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CONTENTS

SOCIAL AND ECONOMIC DEVELOPMENT

POLITICAL PROCESSES AND INSTITUTIONS

NORTHERN AND ARCTIC SOCIETIES

REVIEWS AND REPORTS

SOCIAL AND ECONOMIC DEVELOPMENT

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Assessment of the Systemic Importance of Regional Credit Institutions in the Subjects of the Arctic Zone of the Russian Federation and Determination of the Opportunities for Their Support *

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Abstract. The article is devoted to the analysis of the banking sector in the Arctic regions of the Russian Federation, the identification of systemically significant regional credit organizations in the subjects of the Arctic zone of the Russian Federation and the study of possible areas of their support. The dynamics of existing credit organizations and their subdivisions in the Arctic zone of the Russian Federation in 2020–2021 is considered. It is determined that there are five regional credit organizations operating in nine Arctic regions now, of which one is a private non-banking one. Their activities are mainly aimed at the development of the real sector of the economy of the home region, at lending to small and medium-sized businesses. The detailed characteristics of the regional banks registered in the Arctic regions and the indicators of their activity are given. It is concluded that the allocation of significant banking structures for the functioning of regional economic systems and their support is an important issue in the analysis of the modern banking system. It is noted that the problem of developing criteria for identifying systemically significant banks for specific regions has been repeatedly raised and discussed in scientific research. It is concluded that for the practical assessment of the systemic significance of regional banks, modification and refinement of currently existing methods are required. The article offers the author's methodology for calculating the indicators used in assessing the systemic significance of a regional credit institution for a subject of the Russian Federation. The indicators of assessing the degree of systemic significance of regional commercial banks registered in the regions of the Arctic zone of the Russian Federation are calculated, and their score assessment is performed. The directions of support for regional systemically important credit organizations are presented.

Keywords: *Arctic zone of the Russian Federation, regional policy, banking system, regional bank, systemically significant bank, financial resources*

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Introduction

In modern conditions, regional banking structures are not only a significant source of financing and crediting of enterprises in the real sector of the region's economy. They also actively participate in the organization of financial flows between the links of economic system, serve financial transactions of the authorities of the constituent entities of the Russian Federation, are major taxpayers in regional budgets.

Having the focus on the development of the real sector of the regional economy, high level of adaptation to regional processes and specifics of the economy, efficiency and flexibility in decision making, the regional banks can become an instrument of financial and credit policy implementation at the sub-federal level.

Numerous domestic and foreign studies are devoted to the role of regional banking structures in the development of home territories. Leading scientists have proved high importance of regional credit institutions for organizing financial processes and increasing investment activity. In particular, based on the processing of a large array of statistical information, it was determined that small regional banks, compared with large interregional banks, are more effective in stimulating local economic growth [1], are characterized by a higher degree of adaptation to various kinds of crisis phenomena [2], while the dynamics of indicators of socio-economic development of regions is quite sensitive to reduction in number of small regional credit institutions [3]. In recent years, several major studies have been published, testifying to the effectiveness of the activities of small regional and municipal banks in such economically developed countries as Germany [4], Japan [5], China [6].

There are only 60 registered regional credit institutions in Russia (excluding the federal cities of Moscow and St. Petersburg). At the same time, it should be noted that as of July 1, 2021, there are no such organizations in 23 Russian regions. The number of such regions is growing every year.

Recent trends associated with reduction in the number of regional banks, formation of significant competitive advantages for systemically important large capital banks, due to the scale effect and state support, create risks of complete displacement of regional credit institutions in most Russian regions. These risks are especially dangerous in relation to regional banks, which are currently actively involved in investment processes, supporting priority sectors of the economy and providing the necessary credit resources to small and medium-sized businesses in the constituent entities of the Russian Federation. Thus, an important issue that arises in the analysis of the modern banking system is not only to single out the system-forming credit institutions at the level of the country's economy, but also the significant banking structures for the functioning of regional economic systems.

Methodology for assessing the systemic significance of regional credit institutions

Currently, systemically important banks in Russia are identified annually by the Central Bank of Russia on the basis of Directive No. 3737-U dated July 22, 2015, "On the Methodology for

Determining Systemically Important Credit Institutions". According to this methodology, quantitative indicators of the activities of credit institutions are taken into account when determining systemically important banks: the size of the credit institution, its interconnectedness with credit and other financial institutions, the amount of attracted deposits of individuals and compliance with the criteria for the international activity of the bank. The methodology involves the use of indicators to assess the activities of banks on a national scale and does not provide for the possibility of assessing the significance of credit institutions at the regional level.

The task of developing and adopting criteria that would allow to evaluate contribution of regional banks to development of specific territories and take into account when correcting state banking regulation was raised and discussed repeatedly in modern studies. In particular, O.A. Antonyuk points out the feasibility of identifying systemically important banks for specific regions [7], highlighting three key areas of interaction of a regional bank that determine the degree of systemic importance: interaction with other banks in the region; interaction with the subjects of the regional economy; interaction with banking capital in social development programs. V.A. Fedoseeva proposes to assess the contribution of regional banks to the development of specific territories using the methodology for determining the impact of regional banking structures on the level of socio-economic security in the region [8]. T.E. Diachkova, D.A. Kosareva and O.V. Zakharova emphasize the ability of credit institutions to provide the population and businesses with the necessary banking products as a key direction for assessing the effectiveness and importance of regional banking structures [9].

The method of assessing the systemic importance of regional banks proposed by G.L. Avagyan [10] is one of the most adapted to practical application. The methodology involves two stages of analysis:

1. Calculation of indicators of the systemic importance of regional banks based on the indexes of the bank's reporting, as well as indicators of the socio-economic development of the region where the bank is based (the list of such indicators and the methodology for their calculation are presented in Table 1).

2. Calculation of threshold values of the significance degree for the specified group of regional banks on the basis of the application of the Sturgess formula.

Table 1

Indicators taken into account in determining the degree of significance of regional banks and the methodology of their calculation (according to the method of G.L. Avagyan)

No.	Indicator	Methodology of calculation
1	Bank size	The ratio of bank assets to total assets of regional banks
2	The level of institutional accessibility of the bank	The share of internal structural divisions of a regional bank in the total number of internal structural divisions of regional banks
3	The degree of participation of the regional bank in the development of the regional economy	The ratio of the loan portfolio (net loan debt) to attracted resources in the form of customer funds and household deposits
4		The ratio of the loan portfolio to the value of investments in fixed assets of enterprises in the non-financial sector of the regional economy
5	The impact of the bank on the social development of	The share of loan debt aimed at lending to the service and social sectors

	the region	
6	The role of the bank in the investment process	The ratio of regional bank assets to GRP
7	The level of credit risk	The ratio of the net loan portfolio to the total loan portfolio
8	Interbank interaction of the bank	The ratio of attracted deposits and loans of the bank to the total attracted interbank deposits and loans of banks in the region
9		The ratio of liabilities on bank LORO accounts to total liabilities of regional banks on LORO accounts
10		The ratio of bank liabilities on loans raised from the Bank of Russia to the total liabilities of regional banks to the Bank of Russia
11	Bank's dependence on household deposits	The share of household deposits in total liabilities of banks in the region

Recognizing the rationality of the methodology proposed by G.L. Avagyan, it should be noted that its modification and refinement are required for the practical assessment of the degree of significance of a regional bank.

