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POSSIBILITIES OF THE SHIFT AS A RESERVE OF DEMOGRAPHIC PROBLEMS OF INDIGENOUS PEOPLES FOR SOLVING THEIR MIGRATION PROCESSES

Abstract: *in the article, the authors analyze the implementation of investment projects in the regions of the Russian Arctic, which require adequate staffing, which, in conditions of negative migration dynamics, becomes one of the key risks. Today, the shift is a fait accompli, which is viewed ambiguously and requires separate, careful study to enhance its positive effects and level out possible negative consequences, including to ensure strategic indicators for the development of the Arctic zone of the Russian Federation (AZRF), one of which is the migration growth rate population of its regions, which currently has a negative value, which indicates an outflow of population. At the same time, the existing prerequisites for the development of the rotational work method in the Russian Federation force us to look at it in a new way - as a source of attracting and retaining the population. Thus, the purpose of this study is to determine the possibilities and conditions of shift management for the transformation of migration processes in the regions of the Russian Arctic. The scientific novelty lies in the development of an approach to managing shift work that can change the existing negative migration trends in the regions of the Russian Arctic associated with the outflow of population. The research method chosen was a written survey of workers working on a rotational basis at one of the large Arctic enterprises. It was confirmed that the shift can be a reserve in the transformation of migration processes in the regions of the Russian Arctic. At the same time, it is necessary to change the approach to the shift as an object of management, clarify its types and build a consistent policy for the transition from one type to another based on taking into account the characteristics of the migration motivation of each of them. The specification of the policy of such a transition and the development of certain measures, the procedure for their organization and the formation of an integrated management mechanism that takes into account the state and corporate components will be the subject of further research.*

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Key words: rotational work method, region, Arctic, migration process, socio-economic development, Arctic zone of the Russian Federation, regions of the Far North, state policy in the Arctic zone of the Russian Federation, State Commission for the Development of the Arctic Zone, migration, low innovative potential of the region, increasing efficiency government controlled.

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Introduction

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The studies examined the features of the socio-economic situation of the regions that are part of the Far North and the Arctic zone of the Russian Federation, and analyzed the regulatory framework of the Russian Federation, in which the North is defined as a separate object of state regulation. The main directions of the state policy of the Russian Federation in the Far North and the Arctic zone are shown, the purpose of which is to increase Russia's competitive advantages in the Arctic, the socio-economic development of the northern territories and ensure national security. Organizational issues of implementing state policy and strategic management of the northern macro-region are considered, such as the creation of the State Commission for the Development of the Arctic, the development and implementation of an action plan for the socio-economic development of the territory. Particular attention is paid to the analysis of indicators of socio-economic development of the regions of the Far North; the main problems that entail destructive changes in the socio-economic system of the macroregion are shown. These are historically established, territorially determined phenomena: harsh natural and climatic conditions, remoteness from the "mainland", the focal nature of the economic development of the territory, and modern negative trends: a decrease in the standard of living of the population, an outflow of qualified labor resources, low labor productivity, wear and tear of transport, industrial and energy infrastructure, critical condition of housing and communal services, low innovative potential of the North. The article presents the intermediate results of state policy in the Arctic zone of the Russian Federation: against the backdrop of positive trends in the development of the North, generally negative phenomena are noted in the socio-economic systems of some subjects, which leads to an increase in disproportions within the macroregion.

Currently, the political views of leaders of countries around the world are directed to the north – the Arctic. This is due, first of all, to the richest mineral reserves of this region, including the Arctic shelf, biological resources, the intersection of major transport arteries, as well as an advantageous location for

equipping military bases, allowing control of various strategic objectives.

Russia is a major maritime power, 21 of whose subjects, in whole or in part, belong to the regions of the Far North (and equivalent areas) and including 8 to the Arctic zone of the Russian Federation. Possession of the Arctic coast is a competitive advantage of our country, allowing us to pursue our policy in the Northern macro-region.

The allocation of the Arctic zone as a separate object of state regulation for the purposes of the socio-economic development of this territory is a very important strategic decision right now, during the period of tightening global sanctions against Russia, when the creation of optimal conditions for managing the Arctic zone comes to the fore. Northern regions have historically faced a large number of problems, namely:

- harsh natural and climatic conditions that affect the health of residents and increase the resource consumption of enterprises;
- remoteness from the "mainland", which determines high transport costs for the livelihoods of the population and the organization of economic activities;
- the focal nature of economic development of the territory, concentrated mainly in urban districts, and the low population density in general;
- high dependence of ecosystems on anthropogenic changes.

Analyzing the legislative framework of the Russian Federation, we can conclude that currently the socio-economic development of the Russian Arctic is regulated by the following main legal acts, namely:

- state program "Socio-economic development of the Arctic zone"

Russian Federation for the period until 2035";

- strategy for the development of the Arctic zone of the Russian Federation and ensuring national security for the period until 2035;
- fundamentals of the state policy of the Russian Federation in the Arctic for the period until 2035 and beyond.

