

Original article

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THE IMPACT OF THE NATIONAL ARCTIC POLICY ON THE SOCIO-ECONOMIC TRANSFORMATIONS OF RUSSIA'S POLAR REGIONS

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Abstract. The article deals with the socio-economic dynamics of the Russian Arctic in the context of national policy and scientific views on the priorities, tasks, opportunities, and limitations of development. The fundamental importance and relevance of the presented research is determined by a series of fundamental problems that accompany the processes of development of the Russian Arctic, and the simultaneous increase in the importance of this territory for the national economy of Russia. The research methodology consists of three approaches: 1) critical generalization of policies, declarations, historical facts on development processes in the Arctic; 2) surveys of the population of the Arctic region of the Murmansk Oblast; 3) analysis of statistical data characterizing socio-economic processes in the Russian Arctic, including consideration of demographic indicators, identification of trends and dependencies of interaction between the main factors of GRP production (the number of employees, investment in fixed capital). The application of this interdisciplinary toolkit has made it possible to examine the manner in which socioeconomic transformations are taking place in the Russian Arctic. It has been established that policy is a determining factor in the development of the Russian Arctic. Long-term changes and contemporary socio-economic features of the development of the Russian Arctic are presented, and considered in close connection with the political attitudes, declarations, and views of scientists. It establishes the consistency of the legal regulation of the region with the priorities and declarations of the main participants of the processes in the Arctic. A positive influence of modern policy on the development of this area has been established, which has tended to reduce demographic losses and to ensure investment growth. At the same time, a number of disruptive aspects of development have been established: that there are significant labour and investment imbalances in some regions of the Russian Arctic; and that there is a strong migratory mood among the most economically active population. These findings not only highlight the lack of theoretical development in the field of effective policymaking, but also identify an area for further research. They have important practical implications for identifying and neutralizing risks to the sustainable development of the Russian Arctic.

Keywords: the Arctic, socio-economic transformations, national Arctic policy

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Научная статья

ВЛИЯНИЕ НАЦИОНАЛЬНОЙ АРКТИЧЕСКОЙ ПОЛИТИКИ НА СОЦИАЛЬНО-ЭКОНОМИЧЕСКИЕ ПРЕОБРАЗОВАНИЯ В АРКТИЧЕСКИХ РЕГИОНАХ РОССИИ

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Аннотация. Статья посвящена рассмотрению социально-экономической динамики российской Арктики в контексте национальной политики и научных воззрений на приоритеты, задачи, возможности, ограничения развития. Принципиальная значимость и актуальность представленного исследования определена серией фундаментальных проблем, сопровождающих процессы освоения российской Арктики, и одновременным нарастанием значимости этой территории для национальной экономики России. Методология исследования состоит из трех подходов: 1) критическое обобщение политики, деклараций, исторических фактов на процессы развития в Арктике; 2) опросы населения арктического региона Мурманской области; 3) анализ статистических данных, характеризующих социально-экономические процессы в российской Арктике, включая рассмотрение демографических показателей, выявление тенденций и зависимостей взаимодействия

основных факторов производства ВРП (численность занятых, инвестиции в основной капитал). Применение этого междисциплинарного инструментария позволило рассмотреть то, каким образом осуществляются социально-экономические трансформации в российской Арктике. Установлено, что политика является определяющим фактором влияния на ее развитие. Представлены долгосрочные изменения и современные социально-экономические особенности развития российской Арктики, рассмотренные в тесной увязке с политическими установками, декларациями, воззрениями ученых. Установлено соответствие нормативно-правового регулирования этого региона приоритетам и декларациям основных участников процессов в Арктике. Установлено позитивное влияние современной политики на развитие данной территории, что наметило тенденцию снижения демографических потерь, обеспечило инвестиционный рост. Вместе с тем установлен ряд деструктивных моментов развития: в ряде регионов российской Арктики наблюдаются существенные нарушения между трудовыми ресурсами и инвестиционными процессами; выявлены сильные миграционные настроения у наиболее экономически активного населения. Эти факты свидетельствуют не только о недостаточности теоретических разработок в сфере формирования эффективной политики, но также определяют область дальнейших исследований. Они имеют важное практическое значение для выявления и нейтрализации рисков для устойчивого развития российской Арктики.

Ключевые слова: Арктика, социально-экономические трансформации, национальная арктическая политика

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Introduction

Essential dependence of Russia's national economy on exploitation of natural resources of the Arctic makes the country take an active stance, sometimes quite a special one, in Arctic politics. Meanwhile, stands out is the absence of integrated research clearly correlating policy, declarations, scientific views, and real facts of the long-term development of the Russia's Polar regions recorded in quantitative indicators and consciousness of the population. The importance of considering the population's opinion needs to be emphasized. In particular, research of the social and economic situation in Russia's Arctic settlements (the authors' works are among them), give evidence about paradoxical situations quite frequently. For example, the improved social and economic situation observed as a pattern of a complex of statistical indicators over time is not accompanied by the population's social health improving. This is precisely why the integrated nature of the research is of crucial importance for revealing the essence of social and economic changes taking place in Russian Polar regions.

Moreover, consideration of opinions, intentions, and expectations of the population is relevant in other terms, too. The development of the economy has to be viewed from the standpoints of improving the condition of the country's population as a whole and of Russia's Polar regions in particular. Catastrophic consequences of failing to take into account a man as a principal economy development objective are illustrated by the history of the Russian North. The Soviet long-standing efforts in multi-generational population consolidation in the North were ruined in the very first year after the collapse of the USSR. So, since 1991, there has been observed active population outflow from Russia's Polar regions

(with the downward trend remaining until the present days). That is why in scientific research, the population size pattern plotted over time has still been used as a conventional marker of success (or failure) of policy and management in the Russian Arctic.

