

Socio-Economic Issues of the European North of Russia and the Geographical Aspect of Their Solution in Modern Conditions



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Abstract. The European North of Russia is considered as an economic region with specific characteristics of production and population settlement. A North European economy type with high natural resource potential, innovative geo- and biotechnologies, telecommunication systems and forms of organization of territorial communities of people adapted to difficult climatic conditions is being formed here. The socio-geographical aspect of the development of this economy type is manifested in the interests of the indigenous population to preserve and modernize the historically reclaimed areas of land. This involves overcoming obstacles in rational land use and forest management, reviving existence near rivers, lakes and sea gulfs, and strengthening territorial “center – periphery” ties. The choice of strategic directions for the development of the European North of Russia is significantly influenced by external conditions. They update topics related to the reaction to the world order transformation, the North Russian identity, the contact zone formation for the continental and maritime economies, food security, and the protection of Russia’s Arctic interests from foreign interference threats. The issues of studying the European North of Russia are becoming more complex and require a purposeful scientific explanation, the creation of scientific and technological foundations of territorial management.

Key words: economic region, North European economy type, territorial economic system, typology, methodology, science and socio-economic development.

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Introduction

The issues of socio-economic development of the Russian North (with special attention to its Arctic zone) are studied with considerable effort by numerous research teams. Summarization of the results obtained on this topic¹ (Agranat, 1992; Agranat, 2007; Bashmakova, 2010; Lazhentsev, 2022; Pilyasov, 2016) revealed a trend of the shift of research interest from global and national issues of natural resource development to intra-regional matters related to the unsatisfactory northern way of life. A historical approach to understanding the reaction of local communities to the general transformations of spatial development in Russia and in the world order as a whole is becoming increasingly relevant (Brovina, 2018; Lapin, 2016; Lukin, 2013; Lytkina, Smirnov 2019; Neelov et al., 2011; Shvetsov, 2021; Werlen, 2001). This is a higher level of abstract thinking aimed at translating worldview ideas into solving practical tasks in a particular region of the country. Considering this shift, the author of this article has made *an attempt to geographically show the most significant issues caused precisely by the transformation of economic and social foundations of community development in the European North of Russia*. Three issues are considered: the formation of a large economic region, the substantiation of the North European type of territorial economic complexes, the preservation of previously reclaimed areas of land and their improvement.

The issue of the formation of a large economic region

The European North of Russia is most often considered as the Northern Economic Region (the republics of Karelia and Komi, the Arkhangelsk, Vologda, Murmansk regions, the Nenets Autonomous Area). It was separated from the Northwestern Economic Region in 1982, and since then its

borders have remained unchanged; 4046 thousand people live on 1466.3 thousand km², this is 2.8% of the Russian population (2023); 3.8% of the gross domestic product (GDP) of the Russian Federation is produced here, and mining, forestry and fishing industries make up a large proportion of it.

Among the European economic regions, the Northern one is characterized by a relatively harsh climate and high natural resource potential for industrializing (Richter, 1966; Northern Economic..., 1992). In this respect, it is similar to the Asian regions of Russia, but, in contrast to them, it has more favorable environment, formed under the influence of the warm Atlantic current, the Gulf Stream, and a convenient economic and geographical location near Moscow and Saint Petersburg. Along with the growing importance of the Northern Sea Route and the Arctic as a whole in the national and global economy, the value of this region is increasing as the main springboard for the development and protection of high-latitude Russian territories and waters. A kind of contact zone between the continental and maritime economies, as well as between the geopolitical interests of Russia and Scandinavian countries has been formed here (Shubin, 2011).

Manufacturing and technological ties are significant in economic regionalization. It can be illustrated by the Northern Coal-Metallurgy Base created in the 1950s by combining Karelia and Kola iron ores, Pechora metallurgical coal, Cherepovets water and energy resources. It was the core of the Northern Economic Region. But the “coal and steel age” has passed, and the time has come for high technologies and microelectronic complexes. The former industry has become problematic in terms of territorial organization of productive forces. Technological improvements in some industries sometimes create difficulties for others. For example, the coal-to-gas switch of the Cherepovets regional power station led to the complete closure of the mining industry in Inta, and the intentions

¹ *K 30-letiyu Vologodskogo nauchnogo tsentra RAN* [To the 30th Anniversary of Vologda Research Center of RAS]. (2020). Vologda: VolRC RAS.

of Severstal's management to use gas and hydrogen instead of coke exacerbate the issues of coal mining in Vorkuta and the socio-economic development of this town.

