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**NATURAL RESOURCES USE and REGIONAL DEVELOPMENT in RUSSIA:
POST-SOVIET EXPERIENCE**

Abstract: The major characteristic of regional development is the reproduction of resources of Region - natural, raw-material, human, material, including industrial and infrastructural, providing self-regulating development, or «weak» stability in the terms of the concept of sustainable development. The absence or lack of investments of the finance in reproduction of regional resources is shown in increase of tear and wear of the basic production assets in some sectors of economy and life-support.

Keywords: The raw-material resources specialization of economy of Russia; the natural resources Regions and natural resources use in Russia during the post-soviet period, the reproduction of resources of the Region and «weak» stability, reproduction of the region wealth, tear and wear of a the basic production assets.

The raw-material regions of Russia, their characteristic and dynamics

Russia as large raw-material resources country of the world has declared itself in 1970-1980, when alongside with large-scale development of carbonic raw material in Western Siberia the accelerated development have received electric power industry and industry on processing natural resources: oil and gas, petrochemical and chemical complexes, non-ferrous metallurgy, modernized ferrous metallurgy, timber, woodworking, pulp and paper industry etc. It has huge stocks of natural resources of industrial purpose and not less large stock not utilized while so-called ecosystems services (natural conditions both resources of not economic purpose and use). The country provides about 12.8 % world wide production of petroleum, more than 20 % of gas, nickel and diamonds, 14.5 % of platinum, 50 % palladium etc. [15]. Russia occupies the first place in the world on the area of maintained woods (388.5 milliard ha) and operational stocks of wood (47.6 milliard m³). However in conditions of market economy only 25-35% of them are suitable for profitable industrial development.

Natural-resources potential of Russia is appreciated by UNO in \$ 30 billion, and taken value of the reconnoitered and appreciated stocks of minerals (on categories A+B+C1+C2) in the average prices of the world market for 1992-1999 is determined in \$ 9.5 billion [15]. The truth essential

corrective amendments in the given rating brings in that circumstance, that it on 70 % concerns to stocks of fuel and raw material, deposited in bowels of the earth of northern and northeast territories of the country. It causes high and all growing investment capacity of the Russian natural resources at all stages of their development. In view of this circumstance the rating of natural resources, really suitable for profitable operation in market conditions, on the data of some experts, does not exceed 5 % from named above cost of natural- resources potential of the country.

As to dynamics of manufacture of raw-material production in Russia for the period after disintegration USSR, the recession in the most important branches of that sector has appeared less intensive, than as a whole on an industry, except for branches of a wood complex and industry of building materials (table 1). The country has kept raw-material resources sector as functioning system, though and with the narrowed structure, and thus has defended the place in the world resources markets.

Table 1. Dynamics of some branches of raw material production on a background of Change of GDP and industry as a whole (in the comparable prices, in % by 1990)

Parameters	995	998	999	000	001	005	007
Gross Domestic Product(GDP)	2	8	1	6	9	0	05
Manufacture of industrial production, total, including:	0	6	0	7	0	5	0
Oil-output	9	7	8	2	7	64	98
Natural gas output	0	8	0	1	2	29	30
Coal output	2	3	0	3	7	0	1
Ferrous metal industry	8	1	0	9	9	5	05
Non-ferrous metallurgy	4	3	8	7	0	0	7
Timber, woodworking, pulp and							

paper industry	3	3	9	4	5	4	3
Industry of building materials	4	0	3	7	9	9	37

Source: Calculated from Russian Federal Service for State Statistics data [11].

General negative result of structural changes in an industry became strengthening its raw-material resources specialization on the macro-level and in the national economy as a whole. Since 2004 on a share of raw-material resources sector it is necessary 25-28 % GDP, about 60% total volume of output of manufacture of industrial production, more than 70 % of export and currency proceeds, 100 % Stabilization Fund, of Reserve funds and Fund of National well-being [14].

At the same time one of negative consequences of such development of a national economy is the possible delay of rates of its growth because of high power consumption, capital capacity and funds capacity of the raw-material resources industry as a whole. Besides the development of branches is accompanied by constant commissioning of new deposits and other resources (extensive way of development), that creates real threat of their fast exhaustion and increases of the prices on natural raw materials.

