of legislative registration of such cooperation, the conditions of concluding an agreement (contract) can vary significantly, which, accordingly, leads to limitations in replication of acquired experience in some cases. A positive example can be found in the activities of the Far Eastern State Technical University (FESTU) technology transfer centre [1]. On its basis the Federal Agency for science and innovations established the Centre for transfer of Russian technology and scientific-technical cooperation with APEC states ("TechnoRAPEC") in 2005 within the framework of the federal target scientific-technical program "Research and development in the main guidelines of science and technology development for 2002 – 2006". One more example can be found in the successful development of a cluster in the Penza oblast on the basis of the Penza State University [14].

Resource centre (RC) is a form of combination, integration and concentration of resources from various owners (state, employers, educational organizations, individuals) [12]. Resource centres solve the task of forming a single information space on the whole RF territory, this goal is contained in the Federal target programme "Development of the single educational information environment (2001 – 2005)". The main goal of the Federal target programme was to create the information-technology infrastructure of education system and to increase the use of new information and telecommunication technologies in education process.

Upon analyzing the experience of the research centres functioning in the Moscow region, Samara, Yaroslavl, Tambov oblasts, the Republics of Chuvashia, Komi, etc., four main aspects of the resource centres functioning were determined [12]:

- development of a branch (employers concentrate the material base in the territorial resource centre oriented toward a particular branch of industry);
- development of technology (conditions are created for development, improvement of new (critical, breakthrough) technologies, which form a new production mode and are developed on a intersectoral, interterritorial basis (venture resource centre));
- development of infrastructure (conditions are created for constant reproduction of professional training specialists, workers of traditional occupations to ensure the continuity of all economic branches functioning);
- promotion of socialization (conditions are created for strengthening cooperative relations, facilitation of public access in the interests of forming the civil society).

Resource centres can have the following contract partners: the regional administration and its structural units; local authorities; commercial enterprises, including banks, non-commercial organizations, such as employment centres; individual entrepreneurs, etc.

The adoption of the Federal Law No. 217-FL "On introducing amendments to certain legislative acts of the Russian Federation concerning the creation by state-financed scientific and educational institutions of the economic entities for the purposes of practical application (implementation) of the results of intellectual activity" became an important step towards the creation of innovation economy in the country, the step, which is aimed at overcoming existing obstacles in the use and implementation of R&D results.

A new legitimate economic and legal mechanism was created encouraging state universities and scientific organizations to promote their R&D results and knowledge on the market, to participate in profits and management of *economic entities* established with their participation. The value of this mechanism is not reduced only to the possibility of obtaining deductions from profit of the established organizations. For universities, in particular, this means the opportunity of deepening the cooperation and strategic

Table 1. Number of economic entities established by higher education and scientific-research institutes in accordance with the Federal Law No. 217 dated 02 August, 2009 and registered in the Centre for Science Research and Statistics database by the RF Federal districts [7]

Federal district	Number of economic entities, registered in the CSRS database	Number of jobs planned to be created	Number of scientific-research institutes that established economic entities	Number of economic entities, established by scientific-research institutes	Number of economic entities meeting the requirements of the Federal Law No.217 dated 02 August, 2009
Central	209	465	8	8	111
North Western	53	35	1	1	34
Southern	61	64	-	-	41
North Caucasian	26	85	-	-	5
Volga	118	357	2	2	61
Siberian	184	293	4	6	118
Far Eastern	13	10	-	-	7
TOTAL	**725**	**1472**	**15**	**17**	**403**

partnership with industry, other economy sectors in the sphere of personnel training and scientific research at all stages of innovations life cycle [5].

Distribution of economic entities established by higher education and scientific research institutes on the territory of the Russian Federation is presented in *table 1.*

The table shows, that the largest number of economic entities was established by universities and research centers of the Central (217), Siberian (190) and Volga (120) Federal districts.

In the North Western Federal district 87 small innovation enterprises (hereinafter – SIE) were created under universities by the middle of 2011. Some of them are as follows.

In the Novgorod oblast, the most successful of the SIE are: LLC Grumant – development and production of pharmaceutical substances; LLC Meypick – development of technology and manufacture of layered structures on the basis of leuco sapphire wafers; LLC Enigron – development of masking compilers for almost any software product.

At the Vologda oblast higher education institutions there are the following small innovation enterprises: limited liability companies R&D and manufacturing firm ViVAT (technogenic products and waste recycling and disposal technologies), R&D and manufacturing firm EnergoKIT (technologies of creating energy-saving systems of heat and electric power transportation, distribution and consumption); research-and-production centre "Information and energy technologies" (technology of artificial thawing of frozen soils using radiation and convection method during repair and construction works) established under the Vologda State Technical University; as well as the Limited liability company "Information technology security" of the Cherepovets State University (development and introduction of information security forms).

The Presidential programme for managerial personnel training (2007 – 2013) [3] implemented in accordance with the Decree of the President of the Russian Federation "On the training of management personnel for the national economy of the Russian Federation" No. 774 dated 23 July, 1997 and the Decree of the Government of the Russian Federation No. 177 dated 24 March, 2007, in the format of a state plan is a bit forgotten but still functioning mechanism of formation and implementation of organizational and managerial component of human capital.

[3] Detailed information on the programme is contained in [18].

The strategic goal of the programme is to improve the quality of management at domestic enterprises up to the international level. In the framework of the Presidential programme, 5000 managers annually attend training courses (550 hours) in the leading Russian education institutions, where they study an extended range of subjects in the field of economy and management. After that, they are given the opportunity of practical training at specialized Russian or foreign enterprises. Level of changes in the field of new technologies introduction at the enterprises participating in the Presidential programme is almost two times greater than the average data on Russian industrial enterprises. Due to the fulfillment by specialists of project tasks set in the course of education, about 400 new enterprises are established annually in Russia, the amount of external investments is measured by 300 million EUR, and average production cost saving equals 10%.

The objectives of the programme include:

- annual training of 5000 specialists in Russian educational institutions;
- practical training of up to 3000 specialists in the leading Russian and foreign organizations annually;
- assistance in implementation of the projects, developed by specialists.

Participation in the managerial personnel training programme provides an opportunity for Russian enterprises and organizations to achieve the following goals:

- create significant prerequisites for the transition to new managerial forms and principles;
- implement positive changes in the structures of management, production and corporate culture;
- solve the specific problems in the process of education and abroad onsite training of their specialists (restructuring, reprofiling, receiving investments and orders, etc.);
- establish new industrial and economic contacts with Russian and foreign enterprises, and also develop the existing relations with traditional partners;
- participate in the specialized federal information database that would provide additional opportunities while participating in tenders for state orders and attracting investments.

Implementation of the Programme is of a regional character. So, for example, in Krasnoyarsk Krai, it is the responsibility of the Ministry of economy and regional development of the krai. Training is carried out in Siberian Federal University and Siberian State Aerospace University Named after Academician M.F. Reshetnev. In St. Petersburg the Programme-based training is carried out under 7 universities, which include: St. Petersburg State University; St. Petersburg Academy of Management and Economics; St. Petersburg State University of Engineering and Economics; St. Petersburg State University of Economics and Finance; St. Petersburg State Polytechnical University; North-Western Academy of Government Service; Saint-Petersburg State University of Information Technologies, Mechanics and Optics.

It should be noted, that since 2009 – 2010 academic year, the Programme contains an innovative component by introducing special advanced training programmes "Management in the sphere of innovations".

Establishment of the Strategic Initiatives Agency (SIA) [13, 14], viewed as a kind of all-Russian business projects "incubator" and social ladder in implementing the most interesting, first of all, youth projects, has become a landmark event, reflecting the state's efforts in creating the mechanism of implementing the organizational and managerial component of human potential. The agency is expected to promote the annual implementation of 100 – 200 projects of inexperienced businessmen mainly, and, in particular, it will provide support in working out business plans and financial models of functioning.

The Agency's tasks include: organizing interaction between small and medium-sized businesses, developing tax rules for innovation projects and establishing an independent examination institute, as well as developing the young businessmen and specialists' education standards. One of the goals of the autonomous non-profit organization SIA is "to promote the development of social and professional mobility of young specialists and groups". The three already existing non-profit business associations: Russian Union of Industrialists and Entrepreneurs, Business Russia and OPORA Russia (representing big, medium-sized and small business, respectively) assist in achieving this goal.

An important direction of implementing organizational and managerial component of human potential is Talent Management, i.e. the policy of attracting and retaining promising and talented specialists. *A method of continuous search for promising employees*, worked out by the Taganrog Interregional Chamber of Commerce and Industry (hereinafter - TICCI) can serve as an example of this kind of activity [8]. The programme's goal lies in introducing the system of selecting promising specialists among students; their identification, training and promotion for large and medium-sized enterprises of all types of ownership, social and cultural institutions, service sector, public authorities of different levels and local self-government. The main objective is information and methodological provision of the conditions for professional advancement of the project participants. Launched in 1999, the project focuses on the main groups of young people, among which special attention was paid to the students of Taganrog State University of Radioengineering. Its graduates are traditionally sought for by different companies and organizations dealing with science-based technologies and commercial activity. In the course of project implementation in 2004, on the basis of TICCI Department of business information and consultations, a specialized section for working with promising employees was created, information and computer database of the project participants was formed that can be used by managers of enterprises and organizations, that are TICCI members.

The project is cyclical. Each implementation cycle consists of 3 main stages based on psychometric methods (with the tracking of rating of every participant), and an additional stage, chosen according to the specific needs in the study of the candidates.

At the first stage, the method of expert evaluation of a personality according to the standardized list of qualities (method of group assessment of a personality – GAP) is used to assess the peculiarities of personality manifestations from a subjective point of view.

At the second stage, with the use of diagnostic modules, objective information about the students' personal and business potential is collected, the understanding and prediction of their behavior from the standpoint of potential compatibility with the particular leader is studied. At the third stage, individual work with students is carried out, using interview methods (traditional, hypotheses testing, SPI – structured psychometric interview), that ensures obtaining additional information about the candidates.

The candidates, who passed each testing stage, are invited to participate in the next stage of selection process. Each stage is consistently implemented on a higher level, thus, reducing the share of unjustifiably selected candidates.

This methodology of deep selection/ recruitment of highly qualified specialists with an expected set of personal qualities was tested in the framework of the programme aimed at finding potential employees among the students at two departments of the Taganrog State University of Radioengineering. According to the research results, the Taganrog Interregional Chamber of Commerce and Industry grants letters of recommendation to graduates, which contribute to their employment.

Society sets its special hopes on the human potential of *future* generations – children and young people, whose abilities, aptitudes and needs to carry out different activities are still at the stage of formation. In this connection, the following arguments regarding the mechanism of implementation of developing human potential are viewed as reasonable.

The notion, that all small children have creative abilities and needs for their realization doesn't require special proof. These abilities can belong to different spheres and areas. However, in the course of personality development, such abilities can be either traced and developed by adults (parents, child minders, teachers, etc.), or missed and even suppressed and lost or remain in an embryonic state. In this respect, at least two theses can be stated: 1) the change of educational paradigm from oriented towards an average student, pupil, etc. to a personalized approach to every child, adolescent is required in order to reveal his/her abilities and their orientation at an early stage and their further development[4]; 2) genetically inherent creative abilities and the need for their implementation should be realized by purposefully developed readiness to their implementation, and the whole "triad" should be given a positive, socially-oriented vector.

The following algorithm of forming and implementing (as children and young people become involved in work activities) the *organizational and managerial component of human potential* in the conditions of transition to innovation economy can be proposed.

- Identification (perhaps, testing) of abilities, needs and aptitudes to carrying out the organizational and managerial activities in childhood, education period and when choosing a career. In the Soviet period this function was purposefully and systematically performed by the Little Octobrist, Young Pioneer and Komsomol organizations. This should also include promotion of a "creative class" – support of creative, gifted and talented children and adolescents through specialized schools and boarding schools, special programmes, grants, TV shows, competitions; the identification of talented children using searching methods (for example, in the U.S. and the United Kingdom science representatives visit schools around the country and give lectures and talks, not only educating young people, but also involving them in scientific research, cultivating a taste for this kind of research and simultaneously selecting promising students).
- Accumulation implies maintaining each individual's abilities, needs and aptitudes to the implementation of creative, initiative and organizational-managerial activities in general and in particular, the formation of professional managers, first of all, in the field of innovations.
- Implementation/rational use of identified pronounced creative and organizational abilities that should be reflected, first of all, in the selection and placement of personnel, taking into account each individual's abilities, needs and aptitudes to carry out creative, initiative and organizational-managerial activities in all spheres of life and at all its levels. In this respect, paramount importance is attached to the creation of conditions for extracting human potential (the formation of flexible organizational structures for dealing with the tasks of innovation character, the allocation of individual grants of a searching type, which is possible even without the establishment of clear formal frameworks (for example, according to the principle described by Kurt Vonnegut in his novel "Cat's Cradle", 1963).

Attention should be also paid to various kinds of out-of-the-box/innovation proposals regarding organizational and managerial solutions in the field under consideration. And, in particular, the idea of establishing the *institute of innovation agents* whose task

[4] As an additional (deferred) result, one can expect the increase in the validity of professional self-determination, which, in its turn, will allow for more efficient use of the funds, allocated for professional education.

is to find scientists-inventors, to assist them in patenting their inventions, to organize and carry out or to help carry out R&D for these inventions and introduce them into production [11]. For these purposes, at the state level, it is proposed to launch a social programme, which will cover most of Russia's regions, this programme will provide the education and training of innovation agents and their subsequent work.

Innovation agent is a special type of person who is on familiar terms with technical sciences and knows the economy, he/she is representative, is able to explain, understands the relevance of innovation development for Russia, and therefore, is highly patriotic, sociable, able to overcome the bureaucratic obstacles, find a common language with a scholar, as well as with a businessman and bring the matter to the conclusion of a contract between them and ensure the launch of the enterprise. In the future, such enterprises launched by innovation agents, may become a source of their income. This may be regarded as a financial incentive for their activity (which, in the initial stages, however, is based on pure enthusiasm).

Generally speaking, any student regardless of his/her acquired specialty may become an innovation agent, however, young people with a diploma in innovation management are most preferable. An innovation agent's task is to overcome the "*communicative abyss* lying between the inventor and the investor and representing the main problem of innovation", an innovation agent should look for inventors all over our country, assess the innovation capacity of their inventions and connect the inventor with the right investor. An innovative agent is a kind of producer of an inventor's talent, his/her assistant.

An original three-component formula of the country's successful innovation development was proposed by Aleksandr Prozorovsky, Head of the Innovation Centre I5: "*Talented personnel* is the main condition for building a knowledge economy. <...> There should be quite a few inventors, who should be "distributed" evenly on the vast territory of our country – it is the second condition. Sources of innovation ideas should start their efficient work in our country as soon as possible and simultaneously – it is the third condition. Only after finding a significant number of inventors all over the country, uniting them, providing funding and simultaneous work on the creation of innovations, we will be able to gain the "critical amount" of people oriented towards the modernization of Russia, and this will become a bifurcation point, after which the national innovation system will move to a self-sustainable development mode, the real innovation products will be manufactured at the outstripping rate, the decaying raw material inertia will be substituted by the widespread innovation acceleration".

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Socio-cultural types of population in the region

The article presents an analysis of ISEDT RAS social study carried out in the Vologda Oblast that allowed the authors to identify the most important aspects of socio-cultural modernization: the differentiation of behavior, psychological traits of individuals and social self-identification. It is shown that the population of the region, involved in the transformation, is in the process of socio-cultural division into groups that have dissimilar behavioral characteristics; a new system of interests and value relation to the current changes is formed in different social strata.

The Vologda Oblast, socio-cultural types, modernization, values, socio-cultural dynamics.

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A region is a specific phenomenon that fixes value guidelines, which were formed historically, types of social behavior, political attitudes and specific economic practices. Most people can understand and use only such socio-cultural space as an area of their residence, the characteristics of which do not always strictly correspond to the reformation changes. Today, scientists study the reasons and consequences of the economic crisis, the prospects for stabilizing the society, the issues of stratification changes, people migration, etc. However, despite the variety of researches, there is a need for a profound sociological analysis of modern Russian processes [7], especially the processes that take place in the specific socio-cultural space of a single region [6, 8].

The search for successful models of socio-economic behavior that are adapted to the new reality has become a condition for survival in the unstable social environment. Due to the fact that each person perceives the current changes and reacts to them in his/her own way and due to social heterogeneity, it is necessary to understand and evaluate different groups of people united by the similar types of behavior and value characteristics and find a degree of their diversity. According to the modernization tasks that are set by the Government, it is important to determine the size of the population, which you can "count" for when implementing the socio-economic transformations in the region.

The socio-cultural orientation of the population is usually estimated by the sample interviews [5], subjective self-rating and general concepts reflecting one or another sphere of social development. It is rather difficult to unambiguously define these indicators, so you need an empirical approach that allows describing the content and meaning of polysemantic terms and their simultaneous quantitative analysis, forecast and diagnostic assessment [4].

Sharing the correlation and regression methods and component methods will be able to form aggregates, select the most informative ones, find affecting or group-forming factors and the most important productive performances.

The informational basis of measuring socio-cultural types in the region were the results of a successive stage of the study "Socio-cultural potential of the modernization of the Vologda Oblast"[1], that was carried out in 2010 within the programme "Socio-cultural evolution of Russia and its regions", which was initiated by the Centre for studying socio-cultural changes of the RAS Institute of Philosophy in 2005. The analysis presented in the article is the next step in studying the socio-cultural space of the Vologda Oblast. The main idea of this stage is to identify the types of socio-cultural characteristics of the population, which are formed against the backdrop of economic and social mobility of the region.

The system of indicators, which had several advantages, was selected to analyze the structure of social stratification. It was representative enough to describe the socio-cultural type, since it not only reflected the material standard of living, education level and the availability of power functions [2], but also described the important data on innovation activity, life satisfaction and confidence, etc. The indicators of value orientations were of great importance there. All of the criteria in the questionnaire were presented in the form of a scale. The six-level scale was used to evaluate the material well-being: respondents were classified from the lowest level (relatively poor) to the upper one (relatively wealthy). The ordered scale was used to fix level of education as an indicator of professional and cultural training: it graded from the category of "non-educated, primary education" up to the category of "higher education, postgraduate education". The availability of power functions and the number of subordinates were fixed in answers to the question "Do you have subordinates at your principal place of business?": (1) – no, I do not have; (2) – less than 5 persons; (3) – 5-10 persons; (4) – 11-50 persons; (5) – 51-100 persons; (6) – more than 100 persons. Innovative activity was measured by the question "Did you participate in creating any innovations in the last 12 months (a new company, new product, new technology, new service)?"; there were the following answers: (1) – I did not participate; (2) – I participated on a par with others; (3) – I participated as an organizer. These indicators were considered as the baselines, i.e. the base of socio-cultural personality types, which learned values, norms, attitudes and various regulators of human behavior in the process of socialization that were associated with the modernization and innovation of socialization. All in all, 36 variables were selected for the study of the Vologda Oblast.

As expected, there was a strong dependence of live improvement on the regional, city and oblast authorities and on the nationwide rate (correlation coefficients: $r = 0.742$; $r = 0.827$; $r = 0.865$). Less strong dependence was found among the indicators of dependence of live improvement on close relatives and friends ($r = 0.536$). The statistical data proved the following dependence: the more people satisfied with their living, the more people were confident in their future ($r = 0.536$). The greatest interdependence was revealed among the values, declaring the duties of state ($r = 0.500$) and legislation ($r = 0.534$) and traditional family priorities ($r = 0.599$).

The component analysis, which was performed by the RFP SPSS 15.0, allowed us to identify three factors that had a value more than unity. It should be noted that our calculations were begun with the introduction

[1] The study was based on the results of the public opinion poll in the Vologda Oblast. Population survey was conducted in 2010 by the Institute of Socio-Economic Development of Territories of RAS. The volume of a sample was 1,500 people. The sample is representational; the sampling error does not exceed 3%.

of 36 variables, which were integrated into 12 factors in modeling, explaining 66.7% of variance. Reducing the number of indicators down to 15 led to the formation of six factors and decreased the model's explanatory ability down to 58.8%. As a result of many experimental calculations, the model, which included eight components, three factor and explanatory power of 53.5%, was developed. The first factor explained 22.7% of the total variance, the second factor – 16.9% and the third one – 13.9%.

"Life satisfaction" was the most important indicator in forming the first factor. The indicator of "confidence in future" was less important here. "Financial position" was the least important indicator there, although the value of the factor load was rather good – 0.566. Thus, on the basis of positive correlation coefficients of the variables with the factor, it is possible to choose the notation "Quality of life" as a mark for this factor. Large positive value of this factor means that a person feels the confidence in life and he/she is very optimistic about the future.

The second factor variable includes the following indicators: the availability of subordinates, participation in innovations and the level of education. "Progressiveness" was chosen as a mark for this factor. Holding authoritative resources and symbolic capital in the form of higher education symbolizes the large positive value of the factor.

The third factor combined the following variables: preferred job and recognizing respect for the established customs and traditions as the main life values. The concept of "socialization" was associated with this factor. Its large positive value indicates the predominance the sustainable system of traditional values, focused on achieving stable material benefits with a long-term social perspective.

The analysis of spread in factor values has revealed the differences between respondents with unequal socio-demographic characteristics. The comparison of the subgroups of separated components shows that the urban population (one in four persons) and men (the lowest percentage among all the characteristics of living quality accounts for 13%; the share of respondents with the high quality of life is equal to 24%) have the best quality of life indices, and there is the lowest quality of life indices among the rural population (the smallest share among all the characteristics of high quality of life – 15%; *tab. 1*).

Table 1. The share of respondents in the subgroups of identified factors
(in % from the number of respondents)

Factor	Sex		Age			Type of settlement	
	Men	Women	Young people aged 18 – 35	Adults aged 36 – 59	Pensioners at the age of 60 and older	Village	City
Quality if life							
Low	13	21	18	16	18	17	18
Middle	64	61	59	68	59	67	58
High	24	18	23	16	23	15	25
Progressiveness							
Passive	10	7	8	4	16	9	7
Neutral	77	84	82	82	77	81	81
Active	13	9	10	14	7	10	12
Socialization							
Low	20	18	28	15	12	20	18
Middle	63	58	58	65	58	61	60
High	17	24	15	21	31	19	22
Sourse: Data from the survey in the Vologda Oblast in 2010 (ISEDT RAS).							

As expected, men have more progressive views than women. The adults (aged from 36 to 59 years) have the most active position in life (14%) even in comparison with all the selected categories. Young people (aged from 18 to 35) focus on achieving personal financial success without long-term social prospects (28% of them have a low degree of socialization). Women and older people have a more solid system of traditional values, which is characterized by their high social expectations and striving for balanced life.

The cluster analysis was used in order to divide the respondents into the types that had similar characteristics and did not exceed the threshold values that separated one cluster from another. It was based on the indicators, which had been defined previously by factor analysis. The experiments showed that the optimal number of the clusters was equal to four. Firstly, it provided sufficient differentiation of the array and the difference between clusters according to the characteristics of the respondents, and, secondly, clusters fulness was remained: there were 6% of respondents in the smallest of them. A further increase in the number of clusters would lead to an unjustified decrease in their fulness.