In particular, there are doubts about the possibility of applying the methodology and conducting a correct analysis of the bank's position for regions with a small number of regional credit institutions. Moreover, the author's methodology for calculating indicators makes it impossible to compare the level of systemic importance of regional banks registered in different regions.

It also seems questionable whether it is appropriate to use the indicator "the impact of the bank on the social development of the region" when assessing the level of systemic significance. In addition, the depth of relations with other credit institutions is not a priority factor in the systemic importance evaluation at the regional level.

At the same time, from our point of view, when assessing the systemic importance of a bank, one should take into account the interaction of a credit institution with regional and local authorities, which is expressed in the inclusion of authorities in the list of bank founders or the registration of a special status for a credit institution ("authorized bank of the regional administration", "backbone bank", etc.). Thus, the modified methodology for assessing the level of systemic significance of a regional credit institution can be defined as a set of stages shown in Fig. 1.

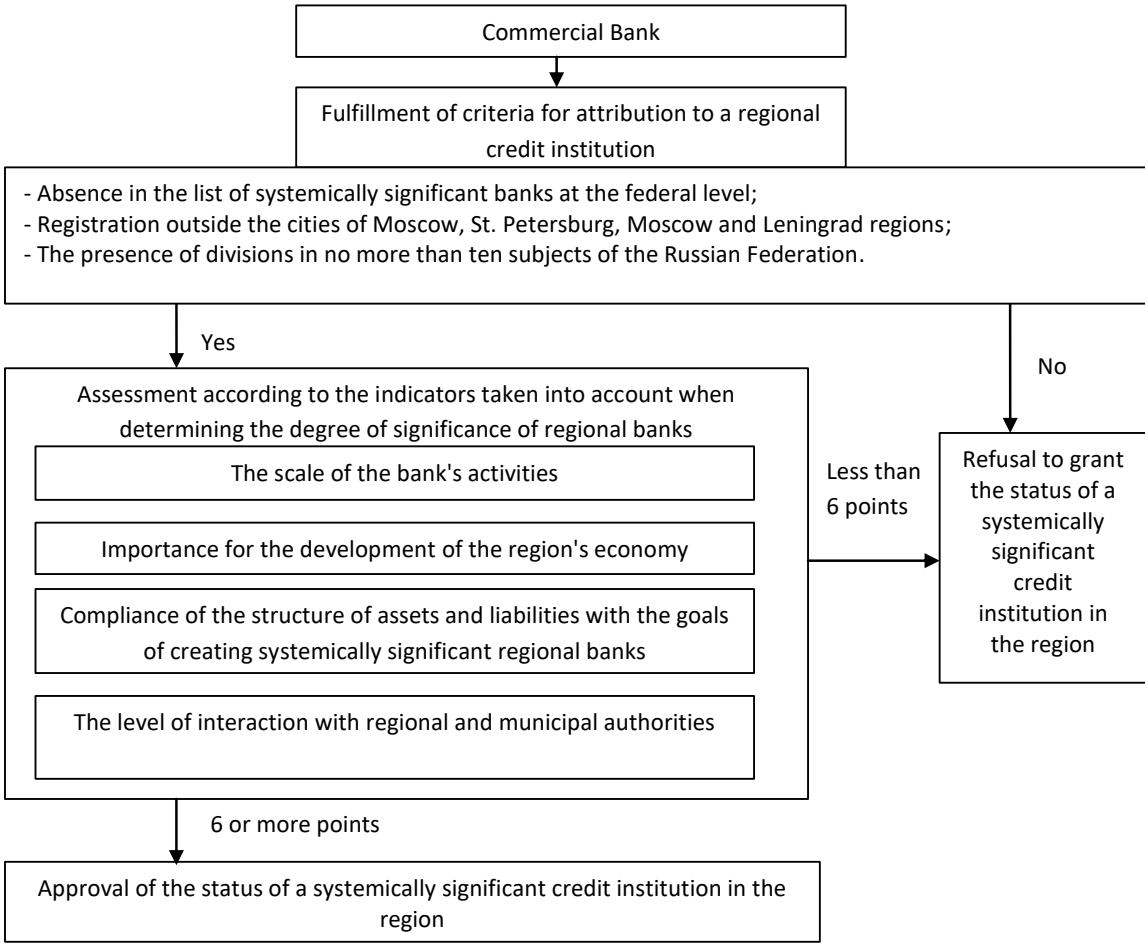

Fig. 1. Modified methodology for assessing the degree of systemic importance of a regional credit institution for a constituent entity of the Russian Federation.

The actual methodology for calculating the indicators used to assess the degree of systemic importance of a regional credit institution for the RF subject and their interpretation is presented in Table 2.

Table 2

Methodology for calculating the indicators used in assessing the degree of systemic importance of a regional credit institution for a constituent entity of the Russian Federation

No.	Factor	Indicator	Interpretation	Score
1	The scale of the bank's activities (A)	The ratio of bank assets to the volume of production of goods and services in the region (A_1)	Assesses the size of the bank in relation to the scale of economic activity in the region	Large bank (2 points) — more than 0.02 Average bank (1 point) — more than 0.01 Small bank (0 points) — less than 0.01
		The share of internal structural divisions of the regional bank in the total number of internal structural divisions represented in the region (A_2)	Characterizes the infrastructure of the bank in relation to the general banking infrastructure in the home region	Large bank (2 points) — more than 0.05 Average bank (1 point) — more than 0.025 Small bank (0 points) — less than 0.025
2	Involvement in the development of the regional economy (B)	The ratio of the loan portfolio to the amount of investment in the fixed capital of enterprises in the region (B_1)	Assesses the bank's potential contribution to investment activity in the region	Significant involvement (2 points) — more than 0.05 Moderate involvement (1 point) — more than 0.025 Slight involvement (0 points)

				— less than 0.025
		The share of deposits of the population in the total volume of deposits of the population of the region (B_2)	Necessary to assess the bank as a mechanism for transforming savings into investment resources	Significant involvement (2 points) — more than 0.02 Moderate involvement (1 point) — more than 0.01 Slight involvement (0 points) — less than 0.01
3	Compliance of the structure of assets and liabilities with the goals of creating systemically significant regional banks (C)	The share of the loan portfolio in the total liabilities of the bank (C_1)	Characterizes the specialization of the bank	High specialization in credit operations (2 points) — more than 0.66 Medium specialization in credit operations (1 point) — more than 0.33 Low specialization in credit operations (0 points) — less than 0.33
		The ratio of the volume of loans to corporate clients to attracted resources in the form of customer funds and household deposits (C_2)	Assesses the bank's involvement in the organization of financial flows in the region	Significant regional activity (2 points) — more than 0.66 Moderate regional activity (1 point) — more than 0.33 Low regional activity (0 points) — less than 0.33
4	Level of interaction with regional and municipal authorities (D)	The share of regional authorities in the authorized capital of the bank (D_1)	Characterizes the degree of involvement of the authorities in the management of banks	Significant control (2 points) — more than 50% Moderate control (2 points) — more than 0% No control (0 points) — 0%
		Special status of the bank (D_2)	Allows to assess the potential for participation in regional and municipal projects	Availability of status — 2 points No status — 0 points