Achieving sustainable innovative development is expected to be achieved through the development and improvement of public-private partnership mechanisms in the implementation of key investment projects, state participation in eliminating

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infrastructural restrictions on economic development, solving social problems, as well as stimulating economic activity. In order to radically increase the efficiency of public administration in this macro-region, the President of the Russian Federation established the State Commission for the Development of the Arctic (Decree No. 50 dated 02/03/2018), which has 9 working groups in such areas as ensuring national security, socio-economic development, development of education and science, development of the transport system, energy development, development of international cooperation, development of industry and technology, ensuring environmental safety and rational use of natural resources, implementation of state policy towards indigenous peoples living in the Arctic zone, as well as two temporary working groups: on the creation IBD on the situation in the Arctic region and on improving the regulatory framework for activities on the Arctic shelf.

The State Commission for the Development of the Arctic, according to the Regulations, is a coordinating body that ensures interaction between federal executive authorities, executive authorities of constituent entities of the Russian Federation, other state bodies, local governments and organizations in solving socio-economic and other problems related to the development of the Arctic zone Russian Federation and ensuring national security. The commission has been working for a year already, but the current situation in the North of the Russian Federation, according to Rosstat, continues to be characterized by destructive processes in the socio-economic system of the macroregion against the backdrop of small positive changes.

The current socio-economic and infrastructural state of the Arctic zone and the Far North is of interest, namely:

one of them is a decline in the standard of living of the population. Although in general the level of average monthly accrued wages of employees of organizations in the regions of the Far North increased and amounted to 55,614 rubles, in such subjects as the Perm and Primorsky territories, as well as the Republics of Tyva and Buryatia, it does not exceed 30,000 rubles. If we subtract tax payments from this amount, then the amount “on hand” will turn out to be completely ridiculous for a northern salary. Additionally, it should be noted that the level of income is calculated taking into account high salaries in the field of mining, but in budgetary organizations (I can confirm this, based on personal experience) it is much lower. And if we talk about unskilled personnel, then their salary is somewhere around the subsistence level. Thus, the northern “long ruble” was practically equal to salaries throughout Russia and turned out to be significantly lower than salaries for similar positions in cities such as Moscow and St. Petersburg. The dynamics of real income of the population, according to statistical data, continues to decline, and against the

backdrop of a significant rise in prices for goods and services (especially housing and communal services), the population has no incentive to continue living and working in the North;

the second of them is the outflow of qualified labor resources, mainly to the central and southern regions of the country. According to Rosstat, migration growth in the Far North has been negative for the last 5 years. This is especially true for such subjects as the Tyumen and Arkhangelsk regions, as well as the Komi Republic and the Khabarovsk Territory: in these territories the rate of negative migration is several times higher than in other subjects of the macroregion. Due to the lack of an effective personnel training system, a problem arises such as a shortage of qualified labor resources. The population is finalizing the northern experience, “harmfulness”, “underground” (if there is a strong desire, this can be achieved by 35-40 years) and is looking for a place in warmer regions;

The third of them is the formation of labor resources - this is undoubtedly an important direction of socio-economic policy in the Russian Arctic.

However, in addition to this, it is necessary to solve several more pressing problems:

low labor productivity due to wear and tear of transport;

industrial;

energy infrastructure;

critical condition of housing and communal services facilities.

Researchers claim that already in 2021 these figures were close to 70% and the funds should last for a maximum of 5 years.

The low innovative potential of the northern regions of the Russian Federation is also not encouraging. In general, the volume of investments in fixed capital in the regions of the Far North increased by 13.5%, but in such subjects as the Republics of Komi and Tyva, Kamchatka and Primorsky Territories, Arkhangelsk and Tyumen regions, it continues to decline significantly, the number of investment projects within the framework of government -private partnerships are also decreasing.

Main part

The attention of researchers to the World Arctic (circumpolar North) is due to the fact that in the 21st century this mega-region is turning from the northern periphery into a zone of economic interests of all major states. Considering these strategic interests, it can be assumed that the field of “economic and political confrontation” will be the struggle for energy resources. “There will be a dialectical coexistence of the forces of cooperation and competition – a scenario that can be called a “friendly race.” Over the coming decades, the Arctic may become “the main storehouse of energy and mineral resources, and, therefore, the attention to it from the world community will be special. Thus, according to Science magazine, the

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Arctic contains 83 billion barrels of oil, which is 13% of the world's undiscovered reserves. Natural gas resources – 1550 trillion. m³ [, almost two thirds - off the coast of Russia. The U.S. Geological Survey estimates that the Arctic could hold up to a quarter of the world's undiscovered hydrocarbon reserves. The World Arctic includes eight states: Russia, Canada, USA, Norway, Denmark, Finland, Sweden and Iceland. Such a list of Arctic countries is given in the “Arctic Human Development Report” and materials of the Arctic Council. E.A. examines in detail the composition of the Arctic territories of the named states, their population and natural and economic potential, and state strategies. Korczak. Currently, non-Arctic countries are also showing significant interest in the Arctic: China, Japan, South Korea, Singapore, India, Great Britain, Germany, France, Italy, Spain, Switzerland and Poland. They have received observer status in the Arctic Council and take part in economic, social and cultural projects in the Arctic. The Arctic is the habitat of indigenous peoples, who are presented in international political discourse as the “Fourth World”. In Russia they are called a special community of the “fourth dimension”, forming an ecological system of values, as well as “saviors of civilization.”