According to respondents' characteristics in the selected clusters, we can conclude that we are dealing with the social strata that differ in their places in the hierarchical social system, spatial localization, subjective characteristics, attitudes to the changing times, values and interests. *Table 2* shows the dominant features of the clusters (layers).

The first cluster is the largest one (43%); it includes the people without higher education (the people, who have no associate degrees), whose financial position can be described as "poverty". The potential, focused on the traditional norms, suggests that the growth of individualistic values, in fact, is caused by the values of survival, rather than the values of self-realization. This cluster includes "traditionalists". There are the people in its centre, who can not estimate their future and present days; these people are not confident in assessing their life environment.

The third cluster is represented by such characteristics that prove the low social position of the people, who are included in this cluster, because most of them have secondary education (70%) and low-income (61%). These people are not confident in their future and they are dissatisfied with their living. However, they have a high rate of innovative activity, preferring the high income with no guarantee for the future (mainly through opening new firms and doing business). It is possible to call this cluster the "Specialists".

Table 2. Frequencies of variables in the selected clusters (% of respondents)

Variables	Cluster 1 «Traditionalists»	Cluster 2 «Realists»	Cluster 3 «Specialists»	Cluster 4 «Modernists»
Availability of subordinates	10	18	4	23
High income	39	45	39	53
Higher education (Associates Degree)	0	29	21	58
Innovation activity	3	2	7	9
Values (adherence to traditions, customs)	100	0	18	100
Confidence in the future	40	43	32	48
Satisfaction with life	41	47	36	56
Preference for risky work	16	43	50	55
Share of all respondents	*43*	*11*	*20*	*26*
Sourse: Data from the sociological survey in the Vologda Oblast in 2010 (ISEDT RAS).				

The fourth and second clusters consist of people, who have authoritative resources and relatively high incomes. They are characterized by confidence in their future and life satisfaction. But the essential difference between these clusters is the level of education and life values. The people in the fourth cluster have higher education or associates degrees (57%); the people in the second cluster have secondary education (62%). The respondents from the fourth cluster have a solid system of traditions and respect for the established customs. This allows us to include these respondents in the groups of "Modernists" and "Realists", respectively.

Thus, the hierarchical structure of society indicates the distance between the social types that defines the differences of their perception of all the sorts of social phenomena and their socio-cultural self-identification and value orientations [2].

The comparison of the clusters in the context of socio-demographic characteristics shows that age is an important differentiating factor: for example, there are more young people (45%) among "modernists", whereas there are only 28% of young people among "traditionalists". There are 12 and 32% of pensioners in these groups, respectively. The age distribution of respondents shows that the shares of men and women in all the clusters correspond to the demographic division of the population in the Vologda Oblast. Vologda and Cherepovets were selected in terms of place of residence as the regional and economic centers with the population of about 300 thousand people each. The people, who live in these cities, have a high level of education and a high degree of satisfaction with life, their incomes are significantly higher than the average income level. City dwellers predominate over "modernists" – their share is 10% more than the share of villagers. There are more rural people in the cluster of "specialists", and city dwellers predominate over "realists" and "traditionalists", but the difference is negligible – within 2 – 4%.

Significant differences between the layers can be observed in the analysis of self-identification. 42% of the respondents from the first cluster have referred themselves to the lowest social class, the share of these people is 6% lower in the fourth cluster. There are less than 4% of "traditionalists" in the middle class; nobody of them refers themselves to the high society. 7 – 8% of "realists" and specialists" and almost 10% of modernists refer themselves to the high society. The majority of respondents in the selected clusters identify themselves as middle social stratum.

The analysis of clusters by occupation shows that 54% of "modernists" and 50% of "specialists" belong to intellectuals and middle management staff. There are 24% of industrial, transport and communications workers and 15% of service sphere employees among "realists". "Traditionalists" are primarily workers (26%), pensioners (12%) and agricultural workers (11%). Complementing these data by the information about the enterprises, where the respondents work, you can see the tendency of new market relations' influence on the education level of social strata. The vast majority of "realists", "specialists" and "modernists" are concentrated in the private sector, including a joint-stock sector.

Thus, a special class is being formed, it includes managers and intellectual workers, whose relationship with the employer are based on mutual trust and pursuing common business interests. At the same time 4% of respondents from the fourth cluster ("modernists") and 3% of respondents from the third cluster ("specialists") are the owners of their own enterprises (companies); whereas, there are these categories in the other clusters.

The fact that most of "traditionalists" (40%) work in state and municipal organizations, 8% of people work on the farm and 9% of respondents are unemployed (pensioners) proves that this cluster is much inferior to the

other clusters in terms of compliance with the exchange rate of the market economy and intervention of specialists in the labour market.

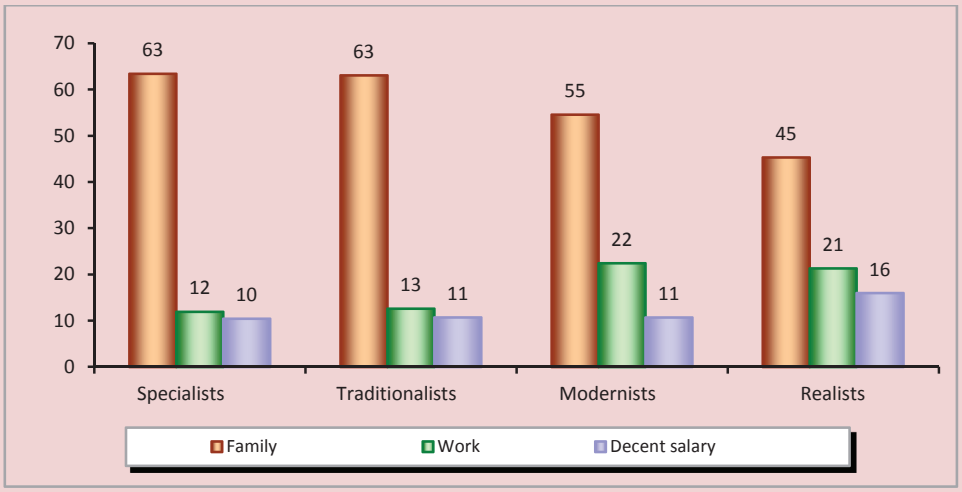
The quality of life, working conditions and social circle of these social groups influence the differentiation of their interests and value orientations. Family and home interests are in the first place in all the groups, but the difference between "specialists" and "realists" is nearly 20% because work and income values are very important in the latter group *(fig. 1)*. These positions are pretty close in in all the groups, but income is in the third place in each group, which indicates the selective attitude of the people to their jobs: not every job suits them. Every fifth "modernists" is primarily interested in work: the number of these people is almost two times higher than their share among "traditionalists"; and only 2% of respondents are interested in spiritual life and culture.

The respondents from different groups show the significant differences in their attitude to leisure and hobby [1]. There is the largest share of the people, who have hobbies, among "moder-nists" (39%), and the lowest share – among "realists" (26%). There are some differences in the intensity of leisure use. More than a half of respondents (56 – 67%) prefer watching television in their free time, and 39 – 56% of respondents prefer working households. These two categories have the greatest weight in the cluster of "traditionalists" *(fig. 2)*.

Among "modernists" there are more people, who spend their free time with their friends (50%), "sit" in the Internet (34%) and travel (11%). Raising socio-cultural moder-nization leads to more intensive use of free time by the respondents. "Modernists", in contrast to "traditionalists", are more mobile and active, they strive for success.

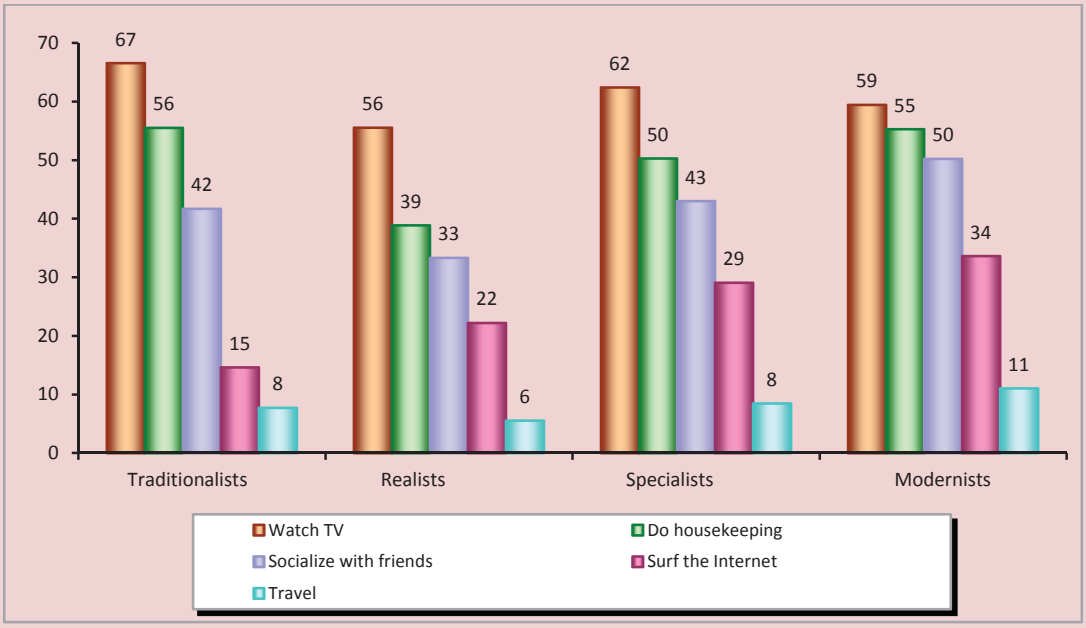
We investigated the relationship between the level of socio-cultural modernization and some opinions and moral values of the population. The highest value of interesting work that deserves to deal with as the main business of life was observed among "modernists" (78%). This group is also characterized by the initiative, spirit of enterprise and search for new things in work and life.

Figure 1. Distribution of answers to the question: "In what area do your main interests lay?" (in % of respondents)



Note: The diagram shows three most popular items.
Source: Data from the sociological survey in the Vologda Oblast in 2010 (ISEDT RAS).

Figure 2. Distribution of answers to the question: "How do you spend your free time?" (in % of respondents)



Source: Data from the sociological survey in the Vologda Oblast in 2010 (ISEDT RAS).

"Traditionalists" prefer such values as caring for their health and well-being (88%). Most "realists" hold the following opinion: "I become what I am, mainly through my own efforts" (70%). "specialists" think that the most valuable thing in the world is a human life and no one can deprive a person of life under any circumstances (81%).

The level of socio-cultural modernization of respondents was investigated as a factor affecting the degree of trusting the authorities and regional government. The selected groups are close enough in terms of this indicator. The most significant differences are observed only in trust to the Government Prosecutor's Office and the regional government. Most people do not trust the local and municipal authorities, they don't trust the media and trade unions. "Modernists" don't trust the government as well as "traditionalists", however, they will more likely take part in the protests against the reduction of the level and quality of life, violation of human rights and freedoms.

The values of the modern society are paradoxical: the society does not trust the government, it seeks to move away from the authorities, while the society comes out for the tightening of state control; the society welcomes the individuality and simultaneously denies freedom [3]. Another feature of the Russian mentality is traditionalism. The vast majority of people prefer traditional and eternal values, they tend to respect the established customs and traditions.

The analysis shows that the shifts, which are observed in the value orientations of respondents, are aimed at greater conformity to modern (industrial), but not a traditional society. Subjective socio-cultural orientation affects the interests, values and motivation of people, on their performance and well-being that include the level, style and quality of life. Different socio-cultural types reflect the degree of public acceptance of liberal values, market ideology, competition, economic progress, the advantages and limitations of cooperation and mutual aid.

Thus, the study of socio-cultural types has confirmed the hypothesis that there is a trend to increase the level of socio-cultural modernization in the modern society in the transition from generation to generation.

The analysis of empirical data of sociological research allowed us to identify the poles of social and cultural modernization, which demonstrate the differentiation of behavior, psychological traits of individuals and social self-identification.

The population of the region involved in the transformations is in the process of socio-cultural division into the groups with dissimilar behavioral characteristics. There is a cluster of people in the Vologda Oblast, who are ready for innovations and improvements; they tend to move toward modernization and innovation development.

The trend to modernization in Russia is inseparable from the socio-historical formation of individual subjectivity. Hence, there is a social phenomenon, which characterizes the incompleteness of social transformations, searching for alternative paths of development and selecting the advanced model of the future. In order to successfully implement the modernization reforms that are conceived by the elite, it is necessary to set the social energy of society free, create the conditions for creative self-realization and return the prestige of the creative professions.

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Expansion of subcultural movements as a result of social disunity among the young population

This article deals with the problem concerning the estrangement of Russian and Ukrainian society from the fundamental institutions of socialization. The acute issue of subcultural movements among the post-Soviet youth population is discussed as one of the negative consequences of this process. The article presents the main reasons for the spread of informal youth associations, as well as the mechanisms of subcultural attitudes' influence on the younger generation. The basic directions of preventing the negative impact of subcultures are determined.

Subculture, youth, mental health, socialisation, social anomy.

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Modern post-Soviet transitional society is undergoing a complex and contradictory process of socio-political, socio-economic, and cultural transformations, accompanied by a clash of established norms and values, regulating people's behavior, with the new, conflicting standards, which are being implemented in the society through mass media.

Rapid devaluation and destruction of traditional norms and values led to a change in behavioural strategies of different social groups in post-Soviet society, first of all, it concerns the youth. Cultural anomy, typical of modern society, is accompanied by the lack of integration in stable social institutions of a significant number of young people, which affects their own personal stability and success, as well as the functioning of social system as a whole.

Due to the relevance of the problem, ISEDT RAS scientific staff (Russia) in collaboration with Cherkassy State Business College (Ukraine) conducted a study aimed at analyzing the moral and psychological condition of the youth as a factor contributing to the alienation of its representatives from the main social institutions and the spread of such social phenomenon as subcultural movement. It should be noted that the study wasn't aimed at characterizing the political orientation of the young generation.

Choosing Russia and Ukraine for studying the psychological climate in the youth environment is not random. Of all the post-Soviet countries, these states have common features and problems, connected with the crisis of spiritual and moral values after the USSR collapse. The common difficulties for Ukraine and Russia lie in the fact that the society exists separately from the authorities, the society possesses paternalism[1] as its characteristic feature.

According to the sociological centers (Yuri Levada in Russia and Razumkov in Ukraine), "Ukrainians and Russians are equally not confident about the future of their countries... the public mood is so similar that it's time to talk about common challenges[2]."

Similar features can be found in the spiritual and moral state of the population in both countries[3]:

1. Firstly, 85% of Russians are not aware of their country's development trends and whether its future is positive. Ukrainians have similar views, and the number of those who believe that the country is sliding towards dictatorship, has grown twice for 2010.

2. The second peculiarity consists in a rapid estrangement of citizens from the state. Only 57% of Ukrainians and 58% of Russians consider themselves part of the state. They prefer more and more often to identify themselves according to the social roles (husband, father, son), nationality or profession.

3. The third common feature is the citizens' distrust of the state's ability and willingness to protect them. 58% of Russians don't feel secure. In Ukraine 50.6% of citizens do not trust the police.

4. The fourth similar feature is the population's discontent over a high level of social inequality: 40% of Ukrainians and 42% of Russians believe that their living standards have decreased.

Therefore, Russia, and Ukraine show similar negative trends, with all the signs of social anomy and consisting in the crisis of the main social institutions, the estrangement of society from the state, the growth of social tension. In these conditions, the young are among the most vulnerable population layers; representatives of the youth, due to their age and lack of life experience, don't possess a sustainable concept of world view and an established structure of spiritual and moral values.

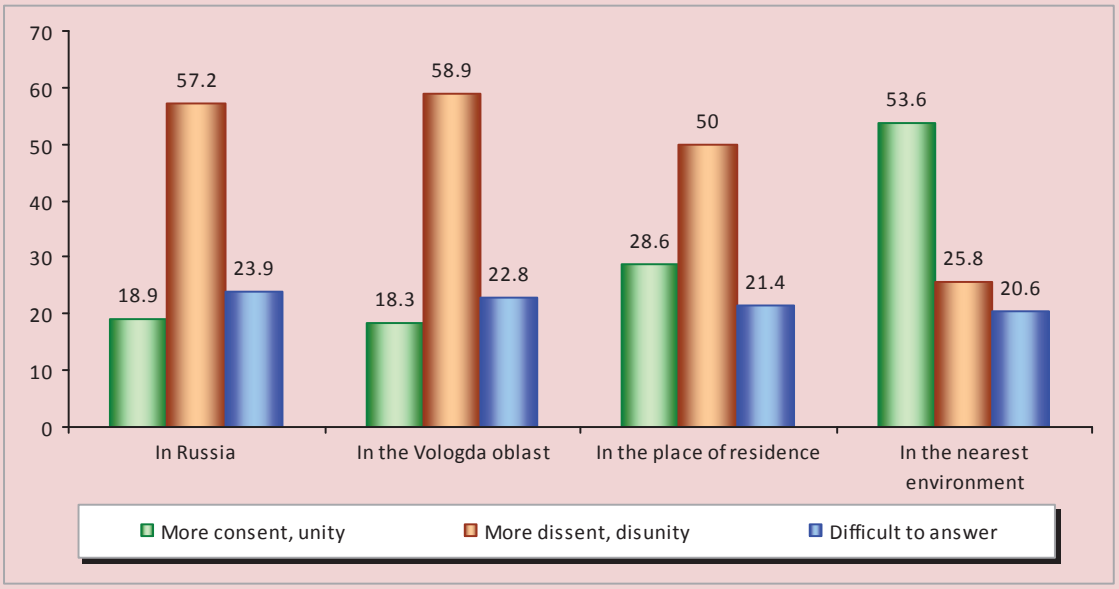
Sociological surveys data prove that today's young people are in a state of social anomy, and so they are an "easy prey" for any forces, ready to offer them life goals and confidence in the future.

[1] The Center for Social-Conservative Policy. Records of the session on the topic "Russia and Ukraine: common problems and solutions" 17 August,.2011. Available at: http://cskp.info/17-августа-в-киеве-состоялось-заседание/

[2] Russia and Ukraine: common results of "zero". Available at: http://emigrant-ussr.ru/blog/rossija_i_ukraina_obshhie_itogi_nulevykh/2011-01-20-110

[3] Ibidem.

Assessment of people aged under 30 of the level of social cohesion on different levels of society organization (in% of the number of respondents)



So, according to the research carried out in the Vologda Oblast in 2011, approximately one person in three (31%) aged under 30 displays symptoms of anxiety, depression, or neurosis; 32% are not satisfied with their lives; 33% experience the feeling of loneliness; every fourth gives a negative evaluation of their day-to-day emotional state (21%) and notes the lack of confidence in their future (25%). Most young people do not trust institutions such as the court (29%), trade unions (34%), Prosecutor's office (30%), the police (40%), mass media (33%)[4].

Young people point out a feeling of social cohesion only at the level of immediate environment, which also shows the prevalence of individualism in the worldview attitudes and opinions of young people on the structure of Russian society *(figure)*[5]. More than half (58%) of people aged under 30 characterize the social relations in the country as a "disagreement" and "estrangement".

The situation is not less tense in Ukraine: 72% of school graduates admit that they drink alcohol; 60% say that they are proud of their motherland, but only 3% are ready to sacrifice something or make concessions in its favour; 36% of Ukrainian university graduates are sure that to succeed in life you need sometimes to be capable of evading the law; 44% of respondents believe that in order to achieve a high position in society, one needs influential relatives first of all (for comparison: the high intelligence and capabilities to achieve this goal were pointed out only by 35% of respondents); 30% of the students are worried about their future, 35% have the feeling of confusion in this connection[6].

[4] Public opinion monitoring. Institute of Socio-Economic Development of Territories of RAS. Vologda: ISEDT RAS, 2011 – 2012. Monitoring is conducted by questionnaire polls at the place of residence. 6 times a year among 1500 people in 10 municipal entities of the Vologda oblast (Kirrilovsky, Vozhegodsky, Sheksninsky, Gryazovetsky, Nikolsky, Babayevsky, Tarnogsky, Velikoustyugsky districts, as well as the cities of Vologda and Cherepovets). The sample is purposeful, quota. Sample error doesn't exceed 5%. The information is processed using SPSS and Excel.

[5] Ibidem.

[6] A nationwide study of secondary school graduates was carried out by the scientists at the Institute of Sociology of the National Academy of Sciences and the Institute of Pedagogy of NAPS in September – October 2011. Altogether 10134 students and 1066 teachers were interviewed. The sample is representative, sample error doesn't exceed 3,2%.

Thus, as the researchers note, the majority of adolescents are pragmatic and demonstrate the consumer's approach to their homeland, considering that it is the state that should take care of its citizens[7].

Social anomy of the young generation in the former USSR countries is manifested most openly in their views on the political situation. At the same time, the heightened emotionalism, lack of political, professional and life experience, psychological instability of the youth can be used by representatives of political elites in the various scenarios of race for power.

The data of sociological research, carried out in the Vologda Oblast, proves the apolitical nature of the views of the people aged under 30, which is connected with the lack of trust in the basic institutions of civil society and understanding their own inability to influence the political situation in the country or region. In 2011 36% of people aged under 30 estimated the political situation in the country as being "tense", "critical", "explosive", while only 12% believed that they could somehow in-fluence this state of affairs.

Almost every second (46%) youth representative characterizes his/her participation in public and political life as "passive". While describing the motives of this passivity, they give such answers as "lack of benefit" (37%), "risk of being involved in dirty business" (11%), "lack of information about the methods of participation in public organizations and forms of local self-government" (15%)[8].

According to young people's opinion, "the indifference towards common causes, individualism", and "disbelief in the possibility to influence the authorities' decision" are the most common reasons that impede social activity and prevent people from displaying their civil position (25 and 22%, respectively[9]).

The scientists at the U.S. National Endowment for Democracy made similar conclusions on the basis of a comparative analysis of the psychological climate and social well-being conducted among the youth of three post-Soviet states – Russia, Ukraine and Azerbaijan. The study shows that the population of Russia and Ukraine experiences its isolation from the state, which is evidenced by the low level of trust to basic social and political institutions on the part of the society[10].

Young people living in the surveyed countries have more trust in their families and friends than in state and public institutions. As the researchers note, "it is quite an expected result; however, such a depth of differences in trust is caused, along with other factors, by a low developmental level of institutions, which the society could rely on"[11].

According to the data for 2010, the level of trust among Russian and Ukrainian population concerning the main political institutions, as well as law and order enforcement institutions was significantly lower than in many European countries *(table 1)*[12]. In these circumstances, the traditional system of informal relations remains the only reliable structure, in the framework of which the formation of subcultural associations takes place.

In the absence of firm and strong relationship between the society, the state and its institutions, the youth starts to long for the associations that reflect various ideologies, different from traditional cultural notions. One of the negative effects of those conditions, when the traditional culture fails to meet the spiritual demands of

[7] Shkatov O. Ukrainian youth wants to learn how to evade the law. Information-analytical portal "Comments". Available at: http://life.comments.ua/way/2012/01/23/316572/ukrainskaya-molodezh-hochet.html

[8] Public opinion monitoring. Institute of Socio-Economic Development of Territories of RAS. Vologda: ISEDT RAS, 2011 – 2012.