Finding out the specific aspects of Arctic policy concerning Russian Polar regions is of independent interest, too. With regard to this, Arctic policy and strategies are considered to be a well-elaborated and relatively popular range of research subjects in the world [1–8]. In fact, the first brief reports containing the comparative diagnosis of the subarctic countries' policies were presented to the scientific community about 10 years ago [9, 10]. The contemporary reports feature more detailed information, including quantitative characteristics [11, 12]. Nevertheless, the shared nature of attitudes in strategic documents pertaining to the entire Arctic, their inclusion into actual social and economic, managerial transformations of the Russian part of the Arctic, correspondence of the policy in the Russian Arctic to these attitudes, etc. remain an understudied question.

The crucial scientific importance, as well as the practical relevance of such research are determined by the fundamental nature of the problem consisting in the controversy between high geopolitical and economic importance of Russia's Polar regions and urgent social and economic issues existing in Polar regions at the same time. Moreover, they are accompanied by aggravated structural disproportions of the economy, backward characteristics of the population's quality of life as compared to the non-Northern Districts, and other objective factors pushing the population and business away from Polar regions [2, 4, 5, 13–17].

In Russia, modern research are currently in the condition of an immense and diverse bank of information, incorporating the following. First, there is the USSR's theoretical and scientific and practical head start in the theory of management, policy, economy of reclaiming and rendering Districts of the North and its Arctic constituent habitable. Next, there are modern developments generating quite controversial ideas of the Russian scientists about prospects, priorities, and policy concerning Polar regions. Finally, the said information includes foreign research oriented mainly to forming the factors of sustainable development for particular Polar regions, with environmental policy aspects discussed individually [12, 15, 16, 18–21].

Institutional research make up the most significant group of the world's research works discussing Arctic policies [10–12, 16, 22, 23]. In these research, they formulate general theses of management and geopolitics concerning the priorities of maintaining geopolitical stability, declarations of responding to the climatic change challenges, ensuring the international cooperation, and the demand for scientific support of social and economic processes in the Arctic. Nevertheless, these theses get broken against the “political inability”, as termed by Lassi Heininen [24, p. 195]. The essence of this “political inability” consists in Arctic politics being insufficient every time a compromise is needed between the requirements of ecology and economy, between ones of sustainable development of the cross-border region and countries' own tasks of the national development, etc.

The authors believe this “political inability” to be rooted in the objective controversies of the development of the Arctic for which the modern economic theory cannot find any solution. So, the research allow stating that it is two controversies being difficult to resolve within the capitalist formation that are the most relevant for the Russian Arctic.

The first one is the clash between real-life social processes that ensure the effect of extra costs of the economy and social sphere in the Arctic (as it curbs development) and the necessity of ensuring the economic development (for replenishing Russia's budget) and social development (for the necessary synchronization with the worldwide processes) of the Russian Arctic [25–28]. During the USSR period — the time when the social and economic space of Russia's North underwent qualitative transformation — the problem was solved with the opportunities granted by the socialist formation and the effects of the USSR's domestic economy being closed. The Soviet-model socialist formation enabled the management to focus immense resources of all kinds for solving the strategic program tasks, while the closed nature of the home economy partially leveled out the problem of extra costs, with all effects belonging

to the state only. Meanwhile, in the current paradigm, the management goes on working in the reality of the “Northern appreciation”, with severe climatic conditions pushing out both business and the population, but it has no opportunity to appropriate all positive effects of functioning of Russia's Polar regions [4, 13, 18, 19, 29].

The second controversy consists in the fact that extra costs of running a business based on mineral products mining in the Arctic conditions dictate higher requirements for predictability and stability of the environment. This contradicts the reality that prices for the main export products of the Russian Arctic (gas, oil, metals, and products of processing thereof) are changeable and hard to forecast, and sanctions have a disequilibrating effect on the economy of Russia [16, 30].

All the above and many other aspects determine the authors' own view on the range of problems of forming the contemporary state policy and the relevant transformations in Russia's Polar regions.

The objective of the research is to find out in the temporal dynamics specific aspects of the influence of the national Arctic policy on the socio-economic transformations of Russian Polar regions.

Objectives:

- to analyze the change of the Russia's Polar regions' population as an inductor of the effectiveness of the national Arctic policy;
- to identify the environmental aspects of the Russian national Arctic policy;
- to assess the relationship between the indicators characterizing the socio-economic transformations of Russia's Polar regions;
- on the basis of the research, to identify trends in the national Arctic policy that determine the socio-economic transformations of Russia's Polar regions.

The scientific novelty of this result is seen in the integrated diagnosing of transformation changes which is pegged to the declared policy and the regulatory and legal framework governing the processes in the Russian Arctic. Also the scientific novelty of this result is determined by making more precise the ideas about policy and internal factors affecting real-life transformation processes of the development of the Russian Arctic. The key question here is whether policy determines real social and economic transformations of Russia's Polar regions in fact, and if it does, to what extent.

Materials and methods

The objects of the research are the Polar regions, by which we mean in this research the constituent entities of the Russian Federation, the territories of which, as of 2021, are completely located in the Arctic zone: the Murmansk Region, the Nenets, Yamal-Nenets and Chukotka Autonomous Districts.