Currently, spatial scientific, technological, economic, environmental and social integration is more important for regionalization. This circumstance unites the efforts and resources of the republics, regions, autonomous areas and municipalities for sustainable use of natural resources, infrastructure, sports and tourism development of territories, cultural events organization and other purposes of interregional co-working. We are talking about managed cooperation within the European North based on joint efforts of regional governments, municipalities and economic structures, research and educational centers (Kozhevnikov, 2023).

However, this raises the question: if the mentioned sources and drivers of regionalization are so clearly important (although ambiguous), then why do economic regions act as a formal appendage to the existing Russian strategic spatial planning system? In relation to the Northern Economic Region, this issue is very relevant. The fact is, there is no major organizing center yet. Only Arkhangelsk claims this status, considering its equidistant geographical location and the historical experience of the large Arkhangelsk Governorate and the Northern Territory (Shubin, 2005).

The joint development of the Northwestern and Northern economic regions is problematic. Saint Petersburg is losing (perhaps temporarily) its status as the "Window to Europe" and is increasingly focusing on the domestic Russian market. Its switch to the Arctic is particularly noticeable, to the benefit of the Russian European North regions. The most significant growth occurs in culture, high-tech medicine, science and education, design efforts and special installation work, logistics, and regional planning. Is this a solid reason to merge the two economic regions into one? There is no definite

answer. In any case, constructive representation of the European North's economic activity specifics and its geographical location in the strategic spatial planning system of Russia remains perfectly legitimate.

The issue of organization of the North European type of territorial economic complexes

The typology of territorial production complexes was first carried out in 1947 by N.N. Kolosovskii (1958) on the basis of energy production cycles and production combinations formed around such cycles. However, he did not consider the northern territories within his typology due to their uncertain status in the economic regionalization of the country at that time, but singled out the "northern industry" for the future. V.A. Krotov (1964) scientifically substantiated the existence of the East Siberian type of productive forces. This is probably the only example of this kind of research. If it is projected onto the Northern Economic Region with an adjustment to modern conditions of social development, the following definition can be given provisionally: *the North European economy type is a mixture of territorial and industrial features including high natural resource potential, innovative geo- and biotechnologies, telecommunication systems and the specific way of life of the population adapted to difficult climatic conditions.*

According to this definition, the main production and technology guidelines of the Northern Economic Region can be formulated as follows:

- creation of energy-coal-oil-gas chemical complexes, where hydrocarbon resources are used mainly in chemical-technological processes, and the use as a fuel is auxiliary;
- complex processing of crude ore materials with extraction of scarce rare and rare earth metals, which are essential for increasing the level of technological self-sufficiency of the Russian economy;
- creation of a geo-mechanical monitoring system, ore beneficiation right at the points of extraction, hydrometallurgical processing methods,

laser scanning, nuclear physical and other methods for studying the properties of naturally occurring materials;

- introduction of new methods of mechanical and chemical processing of wood using its vital cells to obtain biologically active substances;
- installation of technological equipment for agricultural complexes, the structure of which covers the entire cycle of agriculture, animal husbandry and food production.

The listed above requires a systematic scientific and technological substantiation. The implementation of innovative technological projects designed at the Russian Academy of Sciences could significantly contribute to the formation of this economy type.

The study and development of *local forms of the economy and way of life organization* in the European North assumes a more fractional geographical typology. *Figure* shows one example of such a typology (Lazhentsev, 2015). The following elements are distinguished:

- *agglomerations that function as key structures* (Murmansk-Severomorsk, Apatity-Monchegorsk, Petrozavodsk, Vologda, Cherepovets, Arkhangelsk-Severomorsk, Kotlas, Syktyvkar, Ukhta-Sosnogorsk agglomerations). Naryan-Mar with the Iskateli village, designated in official documents as an agglomeration, is also included here, although its population is only 29 thousand people. Back in the early 2000s Vorkuta Urban Okrug was a striking agglomeration example in terms of population

The Northern Economic Region urban settlement map: agglomerations and peripheral industrial settlements (compiled by V.N. Lazhentsev, A.V. Smirnov)



Source: (Lazhentsev, 2015).

settlement and economic organization, but in recent years the villages surrounding Vorkuta are becoming deserted, and Vorkuta itself has ceased to be a key structure due to the lack of an “economic gravity field”;

– *peripheral industrial cities and towns* (there are 67 of them in 2024, including the largest: Kandalaksha, Kovdor, Nickel, Pechenega, Kostomuksha, Segezha, Onega, Nyandoma, Vorkuta, Inta, Pechora, Usinsk, Vuktyl);

– *peripheral settlements with a predominance of country life* (villages remoted from key structures, some forest and “roadside” settlements).