The development of the Arctic has led to the emergence of many problems: demographic, environmental, social and settlement. All Arctic countries are attempting to resolve them using different approaches. Our focus will be on the consideration of demographic processes and the settlement of the Arctic. Based on this, the purpose of the article is to reveal approaches to the study of demographic processes and settlement of the World Arctic (MA). The following tasks were set: to conduct a comparative analysis of existing approaches to the study of demographic problems and the settlement of Arctic territories; identify the main characteristics of the population and demographic processes in MA; determine the features and trends of the processes of settlement and evolution of the settlement system of the Arctic territories. The object of the study is the World Arctic, which includes the territories of eight states, the subject of the peculiarities of approaches to the study of demographic problems and the settlement of Arctic territories. The scientific novelty of the article is due to a comprehensive retrospective and comparative analysis of approaches to the study of demographic problems and settlement of the Arctic. The practical significance of the study is that the results obtained can be used by executive authorities in developing programs and strategies for the development of the northern and Arctic territories.

Let's consider approaches to studying the demographic problems of the Arctic territories. To study demographic problems in domestic and foreign practice, various approaches are used. Let's consider the main ones, namely:

*statistical approach is most widely used in demographic studies. It includes obtaining statistical information about the population, processing the obtained data, constructing time series and distributions, analyzing patterns, as well as calculating population reproduction indicators. Statistical methods make it possible to model the reproduction of the population as a whole and individual demographic phenomena.

The descriptive-historical approach is based on the same information base and processing methods. It is used to determine the total population and its structure in certain historical periods in relation to the world population, the population of individual countries or parts of the world;

*the sociological approach is widely used in demographic research for a deeper understanding of the factors underlying the processes of natural reproduction of the population, marriage and family relations and migration mobility. It allows you to analyze not only the factors themselves, but also their reflection in the human mind. Using a geopolitical approach, the impact of migration outflow and natural population decline on national security is assessed. A reduction in population to a critical level, leading to depopulation of the Arctic territories, their low population compared to neighboring countries with rising demographic dynamics in the absence of free land for a growing population, can lead to a number of serious geopolitical disagreements;

*the socio-psychological approach is aimed at searching for the reasons for this or that intensity of processes, in the plane of the socio-psychological characteristics of an individual or social groups. A relatively new point here is the transition from the identification of the subjective interests of the individual, family and society as a whole, characteristic of early research, to the study of the socio-psychological aspects of the demographic behavior of individual groups of the population;

* the gender approach takes into account the variety of factors influencing demographic processes, the crisis of the modern demographic situation, primarily in marriage and family relations, through “the phenomenon of social self-organization in the relationships between the largest and primary social groups - men and women.” The importance of using a gender approach is mentioned in the report of the UN Economic and Social Council;

*demographic zoning is an approach that helps determine the composition of the population of Arctic territories.

There are three types of territories, namely:

*firstly, these are territories with relatively favorable natural and climatic conditions, where medical and geographical indicators allow the formation of a permanent population;

*secondly, these are territories that are uncomfortable for the permanent population to live in,

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in which priority should be given to the rotational method of development;

*thirdly, territories where, despite the need to resettle the excess population, it is necessary to preserve at least part of the permanent population.

When analyzing demographic processes, an intersectoral approach is effective. For example, to reduce mortality, “not only the capabilities of healthcare must be involved, but also all sectors that influence health, ensuring improved environment, working conditions, increased income, improved lifestyle, etc., so that funds for these goals were regarded as investments in human capital”;

*techno-economic approach interprets demographic behavior and differences in population growth rates from the standpoint of “the rationality of the economic interests of society, family and the individual”;

*ecological-biological approach considers demographic development from the point of view of its impact on the natural environment and ecological situation;

*a combined approach includes an analysis of the totality of socio-economic and biological relations between man and nature, in which substantive activity is of decisive importance for demographic processes and behavior. This method marks multiplicity or pluralism in assessing all manifestations of the demographic development of the world's population and allows us to identify the negative consequences of population growth/decline;

*the economic-social-material approach is used at the state level in almost all Arctic states in order to neutralize the harsh natural and climatic conditions of the Arctic, isolation from the “mainland” and difficult production conditions. The use of this approach makes it possible to attract human resources to the Arctic territories and form stable production teams;

*qualitative approach focuses on the influence of historical, spiritual, moral, ideological, psychological and other factors on demographic processes.

V.N. Barsukov and O.N. Kalachikov, according to the priority factor of demographic development, distinguishes economic, socio-economic, socio-psychological, institutional, population (biosocial, biogenetic), civilizational (historical-cultural) and phenomenological approaches, describes in detail what theory or concept each approach is based on, cites personalities.

There are a number of particular approaches to the study of fertility, mortality, migration and family. They propose measures to overcome the crisis of marriage and family relations, determine the degree of permissible state intervention in regulating the birth rate, what state policy measures can change the reproductive attitudes of the family to have few children or childlessness, how to make Russia attractive for migration, depopulation is justified by the spiritual distress of the family and society. “The whole

variety of points of view can be reduced to two paradigms - the paradigm of modernization and the paradigm of the family crisis.”

When developing the Arctic, foreign approaches differ from Russian ones in many areas: in demographic terms, in building interbudgetary relations, in infrastructure development. Thus, our northern neighbors are relying on the sustainable development and settlement of the territory. In Russia, northerners are almost forcibly resettled to the “mainland,” while the authorities of the state of Alaska subsidize (200–250 US dollars per month) old-timers and pensioners who remain to live here. In Alaska, “resettlement is encouraged, new infrastructure is being actively created, and working and living conditions are increasingly approaching the quality of life standards characteristic of the American mid-latitudes.” In Russia, the Arctic territories need a financial mechanism for development, but only stabilization is proposed. The Arctic regions transfer more to the federal budget than they receive transfers back; the level of budgetary security is lower than the Russian average. However, it is well known that inequality entails economic and demographic losses. Foreign companies use their technologies and the local population to develop the Arctic. In Russia, the situation is somewhat different: in an effort to reduce costs, mining companies are inclined to attract foreign suppliers of machinery and equipment and hire highly qualified foreign labor.