Debatable issue is determining the boundary for granting a bank the status of a regional systemically important credit institution. With the maximum possible score according to the calculation methodology (16 points), a threshold of 50% of the maximum score, i.e. 8 points, can be used as a rigid criterion for systemically important credit institutions (which is more consistent with the current policy of the Central Bank of Russia aimed at enlarging the banking sector and increasing the requirements for credit institutions). At the same time, a softer approach, advocated by the authors of the study, requires a minimum score of 1 point for at least 75% of the indicators (6 points). Another possible approach is to allocate several ranges with different levels of systemic importance for the region: for example, at least 2/3 of the maximum score (11 points) — regional banks with a high level of systemic significance; at least 1/3 of the maximum score (6 points) — regional banks with an average level of systemic significance.

Analysis of banking systems in the regions of the Arctic zone of the Russian Federation

By early 2021, the banking sector of the Arctic regions of the Russian Federation approached with generally stable indicators and several trends that are typical for the entire banking system of Russia. In particular, in 2020, a steady trend towards the reduction of credit institutions was observed. In the regions of the Arctic zone of the Russian Federation, the trend towards a reduction in credit institutions was expressed, first of all, in a decrease in the current number of

branches and representative offices of commercial banks (Table 3). The total number of banks registered in the Arctic regions of the Russian Federation decreased by one unit. In December 2020, the banking license of the Karelian bank Onego was revoked. The reason for this decision was systematic violations of banking legislation [1].

Table 3

Dynamics of operating credit institutions and their subdivisions in the Arctic zone of the Russian Federation in 2020–2021 [2]

Region	Head Office	Branches	Representative offices	Additional offices	Operating cash desks outside the cash center	Credit and cash offices	Operational offices	Mobile points of cash transactions
As of 01.01.2020								
RF	**442**	**618**	**279**	**19997**	**870**	**2198**	**5724**	**290**
Regions of AZRF	7	32	20	1082	45	111	494	10
As of 01.01.2021								
RF	**406**	**530**	**201**	**19453**	**719**	**1967**	**5479**	**289**
Regions of AZRF	6	27	12	1074	33	96	454	9

The reduction of various kinds of internal divisions in the regions of the Russian Arctic zone is related to a number of objective factors, such as the general trend towards enlargement of the banking market participants and displacement of small commercial banks divisions in the regions, development of remote banking technologies and reduction of physical visits of clients to the offices of credit institutions (this trend significantly increased during the period of coronavirus restrictions and a decrease in the social activity of citizens in 2020), decrease of population in many municipalities in the Arctic regions.

As of July 1, 2021, there were five regional credit organizations operating in nine regions of the Arctic zone of the Russian Federation (two in the Murmansk Oblast, one each in the republics of Komi and Sakha (Yakutia) and in the Krasnoyarsk Krai), of which one is a private non-bank credit institution (Murmansk Settlement center), and four are regional banks.

The values of the main indicators characterizing the activities of regional commercial banks are presented in Table 4.

[1] Press release of the Central Bank of the Russian Federation of December 11, 2020. URL: https://cbr.ru/press/pr/?file=11122020_083159lic.htm (accessed 05 July 2021).
[2] According to the Central Bank of the Russian Federation. URL: https://cbr.ru/statistics/bank_sector/lic/ (accessed 07 July 2021).

Table 4

Performance indicators of regional banks registered in the regions of the Arctic zone of the Russian Federation as of 01.01.2021 [3]

No.	Bank	Total divisions	Number of regions where the bank's divisions are represented, units	Size of assets, million rubles	Total loan portfolio excluding interbank loans, million rubles	Account balances of private individuals and entrepreneurs, million rubles	Net profit for 2020, thousand rubles
1	JSC Almazergienbank	26	3	28 976	22 534	16 872	187 002
2	PJSC Severny Narodny Bank	11	2	8 066	2 255	2 931	12 987
3	JSC Yenisei United Bank	35	1	6 559	2 820	4 032	33 870
4	PJSC Murmansk Social Commercial Bank	1	1	925	622	347	−22 193

Let us focus on the characteristics of each of the regional commercial banks.

Almazergienbank was founded in 1993. Having started as a private commercial bank, the Bank has become a backbone credit institution of the regional authorities of the Republic of Sakha (Yakutia) since 1998. The largest part of the Bank's shares is owned by the Ministry of Property and Land Relations of the Republic of Sakha (Yakutia), which now holds more than 97% (the remaining shares were bought out by the Bank itself (1.62%) or are held by minority shareholders (about 1 %)). The status of the main bank of the region allowed Almazergienbank to engage in the implementation of regional and municipal projects, in particular, the Bank was appointed the authorized agent of the government for servicing investments in the oil and gas industry, state targeted programs for the ecology and socio-economic development of the "diamond province", as well as microcrediting of agricultural producers of the Vilyui group of uluses.

The Bank has a fairly wide network of branches in the republic. In addition to the head office in Yakutsk, Almazergienbank is represented by 15 additional offices, 9 operating offices and 1 operating cash desk outside the cash center in the cities of the Republic of Sakha (Yakutia). In addition, the Bank's divisions are represented in Primorskiy and Khabarovsk krais.

As of June 1, 2021, in terms of net assets, the Bank is ranked 117th in the rating of Russian banks, in terms of the size of the loan portfolio and attracted deposits from the population, it is among the Top 100 banks (81st and 72nd in the rating, respectively).

Assessing the structure of assets and liabilities of Almazergienbank, it should be noted that the specialization of the institution is quite wide. Servicing corporate clients (including regional and municipal state institutions), raising funds and lending to individuals and legal entities are singled out as the main activities. The basis of the Bank's capital is formed by attracted funds from the population.

Since February 1994, Severny Narodny Bank has been operating in the Komi Republic (currently PJSC Severny Narodny Bank). The initiative to create this Bank belonged to subsidiary re-

[3] According to the Central Bank of the Russian Federation. URL: https://cbr.ru/statistics/bank_sector/ (accessed 02 July 2021).

gional structures of Gazprom, including Severgazprom and Severgaztorg. Since the early 2000s, Severny Narodny Bank changed owners and become a private bank.

The Bank was established to service local businesses (including regional Gazprom entities) and the population of the Komi Republic. These remain the Bank's key areas of focus today. The bank is active in lending to small and medium businesses in the region. In addition to the head office in the city of Syktyvkar, the bank is represented by three branches in the cities of Ukhta, Usinsk and Moscow, as well as seven additional offices.