The raw-material specialization of economy of Russia is formed by the natural-resources Regions of the basin type, by which we carry those subjects of Russian Federation, where the share of raw-material resources sector in structure of industrial manufacture exceeds average Russian parameter [8 and 9]. Designed on the aggregated raw-material branches¹ that parameter makes approximately 60%, and on separate areas in view of fishing branch and preparation of biological resources, which concern by generalizing statistics to a food-processing industry, - exceeds 96 %. In whole all these Regions cover more than 90 % of territory of the country, concentrate half of all population, make more than 56% Gross Domestic Product (GDP). More than 50 subjects of Russian Federation with such parameters were grouped by us on according to a basin principle in 15 of natural-resources Regions with an average share of raw-material sector in their industrial production from 60.1 up to 96.9 % (**Fig. 1**).

¹ These aggregated branches were marked out by statistics according to developed in former times the so named All-Union qualifier of branches of a national economy (of seven aggregated kinds of economic activity - OKEA) and are not subdivided into obtaining and processing manufactures, so the corresponding data should be accepted with some assumption.

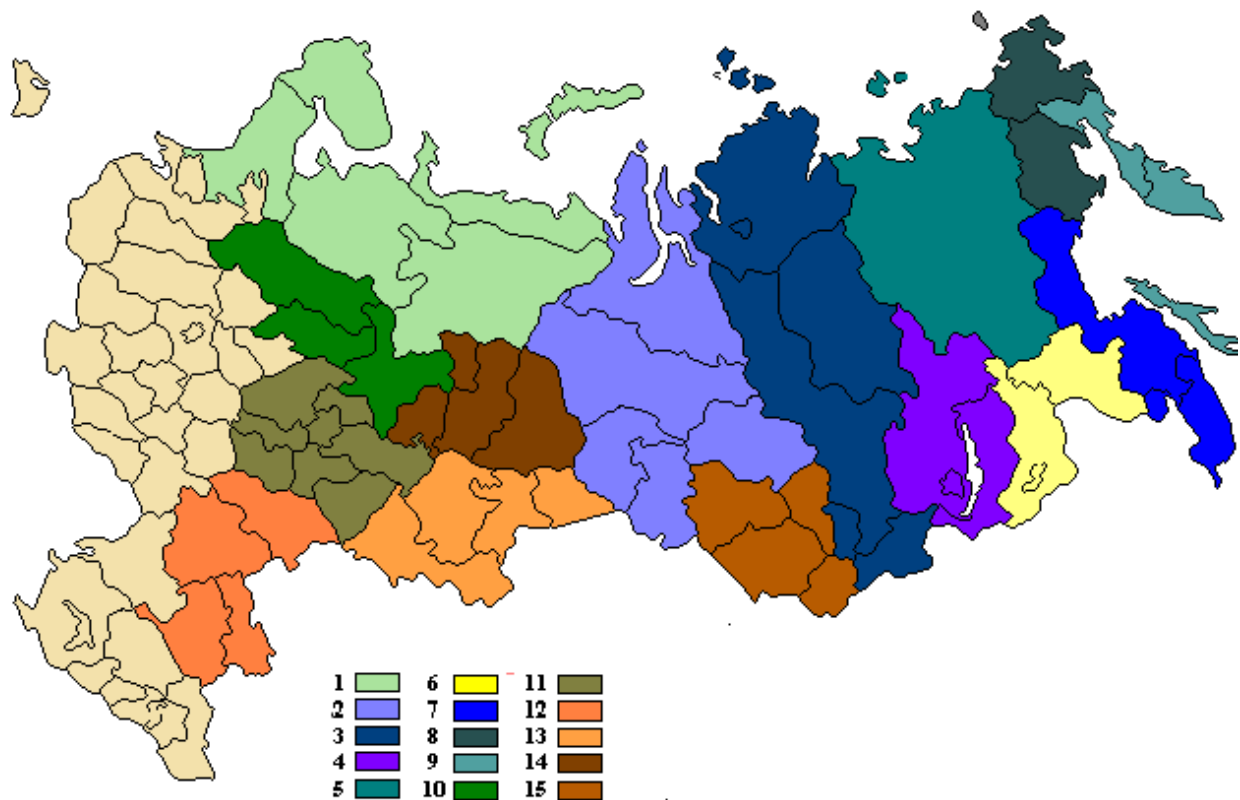


Fig.1 Natural- Resources Regions: 1.Noth-European.2. Ob-Irtysh.3. Yenisei.4. Baikal.5. Yakut.6. Middle-Amur.7. Seaside.8. Magadan.9. Pacific-Ocean.10. Noth-Transvolga.11. Middle-Volga.12.Low-Volga.13. South-Ural. 14. Middle-Ural. 15. Kuzbas-Altay.