As for infrastructure, its lag is due to the established practice of developing the North and the Arctic, which in the Soviet period was based on the social standards of the Gulag and did not provide for the creation of normal living conditions for people. The North and the Arctic are both Tsarist and Soviet, and are currently treated as a “resource storehouse.” The development of the social sphere lagged significantly behind and was carried out “quickly and carelessly.” The huge spatial potential was practically not taken into account; those resources that could be sold without deep processing were used.

Let's consider approaches to settling the northern and Arctic territories. First of all, it is necessary to determine the goals and priorities for the development of the Arctic space. Today, two opposing approaches have emerged, namely:

within the first approach, the Arctic is considered as a source of natural resources, which makes the rotational method of development a priority while reducing the permanent population;

the second approach declares the Arctic a springboard for an innovative economic breakthrough, allowing for sustainable development of the Arctic territories and ensuring national security.

From this understanding of development priorities, two approaches to spatial planning for the development of the Arctic follow, namely:

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rotational – used in “resource” regions with a shortage of local labor resources or in conditions of insufficient infrastructure saturation of the territory. It is aimed at realizing the primary advantages of the Arctic territories - natural resource reserves. The weakness of this approach is that it consolidates the specialization of the region in the extraction of raw materials, the unevenness of development and development;

network (linear-nodal) - focused on the formation of large nodes in the Arctic agglomerations, which, thanks to the agglomeration effect and a high level of infrastructure development, will be able to serve as a core in the network structures of the economy. The concentration of labor resources in large nodes creates an “economy of scale”, and the rest of the territory acts as a raw material base (Russia, Norway - the Spitsbergen archipelago, Denmark - Greenland). However, such an organization leads to an outflow of labor and human potential beyond the boundaries of the “nuclei” of settlement.

Given the large territory of the Arctic and limited human resources, intensive and extensive approaches are used when resettling the population:

the first involves the development of agglomerations and group settlement systems, interconnected economically and by transport, the development of limited territories occurs at a minimum of costs;

The extensive approach involves the formation of a developed settlement system covering as large a territory as possible, with a network of support settlements, especially in border areas, taking into account the interests of the country’s defense capability.

The settlement system in the foreign Arctic is considered within the framework of the concepts of proximity and remoteness, a network approach, and transport connectivity of settlements. Its important feature is the presence of extremely remote or outlying settlements (from the English settlements at the edge) [and rotational settlements. It is noted that the evolution of the settlement system in the future will be influenced by climate changes occurring in the Arctic.

Thus, having examined the approaches most commonly used in domestic and foreign practice, we will demonstrate their application in the study and analysis of demographic processes and settlement systems in the World Arctic. Population and demographic processes of the World Arctic. The study of demographic processes in the World Arctic is reflected in foreign scientific literature. There is a connection between demographic processes, population migration and cycles of natural resource extraction. In recent years, the number of publications

on the socio-demographic characteristics of the population has been growing.

The World Arctic, which occupies an eleventh of the earth's landmass, is home to 5 million 438.5 thousand people, or 0.07% of the planet's population. Such “scissors” between indicators made the Arctic a sparsely populated territory - 0.41 people per square meter. km. Canada and Greenland are the least populated - 0.03, the USA - 0.43 and Russia - 0.51 people per square meter. km (Figure 1). At the same time, 232.5 billion dollars of GRP were produced in MA, which is 0.31% of world GDP.

The dynamics of the MA population are determined by the demographic processes occurring in the Russian Arctic. From 1989 to 2019, it lost 1 million 46 thousand people, or 30% of the original population. In the foreign Arctic, on the contrary, the population has been growing throughout the years - from 2 million 579 thousand in 1989 to 3.0 million in 2019, an increase of 420.5 thousand people, or 16.3%. As a result, the share of the Russian Arctic in the total population of MA decreased from 57.5% in 1989 to 44.9% in 2019. In 1989, there were 906.4 thousand more people living in the Russian Arctic than in the foreign Arctic, however, in 2019, the population of the foreign Arctic began to exceed the Russian population by 560.1 thousand people. The numerical superiority was lost at the turn of 2002/2003. In general, the population of MA from 1989 to 2019 constantly decreased (from 6.06 to 5.44 million people, or by 625.6 thousand people, Figure 2). In the population dynamics of the Arctic states, two opposite trends can also be traced: downward dynamics in the Russian Arctic and upward dynamics in the foreign Arctic (Greenland and the Faroe Islands had multidirectional dynamics). The numerical losses of the Russian Arctic - 1046 thousand people - could not cover the positive population growth of the Arctic states: USA - 202.2, Iceland - 105.1, Canada - 42.2, Norway - 28.9, Finland - 25.7, Sweden – 11.6, Faroe Islands – 3.9 and Greenland – 0.8 thousand people. There is one more feature - in the Arctic part of Canada, Iceland and the USA, the population growth rate was faster than that observed in the country as a whole: 51.7, 41.7 and 37.8%; 38.5, 41.1 and 33.7%, respectively, which indicates the active settlement of the Arctic territories. However, the long-term dynamics of population growth is fraught with the fact that newcomers will replace local residents. The shares of the population living in the Arctic part are insignificant: minimum in the USA - 0.2, Canada - 0.3 and Russia - 1.7%, maximum in Sweden - 5.0, Norway - 9.2 and Finland - 12.0 %. In most countries they are declining, which has led to a decrease in the share of the population living in the World Arctic as a whole from 1.4 to 1.0%.