As of June 1, 2021, the Bank's assets amount to about 7 billion rubles. According to this indicator, the organization is in 203rd place in the rating (it should be noted that in the first half of 2021, the volume of the Bank's net assets decreased by more than 1.2 billion rubles). In terms of the size of the loan portfolio and the amount of funds raised from the population, Severny Narodny Bank is in the rating at 201 and 159 places, respectively.

The only operating regional bank of the Krasnoyarsk Krai at the moment is Yenisei United Bank. The bank was founded in 1994 in the city of Yeniseisk. The development of the Bank was facilitated by the decision to grant it the status of an authorized bank of the Evenki Autonomous Okrug in 1998, as well as the merger of another regional bank in 1999, CB Lesosibirskiy. Active interaction with regional authorities allowed the Yenisei United Bank to receive the status of an authorized bank of the administration of the Krasnoyarsk Krai in 2001. At the same time, the regional authorities also own part of the Bank's shares (at the moment, the State Property Management Agency of the Krasnoyarsk Krai is the owner of a large block of shares (28.61%).

The priority areas of activity and specialization of the Yenisei United Bank throughout the years of its work were lending and servicing local enterprises (including those with state ownership) and authorities of the Krasnoyarsk Krai, as well as attracting public funds, which form the basis for attracting borrowed capital of the bank. The bank is also quite active in the consumer lending market.

The Bank has a head office and a branch directly in the city of Krasnoyarsk, as well as a wide network of additional offices, numbering 33 units.

In terms of assets, the bank ranks 211th in the middle of 2021 (the volume of assets is 6.2 billion rubles). In terms of the volume of the loan portfolio and the volume of attracted funds from the population in the rating of credit institutions in Russia, Yenisei United Bank occupies 188 and 136 positions, respectively.

Murmansk Social Commercial Bank is a small commercial bank in terms of assets, which operates in the Murmansk Oblast. The history of the Bank dates back to 1994, when it was founded as a limited liability company. Later, in 2011, the bank was transformed into a joint stock company, and four years later — into a public joint stock company. Today, 100% of the Bank's shares are owned by a private individual. The network of divisions of the Murmansk Social Commercial Bank consists of a head office in the city of Murmansk and two additional offices.

Since its foundation, the Murmansk Social Commercial Bank has been specializing in servicing and lending to enterprises and organizations of the Murmansk Oblast, as well as attracting funds from individuals. The Bank's clients are enterprises of the main sectors of the economy of the Murmansk Oblast, in particular, non-ferrous metallurgy, the fishing industry, transport, the construction complex and energy. The basis of the attracted capital of the Bank is the deposits of individuals and equity.

The size of the net assets of the Murmansk Social Commercial Bank is less than 1 billion rubles. According to this indicator, the bank occupies a modest 336th place in the rating. In terms of the volume of the loan portfolio and attracted funds from the population, the bank occupies higher positions — 271 and 247 places, respectively.

It should be noted that of the four regional banks operating registered in the regions of the Arctic zone of the Russian Federation as of mid-2021, two banks have a universal license (Almazergienbank and Severny Narodny Bank) and two banks have a basic license (Yenisei United Bank and Murmansk Social Commercial Bank.

Assessment of the level of systemic importance of regional banks registered in the subjects of the Arctic zone of the Russian Federation

The assessment methodology presented above allows estimating the systemic significance of regional commercial banks registered in the subjects of the Arctic zone of the Russian Federation. The initial data for the evaluation of the four regional commercial organizations are presented in Table 5.

Table 5

Initial data for assessing the degree of systemic importance of regional commercial banks registered in the regions of the Arctic zone of the Russian Federation (as of 01.01.2021) [4]

Indicator	JSC Almazergienbank	PJSC Severny Narodny Bank	JSC Yenisei United Bank	PJSC Murmansk Social Commercial Bank
Total assets of the bank, million rubles	28 976	8 066	6 559	925
Number of internal divisions in the home region, units	24	1	35	1
Total loan portfolio excluding interbank loans, million rubles	22 534	2 255	2 820	622
Deposits of individuals, million rubles	16 823.7	2 839.3	4 032.5	346.9
Total liabilities of the bank, million rubles	32403.1	8210.8	6592.3	888.1
Portfolio of loans to enterprises, million rubles	14 685	1 300	1 155	533
The balance of funds on the accounts of enterprises, million rubles	7 138	3 720	1 867	142
The balance of funds on the accounts of individuals and entre-	16 872	2 931	4 032	347

[4] According to the Central Bank of the Russian Federation (URL: https://cbr.ru/) and the Federal State Statistics Service (URL: https://rosstat.gov.ru/).

preneurs, million rubles				
The share of regional authorities in the authorized capital of the bank	Ministry of Property and Land Relations of the Republic of Sakha (Yakutia) — 97,34%;	-	Agency for State Property Management of the Krasnoyarsk Krai — 28,61%;	-
Bank has a special status	Backbone Bank of the Republic of Sakha (Yakutia)	-	Authorized by the bank of the regional administration	-
	The Republic of Sakha (Yakutia)	The Komi Republic	Krasnoyarsk Krai	Murmansk Oblast
The volume of production of goods and services in 2020, billion rubles	1143.1	632.7	2 786.8	1 133.2
The total number of internal structural divisions of banks in the region, units	275	202	566	156
The volume of investments in fixed assets in 2020, billion rubles	221.7	140.4	478.6	191.1
Deposits (deposits) of individuals and other attracted funds of individuals (excluding funds on escrow accounts), million rubles	124 588	133 734	359 716	170 020

According to the data presented in the table, one can see that these regional banks differ significantly both in size and characteristics of their activities, and in the specifics of the regions where they are registered.

Taking into account the presented initial data, we calculate the indicators for assessing the degree of systemic importance of regional commercial banks and conduct their scoring (Table 6).

Table 6

Calculation of indicators for assessing the degree of systemic importance of regional commercial banks registered in the regions of the Arctic zone of the Russian Federation (as of 01.01.2021) (calculated by the authors)

Indicator	JSC Almazergienbank		PJSC Severny Narodny Bank		JSC Yenisei United Bank		PJSC Murmansk Social Commercial Bank	
	point	score	point	score	point	score	point	score
The ratio of bank assets to the volume of production of goods and services in the region (A_1)	0.025	2	0.013	1	0.002	0	0.001	0
The share of internal structural divisions of a regional bank in the total number of internal structural divisions represented in the region (A_2)	0.087	2	0.005	0	0.062	2	0.006	0
The ratio of the loan portfolio to the value of investments in fixed assets of enterprises (B_1)	0.102	2	0.016	0	0.006	0	0.003	0
The share of deposits of the population in the total volume of deposits of the population of the region (B_2)	0.135	2	0.021	2	0.011	1	0.002	0
The share of the loan portfolio in the total liabilities of the bank (C_1)	0.695	2	0.275	0	0.428	1	0.700	2

The ratio of the volume of loans to corporate clients to attracted resources in the form of customer funds and household deposits (C_2)	0.612	1	0.195	0	0.196	0	1.090	2
The share of regional authorities in the authorized capital of the bank (D_1)	97.34%	2	0	0	28.61%	1	0	0
Bank has a special status (D_2)	yes	2	no	0	yes	2	no	0
TOTAL	-	**15**	-	**3**	-	**7**	-	**4**

Among the operating regional banks of the Arctic zone of the Russian Federation, only JSC Almazergienbank (which is systemically important for the Republic of Sakha (Yakutia)) can be recognized as systemically important for the territory of its base. When using a softer approach, which is advocated by the authors of the study, JSC Yenisei United Bank can also be classified as systemically important (for the Krasnoyarsk Krai).