A source: [11,12, 13].

In a **Fig. 2** the distribution of these Regions on a share in their industrial production of raw minerals branches for newer date – 2008, is given. Fishing and preparation of biological resources here is not taken into account, and also there is no primary preparation of wood, that after transition to system of the account on kinds of economic activity requires the special difficult recalculation. Nevertheless, the significant territorial differentiation of natural resources regions with a maximum of a share of obtaining branches in east and northeast territories of the country is appreciable.

For the majority of obtaining regions of the mastered zone of the country the question becomes more urgent, as soon it is necessary to expect an exhaustion of not renewed natural resources and that will be with settlements and their inhabitants after closing the mining enterprises.

Our researches have shown that in 1990-2009 on a general background of decline in population in the country of especially significant scales has achieved in northeast part of Russia.

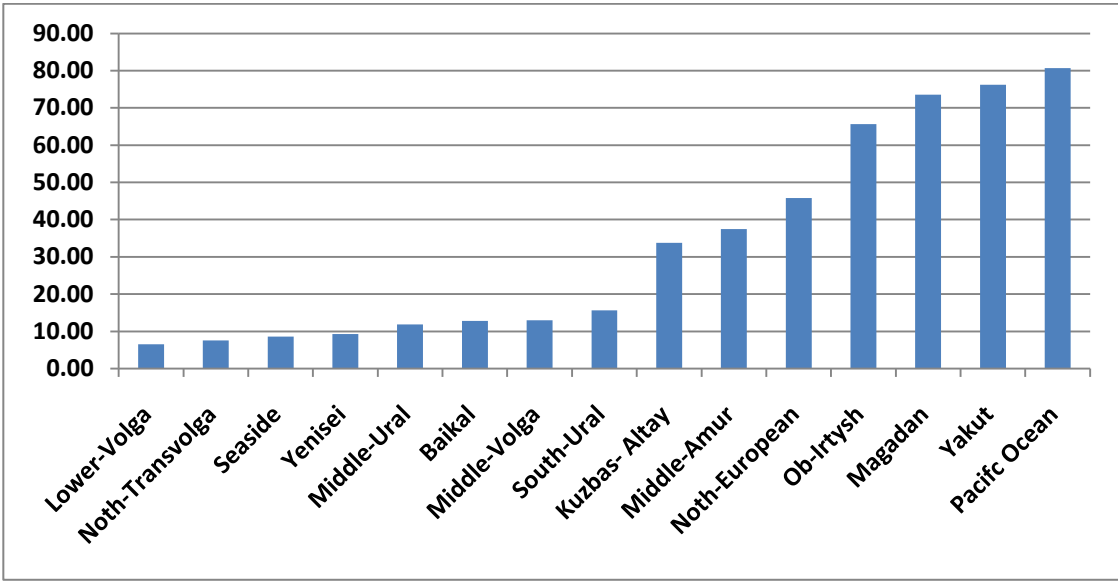


Fig. 2. A share of production of raw minerals in an industrial output of natural-resources Regions in Russian Federation, %, for 2008. A source: [11].

In Transbaikalia, in a number of regions of Russian Far East where because of closing a lot of mines and quarries owing to non-return and physical exhaustion of their stocks the steady zone of active outflow of the population was generated [6, 9, 10]. In a Fig. 3 dynamics of a population of natural-resources Regions during last 20 years is shown. Only in one of them – in Ob-Irtysh region - the population has increased on 82 000, or on 2%.

