Resources for sustainable development of Russian Arctic territories of raw orientation

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Abstract. Attention is drawn to the fate of Russian Arctic regions of raw material specialization, distinguished by single-industry structure of the economy. The urgency of the problem is explained by the inevitable depletion of hydrocarbon and ore resources in the future, as a result of which these regions are threatened with economic depression. The latter may come earlier - due to sharp jumps in world prices for raw materials and the "demarche" of mining companies. The authors believe that to ensure the sustainable development of the Arctic regions of Russia today there are no "iron" recipes. The experience of the USA, Canada and other foreign countries is not always representative. Numerous factors should be taken into account – not only economic, but also ethnic, geopolitical, the factor of "delayed benefit" (in connection with the planned operation of the Northern sea route), etc. In any case, the restructuring of the regional economy is necessary within the significant centers, implying the emergence of new branches of specialization within the existing resource base, the development of high-tech production, expansion of services (including tourism), transport, computer science, communications, etc. As a specific landfill is considered Yamal-Nenets Autonomous Okrug, according to the authors, the most clearly reflects the nature of the problem. Recommendations on the transition of the Yamal-Nenets Autonomous Okrug from a narrow specialization to a balanced economy, on the transformation of this region into an Outpost of the Russian Arctic are presented.

1. Introduction
The instability of the economy of the raw materials regions of the Arctic is due not only to the severity of the local climate. Their socio-economic development depends on a number of factors, characterized by instability: the fluctuation in world prices for raw materials; the strengthening of the single-industry nature of the economy, based on the exploitation of raw materials; the inevitable future depletion of hydrocarbon resources and the departure of mining companies, as a result of which these regions often become depressed with depleted resource potential, disturbed ecosystem and ruined traditional economy. The particular urgency of this problem in the regions of natural resources development is associated with the imminent depletion of hydrocarbon raw materials.

The aim of this work is to find a scientifically based system of measures designed to ensure the sustainability of mineral regions of the Russian North and the Arctic on the formation of regional policy aimed at sustainable socio-economic development, avoiding the mono-sectoral nature of the economy, which would allow the commodity regions to develop successfully in crisis situations (falling commodity prices, depletion of the raw material base, strengthening the narrow-resource structure of the economy, etc.).
2. Arctic cold and the economy of the North

The Arctic territory of Russia routinely refers to the category of "ineffective" and not suitable for the settlement of the "life world". For this reason, the problem of simple, organic and continuous relationship with the Arctic environment was and remains for Russia one of the most complex civilization tasks [1; 2; 3].

A somewhat one-sided view of the history of the resource regions of the North dominated in the Russian literature. According to him, these regions for a long time were considered by the Central authorities only as sources of foreign exchange earnings and replenishment of the state budget. Such approach, they say, formed in relation to the Northern territories the corresponding regional policy, in which short-term benefits prevailed over long-term ones, etc. However, such a logic contains a significant flaw, since it ignores the fact that the development of the North was dictated not by economic, but by socio-political and, especially, military considerations. In this case, with regard to Russia, we should not just talk about industrialization, but military industrialization. At the same time, "Soviet industrialization, aimed at survival in a very tough world war, is pathology only from the point of view of the Anglo-Saxon model of the market economy. It was a very rational and successful economy" [4].

In other words, the reason for the economic costs that Russia has borne and continues to bear due to extreme climatic conditions is unlikely to be correctly sought only in the "vicious" system of socialist planning aimed at "uniform" placement of productive forces on the territory of the country, including the Northern and Arctic regions. This manifests the elements of reductionism, when a complex phenomenon is explained by distorted methodological guidelines and ideological stamps. Indeed, in the context of the planned economy, the concepts of "price", "cost", "economic efficiency", "profitability of production" were filled with ideological content, and the former planning system really contributed to the resettlement of millions of people in Siberia. But, to say that the question of the "cost of cold" then did not take into account at all and reduce its essence to the irrational use of capital and people means to contradict the facts [5].

Invented by the American authors F. Hill and K. Gaddy, the "per capita temperature index", calculated on the basis of average January temperatures and weighted relatively to the distribution of the population, adequately reflects the climatic specifics of Russia. However, their conclusion from the title of the work "Siberian curse: how Communist planners froze Russia" seems to be clearly ideologized and straightforward [6]. It shows that the authors-rusologists did not bother to delve into the socio-political history of Russia, which is replete not only with severe social upheavals, but also enemy invasions, which are manifestations of the age-old territorial expansionism of Western countries. Comparing the Siberian cities with the cities of the Northern regions of Canada and Alaska, the mentioned researchers hide from the reader the incomparable specificity of socio-political history and ethno-political realities of the American territories.