The general methodological approach to the research of the national Arctic policy impact on the socio-economic transformations of the Polar regions includes three main components.

First, a critical analysis of program documents related to the development of the Arctic, from the standpoint of their impact on the socio-economic transformations of the Polar regions. In total, more than 200 documents which can be divided into four main categories have been analyzed. The research of documents published in various languages, from the 1930s to the present time, was based on the continuous sampling linguistic method, as well as on the introspective one, which made it possible to find the connection between socio-economic dynamics of the Russian Arctic, policy implemented in a certain time period, and scientific views, and clearly argue their conclusions as well. The main method of scientific argumentation was the logical comparison method, which made it possible to compare the conceptual foundations and key priorities of the Arctic policy formulated in the legal documents of different eras and countries.

Category 1. The analysis included regulatory and legal documents of the period of the USSR and the modern Russian Federation concerning management of the Russian North, aspects of social protection among them (Resolution of the Council of People's Commissars of the RSFSR dated 26/10/1932 "On establishing the District subject to the effect of the Resolution of the All-Russian Central Executive Committee and the CPC of the RSFSR dated May 10, 1932 concerning the benefits for persons who work in the Extreme North"; Decree of the Presidium of the Supreme Soviet (SS) of the USSR dated 01/08/1945 "On benefits for persons who work in the Districts of the Extreme North"; Decree of the Presidium of the SS of the USSR dated 10/02/1960 "On organizing the benefits for persons who work in the Districts of the Extreme North and equated localities" etc.).

Category 2. Regulatory and legal framework for the development of the modern Arctic; including documents related to the formation and development of the Russian Federation's Arctic zone — a new object of management of the Arctic territories (Fundamentals of the state policy of the Russian Federation in the Arctic for the period of up to 2020 and beyond; Resolution of the RF Government "On approval of the state program of the Russian Federation «Social and economic development of the Arctic zone of the Russian Federation»"; Decree of the President of the RF "On land territories of the Arctic zone of the Russian Federation"; Decree of the Russian Federation's President of March 5, 2020 No. 164 "On the Fundamentals of the State Policy of the Russian Federation in the Arctic for the Period up to 2035"; Strategy for the Development of the Arctic Zone of the Russian Federation and Ensuring National

Security for the Period until 2020; Federal Law of July 13, 2020 N 193-FZ "Concerning state support for entrepreneurial activity in the Arctic zone of the Russian Federation" etc. This powerful regulatory layer of documents corresponds to modern macroeconomic conditions, strategic priorities for the development of Russia and the Arctic, the interests of economic entities and the Arctic territories' population, taking into account the objective possibilities of rational environmental management.

Category 3. The conceptual bases and key priorities of Arctic policy of other circumpolar countries were analyzed (Sweden's strategy for the Arctic region; Finland's Strategy for the Arctic Region Denmark, Greenland and the Faroe Islands: Kingdom of Denmark Strategy for the Arctic 2011-2020; A Parliamentary Resolution on Iceland's Arctic Policy; Norway's Arctic Strategy — between geopolitics and social development, The 2019 Department of Defense Arctic Strategy etc.).

Category 4. Institutional terms and conditions of the international cooperation were analyzed (Declaration on the Protection of the Arctic Environment, 1991; Declaration on Environment and Development in the Arctic, 1993; Declaration on the establishment of the Arctic Council, 1996; Declaration of Ministers of the Arctic Council Member States, 2011; Declaration of Ministers of the Arctic Council Member States, 2015; Arctic Council Fairbanks Declaration recognizes science and education cooperation, 2017 etc.).

The authors then correlated the texts of the before mentioned documents with real-life social and economic processes studied within the framework of the second component of the methodological approach.

Secondly, a statistical analysis of data characterizing socio-economic transformations of the Polar regions. The dynamics of the average annual resident population of the Russian Federation's Polar regions has been studied; the research involved data for the period from 1929 to 2019.

To identify the dependencies between the indicators characterizing the socio-economic transformations of Russia's Polar regions, a time series analysis has been carried out and the Pearson correlation coefficient has been calculated. The synchronization of GRP changes, the number of employees and investments in fixed assets has been assessed. The dependences between the key GRP production factors are considered using correlation and regression analysis. To identify the features of the Polar regions, the same research methods have been applied to data characterizing the socio-economic transformations of the Russian Federation as a whole. The research involved indicators for the period from 2000 to 2018.

Let it be noted that in the authors' previous research they substantiate indicators characterizing the economic processes most clearly and interpretable in modeling well: the physical volume of GRP index in % to that of the previous

year, the physical volume of fixed investment index in the comparable prices in % to the previous-year one, the average annual number of employees in the economy, fixed assets value as of the year end according to the gross book value (for comparing the situation in the Russian Arctic to that of Russia in general, the same indicators have been selected and studied for all Russia) [26]. The lower limit of the data collection period is by the year 2000, which is explained by the GRP data for two of the four Polar regions (Nenets and Yamal-Nenets Autonomous Districts) starting from 2000 only. The upper limit is due to the fact that by the time of writing the article, the GRP data are only available as late as for 2018.