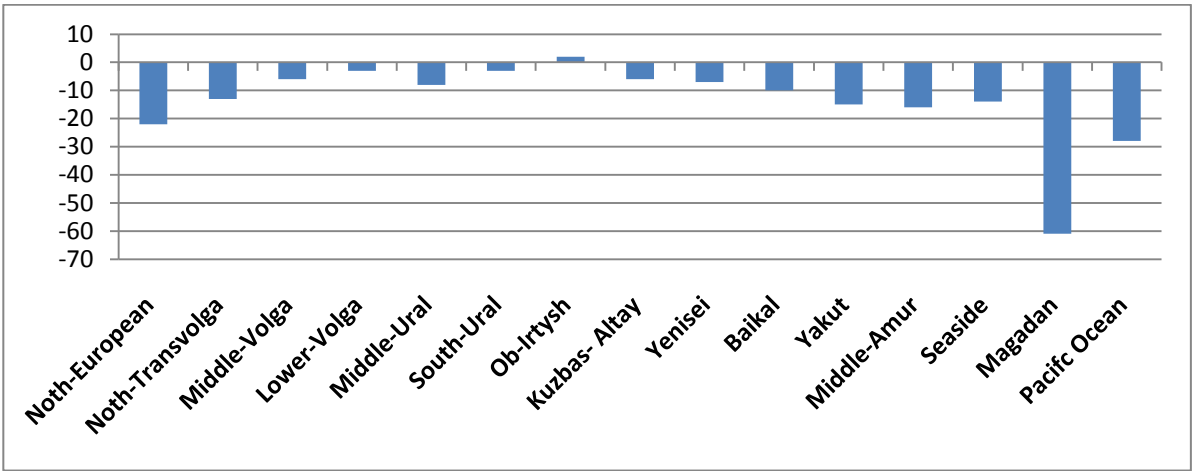


Fig. 3. Dynamics of a population in the natural-resources Regions of Russian Federation, %, during the period 1990-2009, to a level 1990. A source: [12, 13].

2. Sustainable development and reproduction of the region wealth

We proceed from the standard rule, that at realization of the concept of sustainable development at a regional level «stability» differs on the degree both in space, and in time. The idea of Daily [3] about two basic stages, consistently achievable in time, of sustainable development - «weak» and «strong» stability² is widely known. «Weak» stability is understood as the compelled necessity of replacement of leaving natural components of the common, total wealth of the country or region by material capital and human assets of the equivalent importance. A theoretical opportunity of such replacement the economists have proved per 1970 years [4, 14]. In this situation the central role is got by economic tools of regulation of interaction of natural and economic objects, technological innovations, alternative variants of use of natural resources, emphasis on human intelligence. But this idea is carried out and in space, in borders of the countries and regions. Differently, in the same time in regions simultaneously can and already actually there are both stages of sustainable development, but in different proportions - depending on variety of real combinations of natural, social and material conditions. The large role in these combinations, in our opinion, there is an actual ratio of reproducible and non-reproducible natural resources, «inherited» from a nature to each region, including its native population, and also reproduction of other forms of the common wealth (capital) of regions.

The speeds of reproduction of the various forms of the capital - material, natural resources, also human strongly differ that renders the large influence on sustainable development of regions. However this question requires the special research connected to the general economic theory [7].

As it was shown by O. Pchelintcev [8, pp. 33-34, 10-11], the sustainable development acts, in essence, as the new name for a long time familiar *reproductive approach* (or *reproduction economy*).

By one of the important factors of sustainable development of region the normalization of process of reproduction and updating of the capital in the basic production assets of an industry acts. The existing system of the taxation has resulted in catastrophic growth of percent of tear and wear of the basic production assets in Russia. In the worst situation there was such branch of natural resources use as fishing, in which tear and wear of a fixed capital stock has made almost 100 %. Tear and wear of a the basic production assets as the factor of destabilization of manufacture causes

² As is known, at «strong» stability, practically while unattainable for mankind, it is supposed, that some most ecologically critical kinds of natural conditions, resources and boons at any circumstances can not and should not be replaced by other kinds of the capital. For preservation of stability of development the stock of such «critical» natural capital should not decrease from generation to generation of the people.

failures in technological sphere with heavy consequences for a status of an environment, ecological conditions of residing of the population and health of the people.

In **Fig. 4** the regional differentiation of tear and wear on 01.01.2008 concerning average on Russia of a level is submitted. With higher parameters of deterioration are allocated, first of all, old industrial regions, Middle and Lower Volga, Kirov oblast, Middle Ural and Tyumen Oblast, including its autonomous districts. In east of the country the worst relative parameters of tier and wear of basic production assets characterize republics Altai and Tyva, Magadan oblast and former Ust'Orda (Buriat) Autonomous Okrug³.