It was not difficult to anticipate the final statement of these authors that Siberia and the far East are not so much a source of enormous natural resources as a "burden" for the Russian economy. (Between the lines it is read that it is, they say, under the power of a transnational financial oligarchy!). It is not surprising, that one of them - Clifford Gaddy - not only a prominent expert on the Soviet and Russian economy, the author of a number of books, including "The Price of the past: Russia's Struggle with the legacy of the militarized economy" (1996) and "Virtual economy of Russia" (2002), but also "tireless fighter with the Kremlin", a representative of the liberal-globalist part of the American establishment.

Not wanting to engage in understanding the root causes of the development is not always effective economy of the North, the mentioned specialists and their associates rightly emphasize that due to low temperatures production in Siberia sometimes is not economically justified. Indeed, in market conditions, many, covered with the romance of territorial-industrial complexes and enterprises, that have arisen literally on the edge of the world, because of its fantastic capital intensity would not have been built at all. However, isn't it thanks to these enterprises that the Russian economy is being revived, modernized, equipped with new technology and acquires an innovative character?
The organization of the process of economic activity in the North is much more complicated than the classical market schemes, pursuing the immediate interests of private investors, especially foreign ones. For this reason, the categorical "verdict" issued by the President of the Union of cities of the Arctic and the Far North of Russia, a member of the Commission of the Public chamber of the Russian Federation I. L. Shpektor is hardly acceptable: "If the field for which the city was built is exhausted, then such a city should be closed, even without conservations: it is necessary to relocate people and close the city" [7]. Abstracting from the geopolitical and geostrategic components of the problem, I would like to know the opinion of this former mayor of Vorkuta at least on such a delicate issue: how should one deal with parents, relatives and friends buried in local cemeteries in such cases?

In this regard, the Federal centre is obliged to be extremely careful today about the "grandiose" regional projects of spatial and economic reconstruction of Russia that appear from time to time and affect the interests of the population of the Northern territories. Of course, the emerging market is already giving a signal: many enterprises are not viable, they are not able to solve the problem of increased transport costs without state subsidies, for example. Any large-scale opposition in this regard to market mechanisms, which are designed to balance the huge distortions in the placement of productive forces, creates a brake on the development of Russia as a whole.

In the conditions of the North, especially in the places of age-old residence of small peoples who are not going to leave their "feeding landscapes", some sectors of the economy are considered by the expert community within the framework of social and environmental categories rather than economic ones. As an example, we point to wind energy. The economic efficiency of small-scale wind turbines and hybrid systems (sometimes with diesel generators and batteries) in the Arctic is unlikely to increase in the foreseeable future, but their installation is becoming more of a social than an economic imperative. This is especially important for isolated small settlements "scattered" across the Arctic (in which specific objects are often localized - meteorological stations, beacons and other navigation elements, border outposts, etc.). Finally, it is difficult to calculate the "delayed" economic efficiency of the creation of transport and social infrastructure associated with the start of work on the opening of the Northern Sea route (not to mention the needs of the military-industrial complex), etc.

3. About destiny of the Arctic raw regions

This question is increasingly being brought to the panel discussions of economic forums, it is becoming a "headache" for the authorities of the relevant subjects of the Federation and the heads of the largest oil and gas companies. Naturally, not all commodity regions of the country, which form about half of its budget, 70% of exports and are drivers of the Russian economy, belong to the Arctic zone. But, first, some of them, in whole or in part, are located in the Arctic, or strongly gravitate to it, and, secondly, they are all united by a common goal associated with the fact that the strategic use of the current opportunities of raw regions should be the key to their comfortable future.

This idea was at the center of the first thematic discussion on the fate of Russia's raw material regions after the exhaustion of their resources, held at the XII International economic forum Sochi-2013. The panellists then concluded that a key element of the strategy of such regions should be an understanding of the need to support the local population, that it deserves to "live happily" and after the depletion of natural resources. Of course, the same position is shared by representatives of local administrations. At the same time, the proclaimed "formula" does not shed any light on specific levers and tools that can be used to increase the stability of the development of oil and gas producing regions of the Russian North with the inevitable depletion of their raw material base or a possible "collapse" of hydrocarbon prices.