Thirdly, in order to assess the current migration attitudes of the inhabitants of the Russia's Polar regions, the survey of the population has been undertaken (using a model case of the most industrially developed region — the Murmansk region). The method is a questionnaire survey using the representative region-wide sampling of the population of Murmansk Region (taking into account the quotas according to sex, age, education, and subdivision into Districts). The survey covered the following residential settlements: Kovdor, Monchegorsk, Apatity, Kirovsk, Murmansk, Snezhnogorsk, Polyarniy, Kola, Lovozero, Olenegorsk, Polyarnye Zori, Kandalaksha, and Umba (the quantity of respondents is 1291 people). The sampling error amounts to not more than 4 percentage points. The survey was conducted in May – September 2019.

As a result, using a combination of the above three methodological approaches, the authors have identified the main trends in the impact of the national Arctic policy on the socio-economic transformations of the Russian Polar regions.

This research has its limitations. The first one is a relatively brief period of time accessible for analyzing economic indicators of Russia's Polar regions. This is due to the specific circumstances of the Russian statistics which cannot provide time series of economic indicators covering both the USSR period and a part of the post-Soviet period. The causes of this are as follows: 1) for most indicators, qualitative modifications have been introduced into calculation methods, which renders the data plotted over time incomparable even for one and the same phenomenon; 2) there is no information on the main indicators characterizing regional development in the Soviet period and in the first half of the post-Soviet one (for example, in Russia, even the basic GRP indicator has been calculated for the country's larger units (republics and regions) since 1996 only, and for its regions and autonomous districts — since 2000). This limitation is of the objective nature; however, it has not had any negative impact on conclusions based the research results owing to the two emphasis points of the study. First of all, the

study focuses on analyzing policy and scientific views on the processes of long-term social and economic performance of the Russian Arctic regions in detail. Secondly, the emphasis is on the present-day reality resulting from transformation changes, with the reality described with statistical indicators already available.

The other limitation is the integrated character of the research which could prevent the authors from discussing all the possible lines in which politics, scientific ideas, etc. may influence development processes in Russia's Polar regions. A way out of this limitation is seen in continuing their research on the basis of widening the scope of questions under study. They believe the most promising focus District to be comprehension of the contemporary unique crisis which initiates game-changing topics and aspects of scientific study as for the development and management of the Russian Arctic. What consequences will be there for the economy of the Arctic? How will the priorities of policy and management change? The main question is when we will get back to the former life. The world crisis development forecasts worded by the international organizations, world's most powerful states, and well-known scientists enable one to agree with the answer given in the book "Tsunami Coronavirus. When Will We Go Back to Normal?" by B. D. Medico: "There is only one possible answer. We will never go back to normal. When the tsunami has passed, nothing will be as before. We are experiencing the prelude for a new social organization" [31]. Such research will not be easy to conduct, but at the same time, they will be destined for new insights. This is so because they are determined by the unique combination of fundamental development problems of the Russian Arctic, on the one hand, and on the other hand, by the entirely new economic reality and the future which is hard to forecast accurately.

Results and discussion

The population of Russia's Polar regions as an indicator of the national Arctic policy

The data have been collected and the analysis of fundamental regulatory and legal documents has been conducted covering aspects of managing the North in the period of the USSR. It has been found that in the USSR period, the North was a special object of the state management. Since 1938, for the purpose of getting the population established in the Northern Districts, considerable benefits and guarantees for residents of the North have been in place. At the end of the 1950s, they started forming the scientifically grounded Concept of the development of the North which allowed ensuring the continuous growth of the country's productive forces at the expense of exploiting the North's natural resources.

The national policy was aimed at the formation and development of industrial centers and social infrastructure of the North. Some special measures of state support concerned the indigenous local population and were directed to preserve its number, health improvement, education, preservation of culture and national traditions. Separate measures of government assistance and substantial “northern” benefits contributed to the consolidation of population permanently living in the Polar regions (Fig. 1).

Being initially sparsely populated (as of 1929, 24 thousand people in the Murmansk region; 15 thousand people in the Nenets Autonomous District; 14 thousand people in the Chukotka Autonomous District and 32 thousand

people in the Yamal-Nenets Autonomous District), Polar regions increased their population up to the end of the 80s. It was facilitated by protectionist government policy. As a result, from 1929 to 1989 the Murmansk region’s permanent population increased 47.8 times (maximum 1191 thousand people in 1990); the population of the Yamal-Nenets Autonomous District increased 15.2 times (maximum 544 thousand people in 2009); the population of the Chukotka Autonomous District increased 11.3 times (maximum 162 thousand people in 1990); the population of the Nenets Autonomous District increased 3.7 times (maximum 55 thousand people in 1989).