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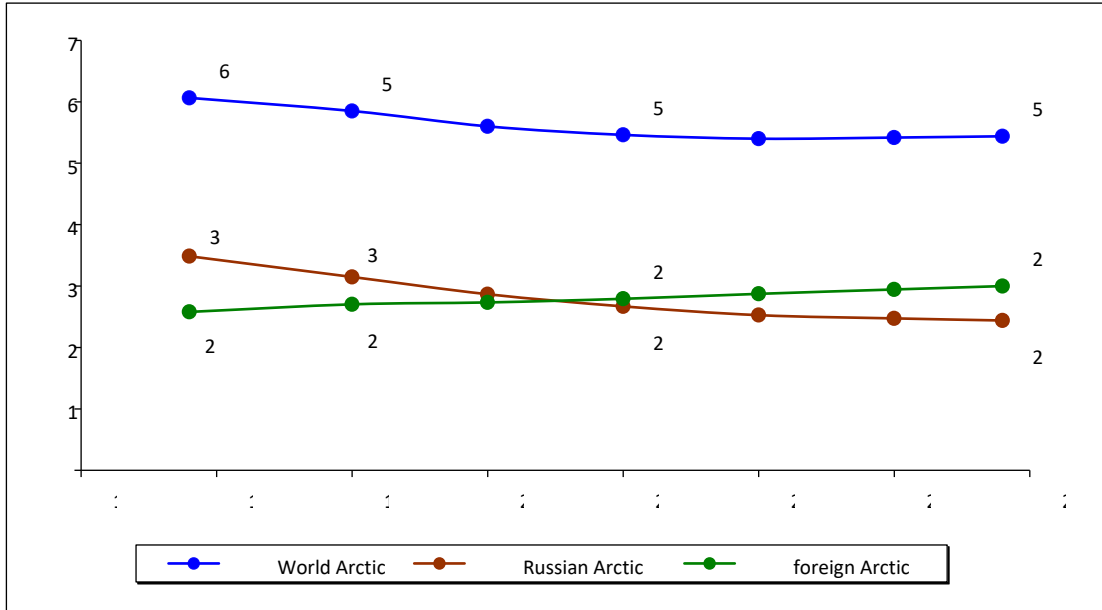
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Pic. 1. Map of population density of the Arctic territories at the beginning of 2021

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Rice. 2. Population of the World Arctic, 1989–2020, thousand people.

Let's consider indicators that reflect the similarities and differences in the demographic development of the Arctic part and the country as a whole. An analysis of the population structure by gender shows that in all foreign countries of the World Arctic, the proportion of men is more than 50% and higher than in the Arctic countries as a whole. In the Russian Arctic, the proportion of men is the lowest - 48.0%, which could not but affect the gender structure of the population of MA, where it is 49.6%. The increased proportion of people of working age has led to the fact that in the World Arctic the demographic burden on the working-age population is lower - 775 - than in the Arctic countries as a whole - 827, per 1000 people. It is lower in Canada - 667 and in Greenland - 672, high in Sweden - 955 and on the Faroe Islands - 947.

The relatively young age structure of the Arctic population ensures a high birth rate. If in the Arctic

parts the total fertility rate (TFR) is 1.71, then for the Arctic countries as a whole it is 1.67. The highest TFR is in the Faroe Islands - 2.48, in Canada - 2.09 and Greenland - 2.00. The lowest birth rates are in Norway - 1.54 and Finland - 1.59. The TFR correlates with the share of indigenous people in the population: where it is more than 15%, the birth rate is higher.

An integral indicator of the quality of life and health of the population - life expectancy (LE) in the Arctic countries as a whole is higher than in their Arctic parts, with the exception of women in Finland. This can be explained by gender differences in life expectancy - they are more significant in the Arctic territories, and the overall mortality rate is higher here. The highest life expectancy in the Arctic is for women in the Faroe Islands - 84.8 years, Finland - 84.3 years and Iceland - 84.1 years. Men have a high life expectancy.

Table 1. Demographic indicators and population settlement indicators for the countries of the World Arctic and their Arctic territories

A country	Population at the beginning of the year, thousand people			Change in number for 1989–2019, %	share of men, %	Demographic load per 1000 people of working age*		TFR, 2018	Share of indigenous population, %**	Life expectancy at birth, years*	
	1989	2000	2019			young	elderly			men	women
Arctic territories of the World Arctic	6064.1	5600.4	5438.5	-10.3	49.6	349	426	10.71	7.5	73.0	80.4
Russia	3485.2	2867.0	2439.2	-30.0	48.0	346	334	10.66	4.0	67.1	77.3