In this regard, reference to the specific experience of Canada, Alaska and other Arctic states is often fruitless. The reason is that in practice, each country solved this problem in its own way, but mainly due to the integrated development of resource territories through restructuring and diversification of the economy. In addition to the construction of enterprises for the processing of raw materials, the development of trade and transport activities, small businesses, tourism, practiced the creation of high-tech industries [8; 9 and 10].
Another detail related to the questionable benefits of regional comparisons is that the so-called "natural rent" is used in different ways in the constituent entities of the Russian Federation. The discovery of oil and gas fields in Tatarstan, Bashkiria and later in the Tyumen region became an engine in the development of engineering, petrochemistry, social infrastructure, etc. It is clear that such mechanism of action of fiscal federalism was not always and, most importantly, not everywhere. No one tried to convincingly argue the reasons for such differences in approaches, although without this it is clear that we are talking about the permanent imperfection of the existing model of fiscal federalism in the country.

According to the President, Chairman of the Board of LUKOIL V. Alekperov, our tax system is not mature, "it does not stimulate the region to invest in its territory, because the region cannot be a major partner in the development of its own territory. Natural rent ... is one hundred percent withdrawn from the region to the Federal budget, and then redistributed to certain projects. The region has no maneuver, no interest, no budget funds to stimulate the development of parallel industries. Today, it is necessary to focus on the fact that regions where there are raw materials with "the limit of their own life cycle", have the opportunity, thinking about the future generation, to form regional funds, which could, among other things, stimulate the creation of new industries" [11].

Agreeing with the authoritative oil and gas expert on the imperfection of the tax system, we note that the effect of the latter in the Arctic raw material regions will inevitably be selective depending on the specific region (the presence of indigenous people, the island, the continental shelf, the degree of population, the amount of concentrated fixed assets and their mobility, the interests of the settled population, etc.). Experts often cite data on the use of raw rents in the Alaska, where with limited access to resources, the government not only compensates the investor for 65% of his investment costs and the same percentage of his compensation costs for him to work here, but also takes care of local residents. At least 25% of the state's profits from hydrocarbon production goes to a special Fund (The Permanent Fund Dividend), half of which by paying dividends equally (but with Federal tax) is distributed among local residents.

Of course, certain compensatory analogs to the residents of raw materials regions ("northern" allowances, housing benefits, social package, annual preferential prices for "holiday tickets", etc.) exist in the Russian Federation. However, this is clearly not enough to increase the population and improve its living conditions.

In general, the problem of prospects of socio-economic development of raw regions of the North is multifaceted. On the one hand, the development of donor regions in some cases lags behind the pace of development of regions generally deprived of mineral resources. Many experts associate this with the accumulation of "Northern" money at the level of the Federal budget, and then - the distribution between the budgets of all regions. It is no accident that representatives of the Northern oil and gas regions are increasingly advocating for a "mechanism for the fair distribution of taxes", as the "appetites" of the Federal center, they say, are constantly growing, and there are no funds for development. The result is a loss of interest of territorial subjects to interregional cooperation and strengthening the effect of competition for Federal budget funds [12; 13; 14 and 15].

On the other hand, it is difficult to hope for a happy future of the population of the Arctic regions after the depletion of their underground storage without relying on their own forces - diversification of their own economy, development of oil and gas processing in the territories of producing regions.

4. Yamalo-Nenets Autonomous area: development or depression?

Let us turn to the specifics of the Yamal-Nenets Autonomous Okrug - perhaps, the most clearly reflecting the nature of the problem. In terms of socio-economic development, this region occupies one of the leading positions in the Russian Federation. Share of gross regional product per capita to the national value occupies 8 place in the region produced 10.6% of the mineral resources of the Russian Federation, including more than 80% of the gas (1st place) and more than 7% oil (2nd place) [16, p. 401]. However, there are many problems in the region that need to be resolved [17; 18; 19; 20; 21]. They are mainly related to the narrow raw material structure of the economy based on the extraction of
hydrocarbons, which has negative consequences, mainly in times of falling world prices for raw materials and as a result of the depletion of the raw material base. These processes are already observed in a number of fields of the district and cause difficulties, which the authorities have not met before.

As practice shows, not only in the Yamal-Nenets Autonomous district, but also in other resource-producing regions this problem is not paid due attention, in any case, the analysis shows that it begins to think about only in crisis periods. However, the expansion of the branch structure of the economy must be addressed in a timely manner in a favorable economic and political environment and at the stage of growing hydrocarbon production, since the problem is easier to prevent than to "treat". The decisive role in solving this problem belongs to the state in the person of both Federal and regional authorities, capable of forming a model of public policy that would allow resource-producing regions to develop steadily, without shocks, not only in the short but also in the long term.