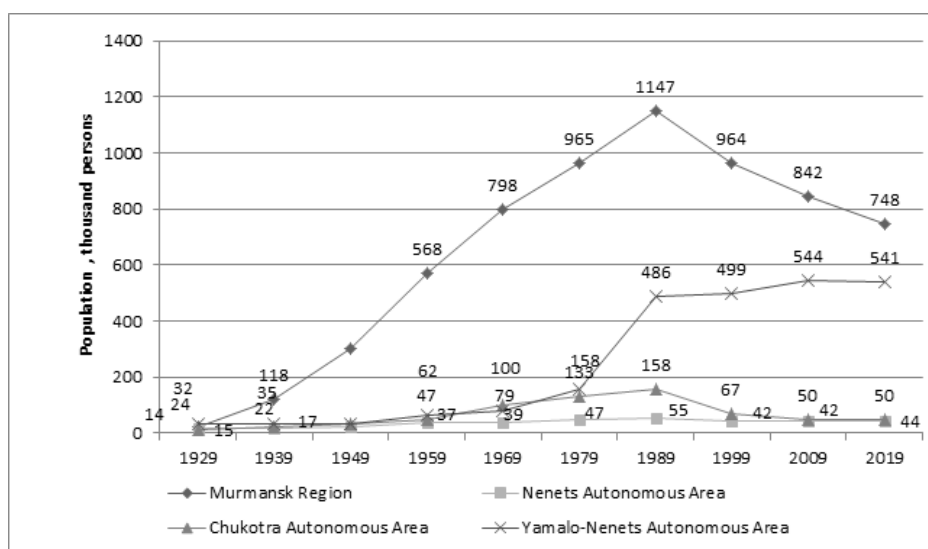


Fig. 1. Population dynamics of the Russian Arctic regions

After the USSR’s collapse, the protectionist Arctic state policy was replaced by a transformational one, which can be tentatively divided into several time stages, each lasting about 10 years. At the first stage (1991–2000), situational policy dominated. During this period, economic activity decreased and it correlated with the all-Russian situation. But a number of compensatory and protectionist measures that were in force during the Soviet period remained and were confirmed by specialized post-Soviet legislation (for example, in 1993, the Federal Law “On State Guarantees and Compensations for Persons Working and Living in the Far North and Equated Localities” was adopted. In 1996, the Federal Law “On the Foundations of State Regulation of the Socio-Economic Development of the North of the Russian Federation” was adopted as well (expired since 1.01.2005). The law established the principle of protectionism and main directions of state policy in the North). Nevertheless, real preferences for the of the Polar regions’ population were

significantly reduced. As a result, in 1991 (for the first time since 1929) the population decline in the most economically developed Polar regions took place. Over the ten years of the situational policy realization, the Murmansk region has lost 127,5 thousand people of permanent population or 13,8 %. Chukotka Autonomous District — 7 thousand people or 12,2 %. On the contrary, the population in the Yamal-Nenets and Nenets Autonomous Districts has increased because oil and gas production projects actively implemented in these Polar regions contributed to the population attracting.

The second stage of transformational policy (2000–2010) can be called “passive-declarative”. Strategically, it was aimed at the reducing of interregional differentiation, and not only among the Polar regions, but throughout the entire Russian space. There were developed political and program documents declaring the strengthening of protectionism for the Polar regions. At the same time, the territorial development policy was passive. In fact, a number of benefits for business and the population

have been reduced, which is fixed by law. There was a gradual rejection of the recognition of the North as a special object of state policy and management, which is fixed by the absence of a specialized normatively fixed policy in relation to the North as a single territory. As a result, the outflow of the population continued in almost all Polar regions.

The third stage of the transformational Arctic policy (from 2010 to the present time) can be called “Arctic-zonal”. The necessity of taking into account the North specifics in regional policy has been replaced by the policy of developing of the Russian Federation’s Arctic zone — a small part of the total District of the North. We recall that in 2008, the President of the Russian Federation approved the “Fundamentals of the State Policy of the Russian Federation in the Arctic for the Period until 2020” and in 2013 the “Strategy for the Development of the Arctic Zone of the Russian Federation and Ensuring National Security for the Period until 2020” was approved as well. It is significant that the government program of the Russian Federation “Regional policy and federal relations”, approved in 2013, no longer contains the term “North”, focusing only on the Russian Arctic. An active rule-making process of the formation of specialized normative legal acts concerning various aspects of the management of the Arctic zone of the Russian Federation continues at present.

As a whole, the focus on the Russian Arctic as a special object of the state policy and alignment of the policy

with the world's circumpolar countries’ policy have had a positive impact on the Russian Arctic’s regions. Impulse of the investment processes has resulted in the development of new deposits, production, and infrastructure and has ensured preservation of scientific organizations and the higher education system, which has slowed down the Arctic regions’ population loss by migration.

One of the results of the realization of the “Arctic-zonal” stage of the transformational Arctic policy is the population’s stabilization of the Polar regions. The population of the Nenets and Chukotka Autonomous Districts, with insignificant fluctuations, stabilized. In the Nenets Autonomous District at the level of 44 thousand people and in the Chukotka Autonomous District — 50 thousand people. In the Yamal-Nenets Autonomous District, since 2010, the population has grown by 24 thousand people, or by 4,6 %. In recent years in all Polar regions, with the exception of the Murmansk region, there has been a steady natural increase: the birth rate exceeds the death rate, which also contributes to the population’s stabilization. On the contrary, the Murmansk region continues to lose population, and at a rather high rate: 62 thousand people for the period from 2010 to 2021 i. e. about 7,8 %.

The authors have carried out the research of the population’s migration attitudes in the Murmansk region (Table 1).

Table 1

Distribution of answers about migration sentiments given by Murmansk region residents (the authors’ calculations [27])

Answer variants	Men				Women			
	18–29, %	30–49, %	50–64, %	65+, %	18–29, %	30–49, %	50–64, %	65+, %
No, they have not changed, I am going to live and work here	46,6	50,7	54,9	71,0	41,8	40,0	58,0	67,0
They have rather changed; I am thinking about moving house to more convenient climatic conditions	21,2	27,8	18,8	9,7	30,6	40,8	20,2	12,5
Surely, they have changed, and I have already found a new job and place of residence	15,3	9,5	4,9	0,0	11,2	6,5	5,2	4,5
I have difficulty answering	16,9	12,0	21,5	19,4	16,3	12,7	16,6	16,1

As can be seen from the survey results, many residents have plans to migrate. Our research shows that an increase in the retirement age has accelerated and intensified migration processes [27]. Notably, the strongest migration sentiments are manifested by the most economically active population group — young people and citizens aged under 49.