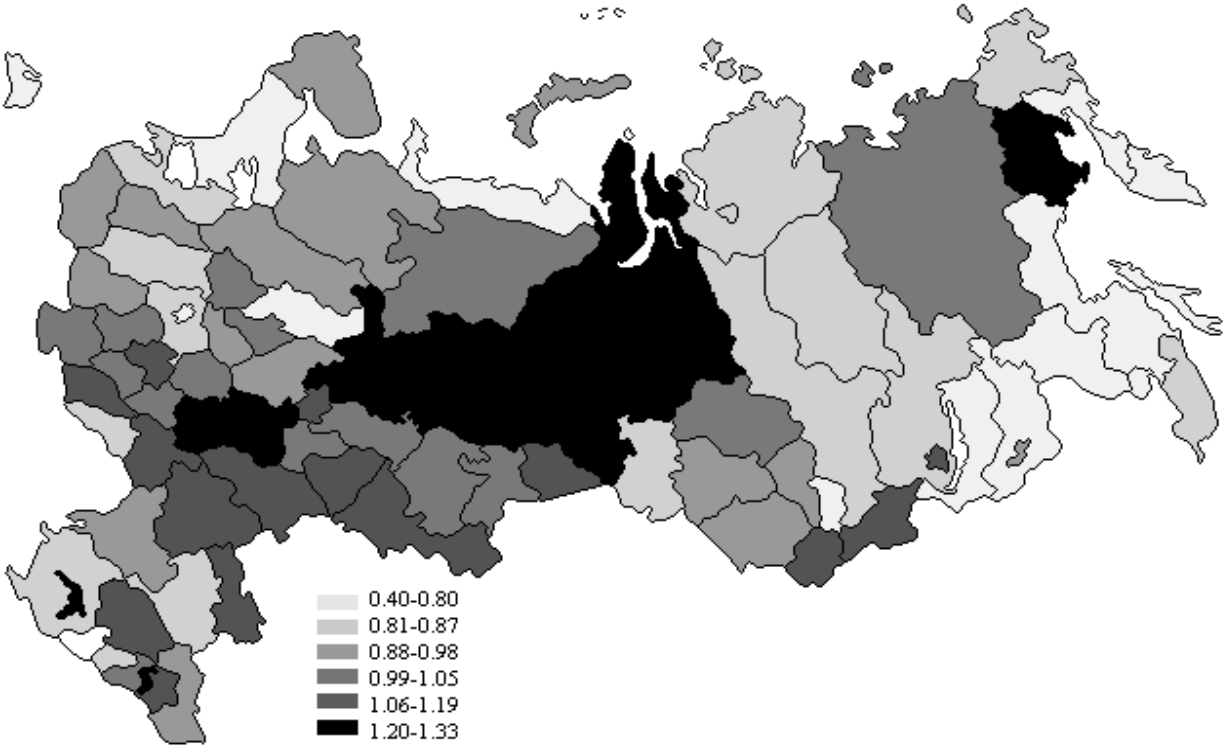


Fig.4 Tear and wear of the basic production assets concerning average on Russia in 2008.

A source: [13].

The interrelation between parameters of use of natural resources and gain of tear and wear of the basic production assets for 1995 - 2008 was analyzed on an example of comparison of a share of raw-material sector in total industrial production of regions and dynamics of tear and wear of a

³ Before merging in Irkutsk Oblast (officially- January 1, 2008).

the basic production assets in them. The greatest increase of tear and wear the basic production assets was fixed in a range from 20.2 % up to 9.2 % of a gain for this period is revealed among regions from the maximal share of raw-material sector in a total regional product (from 96.9% up to 92.0%), such as the Magadan area, Komi and Sakha (Yakutia) Republics and also in Chukotka Autonomous Okrug; in the following group of regions (a share of primary sector from 83.9% up to 81.2%) the greatest increase of tear and wear the basic production assets is fixed in the Tyumen oblast and its Autonomous Okrug – Khanty-Mansiïckiy and Yamalo-Nenetskiy. Hence, in those regions, where especially obviously also is considerably spent nonrenewable the natural resources capital - as of growing volumes of production both subsequent export carbonic and other mineral natural raw material - in the least degree concerning average on Russia there is a compensation of the natural resources capital by the material capital as investments in updating the basic production assets. This compensation occurs not in sufficient scales according to normal economic development and reproduction (in 2009 - on the average on Russia the updating of the basic production assets has made only 4%), not speaking about conceptual sustainable «weak» development such as on Daily.

For the greater detailed elaboration regional differentiation complete (100 %) tear and wear in connection of seven aggregated kinds of economic activity (on system OKEA) also was analyzed. The parameters on three kinds of economic activity were selected from their number: 1) production of mineral raw material; 2) manufacture and distribution of the electric power, gas and water; 3) transport and communication. These kinds of economic activity, in our opinion, full enough reflect a situation with the basic production assets in the majority of kinds of obtaining branches directly connected to operation of the natural resources capital. At the same time, last two kinds of economic activity are directly connected to ability to live of the population, simultaneously providing it reproduction.