The cities of Noyabrsk, Muravlenko, Gubkinskiy, which are similar in terms of their development, were chosen for the analysis of the processes. All of them are resource centers for the extraction of hydrocarbons and are at the stage of falling production with naturally declining returns of hydrocarbons, with the dominant position of enterprises of the raw materials sector of the economy, which includes the service companies of the hydrocarbon cycle "production-primary processing-transportation". The position of these cities is compounded by the fact that in the short term (2020-2025) it's planned to establish five new centers of oil and gas production: Bovanenkoy, Tambeykskiy, Novoportovskoy, Messoyakhskskiy, Kamennomostskiy, which will reduce the role of the Noyabrsk, Muravlenko and Gubkinskiy groups of fields and will have a negative impact on the socio-economic development of these cities [22,23].

The analysis of statistical data on the shipped goods of its own production and performed their own work suggests a poorly developed manufacturing industry. Mining plays a dominant role. For example, in Noyabrsk the volume of mineral extraction in the total volume of shipped goods of own production and works performed by own forces is 85%, and the volume of processing production is only 5%. In other words, the wellbeing of resource single-industry towns depends almost entirely on the state of affairs in only one industry - oil and gas.

As a result, investment activity in the single-industry towns of the Yamal-Nenets Autonomous Okrug, whose economy is dominated by oil, gas and gas condensate production, is unstable and directly depends on the state of hydrocarbon markets. In addition, the decrease in investment activity is affected by the relatively low level of capitalization of domestic vertically integrated corporations operating in single-industry cities during crisis periods.

In the studied cities there is an outflow of population. Maximum values recorded in the city of Noyabrsk, the minimum - in Gubkinskiy. Migration is not intra-regional but inter-regional. Young people and the working-age population, to a lesser extent elderly people, are mostly decreasing from the region. The reasons for the outflow are primarily related to the reduction of jobs due to the relocation of oil and gas production to the areas of fields that are at the initial stage of development, as well as to departures for higher education.

Summarizing the above, we can highlight the main features of the development of the cities of the Yamal-Nenets Autonomous district, which have a purely raw-material nature of the economy:

• currently, their socio-economic development is directly dependent on the extractive gas and oil industries, which dominate the structure of the industry. The role of manufacturing is insignificant;
• these cities are characterized by the fact that the majority of the population is employed in mining and public sector, in manufacturing and other sectors of employment is very low;
• investment activity is unstable and depends on oil and gas prices, the state of hydrocarbon markets;
• in the context of significant fluctuations in the market conditions for hydrocarbons, global and regional crises, the risks of sustainable socio-economic development are increasing.

Thus, the existing economic structure, dominated by gas and oil production, the insignificant role of manufacturing and other sectors of economic activity, dominated by large vertically integrated
mining enterprises and small and medium-sized businesses, has led to a high dependence of socio-economic development of the region on the state of the hydrocarbon market and their resource base. The resulting lack of long-term growth prospects limits the possibilities of diversifying the regional economy by creating new economic activities. Attempts to implement investment projects, including in gas and oil refining, are carried out not so much to diversify the economy, but to compensate for the decline in activities in the field of extraction of major minerals. Therefore, a new model of development of single-industry cities of the Yamal-Nenets Autonomous district is required. For sustainable development it is necessary to restructure the regional economy by expanding the production base and sectoral structure of the economy. Economic restructuring implies the emergence of new branches of specialization within the existing resource base, the development of knowledge-intensive and high-tech production, the expansion of services, including tourism, transport, computer science, communications, etc.

5. Conclusion
There are no "iron" recipes for the sustainable development of the Arctic regions of Russia. The similar experience of foreign countries is not always representative. The exhaustion of resources cannot be considered either a "go-ahead" to the "closure" of the developed territory, or a signal to its "reincarnation". Numerous factors (natural, economic, social, ethno-demographic, geopolitical, communication, etc.), which together may call into question the absolute "status" of the current expediency, should be taken into account.

As for the fate of the Yamalo-Nenets Autonomous Okrug, the authors believe that its strategic perspective is the transformation into an international Outpost for the development of the Russian Arctic. In this regard, the development of the district is associated with the integrated use of all regional advantages in the use of the Northern Sea route. The agenda includes the implementation of major investment projects related to the role of the region as a supplier of hydrocarbons to the domestic Russian and international markets, innovative renovation of manufacturing facilities, construction of pipelines, roads and Railways, and finally, the preservation of the traditional system of life support for the indigenous population.

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