Environmental aspects of Russian national Arctic policy

A negative factor of socio-economic transformations is anthropogenic impact, which is the reason for the vulnerability of the environment of the Polar regions due to climatic features. At the same time, the transboundary transfer of pollutants and the global importance of Polar ecosystems predetermine the need

for international cooperation on rational use of natural resources and environmental protection.

The authors have studied the package of documents on the ecology aspects of the Russian Arctic. They have found that the Russian Federation pays special attention to environmental problems of the Arctic. So, maximum preservation of the unique environmental systems of the Arctic is believed to be one of the pillars of Russia’s national interests. The State Program “Social and economic development of the Arctic zone of the Russian Federation” stipulates environmental principles in all its three subprograms. It has been demonstrated that lack of specialized legislation clearly regulating rational management of nature and protection of both aquatic and land Districts of the Arctic is a flaw.

After collecting the data and analyzing institutional terms and conditions of the international cooperation, it has been found that currently, the Arctic is governed not by a special legal regime but by the so-called “soft law” implying advisory nature of the rules and norms set forth in the International treaties. The analysis of international documents on ecology aspects has allowed finding out the following. Among the Arctic countries, cooperation is quite developed in environmental aspects. However, there is neither a single international agreement on environmental standards for the business and economic activity in the Arctic, nor any special rules on its protection. The International treaties primarily cover the questions of protecting the natural environment, in particular, the unique animal world,

ensuring environmental security, safety of shipping, and aligning the countries' interests when it comes to exploiting aquatic biological resources, exploring and mining mineral products.

Assessment of the dependencies between the indicators characterizing the socio-economic transformations of Russia's Polar regions

The authors have determined then the relationship between the indicators characterizing the socio-economic transformations of Russia's Polar regions.

Figure 2 shows the temporary GRP changes, the number of employees and investments in fixed assets of the four Polar regions and the Russian Federation as a whole.

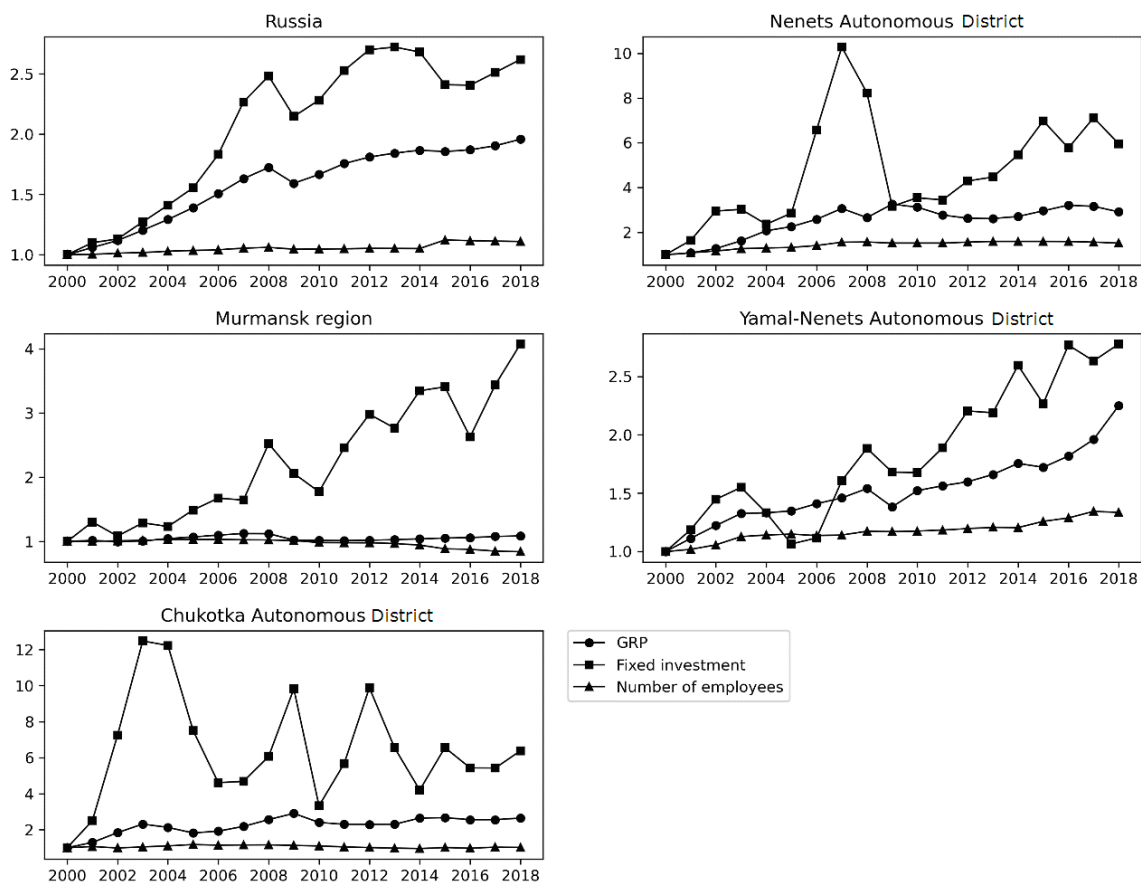


Fig. 2. GRP production in Russia and the Russian Arctic regions

The consideration of the current pattern observed in regions of Russia's Polar regions has enabled the authors to find out the following:

– the behavior of the average annual number of employees features various trends (downturn: Murmansk Region, 1,9 % per year, Chukotka Autonomous District 2,5 % per year; growth:

Yamal-Nenets Autonomous District, 1,8 % per year; a stable level: Nenets Autonomous District);

– three of the four regions have a stable growth of fixed investment (Nenets Autonomous District) — 15 % per year, Murmansk Region — 9,5 % per year, Yamal-Nenets Autonomous District — 6,8 % per year), while in Chukotka Autonomous District, there is no clear trend, with a sharp decline coming after the surge;

– three of the four regions have a stable growth of GRP after the 2008–2009 crisis (Nenets Autonomous District — 4,9 % per year, Murmansk Region — 1,9 % per year, and Yamal-Nenets Autonomous District — 4,2 %). In Chukotka Autonomous District, the fall of GRP resumed in 2016, although the overall growth has amounted to 2,6 % per year since 2013.

To assess the synchronization of temporary GRP changes, the number of employees and investments in fixed assets, a correlation and regression analysis has been carried out. As a result of the correlation and regression analysis of indicators of Russian Polar regions conducted by the authors, the following has been identified:

– there is a positive relation of GRP and the number of employees in Nenets (Pearson's correlation $r = 0,94$ and the 95 % confidence interval $ri = [0,84, 0,98]$, Spearman's correlation $s = 0,66$ and 95 % confidence interval $si = (0,17, 0,93)$) and Yamal-Nenets ($r = 0,96$, $ri = (0,89, 0,98)$, $s = 0,96$, $si = (0,84, 1,00)$) Autonomous Districts, while these indicators are not related in Murmansk Region ($r = -0,11$, $ri = (0,54, 0,36)$, $s = 0,05$, $si = (-0,56, 0,49)$) and Chukotka Autonomous District ($r = -0,05$, $ri = (-0,49, 0,41)$, $s = -0,15$, $si = (-0,61, 0,32)$);

– two regions have no association between the volumes of GRP and fixed investment (for Murmansk Region, $r = 0,30$, $ri = (-0,18, 0,66)$, $s = 0,45$, $si = (0,06, 0,80)$; for Chukotka Autonomous District, $r = 0,41$, $ri = (0,05, 0,73)$, $s = 0,22$, $si = (-0,31, 0,67)$). Nenets Autonomous District features a weak association between these indicators ($r = 0,65$, $ri = (0,28, 0,85)$, $s = 0,64$, $si = (0,13, 0,87)$);

– there is a negative relationship between investment in fixed capital and the number of employees in the Murmansk region ($r = -0,82$, $ri = (-0,93, -0,59)$, $s = -0,76$, $si = (-0,92, -0,34)$), i. e. employment is declining against the background of investment growth, which is 9,5 % per year;

– there is a positive relation between investments and the number of employees in Yamal-Nenets ($r = 0,87$, $ri = (0,69, 0,95)$, $s = 0,92$, $si = (0,73, 0,98)$) and Nenets ($r = 0,70$, $ri = (0,36, 0,87)$, $s = 0,74$, $si = (0,34, 0,91)$) Autonomous Districts. Chukotka Autonomous District has no association between these indicators ($r = 0,11$, $ri = (-0,36, 0,54)$, $s = 0,12$, $si = (-0,30, 0,53)$) due to sharp fluctuations of the investment volumes.

Notably, the behavior of indicators for Russia in general confirms correspondence of the processes to classical models characterizing production [32, 33]. The lack of relationship between GRP and the number of employed in the Murmansk Oblast and the Chukotka Autonomous Okrug, the weak relationship between GRP and investment, the lack of relationship between the number of employed and investment indicate the imbalance of economic processes in these regions. Note that the reasons for the absence or presence

of these links is a separate subject of labor-intensive research. The authors are already working on this task. One of the preliminary hypotheses explaining the weak relationship between investment and GRP in the Murmansk Region and the Chukotka Autonomous District is the deterioration of the regional mineral resource base, which determines the direction of investment to make up for deteriorating conditions of extraction and/or quality of raw materials, rather than to create surplus product. This may also be the reason for the lack of connection between GRP and the number of employed in the Murmansk Oblast, Chukotka Autonomous Okrug due to the fact that the increase in production factors is aimed at maintaining the current level of extraction rather than at creating surplus product, while increasing labour productivity reduces the contribution of such an indicator as the average annual number of employed in the region. Also, the lack of correlation between the number of employed and GRP in the Murmansk Region and the Chukotka Autonomous District may be a consequence of increased dependence of regional production on external conditions. However, all these hypotheses require additional testing.

Tendencies in the national Arctic policy that determine the socio-economic transformations of Russia's Polar regions

As a result of the research, two interpenetrating tendencies of the national Arctic policy, which determine the socio-economic transformations of Russia's Polar regions have been revealed.

The first tendency — the expansion of ideas which have a direct impact on the social and economic processes and policy. For example, Arctic transformation policy discussed by the authors indicates increasingly more extensive permeation of the shared human values into formal documents of the international participants of processes in the Arctic. So, alongside the already commonplace highlights of environmental protection and sustainable development priorities, they form documents concerning indigenous peoples living in the Arctic: recording their clearly stipulated rights to choice, health, and well-being. Notably, in the research of L. Heininen, using the Inuit Arctic Policy case, the author points out not only the indigenous peoples' higher self-awareness but also clear knowledge of what they want [11]. The authors of this study would like to add that these people know exactly how to disperse their ideas into the information space, science, and then into formal documents of Arctic policy, too. This is the ultimate expression of the ideas expansion phenomenon!