Areas of practical support for regional systemically important banks and their participation in territorial investment processes

The experience of identifying systemically important banks for the constituent entities of the Russian Federation by means of the presented methodology can be used to develop measures to support regional credit institutions at the present stage. The importance of such support in recent years has been repeatedly stated both in the scientific community and at the level of the Government of the Russian Federation.

In particular, domestic researchers offered a wide range of tools to support regional banks. At the same time, scientists offer not only a standard set of tools related to the optimization of supervisory activities and the reduction of requirements when setting standards in relation to regional credit organizations [11, 12], but also quite specific measures. Thus, Minatulaev I.Sh. and Suleymanova S.S. proposed to form a fund of financial support for small banks as an instrument of institutional support for regional credit institutions that have fallen into a difficult financial situation [13]. The need to develop a full-fledged state program to support the regional banking system of Russia was stated in research by Varlamova S.B. [14]. Zhirovov V.I. proposed a set of measures related to the creation of conditions for the formation of effective options for cooperation of stable regional banks (for example, holding of banks of one federal district), as well as the adaptation of the programs of JSC “Federal Corporation for the Development of Small and Medium Enterprises” for the implementation of regional credit institutes [15].

The necessity and possibility of supporting regional banks has recently been actively discussed in the authorities. In April 2021, as part of a working meeting between the leadership of the Federation Council of the Russian Federation, the Bank of Russia, federal executive authorities and representatives of regional banks, Federation Council Chairman Valentina Matvienko said that the presence of strong banks in the region is one of the indicators of the quality of life, and the work of small banks makes the financial market more competitive and open. A similar opinion was

expressed by the Chairman of the Central Bank of the Russian Federation Elvira Nabiullina [5]. Only during the last year, several areas of support for regional credit organizations were discussed at the level of the Government of the Russian Federation. These areas include:

- possibility of participation of regional banks in government programs to support the banking sector and lending activity on the basis of providing banks with access to government financial resources, not only in terms of the scale of activity, but also on the basis of other indicators;
- transition to the implementation of "smart regional mortgage", when the program of state subsidies for mortgage rates takes into account the specifics of subjects of the Russian Federation, the territorial need of the population for real estate, and the preferential mortgage program itself is implemented not only through systemically important federal banks, but also through regional lending structures;
- development of a mechanism for the transfer of information banking technologies to the level of regional organizations, the possibility of developing and implementing which is available due to the use of economies of scale in large federal banks, as well as more active work on the part of the authorities to ensure cybersecurity in the banking sector, increasing the availability of databases, state information resources for small and medium-sized banks.

However, with all the potential effectiveness, these areas are under development and discussion, and their practical implementation will depend primarily on the views of the federal financial authorities on the further development of globalization and integration processes in the banking market.

In our opinion, the need to support systemically important regional credit institutions is currently obvious. At the same time, such support should contribute to increasing the attractiveness for regional banks of the direction of activity, which is currently defined as a priority by the authorities — servicing and lending to the real sector of the region's economy. The areas of support for regional systemically important credit institutions are shown in Fig. 2.

[5] Press-reliz vstrechi rukovodstva verkhney palaty parlamenta, Banka Rossii, federal'nykh organov ispolni-tel'noy vlasti i predstaviteley regional'nykh bankov ot 12.04.2021 [Press release of the meeting of the leadership of the upper house of parliament, the Bank of Russia, federal executive bodies and representatives of regional banks dated 04/12/2021]. URL: http://council.gov.ru/events/news/125995/ (accessed 04 July 2021).

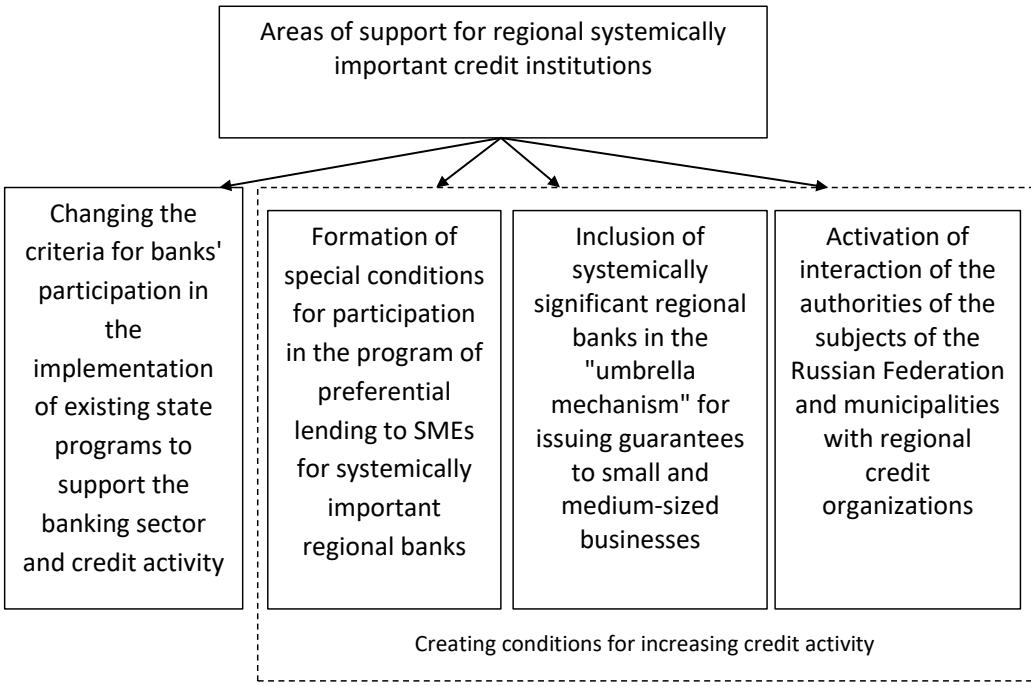

Fig. 2. Areas of support for regional systemically important credit institutions.

As a separate area of support for regional systemically important credit institutions, it is necessary to highlight the change in the criteria for the participation of banks in the implementation of existing state programs to support the banking sector and lending activity. Currently, there is no single approach to establishing criteria for banks to participate in government programs. There are more than 10 different indicators used to determine the selection of participants.

In the first half of 2021, a draft law was developed [6], according to which it is supposed to establish a single requirement for credit institutions participating in the selection for the right to use public resources — a bank's credit rating. Such a decision should increase the number of participants in government programs and increase the competitiveness of regional banks in this area. However, the fact that the credit rating does not always objectively take into account all indicators of the bank's performance and its significance for the development of the region's economy makes it necessary to allow additional banks with the status of regionally significant (based on the methodology proposed above), but without the required credit rating, to participate in the implementation of state programs. Such a measure would provide additional support to the banks taking an active part in financing the real sector of the region's economy and implementing regional and municipal projects, even if for some reason they lack the required credit rating.