[9] Ibidem.

[10] The single questionnaire survey was conducted on a representative sample of the population aged 15 – 34.

[11] Duyk N.M. The first free generation: the young, policy and identity in Russia, Ukraine and Azerbaijan. Public Opinion Bulletin. Data. Analysis. Discussions. 2003. No. 1. P. 53-62.

[12] Andreyenkova A.V. Political behavior of Russians. Public opinion monitoring. 2010. No. 3 (97). P. 47-61. No. 4 (98). P. 4-21.

Table 1. Level of population trust in the institutes of politics, order and law enforcement (2010, in % to the number of respondents)

Institutions	Russia*	Ukraine*	*For comparison***		
			Denmark	*Finland*	*Norway*
Political parties	**7 (24)**	**14 (16)**	*54*	*45*	*47*
Parliament	**22 (17)**	**27 (16)**	*67*	*64*	*53*
Legal system	**26 (20)**	**27 (18)**	*83*	*78*	*61*
Police	**45 (16)**	**41 (19)**	*89*	*92*	*72*

* Figure in brackets shows the state's rank (total number of the states chosen – 25 European states).
** Data on the states with the greatest level of trust are represented.

society, is the emergence and expansion of subcultural movements, which mean the system of values, attitudes, patterns of behaviour and life styles, that is typical of a smaller social community, spatially and socially isolated, to a greater or lesser extent[13].

Similar to the way the pseudo-religious movements begin its rapid development when the influence of traditional religion is weakened, subcultures fill a niche that is not occupied by other social institutions. Society, family, state – crisis of these subjects of socialization urges the population (and first of all the youth, as the most active category "seeking" its place in society) to turn to alternative sources of values, norms of behavior and attitudes.

Youth subcultures are a phenomenon of the Western type urban culture, reflecting a variety of processes occurring in the religious, ideological, political and economic spheres, in the sphere of fashion, etc.[14] Therefore, the level of expansion and nature of young people's subcultural preferences can be regarded as an indicator of social health and psychological climate in the society as a whole.

In 2010, ISEDT RAS scientists carried out a research, aimed at assessing subcultural preferences of young people in Vologda[15].

The survey results showed that mostly young people say they belong to a subculture of punks (21%), emos (15%), goths (14%) and alternatives (13%; *table 2*). However, upon closer examination, it becomes clear that the most common subcultures in the city are skinheads (60%), goths (47%), role players (43%) and emos (41%), as the participants of these subcultures share not only their external attributes or music, but also their ideology, lifestyle and behavior patterns.

The results of the Yaroslavl region youth information centre survey[16] can be used to confirm the data on the city of Vologda. The authors note, "Among the well-known subcultures ranking first, the Yaroslavl Oblast youth name the same ones, as in the 2009 – 2010 surveys: the first place belongs to "emo" (64% of all respondents); the second place – "goths (41%), the third place was divided between "punks" (36%) and "skinheads" (35%)"[17].

[13] Bayeva I.A. Psychology of youth subculture (the socio-psychological aspect of youth policy). *Bulletin of practical psychology of education*. 2007. No. 1. P. 84.

[14] Levikova S.I. Phenomenon of youth subculture (socio-philosophical aspect).Published summary of Doctor of Philosophy thesis. Moscow, 2002.

[15] 498 people aged 15 – 21 were interviewed from 22 education establishments of all levels (universities, training colleges, schools) with the use of questionnaire survey.

[16] The questionnaire survey was carried out in 2011 among 623 young citizens of 20 municipal units of the Yaroslavl Oblast. Respondents aged 14 – 16 equaled 24% of the total number; aged 17 – 19 – 20%; aged 20 – 22 – 20%; aged 23 and older – 35%. Among the people interviewed, young men equaled 50% and girls – 50%. According to their social status: schoolchildren – 27% of the total number, students of specialised secondary educational establishments – 16%; university students – 14%; working youth – 32%; 4% – said they didn't study or work.

[17] The results of the sociological research "Youth subcultures of the region – 2011". Youth subcultures and dealing with them: a practical handbook. Ed. by Ye.V. Koneva. Yaroslavl, 2011. P. 117-125.

Table 2. Characteristics of most widespread subcultures in Vologda (in % to the number of respondents)

Most widespread subcultures	In % to the number of respondents who belong to subcultures or have friends belonging to subcultures	Share of respondents fully accepting subcultural rules among those who belong to subcultures or have friends belonging to subcultures
Skinheads	2.3	60.0
Goths	13.6	46.7
Role players	3.2	42.9
Emos	14.5	40.6
Punks	20.9	26.1
Alternatives	12.7	25.0
Rappers	8.2	16.7
Anime	3.6	12.5

* Ranked according to the level of representation of people, fully accepting subcultural rules.
Source: a survey of subcultural attitudes of Vologda city youth (ISEDT RAS).

Reference

Skinheads represent a subculture, united by a set of image ("zero" haircut, combat boots, khaki army trousers, braces, collarless jackets) and behavioural (extreme aggressiveness) features. The ideologies of various skinhead groups are diametrically opposite. Skinheads are mostly viewed as the extreme right-wing, fascist-oriented stratum.

Goths are representatives of the youth subculture originated in the late 1970-s. Gothic subculture is very diverse and heterogeneous, however, it has such common features as dark image, interest in mysticism and esotericism, decadence, the love of gothic music, literature and horror movies.

Role players are an informal association of people involved in various role-playing games, first of all live action role-playing games. This movement is defined both as a hobby and as a subculture, which is characterized by its own jargon, its own music (minstrels), its own literature (mostly fantasy), and other distinctive elements of a single culture.

Emo is a subculture, created by the fans of a music style of the same name. The main rule for emos is expressing emotions. They are distinguished by their self-expression, confrontation of injustice, sensual perception of the world. They are often vulnerable and melancholic people. The style of emo consists in wearing two-toned clothing, usually black and pink. Representatives of this subculture often wear makeup.

Punks form a subculture, based on social protest, manifesting in ostentatious rejection of the social norms of behaviour, in aggression and denial of bourgeois values. Punks are characterized by anarchic style in their behavior, clothes and music.

Alternatives are a subculture that doesn't have a clear structure and principles, as it was initially based on the musical preferences, rather than philosophic ideas. Popular topics are, on the one hand, non-conformism, calls on the population's political literacy and anti-fascism; on the other hand – love, drugs, parties, etc. Alternatives often share punk anarchist views. Their appearance depends largely on the age and social environment.

Rappers are a subculture emerged in the mid 1970-s in the African-American and Latin American community. It is characterized by its own music (hip-hop, rap), its slang, hip-hop fashion, dance styles (break-dance, etc.), graphic art (graffiti) and cinema. To the beginning of the 1990-s, hip-hop in many countries has become a part of youth culture.

Anime is a subculture, based on the interest towards the animation genre of the same name that appeared in Japan in the beginning of the 20 century. The anime subculture emerged at the end of the 20 and the beginning of the 21 century. Its representatives make up the majority of the children and adolescents belonging to the role-playing community. This subculture is characterized by widespread interest in contemporary Japanese culture. Critics talk about the detachment of the views from the world and outflow of talents into a different culture. However, the anime representatives don't organize public protests and political disturbances. They simply live in a world of their own, which unites them with the subculture of role-players.

The studies of the structure and expansion of informal youth associations in Ukraine are sketchy and scarce. There is some information that, for example, in Odessa and the Odessa region, about 105 subcultures were officially registered in 2011. The most common of them are goths, emos, skinheads[18]. It is also known that Ukraine belongs to the countries, where the issue of curbing the Ukrainian nationalists' activities is the most acute. This movement is especially developed in the city of Lviv, where congresses of Association members are regularly held, and not only from Ukraine but also from other states (particularly, Russia). According to St. Petersburg skinheads, that took part in one of such congresses in 2012, "the situation in Ukraine is far better than in our country"[19].

[18] Lanko A.S. Subcultures at the present time. Available at: http://obozrenie-plus.com/subkultury-v-nashe-vremya.html

[19] Komsomolskaya Pravda. 13 June, 2012. Available at: http://kp.ru/online/news/893700

This is partly connected with anti-Soviet attitudes of the city authorities. In 2012 Lviv City Council banned the celebration of the Victory Day on 9 May, and the use of Soviet symbols on the territory of the city. This resulted in massive clashes between supporters of the right-wing and left-wing movements. The nationalist youth wearing masks marched along the city tore off St. George's Ribbons from passers-by near the "eternal flame", insulted veterans and trampled the wreath, which the Russian consul was going to lay on the military cemetery[20].

Thus, the given data show that the nature of subcultures expansion in Russia and Ukraine has common features, which consist in the prevalence of the most dangerous, anti-social, informal associations; the data also prove that in modern subcultural movements the tendency towards the consolidation of forces at the international level is manifested sharply.

The significant influence of the culture on young people, is conditioned by the community of their life style, behavior, group norms, values and behavior stereotypes. This simplifies socialization process; however, subcultures actively produce norms, behavior patterns and values that contradict the official culture, its content and forms. The ideologies of subcultures have one common feature – a subjective "blur", uncertainty, alienation from the main normative values, approved by an overwhelming majority of representatives of a particular society.

It is the basis of a reverse process of subcultures influence on the younger generation. Their values provide young people with the role of "outside observers" of social processes, which leads to social estrangement, reveals itself in a state of apathy, indifference to the life of the society, minimizes any manifestation of specific social attitudes.

20 Ibidem.

Thus, the data on the various studies confirm the fact that not only Russia, but also other post-Soviet states experience a crisis of traditional social institutions – state, family, religion, school. This creates fertile ground for the spreading of subcultural ideologies, the role of which (as a social institute) lies in the fact that in the process of personality socialization they provide the basic value orientations and social standards that deviate from those generally accepted in a given society. Subculture is an option for everyone, who is concerned about the search for identity, who seeks to find a new complete image of the world in which one can clearly determine his/her own place. When the question concerns the life and cultural style, there is always a choice. The weaker institutional norms and regulators, the faster and more obvious the place of traditional role models is occupied by life styles, competing with each other for an individual who has a free choice[21].

Participation in the subculture gradually leads to abandonment of social and political interests, the substitution of moral values by external rules of behaviour and ways of life, reduction of the level of critical assessment in the perception of new information. Ultimately, it results in the increasing risk of social isolation, drug abuse, deviant or suicidal behavior among young people.

The more acute is a question of purposeful, integrated and systemic impact on informal youth associations. It should be noted that the prevention of subcultural movements expansion in the youth environment may not be forced, because their official banning will violate human rights and freedoms. Besides, given the modern conditions of high technologies, it is almost impossible to establish control over the subcultures development dynamics.

21 Lyasnikov N., Lyasnikova Yu. Socio-economic conditions of forming the spiritual culture of the student youth. Available at: http://www.gumer.info/bibliotek_Buks/Sociolog/Ljasnikov/_DuhKult_zakl.php

The main purpose of preventive measures should include the search and activation of the subcultures' socializing capacity, while counteracting the negative effects of youth associations of anti-social nature. At present, it is also necessary to strengthen the status of such social institutions, as family, education, church. However, taking into account the strong influence of mass media on modern youth, the use of the elements of subcultural attributes and ideology on the air should be placed under control.

Prevention of negative influence of subcultures cannot be reduced to a simple prohibition of their activities. A comprehensive approach to the problem of the younger generation's socialization is required. In our opinion, to achieve this goal, the following directions of activity should be observed:

1. *Wide-scale involvement of the youth in management processes at the level of public associations, political parties, etc.* The solution of this problem will promote strengthening of the institution of power due to the youth representatives' awareness of the real possibility of their participation in the society's political life.

2. *Consolidation of the efforts of various organisations (which include regional and municipal authorities, institutions of education, health care, social security and internal affairs, non-governmental organizations, public associations, religious denominations and mass media) with a purpose of general improvement of the young people's socio-economic condition.* The implementation of complex of measures on employment, promotion of socially acceptable forms of leisure activities, monetary income increase, housing problems solving, and assisting in obtaining education will contribute to the strengthening of young people's spiritual and moral values and their direction towards pro-social course.

3. *Identification of negative conditions of youth socialization, as well as search for forms and methods of consolidating the subjects of preventive activities.* Observance of this principle will allow to implement more extensively the ideas of preventing social ill-being (which is not reduced to only one such manifestation as a subculture) in the youth environment. As for the example of informal youth associations, it will result in the fact that activities aimed at reducing their negative impact will be directed toward eliminating the reasons and not the consequences of young people's involvement in subcultures.

Thus, preventing the expansion of informal youth associations, and other negative aspects of socialization should be based on the improvement of young people's socio-economic position, ensuring the conditions for their professional and creative self-realization in the framework of traditional culture, which will promote the development of young people's interest to its various manifestations. At present, it is also necessary to strengthen the status of the main institutions of socialization that are the bearers of traditional cultural rules and norms. The implementation of these directions requires developing targeted strategies of young people's social adaptation, which can be realized by cooperation with the most important social institutions – family, school and peer groups.

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Anti-poverty Study of Ecological Preservation Area
(the case study of Poyang Lake)

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With the special functions such as the maintenance of ecological system integrity and the guarantee of human material support system sustainability, the ecological preservation areas of river sources belong to the prohibited or restricted development zones of national land, which are not suitable for the large-scale industrial, urban and rural constructions. The regional ecological function protection is the common choice for the current international social regional ecological protection, but these regions are often the relatively poor regions confronting with the pressure of population increase, economic development and environmental protection. The coordinated development between the environmental protection in the source regions and lake regions of Poyang Lake and the local economic society has typical significance in the country.

I. Environmental Protection and Anti-poverty Significance of the Ecological Preservation Area

The terrain of Poyang Lake basin slopes from the south to the north, and five rivers including Gan, Fu, Xin, Xiu and Rao flow into Poyang Lake and then feed into the Yangtze River. Poyang Lake is an important regulator of the Yangtze River with an annual average water feeding yield of 145 billion cubic meters, accounting for 15.6% of the Yangtze River runoff. As the ecological enrichment region of Jiangxi, Poyang Lake is the largest freshwater lake in China, the only Chinese member of World Living Lake Network, and also the water ecology security area of the middle and lower reaches of the Yangtze River, playing a very important role in China's and even the world's ecological patterns. The basin area accounts for 97% of Jiangxi's land area. Jiangxi Province is almost a complete Poyang Lake basin, and the area and scope of the whole basin are basically consistent with the administrative territory of Jiangxi Province. Therefore, the ecological system of Jiangxi is highly consistent with that of Poyang Lake. The impacts of the poverty and backwardness of the river source and lakeside regions on the regional environment are profound, which is easy to cause the environmental degradation and vicious cycle of poverty. Due to the special geographical characteristics and functional orientation, the national and provincial natural reserves are centralized in five river source reserves including 10 counties (cities) and lakeside regions including 13 counties (districts, cities) of Poyang Lake. Due to lack of people's knowledge in ecological resources for a long time, failure for local

residents to get proper compensations from their efforts in environmental protection, and also backwardness of economin development of the region which is dependent on agriculture and fishery, the residents in some regions are still in poverty. The GDPs of Poyang, Duchang and Yugan counties around the Poyang Lake rank last in the province, and the farmers' incomes of these three counties were 3800 Yuan, 3761 Yuan and 5494 Yuan separately in 2011, which are much lower than the average level of 6892 Yuan in the province; meanwhile, these three counties are populated regions with the population of 1.5 million, 0.7 million and 1 million people separately.

The difference between urban and rural areas causes the "unbalanced" development of the ecological economic zone, while the provincial capital and the central cities such as Nanchang, Jiujiang, Yingtan, and Xinyu are central areas of economic and social development in Jiangxi, especially the Yangtze River Delta located at the middle and lower reaches of the Yangtze River, where the urban and rural residents earn much more money. Due to low development of the regional economy for many years, the desires of the cadres and the masses for being rich have kept for a long time, which are easy to change into the blind energy release under the background of the growing gap between their incomes and the incomes in the surrounding regions, the realization of the environmental protection and anti-poverty in five river source regions and Poyang Lake as well as lakeside regions is of great significance for the sustainable regional development.

II. Useful Practice of Environmental Protection and Anti-poverty

The river and lake development and improvement project of Jiangxi Province started from the early 1980s is an exploration and practice seeking for the coordinated development between the economy, society and the ecology, environment in Poyang Lake basin.

With the concept of ecological economy and sustainable development, Jiangxi people seize the internal law that the mountains, rivers and lakes are indivisible, accumulate the experience in mountain, river and lake development and improvement, and combine the mountain, river and lake improvement with the economic development and poverty-eradication, forming an ecological economic system project integrated with the mountain, water and poverty improvement. The tests and explorations are conducted to the development and improvement mode under different natural ecological environments, and 31 experimental demonstration bases of ten categories and more than 100 promotion places are established successively, constituting the experimental demonstration network system. The coordinated development between the environmental protection and the social economy improves people's living standards, the poverty population has been falling by 240,000 people each year, and more than 6 million people have been lifted out of poverty.

In Dec. 2009, the construction of Ecological Economic Zone of Poyang Lake became the national development strategy, which should be tested in the underdeveloped regions first to explore the new ways of coordinated development between ecology and economy, and of harmonious coexistence between man and nature, and organically combine the development with the protection. The Ecological Economic Zone of Poyang Lake can be divided into the core lake region, the lakeside control region and the efficient and intensive region in accordance with the regional function orientation. The main functions of providing the ecological products such as fresh air, clean water, and pleasant climate in the core lake protection region are determined as to enhance the preservation capacity of biodiversity, prohibit the land reclamation around the lake and the cultivation around the lake, reduce the impacts of human activities on the core

region, and scientifically divide the areas used for planting, farming and fishing within the region. The planting and cultivation projects shall meet the needs of lake water storage for flood mitigation, wetland ecological protection and wildlife protection. The construction and management of migratory bird reserves in Poyang Lake, and national aquatic germplasm resource reserves of white-flag dolphin, Chinese sturgeon, cowfish shall be strengthened, and the migratory birds, aquatic animals and natural environment they live on shall be protected; the lakeside control development region is mainly used to protect the natural ecology of the river feeding channel of Poyang Lake as to improve the flood discharge and water supply capacities and construct the ecological barriers of the middle and lower reaches of the Yangtze River. At the same time, the off-site transformation and expansion of the population relocation and the existing industrial enterprise relocation within the lakeside control development regions are encouraged through the policy support in the aspects of investment, credit, land use, energy supply and taxation. The eco-industry shall be developed in accordance with the local conditions to prevent the excessive development of ultra-environmental carrying capacity, and the eco-tourism, eco-agriculture, light eco-industry, and eco-service shall be developed in the fragile ecological areas along the lakeside.

From the water source, Jiangxi Province has designated the protection region of Poyang Lake basin with a total area of 9985.72 square kilometers and with the investment of 135 million Yuan to implement the water pollution improvement project of "Five Rivers and One Lake". At the same time, the water resource protection project of the Yangtze River and Poyang Lake, the urban and rural wastewater treatment project, the industrial park wastewater treatment project, the rural cleaning project and other ecological projects shall be implemented.

The ecological protection encouragement policies of basin counties (cities, districts) and the migrant relocation project in fragile ecological region shall be implemented together with the water environment protection, pollution emission control, ecological security pattern construction, and virtuous cycle of ecological environment. The systemic protection and development of the Poyang Lake basin environment constitute a safeguard for the water ecology security in the middle and lower reaches of the Yangtze River, and lay the foundation for the sustainable development of the region.

III. Countermeasures of Environmental Protection and Anti-poverty

1. Poverty Reduction and Environmental Protection in Development

On the one hand, the poverty shall be reduced and eliminated from the river source region and the lake region; on the other hand, the environmental degradation shall be prevented; so it is necessary to reduce and eliminate poverty and pay attention to the environmental protection in development. Poyang Lake is rich in resources, but the traditional development mode has difficulty in crossing the ecological environment destruction. Therefore, the development modes shall be changed and the regional economy shall be developed in accordance with the local conditions. In the long term, there is no conflict between the poverty elimination and good environment maintenance, but they can be mutually promoted to reach the virtuous cycle. With the improvement of people's living standard, people's demands for the ecological products are continuously growing. Therefore, the provision of ecological products and the strengthening of production capacities of ecological products shall be taken as the important contents of ecological preservation area and the important task of national spatial development. With people's growing demands for the ecological environment service,

the local residents are more positive on the environment improvement, and meanwhile more investments are made to maintain the good environment, forming a virtuous cycle.

2. Close Integration of Environmental Protection with Poverty Reduction and Elimination of Farmers

As an underdeveloped region facing a difficult development task, the economy cannot be rapidly developed and people's living standard cannot be continuously improved only through the ecological construction and protection, which may lead to the vicious cycle of "poverty – environment-sacrificed development – poverty". From the viewpoints of the farmers, they will take the environmental protection into consideration only after solving the clothing and hunger problems. The poor people often conduct the predatory exploitation to the natural resources for solving the survival problems, and become the ecological environment destroyers consciously or unconsciously.

From the viewpoints of the government, it is necessary to complete the following work: first, "enriching people" must be considered as an important aspect in the process of rural ecological environment protection and resource development. The poverty reduction and elimination as well as the sustainable development shall be realized through the local resource advantages and the ecological product service creation; second, the agricultural products with resource advantages and market demand shall be developed into the characterized regional pillar industry with positive support as to form a way combining the industrialization with the poverty development. The enterprises with market development capacities engaged in processing agricultural products shall be guided and encouraged to provide the series of services for raw material production bases in poor regions before production, during production and after production for the poor farmers, forming the industrial management integrated with trade, industry and agriculture, as well as production, supply and marketing, and realizing the integration of regional ecological resource protection and economic development through "hemopoietic poverty alleviation".

3. Implementation of Policy Mechanism Closely Related to the Environmental Protection and Anti-poverty

The ecological pressure can be eased, and the poverty can be reduced and eliminated for famers by making a close connection between the environmental protection and the poverty reduction and elimination and considering the farmers livelihood in the ecological environment protection and the ecological environment protection in the poverty alleviation.

The national and provincial ecological compensation mechanism for Poyang Lake basin shall be established, and the special funds of ecological compensation shall be set. The ecological compensation for the ecological public welfare forest shall be conducted in accordance with the relevant regulations of national and provincial governments. The necessary living subsidies shall be given to the professional fishermen in the lake region who lead a difficult life in the closed fishing seasons. The subsidies shall be given to the wetland resource owners and users whose legal rights and interests are harmed due to the needs of the wetlands in the national natural wetland reserves and the wildlife protection within the ecological economic region of Poyang Lake.

At the same time, the green national economic accounting evaluation mechanism shall be gradually established, and the weight coefficient of ecological index evaluation shall be increased, to gradually form the good mechanism of policy guiding, enterprise operation, and ecological environment protection of public participation, and make the ecological protection participants obtain the deserved repayment and compensation.

4. Implementation of Comprehensive Ecological, Economic and Social Project

The realization of the coordinated development of ecology, economy and society is the process of structure optimization and function enhancement. In accordance to the natural characteristic protection and environmental evolution phase, we should explore the technical approaches to the promotion of ecological protection in protection regions and ecological development of economy, improve the coordination of urban and rural economic development, determine the regional ecological environment protection and the industrial optimization structure by taking the optimization of industrial structure and the integrated design of ecological safety as the entry point, and conduct the ecological economic recovery and reconstruction by taking the comprehensive implementation of ecological, social and economic projects as the reconstruction approaches. In the face of the dual problems of the environmental degradation and the backward economic and social development, the "win-win" goal of ecological balance and productivity improvement can be achieved through the equalization of financial public services.