Here is one more example: the rhetoric of sustainable development priorities for the Arctic pronounced by scientists and echoed by politicians has made its way into regulatory and legal documents and outlined

the declared development priority for the Russian Arctic – enhancing its social and economic level [34–36]. This is exactly why questions of the quality of life, adherence to environmental requirements, etc. are on the current agenda (on equal terms with purely economic matters) of politicians and management in the Russian Arctic.

The second tendency — these are consistent steps taken for developing Russia's Northern margins under the pressure of factors that render reclaiming this space expedient for the state. The analysis of documents characterizing the policy of the Soviet North and the modern Arctic has clearly shown that in these Districts, the processes are determined by the state management within the policy being pursued. The policy is of crucial importance for the Arctic, with the evident fact to be stated – if the declared policy fails to rely on efficient mechanisms for its implementation, this is fraught with essential economic and social risks, consequences for security and business of the Arctic. This view does not contradict the other Arctic researchers' opinion [20, 21, 37–40].

Conclusions

The methodology used in the course of this research has enabled the authors to conduct an integrated study fitting together normative and legal documents, declarations, real facts, and trends of the long-term development of the national Arctic policy on the socio-economic transformations of Russia's Polar regions summed up by quantitative indicators. The logical comparison method, supported by the continuous sampling linguistic method and the introspective one, made it possible to compare the conceptual framework and key priorities of the Arctic policy formulated in the regulatory documents of different time periods and countries.

The authors have clearly demonstrated how the development policy of the Russian Arctic, based on recommendations of theory, efficient practical experience of the developed countries and consolidated in the regulatory and legal documents and managerial measures, leads to not only outwardly positive changes but also to clear deviations from the standard economic interactions of the key factors of regional production, and generates strong migration sentiments in the population

The discussing Of the efficiency of the Arctic policy, as a rule, relies on the analytical basis provided by the regional economy and showing the policy and management problems from theoretical standpoints paired up with the Polar regions' institutional, environmental, production and infrastructural context. However, this research has shown the uncertainty of theoretical foundations associated with the objective nature of controversies, the latter being difficult to resolve at the current stage of social interactions.

The results of the authors' study enable them to point out another limitation in putting together the efficient policy for the Russian Polar regions. The analysis of pattern and interaction of the indices of GRP production, number of employees, and fixed investment for Russia's Polar regions plotted over time confirms that for configuring the efficient policy and management, they clearly lack the critical set of quantitative correlations determining specific aspects of functioning of the economy, demographic and social processes.

As a result, it can be seen that the unstable situation in the Russian Arctic is observed. This is confirmed by orientation to migration detected by this research in a significant part of the Murmansk Region population — and the most economically active population group at that, aged 18 to 39. This is to create risks for the labor market of this Polar region so early as in the nearest future. Notably, Murmansk Region is characterized by the most advanced and diversified economy among other Russian Polar regions. Bordering on the developed countries — Norway and Finland, it has ice-free ports and relatively favorable natural, climatic, and geographical characteristics.

Figures 1 and 2 visualize the way how policy objectives furthering the Arctic get consolidated in regulatory and legal documents and managerial decisions which can be evaluated from both theory and practice standpoints solely as highly efficient ones — but later they result in regional processes getting clearly out of sync. Notably, in two of the four Russia's Polar regions (Murmansk Region and Chukotka Autonomous District), essential disturbances of settlement and investment processes are observed. Meanwhile, the policy and management are completely in line with the modern ideas about necessarily enhancing the District's investment attractiveness. So, as the analysis of regulatory and legal documents has shown, currently, the formation of legislation aimed at enhancing investment inflows into the Russian Arctic and configuring new development mechanisms is continued. For example, in June 2020, they approved lowering investment threshold for obtaining the Arctic zone resident's status and preferences tenfold (down to 1 million rubles), which will widen the opportunities even for smaller enterprises to get investment access to the economy of the Arctic. Considerable benefits are envisaged for developers of offshore fields and liquefied gas production. This process is considered to be an undoubtedly positive one, and this conclusion should be agreed with. However, when tailoring the policy for the Arctic regions, the investment one included, special solutions and mechanisms are necessary that demand detailed scientific support based mainly on the results quantitative estimates, and to a smaller extent — on theoretical concepts.

Thus, consideration of the effect of policies, scientific views, and internal development factors on the long-standing social and economic processes in Russia's Polar regions has allowed substantiating not only the determining nature of the effect policy has on the processes in the Arctic but also singling out the contemporary feature — expansion of ideas. When discussing the performance of the Russian Arctic, the authors recommend taking into account not only the impact of policy but also that of expansion of ideas, with the latter becoming a factor of influence on social and economic processes, too.

Main Findings:

– it has been found that national Arctic politics is the determining factor of influencing the socio-economic

transformations of Russia's Polar regions, and a new impact factor has been identified — expansion of ideas that transforms priorities;

– the authors have found a positive effect of the modern policy on the development; it has slowed down migration and ensured the growth of investments, but at the same time, risks of migration aggravating in the nearest future have been identified (strong migration sentiments have been revealed), and most intensive disturbances of economic processes are observed (there is no relation between the number of employees and GRP, and in a number of Russia's Polar regions, investments do not ensure the GRP growth.

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