Other measures of support for systemically important regional banks presented in Figure 2 are aimed at creating conditions for more active participation of this category of credit institutions

[6] Proekt Federal'nogo zakona N 1046569-7 «O vnesenii izmeneniy v otdel'nye zakonodatel'nye akty Rossiy-skoy Federatsii v chasti sovershenstvovaniya otbora kreditnykh organizatsiy na osnovanii kreditnogo reytinga dlya tseley investirovaniya i razmeshcheniya denezhnykh sredstv» (red., vnesennaya v GD FS RF, prinyat v pervom chtenii 6 aprelya 2021 g.) [Draft Federal Law N 1046569-7 "On amendments to certain legislative acts of the Russian Federation in part of improving the selection of credit institutions on the basis of a credit rating for the purposes of investment and placement of funds" April 6, 2021)]. URL: https://sozd.duma.gov.ru/bill/1046569-7 (accessed 04 July 2021).

in the processes of lending to small and medium-sized businesses in constituent entities of the Russian Federation.

One of such proposed measures is the inclusion of systemically important banks in the "umbrella mechanism" for issuing guarantees to small and medium-sized businesses. Currently, the Government of the Russian Federation is working on a mechanism to simplify the access of SMEs to guarantee support provided by the Federal Corporation for the Development of Small and Medium Enterprises (SME Corporation) when they receive bank loans (this mechanism was created to increase the availability of credit resources for businesses that cannot provide guarantees to the bank, as well as to reduce the number of rejected loans and the waiting period for credit approval). Amendments to this effect were approved during the adoption of the law on the reform of the development institutions [7]. The new mechanism involves the automatic receipt of guarantees by the SME Corporation when applying to a bank in order to obtain a loan if a small and medium-sized business entity meets certain criteria. As a result, banks that enter into an agreement with the SME Corporation will be able to automatically integrate the "state guarantee" option into the offered loan products for corporate clients. At the moment, the most likely inclusion of large federal banks in this program, however, the expansion of the list of banks participating in the program at the expense of systemically important regional credit institutions, according to the authors, looks appropriate and justified.

Another measure to stimulate lending to small and medium-sized businesses by regional banks is to create special conditions for systemically important regional banks to participate in the program of concessional lending to SMEs. Currently, the main program of concessional business lending is the "1764" program, according to which banks participating in the program provide loans to small and medium-sized businesses according to the formula "key rate of the Central Bank of the Russian Federation + 2.75%". In order to increase the effectiveness of the implementation of this program in the regions, the following seems advisable:

- active involvement of regional banks in the implementation of this program, including by softening the criteria for participation in the program of systemically important regional banks (as of July 1, 2021, 61 banks have the status of an authorized bank under this program, whereas 53 banks actually extend credits [8]);
- allocation of a fixed quota from the total amount of financing under the program of preferential crediting of SMEs for systemically important regional banks;

[7] Federal'nyy zakon ot 02.07.2021 № 332-FZ «O vnesenii izmeneniy v otdel'nye zakonodatel'nye akty Rossiyskoy Federatsii i priznanii utrativshey silu chasti 1-1 stat'i 8 Federal'nogo zakona «Ob innovatsionnom tsentre «Skolkovo» (na 17.07.2021 Zakon ne vstupil v silu) [Federal Law No. 332-FZ of 02.07.2021 "On amending certain legislative acts of the Russian Federation and recognizing parts 1-1 of Article 8 of the Federal Law "On the Skolkovo Innovation Center" as invalid (as of 17.07.2021, the Law has not entered into force)]. URL: http://www.consultant.ru/document/cons_doc_LAW_389014/ (accessed 17 July 2021).

[8] The current list of banks under the program of preferential lending to SMEs at a preferential rate of up to 8.5%. Official site of the Ministry of Economic Development of the Russian Federation. URL: https://www.economy.gov.ru/material/news/aktualnyy_perechen_bankov_po_programme_lgotnogo_kreditovaniya_subektov_msp_po_lgotnoy_stavke_do_85_.html (accessed 15 July 2021).

- differentiation of the formula for forming the concessional lending rate for small and medium-sized businesses representing priority sectors of the economy of specific subjects of the Russian Federation and lending through systemically important regional banks, in order to further reduce the cost of credit resources for such enterprises.

Another important direction of supporting regional commercial banks and strengthening their participation in regional investment processes, which is not given enough attention at the state level, is the intensification of interaction between the authorities of the subjects of the Russian Federation and municipalities and regional credit institutions. At present, the most promising interaction schemes are based on assigning special statuses ("authorized bank of the regional administration", "backbone bank", etc.). Giving this status to regional commercial banks, on the one hand, will enable credit institutions to solve many organizational problems successfully, and, on the other hand, will enable the authorities to participate in decision-making on issues of crediting investment projects that are important for the regional economy.

The scheme of involving regional banks in the implementation of commercially attractive projects under regional development strategies and programs seems to be effective. Such projects could be selected by a council comprising representatives of commercial banks with special status, and representatives of authorities and businesses. Regional banks could lend to the projects selected by this council at preferential interest rates through additional guarantees of repayment of the financial resources provided. Schemes of joint financing of projects significant for the region can also be implemented at the expense of resources allocated for the implementation of regional programs and bank capital.

Another possible area of interaction between credit institutions and authorities of the constituent entities of the Russian Federation and municipalities is the implementation of tools to attract free resources of the population in investment processes through regional banks. Regional and municipal bonds issued for investment purposes can serve as such instruments. In conditions of low interest rates on deposit products, there will be a high interest in such instruments from the population, and regional banks will provide convenient schemes for acquiring these instruments for individuals.

Giving special status to the region's key banks will also improve the image of these credit institutions and increase the confidence in such banks on the part of the population and business, which is a significant factor in the conditions when the main state support measures are aimed at increasing sustainability and ensuring stable work of the country's largest systemically important banks.

In general, the implementation of the above measures will contribute to the preservation of banks that are systemically important for the regions on the market, create conditions for enhancing the participation of regional credit institutions in lending to the real sector of the economy of the constituent entities of the Russian Federation and increase the degree of participation of authorities in regulating investment processes.

Conclusion

The study showed a decrease in the number of operating credit institutions and their divisions over the past two years in the Arctic zone of the Russian Federation. Currently, there are five regional credit organizations in nine regions of the Arctic zone of the Russian Federation, of which only four are commercial banks. Of the four operating regional banks, two banks have a universal license from the Central Bank of the Russian Federation (Almazergienbank and Severny Narodny Bank) and two of them (Yenisei United Bank and Murmansk Social Commercial Bank) have a basic license.