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USA	535.2	626.9	737.4	37.8	51.5	409	403	10.97	14.8	75.0	8
Finland	638.0	651.1	663.7	4.0	50.4	306	608	10.59	1.4	78.3	8
Sweden	509.1	514.8	520.7	2.3	51.0	336	619	1.69	3.9	79.8	8
Norway	460.3	466.7	489.2	6.3	50.9	325	527	10.54	11.4	78.9	8
Iceland	251.9	279.0	357.0	41.7	50.2	355	400	10.71	-	81.0	8
Canada****	81.6	93.3	123.8	51.7	50.8	382	285	20.09	53.3	74.1	7
Greenland	55.2	56.1	56.0	1.4	52.8	372	300	20.00	89.7	69.5	7
Faroe Islands	47.6	45.3	51.5	8.2	51.7	437	510	20.48	-	80.1	8
Arctic countries in general	444571	485940	541893	21.9	48.6	351	476	10.67	0.4	73.7	80.9
Russia	147400	146890	146781	-0.4	46.4	337	467	1.58	0.2	67.8	7
USA	246819	281422	329969	33.7	49.5	365	472	1.73	0.03	75.1	8
Finland	4964	5181	5523	11.3	49.4	354	635	10.41	0.2	78.6	8
Sweden	8493	8883	10324	21.6	50.3	358	537	10.75	0.2	80.6	8
Norway	4227	4478	5328	26.0	50.4	338	469	10.56	1.1	79.7	8
Iceland	252	279	357	41.1	50.2	355	400	10.71	-	81.0	8
Canada	27282	33477	37797	38.5	49.1	285	497	10.50	4.9	79.9	8
Denmark	5133	5330	5815	13.3	49.7	329	535	10.73	0.9	79.0	8

* Finland and Canada: men – 15–59 years old, women – 15–54 years old; other countries: men – 16–59 years old, v 16–54 years old.

** Russia - indigenous peoples of the North in 2010, USA - Indians and Alaska natives in 2010, Finland - Sami in 2011-2015, Sweden and Norway - Sami in 2017, Canada - aboriginal population in 2016. , Greenland - Inuit in 2018 *** Norw. 2011-2015, Sweden - 2014-2018, Finland and Canada - 2015-2017, USA - 2017, Denmark - 2017-2018 , Russia an Iceland – 2018

**** Yukon, Northwest Territories and Nunavut included.

The settlement of the northern and Arctic territories from the perspective of a descriptive-historical approach took place in the form of colonization. In addition to the economic impact, resettlement and colonization had an impact on the culture of peoples. The specificity of Russian colonization was manifested in the fact that the surplus population moved not to other countries, but to remote territories of the Russian state. The Russian settler did not feel like leaving his fatherland. The difference between colonization and resettlement is that “resettlement is a private act, while colonization is a public act.”

The most essential prerequisite for successful colonization is the state's right to the country's natural resources, primarily land. But when settling territories where the indigenous population lives, there is a need to reconcile opposing interests and conduct land policy in such a way as not to offend either those who want to preserve their land or those who want to acquire it. How colonization took place in Russia, America and other parts of the world is discussed in detail in the work of L.L. Rybakovsky. Colonization

of the European North began in the 10th–12th centuries. with the penetration of the Slavs into sparsely populated lands with a Finno-Ugric population (Karelians, Komi, Nenets, Vepsians, Sami) and ended in the 17th century. with the entry of the North into the Moscow state. The annexation of Siberia and the Far East took place from the end of the 16th – beginning of the 17th centuries, ending in the middle of the 19th century. Using a demographic approach, we can conclude that by the beginning of the twentieth century. the process of colonization of the Russian outskirts, including the Arctic, was completed. “The main component of population growth—resettlement—is being replaced by another component—natural population growth.”

Let us briefly consider the history of the colonization of the foreign Arctic. In Northern Norway it began in the early Middle Ages, during the Viking Age. The Norwegian North has undergone an accelerated transition from the old communal life and welfare state to rigid market relations. Today the future of the country is connected with the oil and gas industry. The colonization of Alaska occurred in the

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mid-18th century by Russian people. Trade and fishing activities were a form of cooperation with the local population. Coal mining began in the 19th century. In 1867, Alaska was sold to the United States, followed by gold and copper rushes. In 1930–1950 military construction was actively carried out. Overall, this contributed to a sharp increase in population. The first Europeans appeared in the Canadian North in the 9th–10th centuries, but until the middle of the 18th century. The settlement process was sluggish, only the capture of Canada by England accelerated the penetration of Europeans into the Canadian North. In the 20th century, the impetus for settlement came from military construction and the availability of natural resources. In the 10th and 1st centuries, the process of systematic settlement of MA, the formation of a network of permanent settlements, and a settlement pattern continued. The main economic interest of all countries of the World Arctic is energy resources. There are features of the development of territories that are characteristic of both the Russian and foreign Arctic: an increase in the cost of most types of activities; spatial unevenness and discontinuity, low population density and infrastructure placement; few settlements. The stages and specifics of the formation of settlement systems in the World Arctic are described in sufficient detail by O.M. Blagodeteleva. For the Russian Arctic, the vector of population settlement for the long term is determined by the “General Scheme of Settlement on the Territory of the Russian Federation.” It proposes a number of fundamental approaches, namely:

- *not to form permanent settlements in places with unfavorable medical and geographical conditions, in connection with which a transition from a residence policy to a residence policy for the non-indigenous population is proposed;
- *develop large urban settlements - the basic centers of population residence, concentrate the population in promising settlements with a stable socio-economic base, do not create new small settlements, and more widely introduce the rotational method of labor organization;
- *it is recommended to limit urban growth as much as possible; ensure strict selection of persons arriving in the northern regions based on profession and health status; a gradual transition to the implementation of planned shifts of workers;
- *it is necessary to overcome the increasing stagnation of small and medium-sized urban

settlements that determine the economic and social life of the surrounding rural areas.”