This classification of settlements allows us to understand the most acute territorial development issues. In terms of agglomerations, they include the organization of inter-settlement rapid transit, environmental protection, and the participation of adjacent towns and villages in the formation of a common set of social services. The issues of the industrial periphery include the timely response to an increase or decrease in mining and timber harvesting, the search for an additional economic base for long-term development, and the organized resettlement of people. In rural areas, these are the conservation of agricultural land of “dying” villages, the resettlement of the population, the development of the local road network and information communications.

The issue of preserving previously reclaimed areas of land and their improvement

First of all, it is necessary to highlight self-identification of indigenous residents as Northerners, a historically established social community, a kind of symbiosis of North Slavic and Finno-Ugric ethnic cultures. People in the European North of Russia have been living there for centuries. Despite significant fluctuations in their numbers, the formed “cores” of vital activity are stable. Overcoming difficulties of land reclamation and modernization in line with the increasing needs of the national and global economic systems is a challenge that Northerners face today.

The economy of the European North is closely connected to resolving the issues of sustainable development of local communities within their historically established culture and economic traditions. Regionalization and localization of solutions to socio-economic problems is a kind of counterbalance to globalization, the danger of which can be seen in the exaggerated unification of the various societies’ ways of life without careful consideration of their diversity, including the northern one.

The most difficult task is *the rational use of land resources* and the agricultural areas reclamation (at least partially), including arable land. Cultivated in the conditions of the North, this land is a huge historical acquisition, the highly important spiritual and socio-economic reality. However, this very wealth has largely fallen into disrepair during the years of revolutionary reform in the 1990s. The cultivated area in the European North decreased in 32 years (1990–2022) from 1318 to 455 thousand hectares, by 2.9 times; the rural population – from 1417 to 845 thousand people, by 1.7 times. Villages abandoned by their inhabitants who migrated to larger settlements seem to be extremely beneficial only at first glance. However, along with the departure of people, farmland disappears to such a large extent that the energetic metabolism of landscapes radically changes, most often not for the better.

Until recently, the food security issue was that Russia imported a lot of food, but now it is that Russia’s own production does not meet the standards of safety for human health². The northern territories (unlike many others) are most suitable for organic agriculture; they are less polluted with “bad chemicals” and are relatively easy to integrate into the adaptive landscape farming system (Maltseva, 2021; Shcherbakova, 2020).

² *Zemel’nyi potentsial Rossii: sostoyanie, problemy i mery po ego ratsional’nomu ispol’zovaniyu i okhrane: analiticheskaya zapiska* [Russia’s Land Potential: Status, Issues and Measures for its Rational Use and Protection: Analytical Note]. (2023). Moscow: RAS. Available at: <https://www.ras.ru/news/shownews.aspx?id=731db31a-c85e-4c9d-9249-240c9a2fbe28>

Hopes for the preservation of the country life are associated with the revival of consumer cooperation (including traditional Northern crafts, mushroom and berry economies), with the development of bioenergy, gasification, the wooden housing industry, network systems of healthcare, education and consumer services. This can be possible only if there is a stable year-round transport system including, if necessary, river routes, floating (pontoon) bridges, winter roads, and small aircraft; telephone, post-and-telegraph, cellular, television networks, and high-speed fiber-optic and space communications.

The external aspect of the northern agriculture development is manifested in global warming trends and potential changes in natural conditions in the steppe and forest-steppe zones. Agriculture in the taiga zone of Russia will have to be promoted if required, including due to the critical state of the global food market.

The problems of spatial and territorial development in the European North are closely related to forest management. This activity is also predominantly rural and depends on the circumstances mentioned above. The biological and economic problems of taiga territories have been studied sufficiently to improve the entire forestry system (Modernization..., 2018). The hydrology of rivers, lakes, and sea gulfs is not so well researched. Meanwhile, restoring them to service requires a significant amount of hydraulic engineering work, organized on a scientific basis.