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Institutional reasons for economic problems in Russia's local self-government

The article is devoted to the study of institutional reasons for economic problems of local self-government in Russia. The results proving the inconsistency between the actual incentives of regional authorities and goals of territorial development have been obtained upon analyzing the execution of consolidated budgets of RF subjects. The article defines the principal trends of formal state institutions' modernization; the implementation of these directions will raise the interest of RF subjects' administration in the development of local self-government's economic base.

Local self-government, state institutions, municipal budgets.

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A great number of theoretical and empiric studies are devoted to the problems of effective distribution of revenues between the levels of the state system. This issue is especially acute in the context of the "region – municipal entity" relationships. Nation-wide shortage of financial resources in municipalities jeopardizes the sustainability of local communities' functioning and development, and discredits the very idea of local self-government. It is noteworthy, that political and economic top management officials at all types of national municipal entities unanimously declare the lack of funding to be the challenge number one [2].

Why do Russian municipalities experience a shortage of revenues, is this state of affairs normal or should it be changed? Scientists, politicians, managers, practicing economists have been widely discussing this issue.

The opinions, expressed by different parties, vary significantly. Some argue for the complete approval of the "transfer" funding of municipal economy and assume this concept as the only right one. Others strongly reject the existing organizational model of Russian local self-government in general, and its funding system in particular. Each viewpoint has its reasoning.

The main argument, supporting the idea of the revenues' withdrawal from the local level and their further redistribution, has economic grounds and is based on the fact that the revenue potential of municipalities is extremely heterogeneous. Even the neighbouring settlements of the same type can have an absolutely incomparable economic base. Disproportions in economic potential of the settlements of different types are even more pronounced. Given this state of affairs, the uniform standards of revenues inflow from the same sources create distortions in the fiscal capacity of municipalities. A logical solution to the problem, successfully implemented in most Russian regions, is the centralization of a large part of the revenues from municipalities and their subsequent "return" through the system of inter-budget transfers.

However, the transfer model of financing will inevitably create risks of economic and political dependence of local self-governing bodies on regional authorities. Therefore, the main argument of its opponents is the thesis concerning the necessity to observe the constitutional principles of self-sufficiency of local self-government and its independence from state authorities.

Unfortunately, the economic basis for implementing the idea of fiscal independence of local self-government is clearly insufficient. Given the limited list of revenue sources, which local budgets possess by authority of law, it can be stated that for them the only alternative to a strong subsidy-based dependency is the right to claim a part of regional budget revenues.

Obviously, the transfer of a part of the RF subject's budget revenues "downward" is the most civilized and democratic way of strengthening the economic foundation for local self-government. The ideas of budget decentralization are fully consistent with the ideas of administrative decentralization, proposed by the President in his Address to the Federal Assembly and the Session of the State Council in December 2011. But the question arises concerning the willingness of the RF subjects to give the municipalities something above the minimum that the latter obtain in accordance with the Budget code. This article presents an attempt to answer this question, search for the systemic causes of the economic problems of domestic local self-government. It also provides the substantiation of proposals on modernization of institutional structure that is the source of these problems.

Research methodology

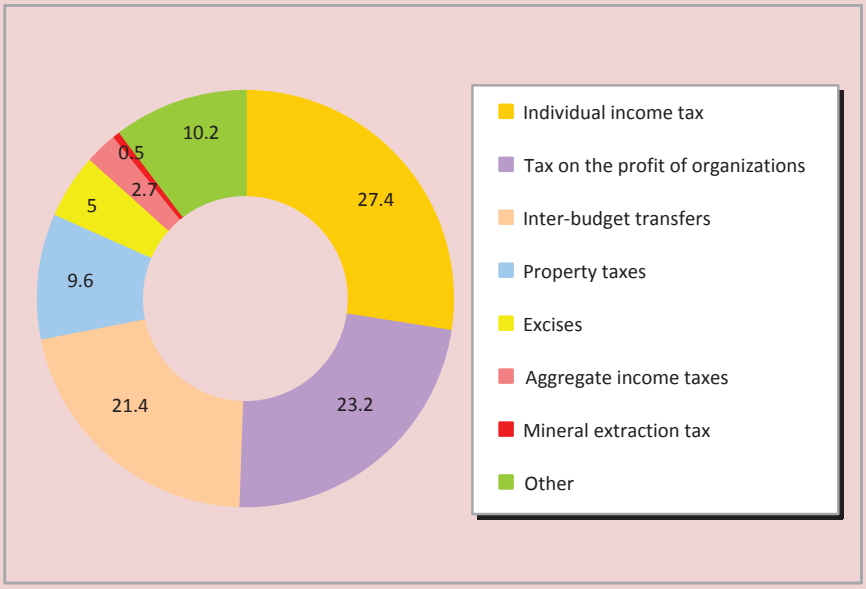
The sub-federal level of the state hierarchy, as well as all the municipal entities of the subject function on the economic basis of a region's consolidated budget. The minimum rates of deductions into local budgets are established in the Budget code. At the same time, the RF subjects have a legitimate opportunity to replace subsidies by the additional rates of individual income tax deductions. They also possess the right to establish the uniform rates of distributing all kinds of tax revenues, subject to be transferred to the region's consolidated budget, between their own and local budgets.

At present, the most significant sources of tax revenues for the consolidated regional budgets (in descending order of importance) are: individual income tax, tax on the profit of organizations, property taxes, excise taxes, aggregate income tax, mineral extraction tax *(fig. 1)*[1]. Concerning any of these types of revenues, regional authorities are entitled to decide on transferring a certain part of it to the municipal level. The present study analyzes the results of execution of consolidated budgets of 83 RF subjects (excluding federal cities of Moscow and St. Petersburg) regarding the realization of this right by the regions.

In the course of the analysis, the data on actual inflow of revenues, in the context of each of the selected sources, into the regional budget

[1] Empirical data, analyzed in the present article, are derived from the sources [3], [4], [5].

Figure 1. Integrated structure of revenues of the consolidated budgets of RF subjects in 2010, %



and into the consolidated budget of municipal entities located on its territory were compared pairwise. The obtained ratios were compared with the minimal rates of tax revenues inflow into the local budgets set by the Budget code, and in case of exceeding of the latter, the fact of transferring the additional revenues by the region to the local level was registered.

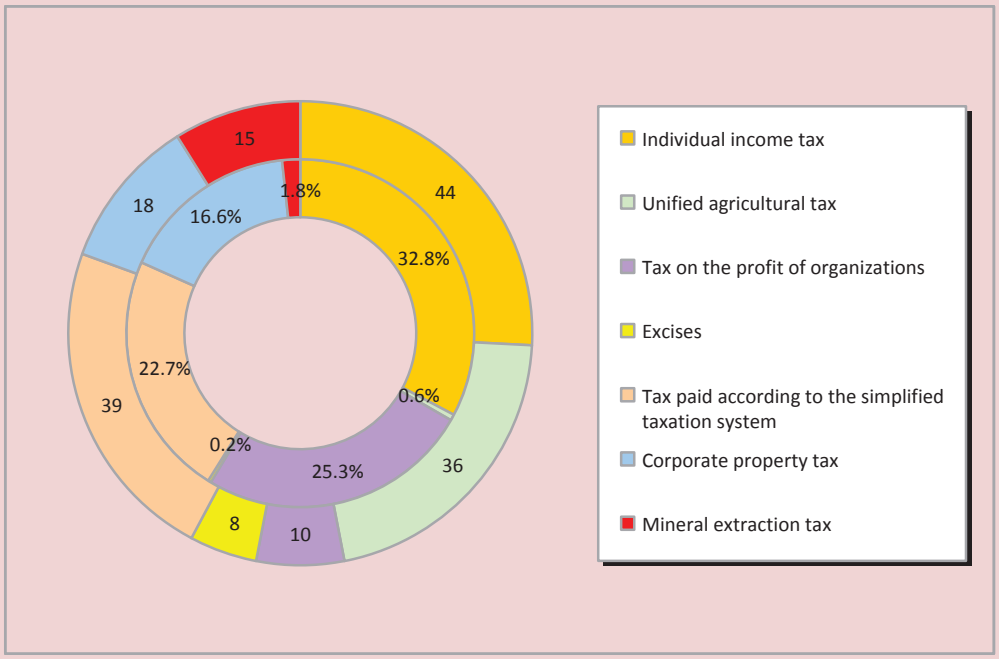
In order to ensure the transparency of the obtained results, it is necessary to make some methodological clarifications. Firstly, it should be noted that the results of analyzing the rates of individual income tax distribution have a certain consolidation error, as additional rates for the tax inflow into local budgets, established in accordance with part 2 of article 58 of the RF Budget code, may be different for different municipalities of one and the same region. Secondly, in the revenue group "Excise taxes on excise goods (products), produced on the territory of the Russian Federation" (hereinafter – excises), data on budget execution are also analyzed in aggregation, which eliminates the possibility of considering the revenue inflow rates separately for each of the excises types. However, as the ultimate goal of the research is to draw conclusions on transferring additional revenues to municipalities, the mentioned assumptions can be considered as insignificant, since part 3 of article 58 of the RF Budget code sets the minimum level for additional rates of individual income tax inflow, and the excises are fully attributed to the revenue sources of the regional budgets. Therefore, the fact of additional revenue transfer to the local level can be registered in the first case by comparing the data on actual execution of regional and local budgets with the aggregated[2] minimum inflow rates, and in the second case – in any precedent of obtaining revenues by local budgets in the form of excises.

Observations and conclusions

The results of the analysis prove that the main sources of additional revenue inflow into the local budgets in 2010 included individual income tax, tax on the profit of organizations, tax paid according to the simplified taxation system, corporate property tax. The structure of the additional revenues of the municipalities

[2] Established in the amounts determined by articles 61, 61.1, 61.2 of the RF Budget code in accordance with the requirements of part 3, article 58 of the RF Budget code.

Figure 2. Additional tax revenues of local budgets in 2010



nationwide and the data on the total number of facts of transferring tax revenues by the regions (by types of taxes) is shown in the diagram in *figure 2*.

It is interesting to note, that the share of different tax sources in the total volume of revenues additionally transferred to the local level (the inner circle of the diagram) is not always directly proportional to the number of facts of transferring the relevant taxes (outer circle). Due to the difference in the capacity of the tax base, the efficiency of transfer of different taxes varies significantly. So, in respect of individual income tax, tax paid according to the simplified taxation system, and corporate property tax, the number of facts of transferring the revenues is comparable to the position of the source in the structure of revenues. At the same time, the share of unified agricultural tax, excises and mineral extraction tax in the total volume of additionally transferred revenues is much less significant, though the number of transfer facts is relatively large (36, 8 and 15, respectively). A special place is occupied by tax on the profit of organizations.

In 2010, it was a leader concerning the efficiency of transfer to the local level – only 10 facts of its transfer provided municipal budgets with more than a quarter of the total amount of additional revenue.

Calculations show that, in general, the total share of additional revenue in the total revenue of consolidated municipal budgets amounted to 2.91% in 2010. If the potential of this source is compared with the amount of subsidies for municipalities, more than the four-fold gap is observed: at the end of 2010, subsidies amounted to 12.63% of the total revenues of the consolidated budget of all RF municipal entities.

In practice, the share of revenues derived from additional tax sources does not exceed 5% for the local budgets of the overwhelming majority of the regions (65 out of 81, or 80.2%) *(fig. 3)*. And only 3 RF subjects: Perm krai, the republic of Khakasiya and Krasnoyarsk krai have overcome the 10% threshold. At the same time, in 33 regions, additional revenues accounted for less than 1% of the revenues of municipal budgets.

The data is complemented by the figures characterizing the intensity of regions' usage of the tax mechanism of providing additional financial support to local self-government. In 2010, 14 regions didn't use this right at all. 17 RF regions accounted for 1 fact of transferring, 19 – for 2, 18 – for 3, 6 – for 4, 4 – for 5. The Penza oblast, the republics of Altai and Adygea each transferred 6 additional sources of revenues to municipalities.

Individual income tax and tax paid according to the simplified taxation system rank first and second according to the frequency of estab-lishing the additional rates of revenue inflow into local budgets (additional individual income tax was transferred to the local budgets 44 times, tax paid according to the simplified taxation system – 39 times).

Unified agricultural tax ranks third. In 2010, the minimum required rate of its inflow into local budgets was exceeded in 36 RF subjects. However, due to the lesser capacity of this revenue source, the share of additional revenue from unified agricultural tax in the total volume of additional revenues amounted to only 0.6%.

As for corporate property tax, ranking fourth in this list, there were 18 cases of its redistribution in favor of the municipalities in 2010. In total, the share of the above-mentioned sources equals 73.4% of the total volume of municipalities' additional tax revenues. Since the base of these taxes is relatively stable, the practice of their transfer to the regions "downward" is reasonable and logical. Municipalities get the revenues, the generation of which can be influenced by local authorities.

Individual income tax is, no doubt, the systemic revenue source for the budgets of all types of municipal entities. As an additional revenue source, individual income tax was transferred to the local level 44 times in 2010 and provided 32.8% of additional tax revenues of municipal budgets. At the same time, different regions "shared" this tax with the municipalities extremely unequally *(fig. 4)*. While in almost half of the RF subjects, municipal budgets received tax revenues in the amounts not exceeding the minimum limit established by the Budget code, the municipalities of other regions received substantial additional revenues.

Figure 3. Distribution of the RF subjects according to the share of revenues on additional rates in the total amount of local budgets revenues

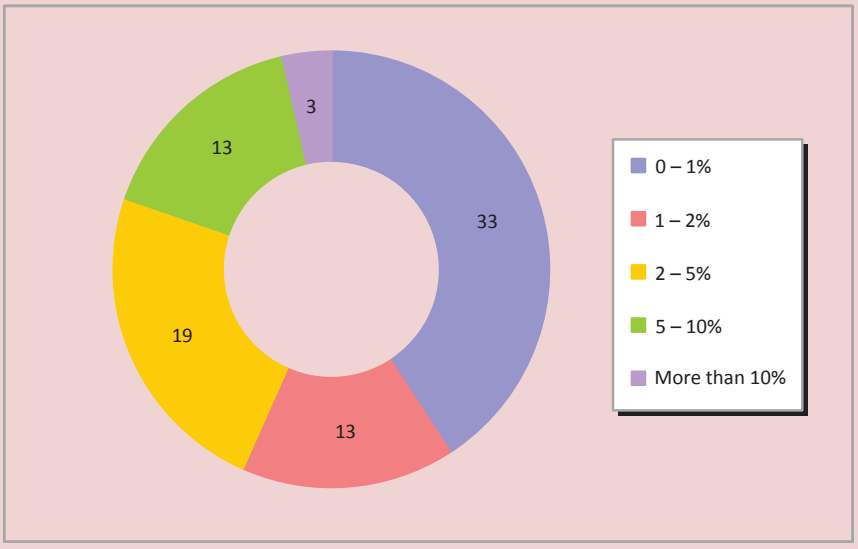
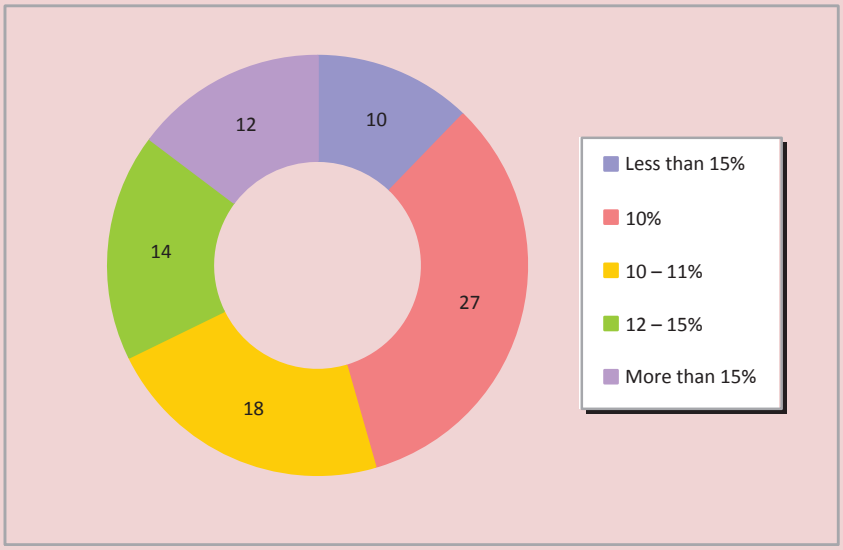


Figure 4. Distribution of the RF subjects according to the share of individual income tax transferred to local budgets in 2010, in accordance with part 3, article 58 of the Budget code of the Russian Federation



The 2010 share of individual income tax inflow into local budgets equaled 30% (for urban districts and the consolidated budgets of municipal districts). Besides, in accordance with part 3, article 58 of the Budget code of the Russian Federation, the RF subjects were to provide unified and (or) additional norms of individual income tax deductions to local budgets in the amount of not less than 10% of the tax inflow into the region's consolidated budget.

In fact, this goal wasn't achieved in 10 regions: the Mari El Republic, the Tyva Republic, Krasnodar Krai, Primorsky krai, Kaluga oblast, Kursk oblast, Novosibirsk oblast, Orenburg oblast, Oryol oblast and Chelyabinsk oblast[3]. In 27 regions, the share of individual income tax, directed to the local budgets above the basic 30 percent ratio, amounted to 10%. That is, the municipal entities of these RF subjects received only the legally stipulated part of the tax. In 18 regions the minimum ratio was exceeded by not more than 1%, in 14 regions – by 2 – 5%, and only in 12 regions – by more than 5%. Thus, despite the absolute "leadership" of individual income tax according to the frequency of its transfer to the local level, the share of transferred revenues in the vast majority of cases remained insignificant.

The fact, that authorities are so cautious in the issues of transferring additional revenue sources to municipalities, is quite understandable. The main risk accompanying the transfer of a part of any tax, even with a relatively homogeneous (in the territorial dimension) base, lies in the danger of increasing disparities in fiscal capacity among municipal entities with different tax potential. Therefore, it can be assumed that the amounts of the additional deductions over any tax should closely correlate with the differentiation level of the corresponding tax base in a particular region. Consequently, on the basis of the thesis concerning the necessity of fiscal capacity alignment, the state authorities of the RF subject should pay the more attention to establishing additional rates, the more heterogeneous is the tax base of municipalities located on its territory.

[3] Obviously, this situation is connected with the fact that the number of municipal entities of the listed RF subjects chose additional subsidies on equalization of budget supply as an alternative to the additional rates of deductions for individual income tax in accordance with articles 137 and 138 of the RF Budget code.

In the context of this discourse, it is interesting to compare additional rates of individual income tax deductions to local budgets with statistical indicators that characterize the differentiation level of labour remuneration in the regions, - the coefficient of funds and the Gini coefficient[4]. The value of the correlation coefficient, obtained after comparing the first two data sets, is 0.224, after comparing the set of additional rates and the Gini coefficient, it is 0.195. Oddly enough, not only is there no expected sustainable negative correlation, but, on the contrary, there is a positive relationship between the share of the tax transferred to the municipal level and the degree of differentiation of its base. In all probability, these results do not illustrate any systemic motives of the regional governing bodies, and are a consequence of spontaneous resolutions taken over a number of years.

The practice of transfer to the local level of additional income tax on mineral resources extraction, tax on the profit of organizations and excise tax (15, 10 and 8 cases, respectively) is less common, as can be seen in the diagram in fig. 2. The main reason for a lesser eagerness of the regional authorities to use these sources of consolidated budgets revenues as a means of redistribution, most likely, lies in a "local" nature of the relevant tax base. The values of profit tax inflow ratios into the local budgets range from 5% in the Voronezh and Kaluga oblasts, Krasnodar krai up to 50% in the Magadan oblast. All 8 cases of transferring excise taxes to municipalities, registered in 2010, are connected with the taxation of alcohol-containing products, and the share of its inflow into the local budgets varied from 0.3% in the Yamalo-Nenets Autonomous Okrug up to 12% in the Republic of Adygeya.

As for mineral extraction tax, the potential recipients of additional revenues are the settlements, fortunate enough to have deposits under exploitation located on their territory. However, it should be noted, that most of the regions, that transferred a part of mineral extraction tax revenues to the local level, exercised this right only in the part concerning tax on the extraction of commonly occurring mineral resources, i.e., as a rule, sand and gravel, raw materials for producing construction materials, water. And only in the Chelyabinsk oblast, the Jewish Autonomous oblast, Zabaykalsky Krai and Altai krai the regional authorities went further and transferred to municipalities a part of the revenues from tax on the extraction of other groups of mineral resources *(table)*. It is logical to assume, that it is the low cost of commonly occurring mineral resources and, consequently, a narrow tax base of the tax transferred to the local level is the main cause of its low ranking (1.8%) among other additional revenues of the local budgets.

So, some conclusions can be made concerning the major trends in the practice of transferring tax revenues by the regions to the municipal level.

Firstly, this practice is not properly developed yet. Major proof can be found in the fact that in 14 regions no tax was further reallocated in favor of the municipalities, and in 33 regions the share of revenues transferred from regional taxes equals less than 1%.

Secondly, the unsystematic character of measures taken, and, more specifically, absence of tangible (at least, in the framework of express-analysis) economic grounds for their adoption. One of the most obvious evidences is the absence of a sustained negative correlation between the additional rates of

[4] It should be taken into account that when calculating both indicators, a wide range of population's monetary incomes is considered, and not all of them are subject to individual income tax. However, the main components of the population's monetary incomes – business income (in 2010 equals 9.3% of monetary incomes in average for Russia), wages and salaries (40,6%) and property incomes (6,3%) are included into the tax base according to individual income tax, and social payments not subject to this tax (17,8%) are characterized by the low level of fluctuations, which allows to consider the coefficient of funds and the Gini coefficient as the indicators characterizing to a certain extent the differentiation level of the tax base according to individual income tax.

Mineral extraction tax, transferred to the local level in 2010

RF subject	Mineral extraction tax, thsd. rub.	Including tax on the extraction of commonly occurring mineral resources, thsd. rub.	Share, %
Republic of Bashkortostan	49 861	49 861	100,0
Udmurt Republic	6 462	6 462	100,0
Chuvash Republic (Chuvashiya)	10 976	10 919	99,5
Sakha Republic (Yakutiya)	80 515	80 515	100,0
Altai Krai	79 591	9 995	12,6
Voronezh oblast	62 802	62 802	100,0
Ivanovo oblast	12 186	12 186	100,0
Smolensk oblast	18 671	18 671	100,0
Tomsk oblast	10 740	10 740	100,0
Chelyabinsk oblast	258 639	73 489	28,4
Yaroslavl oblast	18 608	18 502	99,4
Republic of Adygeya (Adygeya)	4 945	4 945	100,0
Altai Republic	14 840	3 364	22,7
Jewish Autonomous oblast	1 024	0	0,0
Zabaykalsky Krai	324 063	22 250	6,9
TOTAL:	953 922,58	384 700,52	40,3

individual income tax inflow info local budgets and the indicators of revenues distribution irregularity (the coefficient of funds and the Gini coefficient).