The modern settlement system is formed by the industrial nature of the development of the Arctic, which determined the increased share of the urban population and the specifics of Arctic urbanization. However, when assessing the level of urbanization, we are faced with the existing methodological difficulty of classifying settlements as urban. In most countries, the criterion for city status is population size. The UN proposes to take the population of 2 thousand inhabitants as the lower boundary of the city, which does not negate national specifics. Thus, in Norway, cities include settlements with 5 thousand inhabitants, in the USA - with 2.5 thousand inhabitants, in Sweden, Iceland and Denmark - with 200 inhabitants. INRussiaA city is considered to be a populated area with a population of at least 12 thousand, but there are cities with smaller populations. In the Russian Arctic, along with cities, there are urban-type settlements as a transitional form between real cities and rural settlements. The diversity of approaches makes it difficult to compare the degree of urbanization of Arctic territories. In the development of settlements, two opposite trends have emerged: the number of small settlements with the number of inhabitants up to 5 people is increasing, while the population is concentrated in large settlements - over 5 thousand inhabitants. Today, world statistics take into account settlements with a population of over one thousand, which narrows the information base. In the World Arctic there are 416 settlements with a population of over a thousand people. Of these, 34.9 are located in Russia, in Sweden – 13.9, in Finland – 13.7, in Norway – 12.5, in Iceland – 8.2, in the USA – 6.7, in Denmark – 5.3 and in Canada – 4.8%. The density of settlements in MA is very low - 0.32 settlements per 10 thousand km². The overwhelming majority of them have a population of up to 5 thousand people - 71.6%, from 5 to 10 thousand - 11.8%, from 10 to 20 thousand - 8.4, over 20 thousand people - 8.2%. The highest proportion of settlements with a population of up to 5 thousand people is in Denmark – 86.4 and Canada – 85.0; the lowest in Russia – 66.2 and the USA – 60.7%. The maximum population of settlements in the USA is 16,688 and Russia is 15,944, and the minimum in Canada is 4,281 and Denmark is 3,472 people.

Table 2. Population distribution of the World Arctic, %

A country	Population, total	Including by settlements with the number of inhabitants						
		up to 1000	1000–4999	5000–9999	10000–19999	20000–49999	50000–99999	100,000 or more
World Arctic	100.0	18.2	12.2	6.3	10.4	12.0	6.8	34.1

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Russia	100.0	5.9	9.0	3.9	11.3	13.0	6.8	50.1
USA	100.0	37.0	5.9	8.1	-	8.8	-	40.2
Finland	100.0	24.9	11.5	10.1	7.2	8.6	7.9	29.8
Sweden	100.0	26.7	19.9	6.6	13.6	16.3	16.9	-
Norway	100.0	37.7	17.2	9.4	14.2	8.3	13.2	-
Iceland	100.0	4.8	17.6	7.5	14.8	18.9	-	36.4
Canada	100.0	29.1	27.5	6.4	16.2	20.8	-	-
Greenland (Denmark)	100.0	17.5	40.8	9.8	31.9	-	-	-
Faroe Islands (Denmark)	100.0	39.2	34.5	-	26.3	-	-	-

Most of the population of MA lives in settlements of up to 50 thousand people - 3 million 213 thousand (59.1%), and in Iceland the number of this group is 215.1 thousand (63.6%). In Finland, 358.1 thousand live in settlements of up to 20 thousand (53.7%). In the USA and Sweden, half of the population lives in small settlements of up to 10 thousand - 378.1 (51.0%) and 275.0 (53.2%) thousand, respectively. In Norway, Canada, Greenland and the Faroe Islands, the population is concentrated in small settlements of up to 5 thousand people - 404.9 thousand people, or 24.5% of the total MA population living in such settlements (Table 2).

In 2017, there were 15 cities in the World Arctic with a population of over 50 thousand people, of which 9 are located in Russia, 5 in Western Europe, 1 in the USA. The largest Arctic cities of Russia are Arkhangelsk (351,488 people), Murmansk (298,096), Severodvinsk (183,996), Norilsk (178,018); USA - Anchorage (298,192 people - 40.2% of the population of Alaska); Finland - Oulu (198,358 - 29.8% of the urban population), Rovaniemi (52,481); Iceland - Reykjavik (123,246 - 36.4% of the urban population); Sweden - Umeå (87,238); Norway - Tromsø (64,448). A number of countries have only small cities: in Canada - Whitehorse (25,085 people) and Yellowknife (19,569); in Greenland - Nuuk (17,796) and on the Faroe Islands - Tórshavn (13,130). Considering the dynamics of the population of large cities for 1989–2019, it can be noted that in all cities of the foreign Arctic there was an increase, and in the Russian Arctic - only in 2 out of 9 (Noyabrsk and Novy Urengoy). The largest loss of residents was registered in Vorkuta, Monchegorsk, Murmansk and Apatity. It is important to preserve cities because they are poles of economic growth, “connecting transport hubs, important information, scientific and cultural centers for the surrounding areas.” From the above material, a number of conclusions can be drawn, namely:

*despite the fact that in most works and policy documents preference is given to the rotation method, it should be noted that base or support cities are

needed for the development of rotation. They could be cities that have been successfully operating in the North and Arctic for decades. For example, for all oil fields in Siberia, the base city is Tyumen, and the city of Mirny, in addition to servicing oil fields, supplies watches to diamond fields. In the Komi Republic, such a city is Usinsk, Vorkuta and Inta could become such a city;

*the need to preserve the network of permanent settlements is related to the geopolitical approach:

1) in order to consolidate your sovereignty in the Arctic, you need to have a permanently living population in it, adapted to local climatic conditions;

2) rely on medium and small cities, since agglomerations attract the population, expose adjacent territories, make them “nobody’s”, tasty lands for other states; 3) it does not seem appropriate to transfer established cities to the category of rotational cities for both technological and social reasons.

Issues related to population, demographic processes and settlement of the World Arctic are considered. It is noted that many problems have accumulated in the Arctic: from socio-demographic to settlement. Each country solves these problems in its own way, using both universal and specific approaches. The work aims to consider the approaches used in Russian and foreign practice when studying demographic processes and settlement of the World Arctic: demographic zoning, gender, geopolitical, qualitative, combined, cross-sectoral, descriptive-historical, statistical, network, systemic, socio-psychological, sociological, technical-economic, ecological-biological and a number of others. Using these approaches, the process of settlement/colonization, the population settlement system, and demographic trends in the World Arctic were studied. It is noted that the colonization of the European North of Russia took place from the 10th to the 17th centuries, Siberia and the Far East - from the end of the 16th to the middle of the 19th century. The settlement was carried out by its own people; Russia did not need to attract migrants from other countries. Based on the demographic approach, it was concluded

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that by the beginning of the twentieth century. the colonization process was completed, natural demographic development and further development of outlying territories began. In the foreign Arctic, in the initial period, colonization was of a trade and fishing nature, then the extraction of raw materials was carried out. From the first half of the twentieth century. Military interest began to dominate, today economic interest prevails in the development of the Arctic. In demographic development, two opposite trends are noted: the declining dynamics of the population in the Russian Arctic and its constant growth in the foreign Arctic. The settlement network of the Russian Arctic was formed by cities of different sizes; in the foreign Arctic, small settlements were created in the initial period; now the network of medium and large cities is expanding. In recent years, the rotation method has become more widely used in the World Arctic.

Conclusion

Thus, the expected results of the activities of the State Commission for Arctic Development have not been achieved. Chairman of the Commission Dmitry Rogozin considers the reason for the negative interim result to be inconsistency on the part of all executive authorities: "Systemic decisions taken collectively by the state commission are often reduced to zero by the lack of subsequent proper execution." What conclusion can be drawn from the above? Work on the development of the Arctic zone of the Russian Federation is underway, and although we all face huge intractable tasks, there is still time until 2035. And in order for projects and strategies to work, it is necessary to include them "on the ground." Regions, with the help of support and control "from above," must help themselves move from the heroic exploration of the North to comfortable living in it.

Attention to the World Arctic has grown steadily over the past hundred years and will continue to grow due to its natural resources. Despite the increased interest of the governments of the Arctic states, the presence of strategic plans, and significant investments, many problems have not been resolved and require new understanding and "redevelopment." As in the previous period, the cost minimization approach remains. Taking this into account, the following approach to the settlement of the Arctic is proposed: move from a policy of residence to a policy of residence of the newcomer population, in particularly extreme conditions, make maximum use

of the rotation method. There is still no single point of view on how to populate the Arctic. Proponents of the intensive approach propose to develop the Arctic in a targeted manner, creating large agglomerations and group settlement systems, which reduces costs. From the point of view of geopolitical and extensive approaches, it is necessary to form a settlement system that maximally covers the border Arctic space. The accumulated experience of the development of the North and the Arctic shows that a significant part of small and medium-sized settlements with the depletion of the resource base will cease to exist, since they have no options for changing their specialization. An example of this is the miner Inta. At best, some of them can become the basis for intra-regional shifts, if corporate interest in the use of the rotation-expedition method does not prevail.

In the World Arctic there is a peculiarity in the development of demographic processes: in the foreign Arctic there is an upward population dynamics, in the Russian Arctic there is a downward trend, which reduces the already low population of the territory. This led to the fact that the population of the foreign Arctic began to exceed the Russian one by 0.5 million people. The Arctic has a younger age structure, a lower demographic burden, and a fairly high life expectancy. In a number of Arctic countries, the TFR practically ensures simple reproduction of the population.

The North and Arctic are highly urbanized. In the Russian Arctic, a developed settlement system has been formed, including cities of different populations, full-fledged infrastructure, and developed transport. The foreign Arctic was initially developed using a rotational expedition method with a few settlements of narrow specialization, but in recent decades there has been an increase in urban settlements with developed infrastructure, no different from the main part of the country.

The contribution of this article to the study of the problem under study lies in the fact that almost all known approaches to the study of demographic problems and the settlement of Arctic territories are summarized in one work. The elements of novelty include the fact that the proposed approaches are used in the analysis of demographic problems and consideration of the features of settlement of the entire World Arctic. In the future, it is necessary to study the experience of solving demographic problems and population resettlement in the World Arctic.

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