The existing methods for assessing the systemic importance of regional banks, in the opinion of the authors, require clarification and modification. The modified methodology for assessing the degree of systemic importance of a regional credit institution can be defined as a combination of two stages: fulfilling the criteria for classifying as a regional credit institution and assessing according to indicators taken into account when determining the degree of significance of regional banks. This technique made it possible to assess the systemic significance of regional banks registered in the subjects of the Arctic zone of the Russian Federation. According to the calculations, under the soft approach advocated by the authors of the study, JSC Almazergienbank (which is systemically important for the Republic of Sakha (Yakutia)) and JSC Yenisei United Bank (which is system-but significant for the Krasnoyarsk Territory) can be classified as systemically significant.

The experience of identifying systemically important banks for a constituent entity of the Russian Federation using the presented methodology can be used to develop measures to support regional credit institutions. The most effective ways to support regional systemically important credit institutions at the moment seem to be: changing the criteria for the participation of banks in the implementation of existing government programs to support the banking sector and lending activity, creating special conditions for participation in the program of concessional lending to SMEs for systemically important regional banks, including the inclusion of systemically important regional banks in the “umbrella mechanism” for issuing guarantees to small and medium-sized businesses, activation of interaction between the authorities of the constituent entities of the Russian Federation and municipalities with regional credit organizations. The implementation of these directions will greatly contribute to the creation of conditions for increasing the participation of the banking sector in ensuring the economic development of the regions.

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Financial Development Trajectories of the Russian Arctic Regions *

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Abstract. Priority development of the Arctic territories is particularly relevant in conditions of unstable environmental balance, significant climate change, and territorial vulnerability. The Arctic regions have common natural and climatic conditions, geographical location, the availability of natural resources on their territory, the level of technical and technological development of the branches of the national economy, however, they are characterized by heterogeneous conditions of socio-economic development, therefore, the imbalances in the functioning of these regions are manifested more clearly. Elimination or levelling of the emerging interregional imbalances is an objective necessity for the sustainable development of regions, ensuring their financial stability. The authors, on the basis of private financial indices (budget, economic, investment), carried out a pinpoint adjustment of the development of the Arctic territories and determined the trajectories for the implementation and expansion of potential financial opportunities, taking into account the identified threats and drivers that affect the economy of the region. This approach made it possible, firstly, to assess the financial capabilities of the regions in terms of different aspects (budgetary, economic, etc.,); secondly, to identify the dynamics of their financial development; and, thirdly, to rank the regions according to the level of financial solvency. As a result, three clusters were identified: regions with a high value of the economic index; regions with a high value of the investment index and regions with a high value of the budget index. For each group, a vector of financial development has been determined, which makes it possible to effectively use all the possibilities of the Arctic regions to ensure their both social and financial and investment development.
Keywords: *Russian Arctic, financial development, trajectory, threat, driver, financial resource, potential*

Introduction

The Arctic is a priority of the Russian Federation's state policy today, as it is a potential region with strong natural resource potential. However, the Arctic is not only mineral resources, but also people living in its territories. The Arctic regions are home to 19 small indigenous peoples (about 102 thousand people), and there are objects of their heritage and ethnicity that are of great historical and cultural value [1]. Improving the quality and raising the standard of living in the Arctic regions, increasing the sustainability of the northern economy by enhancing the socio-economic policy of resource use and ensuring the financial viability of regional budgets are the main tasks that need to be solved by the joint efforts of government, business and society. Never-

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[1] Budushchee — za Arktikoy: zachem nam ona, otstoit li Rossiya pravo na bogatstva regiona [The future belongs to the Arctic: why do we need it, will Russia defend the right to the wealth of the region]. URL: https://news.myseldon.com/ru/news/index/243489508 (accessed 01 October 2021).

theless, it is impossible to solve these tasks without achieving the financial well-being of the regions, that is, the ability to independently execute the expenditure powers assigned to the subjects.

Under conditions of uncertainty, multidirectional trends in the financial development of regions and a fairly long planning horizon, an approach that makes it possible to assess development options and possible losses is needed. Such an approach can be the development of scenarios [2] [1; 2] or the construction of trajectories [3] of financial development of the territory.

There are many mechanisms and tools of strategic management used to solve various problems of regional development and management. For example, a cluster approach is used to ensure the competitiveness of territories, which involves the creation of integrated entities to solve the problems of innovative development [3, Tatenko G.I.]. In addition, the formation of clusters on the territory of individual regions helps to reduce the costs of local enterprises, thereby providing conditions for investment attractiveness [4]. In the context of this approach, the European method, based on the concept of "smart" specialization, seems interesting [5, Kalyuzhnova N.Ya., Violin S.I.; 6]. The essence of this approach is to identify the competitive advantages of specific territories based on the assessment of promising areas for the development of existing industries and the competitiveness of new ones.

When implementing a strategic document on the development of the Russian Arctic and ensuring its national security [4], the scenario approach is becoming increasingly popular. In the framework of this work, we will focus on building the trajectories of the financial development of the Arctic territories, leaving the framing of specific scenarios outside the scope of the study.

Research methodology

The financial development trajectories of the Arctic regions proposed below are based on the results of an earlier study [4]. Before fine-tuning the development of territories and determining their individual way of implementation and expansion of financial opportunities, it is necessary to pay attention to the background conditions of regional development, that is, the conditions that determine their uniqueness and spatial (Arctic) identification.

The background conditions for the development of the Russian Arctic regions include:

- extreme living conditions in these regions, many of which are absolutely discomfort zones for human life (Republic of Sakha (Yakutia), Yamalo-Nenets, Chukotka and Nenets Autonomous okrugs);

[2] A scenario is a description of regular options for future development, based on an understanding of the essence and dynamics of processes and phenomena, their trends, taking into account possible uncertainties [3, Petrov et al.]
[3] A trajectory is the definition of the general vector of development of the region, taking into account the main driving forces (drivers - a set of external and internal conditions that determine the vector content and the level of regional development.) and the alleged threats.
[4] O Strategii razvitiya Arkticheskoy zony Rossiyskoy Federatsii i obespecheniya natsional'noy bezopasnosti na period do 2035 goda: ukaz Prezidenta RF ot 26.10.2020 № 645 [On the strategy for the development of the Arctic Zone of the Russian Federation and ensuring national security for the period up to 2035: Decree of the President of the Russian Federation of October 26, 2020 No. 645]. URL: https://www.garant.ru/products/ipo/prime/doc/74710556/ (accessed 03 October 2021).