Thirdly, a lack of the regions' attention to the necessity of analyzing the opportunities for expanding the practice of "downward" transfer of the revenues. This is proved, for example, by the fact, that tax on the extraction of commonly occurring mineral resources is transferred to the local budgets only in 15 RF subjects, while this revenue type is present in the consolidated budgets of 80 out of 83 Russian regions considered in the framework of this study. And the peculiarity of the object of taxation consists in its close relationship with the economy of the local governing level – the work of road repair and construction departments, water services companies, etc., that is a serious reason for raising the issue concerning the expediency of transferring the given source.

The analysis proves that state governing bodies of the RF subjects insufficiently use the opportunities of forming the revenues of municipalities by attracting additional tax sources, and prefer the "transfer" model of municipal economy financing.

In the conditions of moving towards budgetary and administrative decentralization, this stagnant and counterproductive model of inter-budgetary relations is becoming a serious obstacle to the development of the institute of Russian local self-government, reduces municipalities' motivation to increase their own economic independence and responsibility, and makes them economically and politically dependent on the decisions of the regional state governing bodies.

Institutional roots of inefficient budgetary decisions

The nationwide scale of the problem of the regions' unpreparedness (or unwillingness) to abandon the subsidies addiction policy and move on to more advanced methods of providing economic support to the development of local self-government proves the existence of systemic reasons for the current situation. Though understanding the benefits that municipalities will gain after the replacement of subsidies by additional tax sources, the governors, however, refrain from actively implementing the practice of the revenues transfer. Reasons for such behavior are of a pronounced institutional nature, the basis

of which, on the one hand, is a set of formal institutions – laws and regulations, governing the work of regional administrations, on the other hand – state ideology developed over the last decade, which is, in fact, an informal institute with its own views on the issues of "what is good and what is bad".

Federal laws No. 184-FL dated 06 October, 1999 "On general principles of organization of legislative (representative) and executive bodies of state authority of the subjects of the Russian Federation", No. 131-FL dated 06 October, 2003 "On general principles of organization of local governments in the Russian Federation" and the Budget code of the Russian Federation are the cornerstones of Russian model of administrative-territorial and financial subordination, that determine the legal basis of interaction between the subjects of Federation and municipal entities. The framework, constructed by these legal documents, and replacing the 1990s liberal doctrine of state administration, was created to improve governability and counteract the centrifugal processes posing a threat to the economic security and territorial integrity of the country[5]. The task of improving governability was reflected adequately in the basic principles, implemented in these laws. They include the centralization of financial resources and the total unification of the revenue sources and powers of the municipalities.

Further application of this management model has revealed a number of significant problems, however, the debates about their inevitability were held ever since the adoption of the laws stated above [8]. But, of course, the main problem of unification lies in the fact that the economic base of municipalities guaranteed by the law is insufficient for the proper fulfillment of the powers assigned to them. And the regions are not in a hurry to expand it, as it was proved in the course of the preceding analysis.

[5] Detail are contained in [1], [7].

The next important feature of the national state administration model is the conformity of the regional development objectives to the ideology of political, administrative and financial resources and solutions centralization.

Abolition of direct elections of governors, the work on the creation of political vertical at the regional level, participation in priority national projects and other federal initiatives implementation over the last ten years have stimulated regional officials to enhance the role of subordination in relations with local self-government. It should be noted, that the idea of subordination of local self-government to the influence of regional administration tunes in to the nature of subordinated systems in general. Thus, according to J. Stiglitz, "centralized systems are not easily subject to self-restraint. For example, if the central authority has the opportunity to intervene, it is unlikely to decide not to." [9].

The result of the regional managers' response to the above mentioned defects of the institutional environment was the emergence of a special system of administrative incentives, alternative to the one officially declared by the state. The main incentives include:

- striving for the priority solution of its "own" issues assigned by the federal centre, without due attention to the strategic objectives of regional development; moreover, this decision can often be formal, necessary and sufficient only for the purposes of neat reporting to the "top";
- desire to take over the consolidated budget, that is caused by the lack of own revenues and supported by opportunities in the field of interbudgetary relations regulation, provided by the budgetary legislation to the regions;
- aspiration to subordinate the relationships with the municipalities, applying the idea of "vertical power structure" to local self-government.

It is obvious that none of these incentives motivates the RF subjects to transfer additional revenues to the local level in order to strengthen the economic independence of local self-governing bodies.

A logical result of the regional managers' work in the conditions of alternative motivation is the unbalanced financial result of the regional and local budgets execution. According to the results of the budgets execution for 2009, 58 out of 83 RF subjects (70%) stated the regional budget deficit, in 2010, the deficit was observed in 61 RF subjects (73%). The consolidated deficit of municipal budgets in 2009 was observed in 73 (88%) Russian regions, in 2010 – in 74 (89%).

The data proves that, in general, the financial position of the RF subjects is, as a rule, better than that of the municipalities. And in conditions, when regional authorities possess the levers for improving the situation, it is one more evidence of their unwillingness to increase the budget supply of municipalities.

Modernization of formal institutions and new incentives for regions

Institutional underlying reasons for the problems of Russian local self-government require the necessity to find institutional solutions. It seems that the efforts here should be concentrated on regional top managers' motivation to strengthen the economic base of local self-government. Real incentives are essential, that will encourage the state governing bodies of the RF subjects to transfer additional revenue sources to the local level.

Unfortunately, underdeveloped civil institutions of a modern Russian society don't provide for the emergence in the near future of this kind of incentives in the course of political discussion and dialogue between the authorities and society. Target-setting function of Russian officials is formed within the boundaries of highly subordinated model of public administration, when all the important decisions are made only with the approval from Moscow.

This peculiarity can't be ignored. Therefore, in order to make the regions interested in the systemic strengthening of municipalities' tax base, it is necessary to understand, that at present, the "vertical" way of motivating regional administrations is the only effective one. In order to make the new incentives properly acknowledged and equally effective in relation to state governing bodies in all Russian regions, an issue can be discussed concerning the inclusion of their achievement indicators into the official system of assessing the governors' work efficiency [6].

As it was proved earlier, the result of the regional elites' misguided motivation is an apparent insufficiency in the practice of transferring tax revenues "downwards" by the RF subjects, the chaotic decision-making and lack of the regions' attention to the necessity of analyzing the opportunities of activity in this direction.

The problems define the goals. Modernization of an official mechanism for evaluating the performance of regional administrations should move on to meet these challenges. The main task of the new rules is to make the state authorities constantly concerned about the sufficiency of their own actions aimed at supporting the municipalities with revenues, rather than subsidies. For example, the total volume and number of revenues, additionally transferred by the regions at the local level, as well as the ratio of the volume of revenues, additionally transferred to the local level in the form of taxes and charges, and the total revenues of the municipalities in the form of transfers from the regional budget, not corresponding with the execution of the delegated state-assigned tasks, can become the main directions for monitoring the relevant parameters of the regional budget policy.

It is necessary to point out, that the article is not aimed at discussing methodological peculiarities of developing the specific assessment indicators, as well as working out the

concrete proposals for introducing amendments into effective documents. This task is the subject of an independent and serious research. The main purpose of the latter discourse and conclusions is to determine the principal areas of activity of the regional state governing bodies, which should be the focus of attention of the federal centre. Highlighting the issue of local authorities' financial dependence on the sub-federal level of state government and creating the instruments of official monitoring of the regional administrations' activities for handling this problem results in a powerful impetus towards increasing the regions' responsibility for the decisions on the distribution of consolidated budgets' revenues.

Modernization of the system for official evaluating the performance at the local level can give an impetus to reassessing the regional elites' mental settings that result in budget resources centralization and "vertical subordination" of the relations between the governing levels.

Its adoption at the regional level implies the abandonment of subordination patterns in the relations between the region and municipalities, liberalization of administrative and budgetary components of "municipal" policy of the RF subject, sustainable development of the local self-government institution in Russia.

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Comparative evaluation of the economic development of underdeveloped areas in the Republic of Komi*

The development of northern territories is always one of the priorities of state policy in Russia. The northern regions, on the one hand, are rich in mineral resources, forest and water resources; on the other hand, today they are the areas with stopped productions and redeveloping cities, rapidly losing their population and infrastructure. The development of new northern territories is extremely slow; the most part of their mineral potential is not ready for industrial development and requires further geological exploration and economic evaluation. The article deals with the developmental problems of the northern regions in the case of some territories of the Republic of Komi.

Northern territories, development, resource potential, underdeveloped areas, progress, socio-economic analysis, evaluation.

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The Republic of Komi is an old industrial resource region, but despite this, a large part of its territory is characterized as underdeveloped and under-populated. The aim of this study includes the determination of the least economically developed and redeveloping territories, location of the similar areas, selection of promising directions of their development and the ideology of their resource potential.

According to these objectives, the economic situation in some regions in the Republic of Komi has been estimated; the districts have been differentiated based on their industrial

* The article was prepared as a part of the Ural RAS Department's Interdisciplinary Project "Strategy for the Integrated Socio-Economic Development of the Ural North territories that are insufficiently explored and poorly involved in the economic turnover".

development indicators, population's incomes and infrastructural conditions. According to the types of districts, the opportunities for their development have been considered on the base of available mineral resources.

There is an analysis of the indicators that characterize the total level of economic development of a territory, the level of an infrastructural component and demographic situation in order to determine the threshold values that allow us to consider the territory as insufficiently explored and poorly involved in the economic turnover.

The following general economic indices have been chosen: per capita industrial production and the volume of capital investment, wage rate and the share of unprofitable enterprises [4]. Some indices (average per capita industrial output, average wage, average per capita investment) have been correlated with the average figures for the Republic in order to assess the situation in the districts at the regional level.

Investment infrastructure has been estimated in terms of the number of construction companies and the amount of building materials, as well as by the density and the length of a road network. In addition, the average per capita indices of production and electricity and heat transmission have been considered. To assess the degree of territorial development, socio-economic indicators have been studied in the dynamics from 1990 to 2008 – 2009.

Tables 1 and 2 show the most important indices of the economic situation in the cities and regions of the Republic of Komi in 2009 [6].

The group of districts that have the lowest industrial production indices consists of the following southern agricultural areas: Koygorodsky District, Kortkerossky District, Priluzsky District, Sysolsky District and Ust-Kulomsky District. Per capita industrial production in these areas is 20 – 30 times lower than the average rate in the Republic.

The ratio between the same indices in the second group of districts is 12 – 13 times. This group consists of Troitsko-Pechorsky District and Udorsky District.

The third group of districts includes Knyazhpogostsky District, Ust-Vymsky District, Ust-Tsilemsky District, Izhemsky District, Syktyvdinsky District and Intinsky District. The industrial production rate in these areas is 3 – 5 times lower than the republican average rate. The district of Vorkuta can be included in this group; per capita production rate has halved in this area since the 1990s.

The fourth group of districts is obvious: it includes Usinsk, Pechora, Ukhta and Sosnogorsk industrial hubs. Vuktyl has the special position here: there was a significant drop in its industrial production in 2000 – 2005.

Considering the dynamics of industrial production for the period since 1990, it is easy to see the rapid decline in such districts as Koygorodsky, Kortkerossky, Priluzsky, Sysolsky, Ust-Kulomsky, Troitsko-Pechorsky and Udorsky. At the same time, there was an increase in the sharp differentiation of those districts in terms of industrial output in the period from 1990 to 2005. That differentiation had smoothed a little bit only by 2009. So, if the difference in per capita industrial output between the "poorest" Ust-Tsilemsky District and the "richest" Usinsk District was 6.4 times in 1990, then it was 314 times in 2005.

An average per capita level of investment has been considered as another indicator that characterizes the total economic situation in the districts and the level of investment activity *(table 3)*.

The following groups of districts have been identified on the base of the ratio in the average republic level. The group of districts that have the lowest per capita investment rates includes Troitsko-Pechorsky District and Ust-Kulomsky District: the share of investment in these areas is 20 times lower than the average investment rate in the Republic of Komi. In addition, there was a rapid decline in capital investment in these areas in recent years.

Table 1. Indicators of overall economic development of the cities and districts in the Republic of Komi

City / District	Ratio of an average per capita industrial production index of the districts to an average republic index	Ratio of an average wage index of the districts to an average national index,%	Average per capita district investment in regard to average per capita republican investment	Share of unprofitable enterprises,%
Syktyvkar	0.69	89.1	0.7	35
Vorkuta	0.67	**115.6**	0.2	34
Vuktyl	**1.86**	**121.8**	**0.1**	**60**
Inta	0.25	97.2	**0.1**	30
Pechora	**1.07**	**106.1**	0.7	27
Sosnogorsk	**1.15**	**101.8**	0.5	48
Usinsk	**5.30**	**163.6**	**2.9**	31
Ukhta	**1.87**	**120.8**	**3.7**	38
Izhemskiy	0.40	61.7	0.4	**75**
Knyazhpogostsky	0.11	70.2	0.2	50
Koygorodsky	**0.03**	**54.7**	**0.1**	50
Kortkerossky	**0.03**	**56.4**	**0.1**	**60**
Priluzsky	**0.05**	**59.7**	**0.1**	40
Syktyvdinsky	0.28	72.6	0.2	39
Sysolsky	**0.03**	**56.1**	**0.1**	**83**
Troitsko-Pechorsky	0.07	**55.6**	**0.04**	50
Udorsky	0.08	**55.4**	**0.1**	**70**
Ust-Vymsky	0.18	72.8	**0.15**	50
Ust-Kulomsky	**0.03**	**53.9**	**0.04**	**80**
Ust-Tsilemsky	0.36	62.4	0.3	–
For reference only: absolute figures for the Republic of Komi	**Per capita industrial production 254 thsd. rub.**	**Average wage 20.8 thsd. rub.**	**Average per capita investment 113.5 thsd. rub.**	**38**

Table 2. Per capita industrial production in the city / district in regard to per capita production in the Republic

City / District	1990	2000	2005	2009
Syktyvkar	**1.16**	0.83	0.84	0.69
Vorkuta	**1.06**	0.96	0.87	0.67
Vuktyl	**1.13**	0.57	0.13	**1.86**
Inta	**1.42**	0.52	0.26	0.25
Pechora	0.67	**1.17**	0.90	**1.07**
Sosnogorsk	**1.10**	**1.71**	0.84	**1.15**
Usinsk	**1.43**	**6.66**	**6.15**	**5.30**
Ukhta	**1.15**	0.62	**1.49**	**1.87**
Izhemsky	**0.29**	**0.06**	0.44	0.40
Knyazhpogostsky	**1.09**	0.25	0.34	0.11
Koygorodsky	0.60	0.36	**0.05**	**0.03**
Kortkerossky	0.43	0.13	**0.02**	**0.03**
Priluzsky	0.48	0.13	**0.04**	**0.05**
Syktyvdinsky	0.53	0.30	0.23	0.28
Sysolsky	0.40	0.12	0.09	**0.03**
Troitsko-Pechorsky	0.60	0.16	**0.06**	0.07
Udorsky	**2.11**	0.38	**0.08**	0.08
Ust-Vymsky	0.72	0.27	0.47	0.18
Ust-Kulomsky	0.53	0.15	**0.02**	**0.03**
Ust-Tsilemsky	**0.23**	**0.06**	**0.03**	0.36
For reference only: Industrial production in the Komi Republic for 1 person, thsd. rub.	**3.2**	**51.2**	**148.1**	**254.4**

The per capita investment rate is 18 times lower than the average republican rate in the second group of districts. It includes most southern districts of the Republic: Koygorodsky District, Kortkerossky District, Priluzsky District, Sysolsky District, as well as Inta and Vuktyl. Udorsky District is also in this group. As in the previous group, the share of these territories' investment in the average Republic's investment declined in the last five years, and the greatest investment drop took place in Vuktyl.

There is a rather good investment situation in Izhemsky District, Ust-Tsilemsky District, Knyazhpogostsky District, Ust-Vymsky District and Syktyvdinsky District. The ratio between the average republican rate and the share of district investments in this group does not exceed 10-fold value (0.1 – 0.4 un.; table 3). Vorkuta is also in this group: investment activity has been falling here since 1995.

Per capita investments are 3 – 4 times higher than in the Republic in the districts that are attractive for investment. This group includes Usinsk and Ukhta Districts, which are the stable oil production and refining centers. This ratio has been remaining over the last 20 years. Sosnogorsky and Vuktylsky Districts could be included in this group in the early period.

The assessment of the financial condition of economic entities has shown that the most of unprofitable enterprises are located in Sysolsky District (83%), Ust-Kulomsky District (80%), Izhemsky District (75%) and Udorsky District (70%). The share of unprofitable enterprises in these areas has exceeded 60% over the period from 1995 till 2000. The second group includes traditionally unprofitable Kortkerossky District (60% of unprofitable enterprises) and Vuktylsky District that had only a quarter of insolvent businesses

Table 3. Average per capita investment of the districts in regard to average per capita investment in the Republic of Komi

City / District	1990	1995	2000	2005	2009
Syktyvkar	0.6	0.7	1.0	0.5	0.7
Vorkuta	0.7	0.9	0.5	0.5	0.2
Vuktyl	**1.6**	**5.1**	0.8	**2.1**	**0.1**
Inta	0.6	0.7	**0.4**	**0.2**	**0.1**
Pechora	0.7	0.5	**1.4**	0.8	0.7
Sosnogorsk	**1.0**	**1.4**	**1.1**	0.8	0.5
Usinsk	**2.3**	**2.3**	**4.9**	**3.0**	**2.9**
Ukhta	**1.1**	**1.4**	0.9	**3.3**	**3.7**
Izhemsky	0.6	0.9	**0.3**	0.6	0.4
Knyazhpogostsky	0.5	0.6	0.5	**1.6**	0.2
Koygorodsky	0.6	**0.2**	**0.2**	0.3	**0.1**
Kortkerossky	**0.4**	**0.4**	**0.2**	**0.1**	**0.1**
Priluzsky	0.6	**0.4**	**0.2**	0.2	**0.1**
Syktyvdinsky	0.7	0.9	**0.4**	0.4	0.2
Sysolsky	**0.4**	**0.3**	**0.3**	**0.1**	**0.1**
Troitsko-Pechorsky	0.7	0.6	**0.2**	0.3	**0.04**
Udorsky	0.7	**0.4**	**0.4**	**0.2**	**0.1**
Ust-Vymsky	**0.3**	0.5	**0.3**	0.3	**0.15**
Ust-Kulomsky	0.5	0.8	**0.5**	**0.1**	**0.04**
Ust-Tsilemsky	0.7	0.6	**0.3**	0.5	0.3
For reference only: Average per capita investment in the Republic of Komi. thsd. rub.	**2.7**	**3443**	**16.3**	**50.9**	**113.5**

in 1995, the share of which grew more than twice in 2009. The next group includes the districts which have about 50% of unprofitable enterprises. They are Koygorodsky District, Troitsko-Pechorsky District and Ust-Vymsky District. It should be noted that the number of unprofitable enterprises decreased in Inta, Vorkuta and Pechora in 2009 as compared with 2005. It was caused by the closure of pits and closing down of co-operating businesses in Inta and Vorcuta.

The ratio of an average district wage rate to average republic wage rate has been considered in the dynamics for the period from 1990 till 2008 in order to assess population's income in terms of remuneration of labour *(table 4)*.

It is possible to divide three groups of districts in this context: the districts with the lowest wages and deteriorating dynamics, the districts with a stable average wage rate and traditional "rich" districts.

There are most agricultural regions in the first group. They are Koygorodsky District, Kortkerossky District, Priluzsky District, Sysolsky District and Ust-Kulomsky District. There is the traditionally lowest wage rate in these regions of the Republic; it has not exceeded 60% of the average regional level over the last 20 years. This group also includes Udorsky District and Troitsko-Pechorsky District, whose economy is largely based (or was based in the past) on the logging industry. In contrast to the above-mentioned regions, these two regions had the average wage rates in the early 1990s: wages were about 80% of the republican level there. For example, the average income of a resident of Troitsko-Pechorsky District was comparable to the income of Syktyvkar's residents in 1990, but it halved in 2000. There has been a trend to the increase in wages in the "low-paid" districts recently, however, this increase is negligible.

Table 4. The ratio of the average district wage rates to republic wage rates, %

City / District	1990	1995	2000	2005	2008
Syktyvkar	86.2	83.1	86.4	89.7	89.1
Vorkuta	**135.9**	**161.3**	**130**	**113.8**	**115.6**
Vuktyl	**103.9**	**126.8**	**132.8**	**136.6**	**121.8**
Inta	**126.7**	**147.5**	**108.4**	89.9	97.2
Pechora	96.4	92.7	**109.4**	**104.5**	**106.1**
Sosnogorsk	98.3	90.7	**126.6**	**105**	**101.8**
Usinsk	**142.5**	**111.7**	**205.5**	**174.5**	**163.6**
Ukhta	**107.8**	**106**	**126.4**	**123.1**	**120.8**
Izhemsky	71.4	**54.3**	**39.2**	**52.3**	61.7
Knyazhpogostsky	71.1	62.9	**51.9**	71.5	70.2
Koygorodsky	**68.0**	**55.4**	60.7	**54.5**	**54.7**
Kortkerossky	**68.0**	**50.7**	**45.8**	**49.7**	**56.4**
Priluzsky	**67.2**	**53.6**	**43.2**	**54.3**	**59.7**
Syktyvdinsky	78.4	**58**	**47.7**	63.6	72.6
Sysolsky	**68.9**	**54.3**	**46.1**	**51.2**	**56.1**
Troitsko -Pechorsky	84.5	64.8	**51.4**	**53.2**	**55.6**
Udorsky	77.7	73.7	**51.3**	**52.2**	**55.4**
Ust-Vymsky	74.5	70.5	69.7	76.3	72.8
Ust-Kulomsky	**65.3**	**48.5**	**44.6**	**47.8**	**53.9**
Ust-Tsilemsky	76.7	**56.3**	**45.4**	**56.5**	62.4
For reference only: The average wage rate in the Republic of Komi, thsd. rub.	**412**	**878**	**3.6**	**11.6**	**20.8**

The second group includes Ust-Vymsky District, Ust-Tsilemsky District, Syktyvdinsky District, Izhemsky District, Knyazhpogostsky District and Intinsky District. A wage rate in these areas accounts for 70%; it is higher than an average republic wage rate or equal to it (Intinsky District). This group is characterized by the industrially-oriented economy, which is based on the lumbering, coal mining, and food industries, as well as freight transportation. There was a significant reduction in wages in Intinsky District due to the closure of pits and general degradation of the regional economy.

The third group includes industrial regions of the Republic: Usinsky District (164% of the average national wage rate), Ukhtinsky District (121%), Vuktylskiy District (122%), Pechorsky District (106%), Sosnogorsky District (102%), Vorkutinsky District (116%). Wages are traditionally high in these regions. However, there are tendencies associated with the coal industry restructuring, changes in tax laws and intergovernmental policy.

Thus, a wage rate in Vorkuta has decreased more than 1.5-fold over the last 10 years due to the decline in the coal industry. There was a record wage rate in Usinsky District, when the average monthly wage was 2 times higher than the average wages in the Republic; but the wages were reduced because of oil income redistribution in favor of regional and federal budgets, and, as a result, there was a total reduction of budget costs and oil companies' cost optimization.