The carried out analysis has shown, that the greatest densities of the completely worn out basic production assets in production of mineral raw material is characteristic for all republics of Northern Caucasus (except for the Chechen republic), Tatarstan and Udmurtiya Republic, and also Voronezh, Murmansk and Yaroslavl oblast. In the Asian part of the country the worst parameters are marked in Republic Tyva, in the Magadan oblast, in the former Ust'Orda (Buriat) and Chukotka Autonomous Okrug.

In manufacture and distribution of the electric power, gas and water the worst parameters of complete tear and wear the basic production assets rather precisely allocate practically all European part of the country, except for the Saratov oblast and republics of Northern Caucasus. In the Asian part with worst concerning average on the country of parameters of complete tear and

wear of funds of this branch are allocated only Kurgan and Novosibirsk oblast and Former Ust'Orda Buriat Autonomous Okrug. As a whole here situation connected to prescription of development and scope of the population by named above kinds of services, and with backlog of updating of the basic production assets in housing and communal services from its normative level obviously has found reflection.

As to such branch of activity, as transport and communication, it's in the regional scale more differential also is various, than in two considered above kinds of economic activity. In particular, worst parameters of complete tear and wear of the basic production assets are typically for Stavropol Krai and Republic Adygeia in the European part of the country and Republic Tyva, Tomsk and Magadan oblast, Former Ust'Orda Buriat and Chukotka Autonomous Okrug. In details situation with maintenance of reproduction of transport as complex concept is considered in the article of P. Krylov [5].

3. Development of natural-resources Regions and incomes from natural resources use.

Major condition of transition to sustainable regional development is the control above receipt and distribution of the incomes from use of natural resources and ecological conditions of territory. Questions on proportions redistribution of the incomes from natural resources use between the budgets of the state, regions and municipalities, including large urban formations in this connection are important.

The mechanism of distribution of the incomes from natural resources use between the federal centre, regions and municipalities in Russia are the legislatively installed proportions of receipts of natural resource payments and taxes in the budgets of a different level. These proportions are various in the different countries and require periodic change depending on an economic, social and ecological situation. In modern Russia the distribution of the tax and not tax incomes from the natural resource use between the budgets of a different level is legislatively fixed in a number of the Codes - Budget, Tax, Ground, Water, Wood, and also in the Federal laws - «About subsoil Resources», «About fauna» etc. Petroleum, and since 200, gas incomes have allowed to generate Stabilization Fund, from which then were allocated Reserve Fund and Fund of National well-being, and also considerably to increase the size of gold-value reserves of the country. Cumulative volume of means of Reserve fund (on 1.02.2008) on the moment of its allocation from Stabilization Fund has made \$ 125.19 or 3057.85 milliard Rubles, and on 1.04.2009 has made, on the data of the Ministry of Finance of Russian Federation, \$ 121,06 milliard or 4117,63 milliard Rubles. However

to 1.03.2010 cumulative volume of Reserve Fund was reduced up to 1763.89 milliard Rubles or \$ 58.9 milliard (at 2.33 times rather 2009).

As of April 1. 2009 cumulative volume of Fund of National well-being has made 2 915.21 milliard Rubles, that is equivalent \$85.71 milliard. By 1.03.2010 the Fund of National well-being also was reduced, but in a smaller proportion (at 1.08 of time) and has made 2684.21 milliard Rubles or \$ 89.63 milliard.

The modern Russian legislation more and more centralizes the incomes from natural resources use with the subsequent redistribution them through system of transfers and grants. That does not stimulate regions in business of taxation from use of resources. Especially it is necessary to stop on payments for usage by natural resources in Russian Federation. For example, since 2001 the amendments in the Federal Law «About subsoil Resources», essentially changing the system of payments were accepted at use of bowels of the earth: the most part of receipts from oil - and gas output was directed to the federal budget. In 2004 of power of a federal level of regulation of subsoil resources use were considerably extended. The law has fixed a cancellation of a principle «of two keys» (that is principle of joint conducting federation and subjects of federation in questions of natural resource use and next change of proportions of distribution rents of the incomes from operation of resources of subsoil between federal and regional levels). Actually «Others» and prevailing minerals, as invaluable concern only to conducting a local level. To municipalities in their order the taxes to ground both immovable property and part of payments for negative influence on environment are left only, that are not capable to supply even the minimal needs of the majority from them (Table 2).