The time has come when *land use in general* should become one of the most important areas of economic activity. In this regard, we note that many issues of land use now have to be addressed to low-budget economic entities, and this often determines inefficiency of their consideration. The financial strains of territorial self-government societies and municipalities are especially noticeable for the population. Most of them do not have funds for

engineering, geological, geophysical and biomedical surveys of problematic residential and industrial areas of land.

A constructive approach to resolving the land use issue is directly related to the recommendations of ecologists, biologists and physiologists. Some of them are: the creation of new technologies for “healing wounds” received by nature due to mining; the creation of artificial meadows in the tundra zone – a reliable forage for livestock; the use of special grazing regimes for deer and the preservation of mosses and lichens; the development of special rules and regulations for construction on permafrost; the organization of natural processes monitoring, which systematically examines interrelation between objects of fauna, flora and the biobased economy.

Let us pay attention to another aspect of land modernization – *energy*. Vologda Research Center of RAS has revealed that the proportion of housing with central heating and gas supply is decreasing more and more noticeably due to the active construction of apartment buildings and houses with individual heating systems, mainly working by electricity³. This reflects the general trend of utilities transformation, when the use of the heat in households becomes cheaper compared to central hot water supply. Moreover, if we take into account the increasing importance of country house ownership for people, this trend should be considered as the most important factor changing the structure of the end-use energy consumption. The use of individual heating systems is also beneficial for the far periphery, where it is more expedient to supply electricity than to build a gas pipeline or deliver fuel.

³ Uskova T.V., Voroshilov N.V. (Eds). (2024). *Sotsial'no-ekonomicheskoe razvitiye munitsipal'nykh obrazovaniy Vologodskoi oblasti. 2000–2023 gg.: informatsionno-analiticheskii byulleten'. Vyp. 11*. [Socio-Economic Development of the Vologda Region Municipalities. 2000–2023: Information Analysis Bulletin. Issue 11]. Vologda: VolRC RAS.

In our opinion, the mentioned transformations should be based on the *geosystem approach* – the theory of natural complexes, “principles and methods of changing the earth’s surface in the direction necessary for humans” (Sochava, 1978, p. 7). Introduction of the geosystem factor into the parameters of social reproduction actualizes the issue of natural resources capitalization (Dmitrieva et al., 2023). If the area of a particular geosystem has a set of useful properties and qualities considered in units of physical measurement, their totality should also have a cost estimate that can serve as a basis for subsequent, more specific calculations. The practical meaning of this position is explained by the need to accumulate financial resources sufficient to reproduce the natural resource potential of geosystems and create an environment conducive to human life.

Conclusion

The regional aspects of social reproduction have a traditional scientific explanation, pointing to the geographical division of labor and the characteristic of productive forces to combine into territorial production complexes. In this (traditional) respect, the European North of Russia has a fairly well-established scientific status of mineral and biobased specialization with deep processing of fresh raw materials using the latest technologies. The accelerated formation of the contact zone between the continental and maritime economies, as well as the need to protect Russia’s geopolitical interests in the Arctic contribute to the novelty in the research agenda of the last twenty years.

But even more, the novelty is substantiated by the world order transformation and the awareness of territorial communities of their own role in the ongoing socio-political processes. Against this background, the interpretation of the North European type of the economy and way of life organization as a specific set of industrial and social processes serves as a kind of guideline for strategic planning. The fractional typology of the forms of territorial organization of the economy and settlement of the population is also of great importance, taking into account the relationship between urban agglomerations, industrial and rural periphery.

The most urgent issue in the European North is the preservation and development of historically reclaimed areas of land where the population rooted, using a new scientific and technical basis. To solve this problem, it is necessary to restore agriculture, considering its influence on ensuring food security and its importance as a link within the entire agricultural complex, create a new forest management system and enhance the role of local communities in its regulation, restore rivers, lakes, and sea gulfs to service. Changes in the energy structure due to the use of individual heating systems have a positive impact on households.

The reference to geosystem approach emphasizes that the effect of integrating scientific knowledge, including socio-economic knowledge, can be enhanced if the solution of complex issues is based on “end-to-end” research methodologies.

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