The evaluation of investment infrastructure was based on such indicators as highway density, the number of construction companies, production of building materials, electricity and thermal energy generating and distributing *(table 5)*.

Highway density is rather low in most regions of the Republic – up to 20 km per 1000 sq. km. The lowest highway density is in the areas of Inta, Vorkuta and Vuktyl – up to 5 km per 1000 sq. km. There is a poor motor traffic in Ust-Tsilemsky and Troitsko-Pechorsky

Table 5. Selected indicators of investment infrastructure of the cities/districts in the Republic of Komi in 2009

City / District	Commissioning of hard surface highways of public service in the cities and districts, km	Generation, transmission and distribution of electricity, gas and water per capita, thsd. rub.	Number of construction companies	Production of building materials, mln. rub.
Syktyvkar	–	42.0	1051	673
Vorkuta	–	36.4	108	357
Vuktyl	–	12.0	19	0
Inta	–	23.1	41	14
Pechora	18.9	74.0	86	88
Sosnogorsk	–	52.0	70	0
Usinsk	–	48.8	194	0
Ukhta	3.3	15.8	430	399
Izhemsky	–	2.9	10	0
Knyazhpogostsky	–	10.9	20	0
Koygorodsky	–	6.1	2	0
Kortkerossky	–	5.3	12	0
Priluzsky	–	5.9	12	0
Syktyvdinsky	–	4.9	24	0
Sysolsky	–	5.4	11	0
Troitsko -Pechorsky	–	6.4	2	0
Udorsky	29.9	9.3	15	0
Ust-Vymsky	–	7.2	9	5
Ust-Kulomsky	1	3.1	5	0
Ust-Tsilemsky	0.3	4.6	7	0

Districts, as well as in the regions of Usinsk and Pechora, where highway density does not exceed 10 km per 1000 sq. km. There is the best traffic in the southern regions and in the neighboring regions of Syktyvkar. The amount of commissioned roads has significantly reduced over the last decade. If more than 180 km hard surface highways were put into operation in the Republic in 2000, then only 53 km of roads were built in 2009 and 9 km in 2008. Since 2002 there is no road construction in Intinsky, Vorkutinsky, Troitsko-Pechorsky and Knyazhpogostsky Districts.

Rural areas lag behind urban districts in per capita production, transmission and distribution of electricity, gas and water. This indicator does not exceed six thousand rubles in most areas, except Knyazhpogostsky Districts and Udorsky District.

The production level of building materials is quite low in the region. The share of the construction industry in the structure of industrial production was comparable with wood, gas and oil-processing industries in the 1970s - early 1990s. However, the production of building materials declined sharply after the beginning of economic reforms. The main reasons involved a general decline in the industrial production and reduction in housing and industrial construction. Therefore, there was a more rapid reduction in the production of building materials as compared with other sectors.

Today, the construction industry of the Republic of Komi is represented by the extraction of mortar sand, sand-gravel mixtures, brick clay, limestone and dolomite, production of cement, building lime, bricks, wall panels, crushed stones, etc. There was a sharp decline in production of all the types of building materials and reduction in their product range in the early 1990s. Production output has decreased more than 2-fold over last decade. Building materials are produced mainly in Syktyvkar, Ukhta, Vorkuta, Pechora, as well as a small volume of materials is produced in Intinsky District and Ust-Vymsky District.

The analysis has showed a rather low level of general economic and infrastructural development of most districts in the Republic. In general, low economic performances in most areas are caused by the high rates of decline in industrial production over the last 15 years. There is also a sharp differentiation of economic development indicators between the districts.

It is proposed to use the following boundary values to define the most underdeveloped or redeveloping territories:

- a ratio of an average republican index of per capita industrial production to an average regional index is equal to or less than 10 un.;
- a ratio of republican to regional average per capita investment is equal to or less than 10 un.;
- a regional average wage rate is equal to or less than 60% of an republican wage rate;
- the number of unprofitable enterprises is equal to or more than 50% of the total number of companies;
- highway density is less than 20 km per 1000 sq. km.

Taking into account the results of this analysis and fixed boundary values, it is possible to divide the following groups of underdeveloped territories and territories poorly involved in the economic turnover:

- The districts that have a lack of infrastructure, undeveloped industry and low population settlement, but, as a rule, they have unclaimed mineral, forest, land and recreational potential. Troitsko-Pechorsky, Ust-Tsilemsky and Sysolsky Districts can be included into this group.
- The districts that have the "deindustrialization" of manufacturing production with a relatively developed infrastructure. This group includes Inta and Vorkuta Districts.
- The districts of the "new" economic development, which are located in the affected zone of implementing and prospective invest-

ment projects and created transport corridors. Udorsky and Knyazhpogostsky Districts can be included into this group.

This grouping of districts is also based (in addition to economic performances) on the classification proposed by Ph. Kotler, K. Asplund, J. Rein and others, which divides different life cycles of the territories [2].

Value appraisal of mineral potential of the first group of districts, which is based on the methodology by I.A. Nezhenskiy and I.G. Pavlova [3], shows its low cost as compared with the regional level; this fact proves that there is a lack of geological knowledge of these territories, rather than a lack of mineral resources *(table 6)*.

Thus, there are significant resources of pyroschist, peat, expanded clay, and quartz glass sand in Sysolsky District. The Upper Pechora deposit of rock and potassium-magnesium salt is located in the southern part of Troitsko-Pechorsky District. Ust-Tsilemsky District is famous for Pizhemsky titanium deposit, bauxite deposits and niobium resources.

There is a majority of regional mineral resources in the districts of "deindustrialization", which have the significant reserves and resources of coal, manganese, chromite, vein quartz, gold, building and facing stones.

The districts of new economic development are characterized by a high share of resources in the total cost of resource potential, which also proves their poor geological development. Pyroschist reserves contribute a lot to the potential value of resource capacity of these districts.

The projects related to the development of the districts from the first and second groups can be implemented only on the base of active government support or public-private partnership that is aimed at creating the necessary prerequisites for geologic exploration and attracting capital in the mineral resource sector.

The regional deposits and manifestations of minerals can become a base of new industries in these regions.

The availability of transport and production infrastructure determines the directions of development of Vorkutinsky and Intinsky Districts and a part of Pechorsky District, strategic of which are the stabilization and development of the coal industry, which include [1]:

✓ beginning and expansion of coal production in new coal fields;

✓ deep processing of coal, including coal-chemical processing to produce such high-value products as synthetic liquid fuels, synthetic gas, sulfonated coal, activated charcoal, adsorbents, high-carbon materials;

Table 6. The cost of subsoil minerals in terms of the municipalities in the Republic of Komi

Municipalities	Cost of mineral resources, bln. rub. / the share in the total cost of the Komi Republic, %		
	Total cost of reserves and resources	Reserves of cat. $A+B+C_1+C_2$	Resources of cat. $P_1+P_2+P_3$
Districts with a weak infrastructure and unclaimed resource potential			
Sysolsky	362.2/3.0	114.0/1.9	248.2/4.0
Troitsko-Pechorsky	96.4/0.8	91.4/1.6	5.0/0.08
Ust-Tsilemsky	455.0/3.8	84.9/1.4	370.2/6.0
Districts of "deindustrialization"			
Vorkuta	6246.2/52.3	2391.9/41.1	3854.3/62.8
Inta	1115.3/9.3	519.4/8.9	595.9/9.7
Districts of a new economic development			
Knyazhpogostsky	159.9/1.3	144.8/2.5	15.1/0.2
Udorsky	890.3/7.4	215.4/3.7	674.9/11.0
Republic of Komi	**11951.9/100**	**5817.2/100**	**6134.7/100**

✓ increasing utilization of coal mine methane in the degasification of mine fields and mines.

The main problems of the development of northern territories include their remoteness from outlets and their underdeveloped infrastructure that needs a lot of expenses on the development in the conditions of the North, which determines the implementation of investment projects at the pay limit.

The experience of foreign northern countries and regions shows that the developmental problems can not be solved within the scope of "a pure business approach" that is aimed only at commercial viability. New projects implemented in the undeveloped northern regions can be successful only with the active support of federal and local authorities and in the realization of public-private partnership.

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Assessment of the economic efficiency of scientific-technical progress in dairy cattle breeding

The article evaluates the economic efficiency of scientific-technical progress (STP) in dairy cattle breeding. A set of indicators for estimating the economic efficiency of milk production is described. The system of network planning and management on the basis of network graphs is used for scientific substantiation of the efficient milk production model. In order to ensure the comparability of production system elements, it is proposed to use the unified energy indicators to determine the ratio of energy contained in the manufactured products to the amount of energy spent on their production. The article provides the algorithm and results of economic and energy analysis of cow housing types efficiency on the reconstructed dairy farms in the Vologda Oblast.

Labor costs, metal consumption, energy consumption, reduced costs, energy content, reduced energy consumption, economic and energy efficiency.

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Grave problems in dairy cattle breeding include low productivity and deplorable working conditions of cattle-raisers due to obsolete technologies and equipment, significant physical and moral depreciation of the whole production base of milk cattle breeding, acute shortage of qualified personnel. Increasing the efficiency and competitiveness

of this sector is possible only through farms modernization on the basis of the latest technologies and technical means. Large-scale work in this direction is conducted in many regions, including the Vologda Oblast. This is evidenced by the following sustainable trend in livestock production: the average milk yield per one cow increased from 4221 kg in 2005 to 5194 kg in 2011. In prospect, dairy cattle breeding should fulfill the task of increasing the livestock population up to 100 thousand head and achieve milk yield up to 6000 kg per a year [5, 6]. All this requires the reconstruction and modernization of farms, establishment of a good fodder base, improvement of the cattle-raisers' working conditions.

In addition to considerable financial costs, the development of modern milk production technologies requires profound knowledge of their peculiarities and comprehensive notion of the economic effect, which can be obtained when acquiring and using the latest technologies and technical solutions with regard to economic management conditions.

Issues of estimating the economic efficiency of STP achievements implementation in dairy cattle breeding are reflected in a number of works insufficiently, which predetermined the aim of the research: the improvement of methodological approa-ches to estimating the efficiency of promising technologies in milk production. To achieve this goal it is necessary to solve the following tasks: on the basis of the analysis, to identify the methods and indicators used in assessing the efficiency of new equipment introduction; to supplement the methodology of assessing the efficiency of new technologies implementation in dairy cattle breeding with the indicator of a minimum of reduced costs and economic and energy indicators; to assess the economic efficiency of implementing the tethered and loose cow housing options on the basis of the proposed methodology.

The problem of assessing the economic effectiveness of equipment and technology is highlighted in the research in the form of methodology guidelines and standards [1, 4] approved by the RF Government, the works of scientists [3, 12].

Methodological principles for assessing the economic efficiency of new equipment are revealed in the "Methodology of assessing the economic efficiency of using new equipment, inventions and rational suggestions in agriculture" (1998) [4]. In accordance with this methodology, the annual economic effect is determined by comparing the reduced costs of basic and new equipment in compliance with the comparability of the options:

$$E_a = \left[C_1 \cdot \frac{B_2}{B_1} \cdot \frac{P_1 + E_n}{P_2 + E_n} + \right.$$
$$\left. + \frac{(U_1 - U_2) - E_n \cdot (K_2 - K_1)}{P_2 + E_n} - C_2 \right] \cdot A_2, \qquad (1)$$

C_1 and C_2 – reduced costs per a production unit, produced with the use of basic and new equipment;

A_2 – annual output of production produced with the use of new equipment in a target year in physical units;

$\frac{B_2}{B_1}$ – coefficient of assessing the increase in the performance of the new equipment as compared to the basic one;

B_1 and B_2 – production output when using the unit of the basic and new equipment respectively in physical units;

$\frac{P_1 + E_n}{P_2 + E_n}$ – ratio indicating the coefficient of assessing the change in service life of the new equipment as compared to the basic one;

P_1 and P_2 – share of depreciation charges from the initial price of the basic and new equipment;

E_n – normative coefficient of capital investments efficiency;

$\frac{(U_1 - U_2) - E_n \cdot (K_2 - K_1)}{P_2 + E_n}$ – customer's cost advantage in the current expenses and deductions from attending capital investments for the whole service life of the new equipment, rubles;

K_1 and K_2 – customer's attending capital investments when using the basic and new equipment calculated for production output when using the new equipment, rubles;

U_1 and U_2 – customer's annual operation costs when using the basic and new equipment calculated for production output when using the new equipment, rubles.

Methodologies of capital investments efficiency calculation are based on the integrated approach to economic development, and the criterion is the produced national revenue increase. The economic efficiency of production, which is one of the most important indicators of economic development, is defined as the ratio of the useful result (effect) to the cost of its obtaining.

Economic efficiency indicators are conditionally divided into 3 groups.

The first group includes generalizing indicators of economic efficiency. First of all, it is the growth of the social productivity of labour, quantitatively expressed in the growth of production output, as well as in the absolute cost savings of living and materialized labour input (in price and physical measurements).

The second group comprises the main indicators of the economic efficiency of production resources usage: direct labour, basic production assets, material costs and capital investments. These include the direct labor productivity (labor intensity), fixed assets turnover ratio (capital-output ratio), materials consumption (materials-output ratio), return on capital investments (capital intensity).

The third group includes technical and economic indicators of the resources usage efficiency. They are used for the specific analysis and planning of individual sides of production process, considering the factors of its growth at the enterprises, industry branches, in agriculture. These indicators are: output per worker; working equip-ment usage coefficients, equipment capacities; the specific raw materials, fuel and energy consumption, a unit of capital investments, payback period, reduced costs [4, 12].

In most cases, the efficiency of investments in equipment is estimated by using the so-called dynamic indicators, which characterize the object of research for the whole period of its use. Such indicators are calculated by discounting (bringing payments, effected at different times, to the particular point of time).

To determine the current value of future payments, it is necessary to conduct the discounting of payments, i.e. to compare future cash flows with their present value.

The formula for discounting the one-off payments is given below:

$$E_0 = E_n \frac{1}{q^n}, \text{ or } E_0 = E_n \frac{1}{(1+i)^n}, \quad (2)$$

E_0 – current value of payments, i.e. the sum of payments reduced to the present moment;

E_n – payments at the end of the *n*-period;

$\frac{1}{q^n}$ – discount multiplier;

i – interest rate on the invested capital (or the discounting interest rate).

In case of periodical payments:

$$E_0 = e\frac{q^n - 1}{q^n(q-1)}; E_0 = e\frac{(1+i)^n - 1}{i(1+i)^n}, \frac{q^n - 1}{q^n(q-1)}, \quad (3)$$

e – annual payment;

$\frac{q^n - 1}{q^n(q-1)}$ – discount multiplier.

When investing the financial resources in equipment and technology, the optimal indicator is the internal rate of return. A measure of the investments efficiency for this indicator is an internal rate of return *r*, that is, the interest rate at which the discounted sum of cash flows is equal to zero.

The basic formula for calculating the internal rate of return r is as follows:

$$E_0 = -S_I + \sum_{t=0}^{n} (K_e - K_a) \frac{1}{(1+r)^t} = 0, \quad (4)$$

S_I – sum of capital investment into equipment and technologies, in monetary units;

K_e – revenues, in monetary units;

K_a – payments, in monetary units.

To determine the value of r, the equation of n-th degree should be solved. For $n > 4$ the solution can be only approximate. Therefore, in practice, the simplified approximate calculation methods are used. The solution can be carried out both graphically and analytically.

The obtained value of r is compared with the minimum rate of return r_{min} established at the enterprise. If $r > r_{min}$, the investment is appropriate.

All of these indicators can be successfully used when assessing the present-day equipment and technologies, but with appropriate adjustments considering the time factor (inflation) and the peculiarities of the studied object. These indicators are given in the methodologies by modern authors [5, 10, 12], these methodologies contain various additions, reflecting the peculiarities of the area in which they are applied.

The choice of methodology for the analysis depends, as it was already noted, on the object of the study: the introduced new and replaced old technologies and equipment for agricultural production, implementation of separate technological processes, agricultural machinery usage and repair.

At the present time, for scientific substantiation of the optimum model of milk production, the network planning and management system is widely used, it is based on network graphs [7].

The methodological basis of network planning and management is presented by the methods of operations research, the theory of directed graphs and some sections of the probability theory. A distinctive feature of the network planning and management system is the use of the specific information-dynamic model of the process, the so-called network model of a complex of operations. The dynamism of the process manifests itself in the constant change of its state, the constant change of composition and parameters of its elements – works and their relations.

The criterion of options assessment shall be the labor content per unit of output, metal consumption, energy intensity. Capital and operating costs in the market conditions are changeable, at the same time, they are proportional to the cost of labour, metal consumption and energy intensity.

The labor content per unit of output (man-hours per head) is defined by the formula:

$$C_u = \frac{n \cdot q}{W_r}, \quad (5)$$

n – the number of employees, performing this operation, pers.;

q – production (milk) output per one head, tons/head;

W_r – efficiency of the equipment at the given operation per an hour, tons/hour.

Specific metal consumption (kg/head) is calculated according to the formula:

$$M_s = \frac{M}{n}, \quad (6)$$

n – the number of cows, head;

M – weight of machines and equipment, kg.

Energy intensity per unit of output (kW*h/head) is calculated according to the formula:

$$E_u = \frac{N_{dm} \cdot q}{W_r}, \quad (7)$$

N_{dm} – power of a drive mechanism, kW.

In order to determine the sequence of operations, ensuring the lowest labour costs, specific metal consumption and energy intensity, it is necessary to choose the optimal path. The task is formulated as follows: find the shortest path from point 1 to point C, moving only at the direction of the arrows.

Let L_{opt} be the optimal distance between the two vertices of the network graph, l_{i_{n-1},i_n} is the distance between two adjacent vertices. Then the principle of optimality of network planning (minimization of the sum of the distances) can be expressed by the following relation:

$$L_{opt} = \sum_{i=1}^{n} l_{i_{n-1},i_n} \to \min. \qquad (8)$$

The optimality principle leads to the rule of sequential selection of options: if in the process of finding the shortest distance between any two vertices of the network graph there are several edges of different length connecting one of these vertices with some intermediate vertice, the shortest path in the given vertice will be the edge, which length if added to the sum of the lengths of preceding edges produces the smallest sum. All other options can be dismissed.

The optimal path from the starting event to the ending one is easily traced by the generalized criterion, i.e. on average value of technical and economic indicators per unit of output: the cost of labour, metal consumption, energy intensity:

$$n_{av} = \frac{1}{i}\sum_{1}^{k} n_i, \qquad (9)$$

n_{av} – generalized criterion;

n_i – technical and economic indicators per unit of output (head/day).

Thus, carrying out the appropriate calculations, we obtain the optimal path, which will correspond to the optimal technical and technological scheme of milk production on a milk farm.

When conducting the economic assessment of equipment and technologies of livestock maintenance, the important indicators of activity include the physical indicators, which characterize the quantitative and qualitative state of manufactured products. Physical indicators reflect the level of resources used in production: labor costs, energy and fodder consumption, material costs.

The necessity of using physical indicators in determining the economic efficiency of created and used technologies and technical solutions in dairy cattle breeding is conditioned by the requirements of market economy, when it is important to identify the main directions of reducing production costs by saving on fodder, energy, working hours, eliminating the losses of resources and products.

This system of indicators can be supplemented by indicators, which provide choosing the most efficient production option [2]. Firstly, it is a well-known indicator of the minimum of reduced costs. Reduced costs is an indicator of the best option of the comparative efficiency of production. It is calculated by the formula:

$$R_i = C_i + \mathrm{E}_n \cdot \mathrm{K}_i \to min, \qquad (10)$$

C_i – self cost (operating expenses) of a unit of production, rub.;

E_n – normative coefficient of capital investments efficiency (established on the level of the current refinance rate of the RF Central Bank);

K_i – capital investments in equipment and technology as calculated per a unit of production, rub.

Current expenditures and capital investments in equipment and technology are reduced to a common scale through the normative coefficient in the amount of reduced costs.

Secondly, it is the economic and energy indicators, which, at present, are widespread due to the fact that they most fully correspond

to the economic functions of production efficiency criterion, reflect the cost of living and materialized labour in energy units. The increase in energy consumption for obtaining one unit of production, the scarcity of fossil fuels and steady growth of investments in their extraction point to the fact that agriculture has turned into an energy-intensive sector. As V.I. Dragaytsev and A.V. Shpilko [12], V.V. Kalyuga [3] and other researchers of this issue [2, 9, 11] point out, the necessity arises to develop the methodology of economic and energy analysis of the technical and technological level of production development in agriculture. The existing methodologies are primarily developed for pig-breeding and beef cattle-breeding farms. The novelty of the economic and energy assessment indicators used in this paper consists in the fact that the methodology, on the basis of which they are calculated, is developed for dairy farms and takes into account the peculiarities of their activities [9, 11].

Therefore, it is possible to compare the elements of the production system in the unified energy indicators, i.e. to estimate the economic efficiency of the production by using the indicator, which characterizes the ratio of the amount of energy contained in the manufactured products to the amount of energy spent on its production.

Total energy intensity (total energy consumption) for the production of milk is calculated as follows:

$$E_t = E_d + E_m, \quad (11)$$

E_t, E_d, and E_m – total, direct and materialized energy consumption, MJ.

Direct energy consumption is based on the consumption of electric power, heat energy and fuels and lubricants:

$$E_c = E_{ce} + E_{cf} + E_{ch}, \quad (12)$$

E_{ce}, $E_{cf,}$ and E_{ch} – consumption of electric power, fuel and heat, MJ.

Energy intensity of the consumed electric power is calculated by the formula:

$$E_{cp} = A_{cp} \cdot I_{de}, \quad (13)$$

A_{cp} – amount of consumed electric power, kW*h;

I_{de} – energy equivalent of 1 kW*h of direct expenses, MJ.

Energy intensity of the liquid fuel is calculated by the formula:

$$E_{clf} = Q_{clf} \cdot I_{clf}, \quad (14)$$

Q_{clf} – fuel consumption, kg;

I_{clf} – energy equivalent of 1 kg of consumed liquid fuel of direct expenses, MJ.

Energy intensity of the consumed heat is calculated by the formula:

$$E_{ch} = S_u \cdot I_{uh}, \quad (15)$$

S_u – useful area of production facilities, required for producing 1 centner of milk per year, m^2;

I_{uh} – energy equivalent taking into account the heat consumption per 1 m^2 of the useful area of production facilities per year, MJ.

Materialized energy consumption is calculated by the formula:

$$E_o = E_{mf} + E_{mfp} + E_{mlf} + E_{me} + E_{mh} + E_{mb} + E_{mem} + E_{mw} + E_{ml}, \quad (16)$$

E_{mf} – energy consumption, materialized in fodder, MJ;

E_{mfp} – energy consumption, materialized in fodder over the past years, MJ;

E_{mlf} – liquid fuel energy intensity, MJ;

E_{me} – electric power energy intensity, MJ;

E_{mh} – heat energy intensity, MJ;

E_{mb} – energy intensity of the buildings, MJ;

E_{mem} – energy intensity of equipment and machinery, MJ;

E_{mw} – energy consumption for water, MJ;

E_{ml} – consumption of living labour, MJ.