Table 2. Distribution of tax receipts and non- tax payments from use of natural resources and between the budgets of different levels, %.*

Kinds of tax and non - tax payments for usage by Natural Resources and pollution of an environment	The Federal Budget	The Regional Budget	The Local Budget
1. Tax payments for usage by Natural Resources			
The tax to production of minerals as carbonic raw material (fuel natural gas)	100	-	-
The tax to production of minerals as carbonic raw material (except for fuel natural gas)	95	5	-

The tax to production of minerals (except for minerals as carbonic raw material, natural diamonds and prevailing minerals)	40	60	-
The tax to production of minerals on a continental shelf of Russian Federation, in an exclusive economic zone of Russian Federation, outside territory of Russian Federation	100	-	-
Regular payments for production of minerals (royalty) at performance of the agreements about section of production as carbonic raw material (fuel natural gas)	100	-	-
Regular payments for production of minerals (royalty) at performance of the agreements about section of production as carbonic raw material (except for fuel natural gas)	95	5	-
Regular payments for production of minerals (royalty) on a continental shelf, in an exclusive economic zone of Russian Federation, outside territory of Russian Federation at performance of the agreements about section of production	100	-	-
The tax for usage by objects of water biological resources (excepting internal water objects)	70	30	-
The tax for usage by objects of water biological resources (on internal water objects)	100	-	-
The water tax	100		
The tax to production of the prevailing minerals	-	100	-
2. Non - tax payments for usage by Natural Resources and pollution of an environment			
Payment for usage by water objects which are taking place in the federal property	100		
Payment for negative influence on an environment, including:	20	40	40

Payment for negative influence on an environment in the subjects of Russian Federation - cities to Moscow and St.-Petersburg		-	80
Payments for use of woods in a part of the minimal size of a rent payment and minimal size of a payment for the contract of sale and purchase of wood plantings	100	-	-
Payments for use of woods in a part of a rent payment, exceeding the minimal size, and minimal size of a payment for the contract of sale and purchase of wood plantings	-	100	-
The tax for usage by objects of fauna	-	100	-
Payment for usage by water biological resources under the intergovernmental agreements	100	-	-

*On the data of legal-reference system «Consultant+»: the Budget Code of Russian Federation from 31. 07.1998, №145-FL in redaction of the federal Law from 17.03.2009 [1].

In the system of the relations between the Federal Centre, the regions and raw-material companies appears a problem of activation of influence of the natural resources use on a level and quality of growth of economy of natural resources Regions and on realization of their socio - economic potential.

The centralization which has increased since 2005, of the tax incomes received from usage by natural resources of concrete regions, quite often causes criticism on the part of the regional authorities explaining default in complete volume of the planned before social and ecological programs by reduction of natural-resource payments in the regional budgets. It is possible that is correct, but our calculations have not allowed to find out of any appreciable connection between the incomes of the budgets and their charges on the social and ecological purposes in the majority of natural-resources Regions [9].

It is still impossible to recognize structure of natural-resource payments in modern Russia effective from the point of view of easing negative influence of raw-resources use on natural complexes. It promotes preservation and even to strengthening of a raw-resources orientation of a national economy. So, last years XX in the share of payments for bowels of the earth in the incomes of the budgets has increased on the Russia as a whole and in all its macro-regions, but is especially

sizeable on Ural. The payment for water, wood and ground resources in structure of general natural-resources payments, on the contrary, in a different measure has decreased. The payment for water resources has decreased in all macro-regions, but most of all in the European territory of the country and in West-Baikal part of East Siberia. The payment for usage by ground especially appreciably has decreased on Ural, but has increased in the European part of the country. For these resources of high ecosystem value of the enterprise pays the small sums, though not only actively use them during production of minerals, but also worsen their quality.

Despite of some strengthening of the economic importance of payments for use of natural resources, as a whole they remain in Russia low, is weak differentiated is territorial and not rendering the large influence on economy of regions. So, account and analysis of factors of pair correlation between these payments and GDP in different regions for 1996 and 2005 have shown weak connection of the given parameters. Same has revealed the analysis of regional correlation between payments for resources and living standards of the population. And only payments for water resources have appeared rather more closely connected with a standard of living of the population for both specified dates (factor of correlation 0.73 and 0.75 accordingly). Unfortunately, the most part of payments for natural resources since 2004 began to concern to the taxes and is not shown in standard statistics. However, as the size of payments for natural resources is small now, it, as against size of the taxes in branches of natural resources use, is statistically enough determined. It allows using the given parameter for revealing a number of the tendencies in dynamics and territorial distribution of the incomes from use of natural resources.