Energy consumption in the consumed fodder is calculated by the formula:

$$E_{of} = q_f \cdot I_{of}, \quad (17)$$

q_f – fodder consumption for producing 1 centner of milk;

I_{of} – energy equivalent of 1 centner of fodder unit, MJ.

Energy consumption over the past years materialized in fodder is calculated by the formula:

$$E_{mfp} = q_f \cdot I_{mfp}, \quad (18)$$

I_{mfp} – energy equivalent of 1 centner of fodder unit of materialized consumption over the past years, MJ.

Energy intensity of the liquid fuel is calculated by the formula:

$$E_{mlf} = Q_{fc} \cdot I_{mlf;}. \quad (19)$$

I_{mlf} – energy equivalent of 1 kg of liquid fuel of materialized consumption, MJ.

Energy intensity of electric power is calculated by the formula:

$$E_{mp} = E_{cp} \cdot I_{mp}, \quad (20)$$

I_{mp} – energy equivalent of 1 kW*h of materialized consumption, MJ.

Energy intensity of heat is calculated by the formula:

$$E_{mh} = S_u \cdot I_{mh}, \quad (21)$$

I_{mh} – energy equivalent, taking into account the materialized consumption of heat for 1 m^2 of the useful area of production facilities per year, MJ.

Energy intensity of buildings is calculated by the formula:

$$E_{mb} = A_b \cdot I_{ob}, \quad (22)$$

A_b – specific total area of a production premise necessary for production of 1 centner of milk per year, m^2;

I_{ob} – energy equivalent of 1 m^2 of buildings and facilities, MJ.

Energy intensity of equipment is calculated by the formula:

$$E_{me} = W \cdot I_{me}, \quad (23)$$

W – weight of equipment, kg;

I_{me} – energy equivalent of 1 kg of the weight of equipment, MJ.

Energy consumption for water is calculated by the formula:

$$E_{mw} = q_w \cdot I_{mw}, \quad (24)$$

q_w – specific water consumption for pro-ducing 1 centner of milk, l;

I_{mw} – energy equivalent of 1 litre of water of materialized consumption, MJ.

Energy consumption for living labour is calculated by the formula:

$$E_{ml} = C_l \cdot I_{ml}, \quad (25)$$

C_l – specific labour input for producing 1 centner of milk, man-hours;

I_{ml} – energy equivalent of living labour, MJ.

Energy content of the main production of dairy cattle breeding E_{pr} is equivalent to the energy content of milk E_1, MJ.

Energy content of additional production:

$$E_a = E_2 + E_3 + E_4 + E_5, \quad (26)$$

E_2 – energy content of calf crop, MJ;

E_3 – energy content of cows body weight gain, MJ;

E_4 – energy content of body weight of culled cows, MJ;

E_5 – energy content of manure, MJ.

Energy content of the whole amount of dairy cattle breeding production when producing milk:

$$E_{wp} = E_{pr} + E_a. \quad (27)$$

Coefficients of economic and energy efficiency assessment of various milk production technologies are calculated by the formulae:

$$\eta_1 = E_{pr}/E_c \cdot 100, \quad (28)$$

$$\eta_2 = E_{wp}/E_c \cdot 100, \quad (29)$$

η_1 and η_2 – coefficients of economic and energy efficiency assessment of production of main products (milk) and the whole cattle-breeding production of the dairy livestock breeding sector, %.

From the point of view of energy, the technology is profitable, if it ensures the highest energy output in the products per a unit of the total used energy.

The energy intensity of milk production is determined on the basis of the primary source of information – cattle-breeding farm Zarya located in Gryazovetsky District of the Vologda Oblast. The farm uses seven technologies of milk production (the technologies are described in *table 1*).

On the basis of these data, we shall calculate the minimum of reduced costs and economic and energy indicators, then we shall summarize the data in *table 2*.

Table 1. Main technological characteristics of the dairy farms of CJSC cattle-breeding farm Zarya of Griazovetsky District of the Vologda Oblast

Technological characteristics	Farm					
	"Pirogovo"	"Sloboda"	"Palkino"	"Ostanino"	"Gari"	"Stanovishchevo"
1. Housing option	Tethered	Tethered	Tethered	Loose	Loose	Tethered
2. Farm size, head	338	675	352	391	691	161
3. Silo, hay loading option	Ranger-965	Ranger-965	Ranger-965	Ranger-965	Manitou-730	Ranger-965
4. Fodder distributing option (with tractor MTZ-82)	RKT-10, KTU-10A 10 м^3	"Bulldog" 8 м^3 "Optimix" 12 м^3 In the maternity barn – distribu-tion by hand	"Optimix" 12 м^3 TVK-80 (delivery room) KTU-10A (young cattle)	"Optimix" 12 м^3	"Optimix" 12 м^3	RKT-10, KTU-10A 10 м^3
5. Type of milking equipment	"Surge" 2×200, milking tube	"Unicala" 4×200, milking tube	"Unicala" 4×200, milking tube	"Europarallel" Milking parlour 2×12	"Europarallel" Milking parlour 2×12	ADM-8 (200), milking tube
6. Milk cooling option	Tank 6 м^3, 2 pcs	Tank 4 м^3, 3 pcs	Tank 10 м^3	Tank 8 м^3, "iced water" equipment	Tank 10 м^3, equipment for flash cooling of milk	Tank 10 м^3
7. Watering equipment	Communicating vessels in water tanks	Communicating vessels in water tanks	Communicating vessels in water tanks	Double-ball thermo drinkers	Double-ball thermo drinkers	Communicating vessels in water tanks
8. Manure removal option	KSN-f-100, 2 pcs Augers	KSN-f-100, 10 pcs	KSN-f-100, 6 pcs	Delta-scrapers 12 pcs Augers	Delta-scrapers 10 pcs Augers	KSN-f-100, 2 pcs.
9. Equipment for manure transportation	2PTS-4 + MTZ-82	RZHT-16 + T-150K, 2PTS-4 + MTZ-82	2PTS-4 + MTZ-82	RZHT-16 + T-150K	RZHT-16 + T-150K	2PTS-4 + MTZ-82

Table 2. Main performance indicators of 2 stock-breeding complexes at CJSC cattle-breeding farm Zarya (during reconstruction)

Indicator	"Sloboda"		"Gari"	
	Before reconstruction	After reconstruction	Before reconstruction	After reconstruction
Reduced costs, rub.	484.37	518.77	485.44	541.47
Indicator of economic and energy efficiency of milk production, %	13.75	10.58	13.85	14.67
Indicator of economic and energy efficiency of total production output, %	27.72	16.27	23.06	21.70

The data in the table show the significant advantages of milk production by using the loose cow housing option and by milking cows in the parlor.

After analyzing the parameters of the minimum of reduced costs criterion, it is possible to make a conclusion that the economic efficiency of milk production at the complex "Sloboda" (tethered housing option) is greater in comparison with that at the complex "Gari" (loose housing option). However, the gap in the values of reduced costs for compared options is insignificant, and if the additional indicators such as gross output volume, labor costs, metal consumption are taken into consideration, the performance of the complex "Gari" is better.

Economic and energy analysis proved, that after reconstruction, the values of the indicators of energy consumption in production reduced, it is especially noticeable at the complex with the tethered cow housing option (from 27.72% to 16.27%), and as a result, the value of the economic and energy indicator for the complex with loose cow housing option increased (21.70% at the "Gari" in comparison with 16.27% in the "Sloboda"). Besides, at the "Gari" complex, labour costs for production of goods are the lowest (from 1.24 to 0.92 man-hours per centner), which indicates the greater efficiency of production and economic activities. Specific indicators of fodder and metal consumption for producing 1 centner of milk also confirm the high efficiency of milk production when using the loose cow housing option. However, the disadvantage of this technology lies in significant electric power consumption – 11.4 kW • h/centner, which is inevitable given the high degree of mechanization and automation of milking process.

Thus, we can conclude that loose cow housing technology (with parlor milking), in spite of the short experience of its use in Russia, has certain technical and technological advantages compared to the tethered cow housing technology and milking with the use of milking tubes. The loose cow housing technology provides the highest labour productivity, low metal and fodder consumption, and as it is known, the cost of fodder and salaries account for the largest share in the self-cost of the final product. Therefore, when reducing these costs, the value of the cost price also reduces, and the producers obtain an actual opportunity to increase their incomes, purchase additional equipment, carry out the necessary modernization of technological equipment, etc.

As it was stated above, any kind of activity is accompanied by certain energy consumption, so it is reasonable to point out the necessity of applying the standards of energy intensity for expanding the opportunities of investment planning, financing, crediting, since these standards meet at least two requirements: they take into account the production potential of agricultural goods producers and reflect the developmental level of individual branches and agriculture in general.

The described methodological approaches to estimating the economic efficiency of STP achievements implementation in dairy cattle breeding provide for establishing the extreme values of the efficiency criteria and, in accordance with them, to forecast and justify the optimal values of economic and energy indicators of compared technologies at designing stages (working out a business plan) and in their implementation.

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Information and advisory support of the management of sustainable development of agriculture in the northern region

The article describes the essence, peculiarities and methodological basis of information and advisory support of the agricultural sector's stability management. The principles and forms of information and advisory support organization are revealed. The experience of providing advisory services to agriculture in pre-revolutionary Russia and abroad is generalized. The article reveals the regional peculiarities of advisory service formation in the agrarian sector of the Republic of Komi. The main trends of information and advisory support of the region's sustainable agricultural development are studied. The practical recommendations concerning the innovative solutions implementation with the help of the advisory service are given in the article. It also describes the system of advisory support of organizations which includes the republican information and advisory centre (IAC), interregional information and advisory centres, which have close cooperation with the Federal information and advisory service.

Information and advisory service (IAS), sustainable development, information support, sources of information, organizational structure of an advisory service, the Republic of Komi.

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Essence and peculiarities of information and advisory support of the agricultural enterprises' stability management.

The sustainability of agriculture, as a complex economic, social and environmental system, is determined by external and internal factors and conditions. Information and advisory support occupies a special place among the major factors determining the agricultural production sustainability. An efficient system of information and advisory support of the stability management enables the comprehensive and most accurate description of the external and internal environment of the economic entity.

In addition, it helps to make the optimal managerial decision in each situation, reduce the risks and ensure the sustainable development of agricultural organizations and households. Therefore, there is the constant need for information in order to manage the agricultural enterprises' sustainable development, the information and advisory support should maintain their functioning at all stages of a production cycle.

The relevance and significance of information and advisory support of the agricultural enterprises' sustainable development management in the northern regions is determined by the significant decline in production during the

reform periods, resource potential deterioration, increasing outflow of qualified specialists from the village, the sector's estrangement from innovative development. The efficiency of the sector's stability management mainly depends on the activity of information and advisory services.

The analysis of scientific literature shows a lot of approaches to revealing the essence of sustainable development. One can agree with the viewpoint of the authors, who define sustainable development of the agricultural sector (enterprise) as the ability to ensure the reproduction of production capabilities, human resources and natural environment in their unity and cooperation over a long period of time. Three closely connected components of sustainable development are distinguished by the authors: economic, social and environmental [6].

Information support is the major factor determining the sustainable development of agricultural production. An efficient system of information support helps to reduce risks in the activities of economic entities and take optimal managerial decisions for each situation. There are different approaches to the notion of information support in the literature. The Economic Encyclopedia gives the most generalized definition of information support, which is regarded as: 1) information, knowledge provided to the consumer in the course of activity aimed at meeting his/her information demands; information which is properly processed (selected, systematized and arran-ged); 2) one of the components of modern automated information systems; 3) process of information provision to individuals or groups in accordance with their information demands [16, p. 248].

Information support includes the following elements: information, information sources, methods of information gathering and analysis, means of collection, issuing, processing, storage and protection of information, information systems and technologies, communication processes.

The basis of information support is the information, which is one of the most important resources, along with material, human and financial.

The information about the technologies and organization of agricultural production and agricultural products processing, means of technological processes' mechanization and automation, plant varieties and animal breeds, new forms of management organization, market situation, products and material resources serves as an essential part of the agricultural sector's sustainable development management. The role of information in providing the sustainable development of agriculture increases due to the sector's transition to the knowledge-based specialization. Modern agricultural production widely uses biotechnology and genetic engineering.

The increased necessity to transfer the information on scientific achievements to agricultural producers is also caused by the fact that, unlike big industrial enterprises, the agricultural organizations and peasant (farmer) households, due to a lack of financial resources, can't carry out scientific research and independently organize the scientific-technical maintenance of agricultural activities. Besides, over the years of market transformations, the number of highly qualified specialists in agricultural organizations decreased significantly. In the pre-reform period, specialists at big agricultural enterprises practically fulfilled the consulting function as they possessed the knowledge concerning innovations.

Educational institutions, scientific organizations, subjects of the agricultural and food market, legislative and executive bodies are the main sources of information for different types of sustainability. Higher and secondary special educational institutions, institutes of retraining and advanced training of the agroindustrial complex (AIC) employees develop educational-methodological, scientific-methodical materials.

Scientific-research organizations provide scientific works, scientific-methodical materials, information about the research and development to be used in production activities. Indicators of agricultural organizations and farms, market conditions are the source of information provided by the production and market sphere. The information provided by the state authorities consists of normative-legal acts, analytical and current information.

In the course of their activities, agricultural producers receive important information from the regional ministries (departments) of agriculture, municipal agricultural administrations, information and advisory services, individual advisers. The information can be also obtained from TV, periodicals, Internet, scientific-practical seminars and conferences, specialized exhibitions and presentations.

Agricultural enterprises use different types of information: scientific-technical, industrial, managerial, economic, social, legal. Depending on the sources of its obtaining, information is divided into internal and external. Internal information includes all kinds of accounting, book-keeping and statistical reports, contractual relations with suppliers, buyers and investors, different kinds of plans, business plans, etc.

The information obtained outside an agricultural enterprise is external. It includes the information concerning taxation, crediting, pricing, the situation with demand for and supply of foodstuffs; interest rates for loans; activities of the buyers of agricultural products and suppliers of various industrial production resources, information concerning the provision of repair and construction services; new technologies, plant varieties and animal breeds; forms of production and management organization; advisory information on legislative, legal and financial issues; on the organization of accounting and reporting, etc. The use of various information sources, its processing and storage allow making decisions concerning the sustainable development of agricultural enterprises.

There is a wide range of means and methods of information transmission from its source to its user. The spread of knowledge and information transfer to the agricultural producers faced many stages of development, from oral lecture-advisory service, initial publishing activity to modern computerized communication system.

The essence of information and advisory service lies in its ability to extract from the system of the existing knowledge and information funds the information which is a combination of these information sources [10, p. 16].

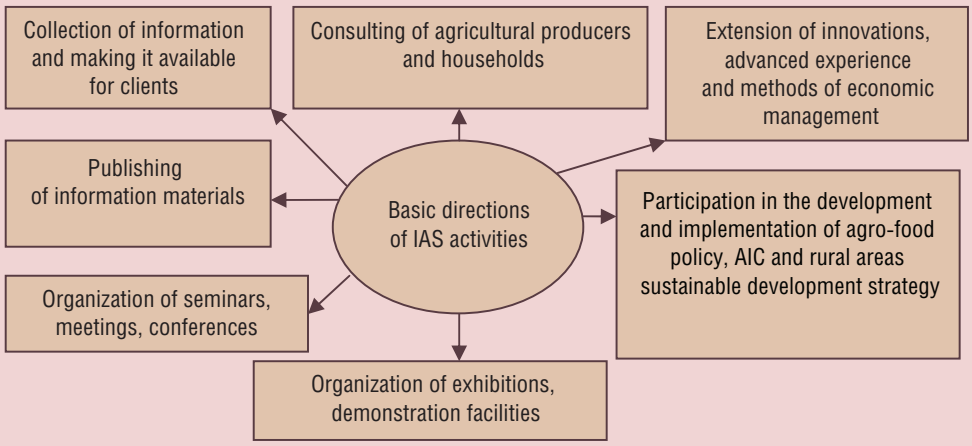
The role of information and advisory services consists in transmitting scientific, technological and market information, advanced domestic and foreign production experience to the users.

The main representatives of this service are consulting specialists, well acquainted with legislation and agricultural production, market-based management methods, having the skills of management decisions drafting, communication and teaching skills. Users of information and advisory services are represented by agricultural and agroindustrial organizations, peasant (farm) households, state management authorities of the agroindustrial complex, population. Each subject is interested to receive economic, social and environmental effect from the rendered services.

The agricultural advisory service has quite a few definitions. According to John Russell, it can be defined as the provision of knowledge and skills that farmers need in order to acquire and implement more efficient methods in crop and livestock production for the purpose of increasing productivity and improving living standards.

K.M. Fisher and others give approximately the same definition of the service. In their interpretation, the agricultural advisory and farmers training service has as its goal the transfer of information and practical skills for more effective use of available resources.

Figure 1. The basic directions of information and advisory service activities



However, the essence of the service is expressed most clearly by A.W. Van Den Ban and H.S. Hawkins: "The agricultural advisory service is a purposeful transmission of information in order to help people form a sound opinion and make right decisions" [op. cit.: 3, p. 7].

The agricultural advisory service not only organizes the transfer of ideas, information, knowledge, advice, skills, but also provides practical assistance for their implementation in production. The information and advisory service is the link between science, education and production sphere. The basic directions of the service activities include: information, consulting, innovation, education, exhibition, publishing activities, as well as participation in the agricultural policy development and implementation *(fig. 1)*.

An important role in advisory service belongs to consultants, the activities of which are aimed at transferring new knowledge to agricultural producers. However, as A. Chayanov points out, the employee of the public agriculture (consultant) "is a figure more social rather than technical. The objects of his/her activity are people, their minds, their will and consciousness, and not only the field, livestock and agricultural equipment" [14].

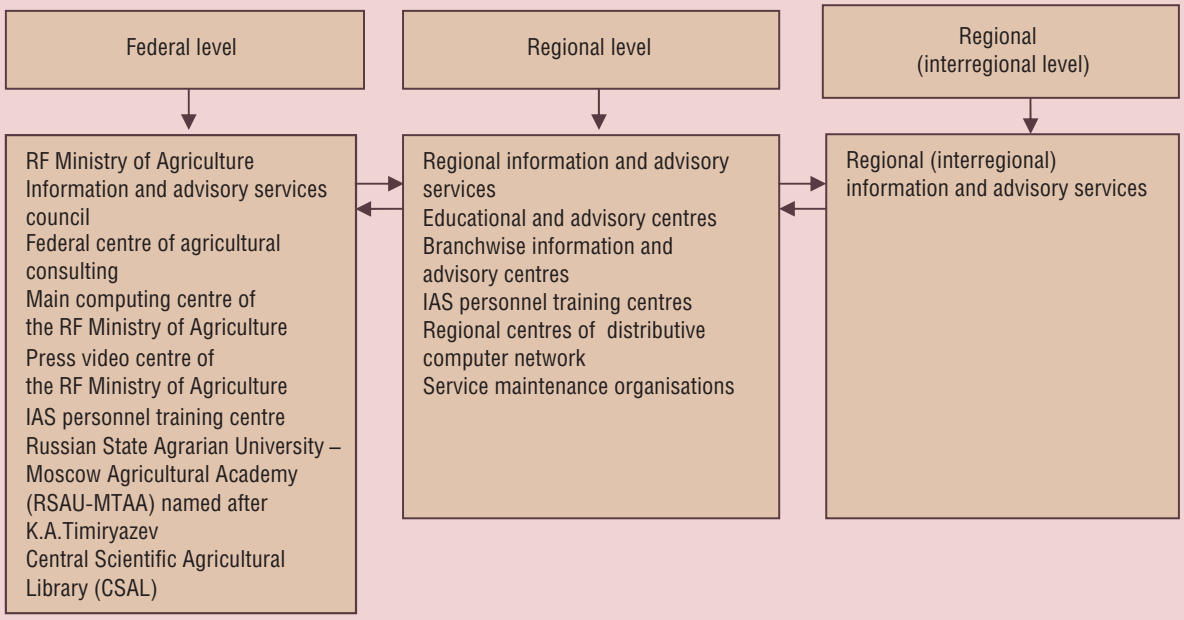
At present, the AIC information and advisory support system includes Federal, regional and district (inter-district) levels *(fig. 2)*.

In the Republic of Komi the information and advisory center was established at the regional level at the Institute of retraining and advanced training of AIC employees and represents its structural subdivision consisting of two people. The staff of the center combines consulting activity with teaching. At the district (inter-district) level IAS is absent.

Today, the IAS organizational structure is focused mainly on providing services free of charge. The questionnaire survey data showed that only 6% of the country's agricultural producers are willing to pay for the rendered services (creating business-plans and constitutive documents). Considerable amount of funding is allocated for the provision of advisory support to agricultural producers and retraining of specialists for agriculture within the framework of the State program of agricultural development and regulation of agricultural products, raw materials and food markets for the period of 2008 – 2012.

Thus, the information and advisory service is a single state multilevel system that actively cooperates with science, education and agro-industrial sphere in order to provide agricultural entities and governing bodies with information for its practical application. Financially, the service is mainly state-supported.

Figure 2. Organizational structure of the information and advisory service of the RF agroindustrial complex



The experience of providing advisory services to agriculture in pre-revolutionary Russia and abroad

Russia is one of the first countries, where agricultural consulting emerged. V.M. Bautin and V.V. Lazovsky, the prominent scientists in the sphere of information and advisory support of agrarian sector, believe that the overview-analytical report of the Dutch scientist A.W. Van Den Ban, which he presented in 1998 at the IAS conference, is the best work covering the history of information and advisory service development in pre-revolutionary Russia [19].

The first agricultural society in Russia was established in 1765; it laid the foundation "for the first special institution of agronomists for giving consultations in different provinces". In 1797, under the jurisdiction of the Senate, the Government Expedition was established, and, attached to it – the "Practical school of agriculture". School graduates were sent to remote villages, where they were given the land for establishing instructional farms and teaching advanced farming practices to local peasants.

The Committee on improvement of agriculture in Russia was established In 1833, and the Finance Ministry initiated the establishment of the "Institute of practical agronomists" in 1834. The ultimate goal of the agronomists' activities was the development of agricultural consciousness in different population groups and competitive spirit between farmers, for that purpose exhibitions and contests with distribution of prizes and awards were organized. In 1886, zemstvos, the first Russian public organizations, the goals of which included, in particular, the solution of agricultural problems at the local level, were established.

Since 1906 the formation of the district agronomy began, the essence of which was to provide agricultural and economic support to the population. The district agronomist was in the service of the zemstvo, i.e. represented a public agroeconomic organization, the financing of which was carried out at the expense of the members. Since 1908, the government began to provide constant support to the district agronomy, and by 1911 there were more than 3600 district agronomists in Russia.

According to the functions, tasks and servicing areas a pre-revolutionary district agronomist corresponded to the modern field consultant, who is considered the main figure in the system of information and advisory service in developed countries.

During the second agrarian reform, there appeared a new representative of agronomic service: the khutor agronomist [Russian: хуторный агроном, khutor – a single-homestead rural settlement of Eastern Europe – translator's note]. There were more than 1580 khutor agronomists in 1911 in Russia. Their main task was to assist individual farmers. Over time, they were allowed to provide assistance to community members. A khutor agronomist was a government official and received financial support from the government.

Nine thousand employees worked in the Russian system of agricultural consulting in 1913. A.W. Van Den Ban notes that at the time the Russian agricultural advisory service was, perhaps, the best in the world [19].

The first theoretical research and further development of the agricultural advisory service, especially in 1916 – 1924, is connected with the name of an outstanding Russian scientist-agronomist A.V. Chayanov.

He believed that "no system, no public scope, even possessing all the power of a state organization, is capable of implementing with greater success the organizational reform of agriculture. It is necessary to use the interest of private commodity producers, national economic forces. Public agronomy (consulting) should act as a catalyst stimulating and guiding the work of agricultural producers."[5]. The ideas of A.V. Chayanov, who is the founder of scientific approaches to agricultural consulting, are widely used all over the world.

Unfortunately, the development of this sphere of activities was interrupted in our country for many years. The Ministry of Agriculture and Food of the Russian Federation began to restore the information and advisory service only in 1993.

The first state advisory services emerged in the late 19 – early 20 century in Holland and the USA. The American model is of particular interest to the creators of Russian IAS. In the U.S. the agricultural knowledge dissemination service, known as the Cooperative Extension Service, was established in 1862, when the law on the organization of science, agricultural education and knowledge dissemination among farmers was passed. According to the law, the functions were entrusted to 74 land-grant universities (agricultural institutions of higher education of the states that were granted land from the government free of charge in order to fulfill this task). At the federal level the Cooperative Extension Service was set up in 1914, with the passing of the Smith-Lever Act.

At present, the U.S. Cooperative Extension Service represents the state cooperative service of knowledge dissemination, which comprises the U.S. Department of Agriculture (Federal level) and united systems of the states comprising the extension services of universities and districts. In general, the extension service of the states involves 74 public universities, 130 agricultural colleges, 27 colleges of veterinary medicine, 59 experiment stations, 63 schools of forestry and 3150 extension service offices in administrative districts (counties).

At the Federal level, the Cooperative Extension Service is a part of the U.S. Ministry of Agriculture and represents an Administration with a staff about 200 employees. The Federal service coordinates the activities of all the country's extension service partners, covering a wide range of industrial and social problems: agricultural production, development of the rural economy, development of a farm family, the natural resources and environmental management.

At the level of the states, the extension service is an integrated system, which includes extension services of the universities and districts.

Each County has its own extension service with staff number ranging from 3 up to 15 people. District services are subordinated to the services of the states. For the specialists of the district services briefings are regularly held at the university. Possessing a Master's or a higher degree is the obligatory requirement for specialists [3].

The summary of international experience in agricultural information and advisory services, which is represented most fully in the domestic and foreign publications [1, 2, 3, 4, 7, 8, 9, 10, 12, 13, 14, 17, 18], indicates that services of agricultural consulting operate for many decades, and play a prominent part in the improvement of technologies, farmer production organization and management.

In the world practice, the goods producers' advisory services can be organized according to various models: advisory services under the ministries of agriculture and food (Great Britain, Germany, the Netherlands, Poland); the university model (most widespread in the United States); information and advisory services, created on the basis of leading agricultural colleges (Scotland, in some states (Länder or federal states) of Germany); information and advisory services, created on the basis of farmer organizations (Finland); private advisory services, functioning at the present time, in many agriculturally developed countries (England, Wales, New Zealand, etc.).

Despite the variety of organizational forms, advisory services have common features, which are expressed in the following:

- the services were established in most countries according to the decision of state bodies and for a long time they were funded through the budget, while the gradual transition from full government financing to partial compensation for the rendered services through charging fees to clients began along with gaining credibility and sustainable development of agriculture;
- advisory services are established at the national, regional and local levels, in their close interaction;
- scientific and educational institutions staff, mass media are engaged in the activities of the services.

For Russia and its regions it is impossible to copy the foreign models of information and advisory services due to the peculiarities of its agricultural sector development, mixed character of agrarian economy, little state support of agricultural producers, historically formed mentality of the peasants, expressed in their inclination to collective work.

Regional peculiarities of information and advisory service formation

Establishing a regional information and advisory service is connected with the peculiarities of agroindustrial complex development. The agro-food sector of the Republic of Komi does not occupy a dominant position in the economy. Now it accounts for 2.6% of the gross regional product and 0.8% of investments in fixed capital, 2.8% of the average annual number of the employed in the economy.

The industrial character of the Republic's development determined the prevalence of urban population. Its share in the total number of population equals 77%. At the beginning of 2011, it was 899.7 thousand people, of which 693.2 thousand lived in cities and 206.5 thousand – in rural areas.

One of the agricultural production peculiarities is its great dependence on natural and economic conditions. The Republic of Komi occupies 2.4% of Russian territory. The share of the most productive land –ploughland – equals only 0.2% of the area, while in the country in general, this indicator equals 7.1%. The share of plowed land reaches 25% against 55% for the country in average. The poor development of the Republic's territory is explained by the natural conditions unfavorable for agriculture, vast forest areas (74.6%), and small density of population.

The largest share of agricultural land (83%) is used by collective organizations. 15% of the total area is at the disposal of private households, in average, one family possesses 0.4 ha. Total area of the land plots provided to farms is 7.7 thousand ha (2% of agricultural land) or, in average, 28 ha per one farm.

Due to the unfavourable natural and economic conditions of agricultural development in the Republic of Komi, its food self-sufficiency is low. At present, self-sufficiency for meat and meat products equals 27%, milk and milk products – 27%, egg and egg products – 72%, potato – 75%, vegetables – 24%. However, the region has favorable conditions for producing socially important products. Agronatural (sufficient amount of precipitations, long light day in the vegetation period, large areas of natural forage lands, including floodplain meadows) and economic potentials contribute to the efficient potato growing, cattle, reindeer and poultry breeding. The Republic possesses the resources for producing organic products and forming the respective market segment. A kind of rental income can be received from the realization of environmentally safe products. Products of traditional economic sectors (reindeer breeding, fishing, hunting, mushrooming and berrying) are competitive not only at the regional but also national and international markets.

Creating the regional information and advisory service is closely connected with organizational and legal forms of management, staffing with managerial personnel, general trade specialists, and their professional level.

The food sector of the Republic is represented by diversified agricultural organizations, manufacturers of food production, farms and private subsidiary plots of citizens. In 2010, 190 agricultural organisations and institutions' subsidiary plots, more than 93 thousand private subsidiary plots, 437 peasant (farmer) households, 76 thousand gardening families and 30 thousand vegetable growing families were involved in agricultural production.

In the total volume of gross agricultural production, agricultural enterprises account for 55%, private households – 41%, peasant (farmer) households – 4%. Agricultural organizations are leaders in livestock production output *(fig. 3)*.

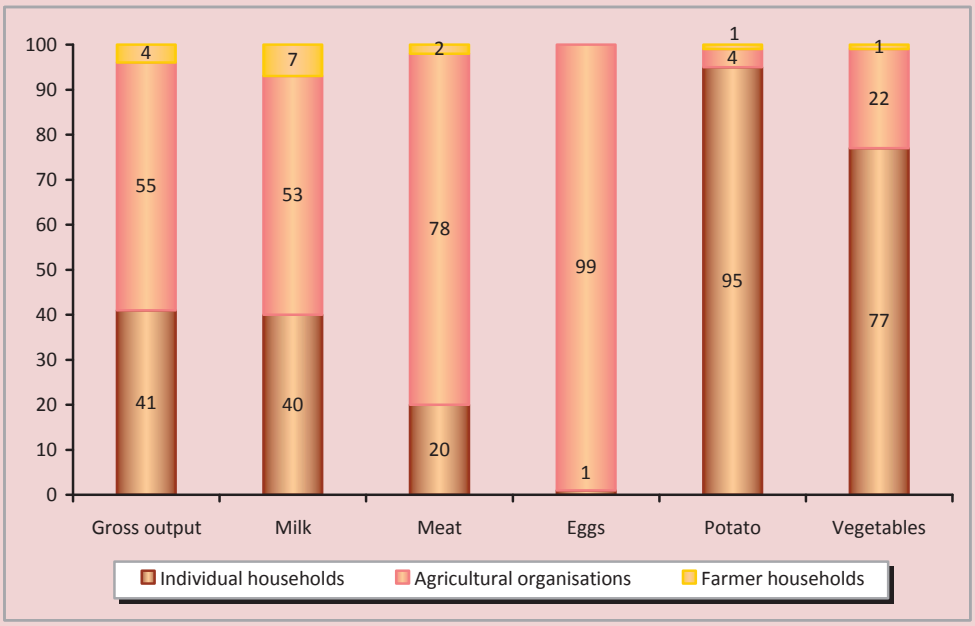
For the years of agrarian reform there has been a significant decrease in the concentration of production and downsizing of agricultural organizations. While in 1990s there were in average 428 workers per one agricultural enterprise, 4 thousand ha of agricultural land, 1021 ha of crops, 1694 head of livestock including 661 cows, 65 tractors, at present these figures equal respectively: 99 workers; 1.1 thousand ha; 376 ha; 307 head including 133 cows; 14 tractors.

Transition to market economy had a negative impact on the agrarian sector. During 1990 – 2010 milk production decreased 3.4-fold, livestock meat production (in slaughter weight) – 3.1-fold. For this period, given the population reduction by more than 1/3, meat production per capita for a year has decreased from 31 to 19 kg, milk – from 166 to 68 kg, eggs – from 294 to 186 pieces.

For the years of reforms, the sector has experienced the production capabilities reduction and to a certain extent lost its industrial character. Areas of cultivated agricultural land, for the period under review, decreased from 353 thousand to 191 thousand ha, areas under crops – from 100.5 thousand to 40.5 thousand ha; livestock population decreased from 173.5 thousand to 38.7 thousand head, reindeer – from 123.6 thousand to 83.8 thousand head. The number of employees at agricultural organizations decreased more than 3-fold.

In the creation of an information and advisory service, great importance is attached to the availability of scientific and education potential capable of interacting with an advisory service, as well as the degree of innovative activities implementation in the agroindustrial complex.

Figure 3. Share of different household types in the production for 2010, %



The Republic of Komi possesses the significant scientific and education potential. In order to boost the information and advisory service, it is expedient to use the R&D results of the Research Design and Technology Institute of Agroindustrial Complex of the Russian Academy of Agricultural Sciences (RAAS), the Institutes of Biology, Physiology, Chemistry, Socio-Economic and Energy Problems of the North Komi Scientific Centre of the Ural RAS Department, the Scientific-Research, Design and Survey Institute "Komimeliovodkhozproekt", Syktyvkar Forest Institute, Syktyvkar State University, the Agroindustrial Training College of the Republic of Komi, etc.

The cooperation between the information and advisory service specialists, scientists and educators can be directed towards the use of new high-yielding plant varieties, highly effective fertilizers, produced from industrial wood residue and local agronomical ore; biological nitrogen; sapropel; innovative technologies in dairy and beef livestock husbandry and reindeer breeding, as well as the elaboration of agricultural sector and rural areas sustainable development concepts and programs at the regional and municipal levels. The Republic's higher education institutions should provide the up-to-date training of consulting specialists which will allow solving practical tasks of the agrarian sector's innovative development.

Close interaction of the Republic's advisory service with scientific and higher education establishments can be accomplished by involving the R&D institutions' researchers and universities' faculty in the IAS personnel training. In their turn, highly qualified service advisors will participate in the training of the specialists for the agricultural sector and regional IAS. The advisory service personnel in cooperation with scientific and university staff can conduct applied research on the acute agroindustrial issues and carry out publishing and advertising activities. The cooperation between IAS and institutions of secondary vocational agrarian education will be carried out by using their training and production facilities for demonstrating the regional advisory service's activity.

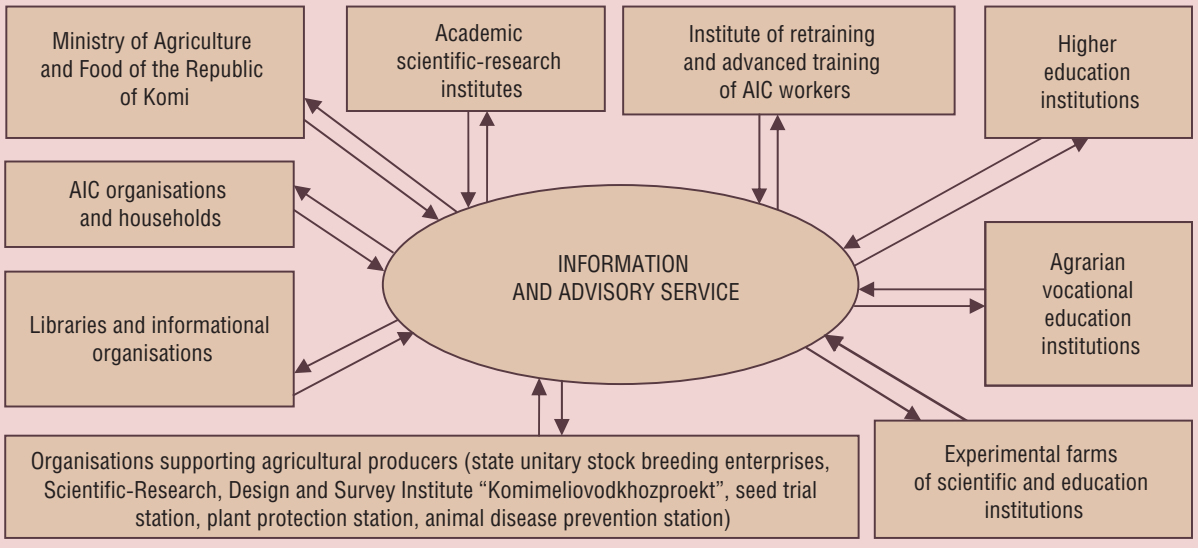
The pattern of possible cooperation between IAS and agrarian sector's governing and supporting bodies, scientific, educational and information establishments within the Republic of Komi is presented in *figure 4*.

Thus, the formation and development of the regional information and advisory service requires taking into account the factors and conditions of agricultural sector's functioning which is connected with natural conditions, socio-economic factors, agroindustrial production management and support, farmers' mentality, AIC staffing with personnel and scientific-educational resources, agricultural enterprises' innovative activity. The regional agricultural advisory service which is closely connected with the bodies of AIC governing and support, scientific and educational establishments, advanced development organizations facilitates the transfer of scientific, technological and market information, advanced domestic and foreign experience as well as provides practical assistance in innovations implementation in production.

Conceptual approaches to establishing the regional information and advisory service

Today, the information and advisory support of agricultural producers in the Republic of Komi is at the early stage of its development. The issues concerning the status of IAS, its formation at the district level and its financing remain unsolved. Due to the lack of financial resources, the information and advisory centre doesn't carry out advertising and publishing activities, issuing of information materials, newsletters, surveys; the agricultural producers' demand for information about production, storage, processing and realization of products is not satisfied properly; the system of information and advisory support for rural population is developing rather slowly; it is difficult for information and advisory service establishments to attract highly qualified specialists, having practical work experience. Dissatisfied with the amount of wages, regular employees have to combine their main work with teaching. This results in the reduction of the quality and volume of rendered services.

Figure 4. Interaction of the regional information and advisory service with the bodies of agroindustrial complex governing and support, scientific, educational and information establishments in innovations implementation



Analysis proves that the state of affairs concerning the information and advisory service organization in other regions of the Russian European North is quite the same. For instance, the main factors, hampering the agricultural organisations' information and advisory support system development in the Vologda Oblast, are the following: understaffing of an advisory service with specialists; absence of agricultural producers' development monitoring; poor material and technical provision of the service; lack of clear distribution of functions in an information and advisory centre; underdevelopment of organization structures; lack of funding sources for advisory services payment [11, p.13].

Agricultural producers as well as regional AIC governing bodies are interested in the efficient functioning of an integrated information and advisory service. This interest is connected with the implementation by IAS of agro-food policy, strategy of sustainable agricultural and rural development through innovations extension and implementation, advanced experience and economic management methods, market information. Regional authorities and governing bodies provide financial support to agricultural producers. In average, for 2008 – 2010 the share of state budget of the Republic of Komi allocated to the agricultural sector support equaled 89 %, and federal – only 11 %.

While forming and developing IAS in the Republic of Komi, it is necessary to take into account natural, socio-economic factors and institutional peculiarities of agricultural production. The information and advisory service in the form of non-commercial organization based on scientific and educational institutions, using their material and human resources, is the most perspective for the republic. The requirement for republican information and advisory centre's services will be fulfilled by agricultural organisations and households of suburban districts and municipalities of the cities.

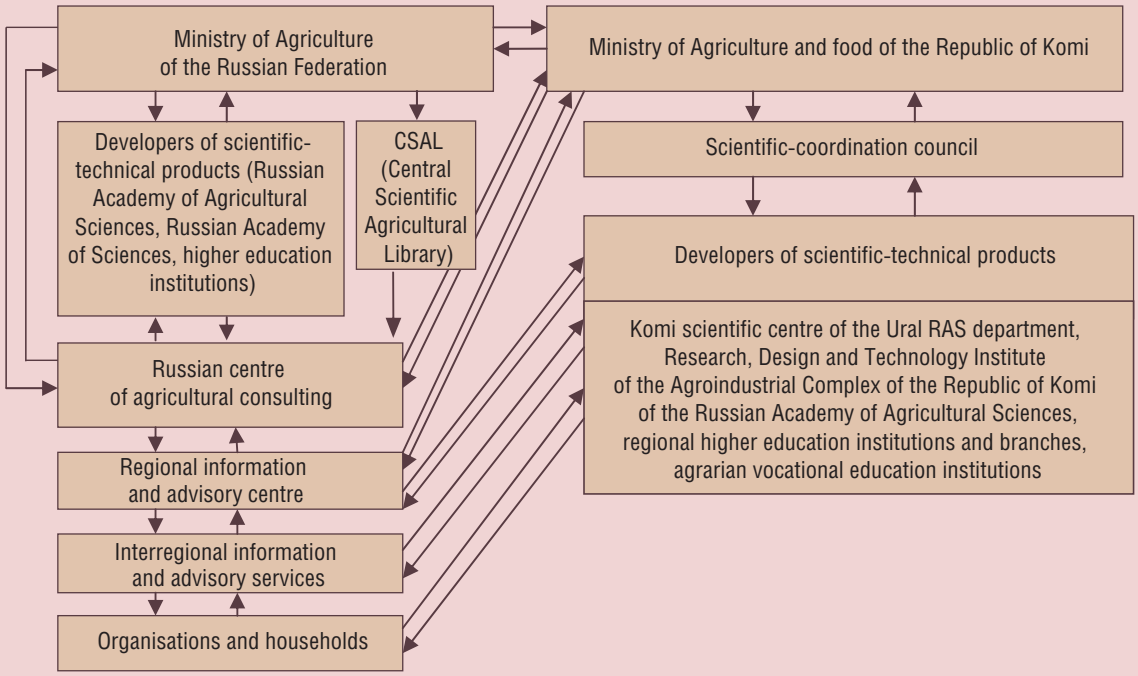
It is inexpedient to establish IAS in every remote rural district. It is the interregional information and advisory service that needs to be created. The proposed system of information and advisory support of collective organisations, peasant (farmer) households and private households is shown in *figure 5*.

Nowadays, the majority of agricultural organisations and farmer households in the Republic of Komi have lost their economic and social stability. Therefore, the agrarian production modernization with the use of innovative technologies plays a special role in ensuring this stability. International practice shows that about 60 – 80% of agricultural producers are capable of developing innovations with the help of an agricultural advisory service. Thus, the regional IAS activity should be directed towards the large-scale extension of R&D and advanced experience. It can be achieved by creating the data base of innovative R&D; methodological, information and advisory support of AIC organisations concerning the innovative technologies implementation; support in assessing the innovative projects efficiency.

It is advisable to establish a scientific-coordination council under the Republic's Ministry of Agriculture and Food in order to choose the most efficient directions of innovative activity. It will comprise the representatives of IAS, scientific and educational organisations, sector associations of agricultural producers, specialists and heads of agroindustrial enterprises, regional and municipal governing bodies. The main goals of the council include: determining the strategy and tactics of the regional AIC innovative development and innovative strategy implementation monitoring. An independent expert commission should be created to estimate the innovative strategy implementation.

Given the difficult situation in the agricultural sector, it is inappropriate to orient towards the overall commercialization of advisory activity.

Figure 5. Structure of information and advisory support of agricultural sector in the Republic of Komi



The IAS funding should be effected mainly at the expense of the budget. World practice shows that advisory organisations provide their services free of charge at early stages of their development. After gaining authority and only under conditions of sustainable agricultural development, the information and advisory organisations gradually switched over to the provision of paid services. The transition takes quite a long time. For example, the Netherlands and Denmark required 120 years just to shape this problem, and in Britain advisory services were able to proceed to partial self-financing only after 50 years of work [5, p.15]. Introduction of benefits on paid services for individuals is expedient when the IAS formation process is finished and its development goes on.

In conclusion it is necessary to state the following:

- an efficient agricultural information and advisory support system enables to study an external and internal environment most comprehensively and accurately, reduce risks in the activities of economic entities and provide their sustainable development;
- study of domestic and foreign experience in creating and functioning of agricultural information and advisory support proves: the services were established according to the decision of the state authorities at the national, regional and local levels in their close cooperation; for a long time, the services rendered by information and advisory organisations were financed from the budget with gradual transition to paid services; the peculiarities of the domestic agrarian sector don't allow to copy foreign models of information and advisory services;
- analysis of the ways, in which the information and advisory support is organized, indicates that the main factors hampering the agricultural organisations' information and advisory support system development in the Republic of Komi are the following: understaffing of the service with specialists; lack of funding sources for advisory services

payment; insufficient interaction between the information and advisory centre and the regional AIC governing and managing bodies, scientific, educational and information establishments; absence of information and advisory services at the municipal level;

• proposed system of information and advisory support of the republic's agrarian sector comprises regional and interregional levels in their close cooperation with scientific and educational institutions, governing bodies and information establishments.

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Mikhail N. Khurs

Sad news was received from Minsk. Mikhail Nikolayevich Khurs, Ph.D. in Sociology, the scientist respected in Russian and Belarusian academic circles, died at the age of 69.

M.N. Khurs was one of the first representatives of factory sociology in Belarus in the 1970s. He became the founder of the well-known in Belarus schools on social planning, social support of the process of developing and implementing the social programs of different levels, public opinion studies, the situations in the spheres of power engineering, housing and communal services, marketing research in the banking sphere.

In 2006 – 2008 M.N. Khurs held the position of Deputy Director on scientific and innovation activity at the Institute of Sociology of NAS of Belarus. At this period he played the key role in organizing collaborative research with ISEDT RAS. He actively participated in organizing and conducting joint seminars, scientific-practical conferences in Vologda and Minsk, delivered his presentations and reports there, and attached fundamental importance to the development of Belarusian-Russian relations in the context of the post-Soviet states integration prospects. M.N. Khurs was the author of several articles published in ISEDT RAS journals that were highly appreciated by the readers. Due to the efforts of Mikhail Nikolayevich, his initiatives have been turned into the long-term contractual programmes of cooperation between the Russian Academy of Sciences and the National Academy of Sciences of Belarus.

M.N. Khurs was a very sociable person distinguished by his warm attitude toward his academic colleagues, sincere kindness and optimism. The memory of M.N. Khurs will remain with all his friends and colleagues.

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