As to change in the ratio of payments for separate kinds of natural resources inside macro-regions, here most essential shifts for last years have taken place on Ural, where almost on 30 percentage items the payments for subsoil resources have grown and on 22 items the payments for ground have decreased. The payments for ground have grown only in the European part of the country. In all other regions of the country their share was reduced. The share of payments for water resources has decreased in all regions.

The greatest contribution of payments for usage by natural resources in the regional budgets allocates those northern and east regions, where in conditions of sparsely populated territory the large development was received with a mineral-raw industry as unique or prevailing specializing branch of economic activity. With reduction of scales of development of obtaining branches in similar natural and socio economic conditions the contribution of the specified payments to the budgets of northern and east areas is reduced. The minimal payments for use by natural resources in

the regional budgets allocate the more densely populated resource regions described enough differentiated by structure of raw sector and more various tax base.

However influence of resources use on economy of raw-resource regions at all is not limited to the direct taxes and payments for use of natural resources. The total incomes of this kind of activity acting in the budgets of a different level, include both other indirect tax and not tax taxes, so in the whole influence natural resources use on economy of a raw-resource regions it appears rather essential.

For definition of a degree of influence in different groups of natural-resources regions we designed factors of pair correlation between such parameters, as a level of development of a raw-mineral complex, GDP, volume of industrial manufacture, incomes of the regional budgets and monthly per head the incomes of the population [10]. The accounts have shown high interdependence of the named parameters in northern and South-Siberian latitudes zones, and also in Far East meridional differentiated to a strip. The values of factors of correlation vary in these groups of regions from 0,886 up to 0,743 that testify to a main role of receipts from a mineral resources complex in life-support of the population of resource regions weak differentiated to structure of their economy. In raw regions with the best natural and socio economic conditions and more differentiated by economic structure the similar parameter is reduced up to 0,570. In the European part of the country the correlation dependence between a level of socio economic development of regions and security by the natural resources, involved in economic circulation, as was already mentioned, is not traced at all.

From the other side that for natural-resources regions the weak correlation dependence of quality of social environment on their economic characteristics is inherent. So, according to the carried out accounts, the share of expenses on the welfare programs in structure of the budget charges does not depend on general size of tax base of region. The expenses for protection of an environment are poorly connected to a degree of deterioration of a fixed capital. Even more poorly, behind some exception, the dependence of sick rate of the population from emissions of polluting substances in an environment is expressed, as this level is determined, as is known, in the basic social conditions. Besides the account of the appropriate factors of correlation on the subjects of Russian Federation in scale large macro-regions does not reflect local character of distribution of diseases from the ecological reasons.

Conclusions.

Interregional unevenness in Russia continues to increase practically on all significant parameters, including the centralization and territorial concentration of financial resources accrues. It is highest in regions, where less than 20 % of the population of Russia lives. It is regions, except for Moscow and S. Petersburg, richest claimed on world and home market by natural resources. However other regions of Russia, rich with natural resources less claimed in conditions of market economy, on the contrary, concern to poorest territories of the country. At them does not remain of means and there are no administrative efforts to reproduction not only natural resource, but also material, social and demographic component of cumulative wealth of region.

The experience of Russia of last years has shown, that performance about automatism of action of market mechanisms in regional development are fair only for use of natural resources, instead for their reproduction, as last occurs mainly in subsystems of biosphere, hydrosphere, in separate landscapes and ecosystems. As the natural subsystems frequently do not coincide with borders of socio economic regions, the reproduction of natural resources can not successfully be solved not only in a circle of the direct participants of the market, and requires the specialized regional administrative structures.

The sustainable regional development in its «weak» form can be characterized through various kinds of reproduction of wealth of region, including through a parameter of tear and wear of the basic production assets. The observable changes in development of a society and its interaction with a nature do not correspond to the basic principle of stability of development, which means equation of development of its economic, social and ecological components. The priority is still given back to economy without the real coordination of interests with social and ecological problems of a society. It gives the basis for the consent with opinion on unsustainable development [2] of economy of Russia.

The influence of raw-material sector on development of natural resource Regions depends not only on size of the incomes received as a result of production, usage and realization of natural resources, but also from economic and social efficiency of use of these incomes. The experience of development of some regions shows, that this influence amplifies, if received from natural resources use the incomes, let even small, are invested in diversification of regional economic structure.

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