- infrastructural restrictions, primarily — inaccessibility; in some areas of the Arctic zone of the Russian Federation there is no access by land transport to neighboring territories and settlements throughout the year (for example, the Arctic regions of the Republic of Sakha (Yakutia));
- increased resource intensity, northern rise in price and high costs with a low competitive position of goods of local producers;
- ultra-dispersed population resettlement, which is caused by natural and climatic factors, features of economic development, market conditions of the regional economy, and the ethno-social structure of the population. The low level of social infrastructure (social, medical, educational and other services), the lack of developed transport accessibility (especially in the Arctic regions of the Republic of Sakha (Yakutia), Chukotka and Yamalo-Nenets Autonomous okrugs) slowly modernize the lifestyle of the Arctic population and worsen their adaptation to social and economic changes in vast intercity spaces, thus having a significant impact on their settlement centres [5, Fauser et al.];
- significant natural resource potential. The Russian Arctic is a geostrategic territory of the Russian Federation and is of great economic, military-strategic, transport and logistics importance. Colossal reserves of oil and gas are concentrated on its territory: almost a third of the world's explored reserves of nickel and platinoids, over 90% of tin, diamonds, gold, mica, apatite, etc.;
- ecological pressure on the territory. The regions of the Russian Arctic are characterized by an increased techno- and anthropogenic load on nature and require consideration of the ecological capacity of the territory (the level of anthropogenic load that can sustain natural ecosystems without irreversible damage to their life-supporting functions), due to the fact that many potential environmentally hazardous enterprises and organizations are involved in the development, extraction and processing of natural resources [6].

Further, using the basics of cluster analysis, the studied set of regions was divided into groups of homogeneous objects by the level of financial solvency, taking into account the value of private indices; each group was defined by its own development trajectory. Clustering was conducted on the basis of the maximum values of the particular indices (Table 1).

Table 1

Private financial indices [5] for the period 2005–2019

Arctic regions	Aggregated financial indices		
	Budget index	Economic index	Investment index
Republic of Karelia	0.143	0.164	0.069
Komi Republic	0.118	0.076	0.112
Nenets Autonomous Okrug	0.124	0.051	0.179
Arkhangelsk Oblast (without AO)	0.156	0.121	0.122
Murmansk Oblast	0.206	0.130	0.150
Yamalo-Nenets Autonomous Okrug	0.079	0.066	0.188

[5] The calculation methodology is presented in detail in [7].

Krasnoyarsk Krai	0.109	0.114	0.113
The Republic of Sakha (Yakutia)	0.089	0.078	0.130
Chukotka	0.174	0.227	0.181

As a result, the composition of the clusters was defined as follows:

- cluster 1 — regions with a high value of the economic index;
- cluster 2 — regions with a high value of the investment index;
- cluster 3 — regions with a high value of the budget index.

It should be noted that the formation of groups of regions included in a particular cluster, namely the distribution of regions by groups, was based on the ranking of values of the aggregated financial indices within each region. Due to the fact that Krasnoyarsk Krai has almost the same values of economic and investment indices, therefore, this region was included in clusters 1 and 2 with the possibility to assess the trajectory of its development on the basis of identified competitive advantages. Perhaps, the formation of clusters will be different in a larger sample of regions, but this is a matter of a separate study with a different object.

The trajectory of the region's development with high values of the economic index

***Trajectory context*.** Regions with a high economic index are characterized by a high share of raw materials (minerals) exports in the region's foreign trade balance, low level of unprofitable enterprises in the overall structure of the gross regional product, dependence of the economy on the foreign trade activities of the region.

This is the trajectory of cluster 1 regions: Republic of Karelia, Krasnoyarsk Krai, Chukotka Autonomous Okrug.

Drivers:

- resource base;
- international cooperation;
- development of extractive industries.

The diversity of mineral, forest, aquatic, biological, land and other resources acts as a driver for the development of the Republic of Karelia. The mineral resources of the region are represented by more than 50 types of minerals. A significant part of the Republic of Karelia is covered by forests (approximately 53%), which forms the natural advantages of the region for the development of the timber industry. In addition, access to the basin of the Arctic and Atlantic Oceans to the Northern Sea Route through the Baltic and White Seas is a potential for the development of sea freight, fish processing, and can also be used for tourism (as the shortest route to the Solovetsky Islands) [6].

[6] Proekt strategii sotsial'no-ekonomicheskogo razvitiya Respubliki Kareliya na period do 2030 goda [Draft strategy for the socio-economic development of the Republic of Karelia for the period up to 2030]. URL: https://economy.gov.ru/material/file/89a071c19798e94c3478014f01520cf4/proekt_RK.pdf (accessed 15 September 2021).

It should be noted that a sufficiently developed border infrastructure will not only strengthen existing international relations and cooperation between the Republic of Karelia and Finland, but also become the main driver for the development of this region.

The basis of the economic development of the Chukotka Autonomous Okrug is the coal industry and the extraction of ores of non-ferrous (precious and non-precious) metals, as well as industries of traditional economy of the small peoples of the North.

Chukotka is rich in non-ferrous and precious metals, coal, oil and gas, which is the main driver for the development of this region, attracting large industrial investors in the development and operation of deposits.

Reindeer herding and sea fur hunting in the Chukotka Autonomous Okrug, being a traditional sector of economy, provide its inhabitants with up to 50% of the needs in meat products [7].

The Chukotka Autonomous Okrug has a high export potential, as its extractive industry capacity is much greater than the region's domestic market demand. Export logistics to the Asia-Pacific region is a more feasible option for entering the Russian market. The ASEZs are an effective tool for implementing an export-oriented model in relation to neighboring countries, with tax incentives created for them and support for the creation of the required infrastructures.

The basis of the economy of the Krasnoyarsk Krai is its industrial complex with three core industries (non-ferrous metallurgy, fuel and energy complex and oil and gas industry), which is the driver of regional development, since it provides a significant part of the gross regional product. Other drivers of the region are hydrocarbon resources and its geographical position in the context of the depletion of the resource base of Western Siberia and the European part of Russia [8].

In order to ensure employment and to maintain distribution of the population and productive forces in the region, timber and agro-industry play an important social role, although they are not considered basic ones.

Threats. The following threats should be highlighted for the regions of this cluster: depletion of minerals; instability of prices on world markets and volatility of currency markets; ecological situation.

In the Republic of Karelia, the forest complex and the mining industry form a mono-specialization of the region. Recently, special attention has been paid to sectors oriented to the final consumer market (for example, food industry).

The Chukotka Autonomous Okrug, being one of the largest gold-mining regions in Russia, provides a high level of GRP, tax per capita income and investments, attracting additional labor

[7] Proekt strategii sotsial'no-ekonomicheskogo razvitiya Chukotskogo avtonomnogo okruga do 2030 goda [Draft strategy for the socio-economic development of the Chukotka Autonomous Okrug up to 2030]. URL: https://www.economy.gov.ru/material/file/6f420547cf9ff60f79133cec6d6ef495/191219_CHAO.pdf (accessed 10 August 2021).

[8] Proekt Strategii razvitiya Krasnoyarskogo kraya do 2030 goda [Draft strategy for the development of the Krasnoyarsk Territory up to 2030]. URL: http://www.krskstate.ru/2030/plan/4_1_1_1 (accessed 10 September 2021).

force. Nevertheless, focusing on the development of one flagship industry causes monodependence and makes the regional economy vulnerable to external price conditions.

***Vector of financial development*.** Taking into account the driving forces of the regional economy and the identified threats, the general orientation of their financial development trajectory should be focused on the increase of budgetary resources and development of investment potential (Fig. 1). The individuality of the development trajectory of each region from cluster 1 will depend on the specific features of the economic structure.

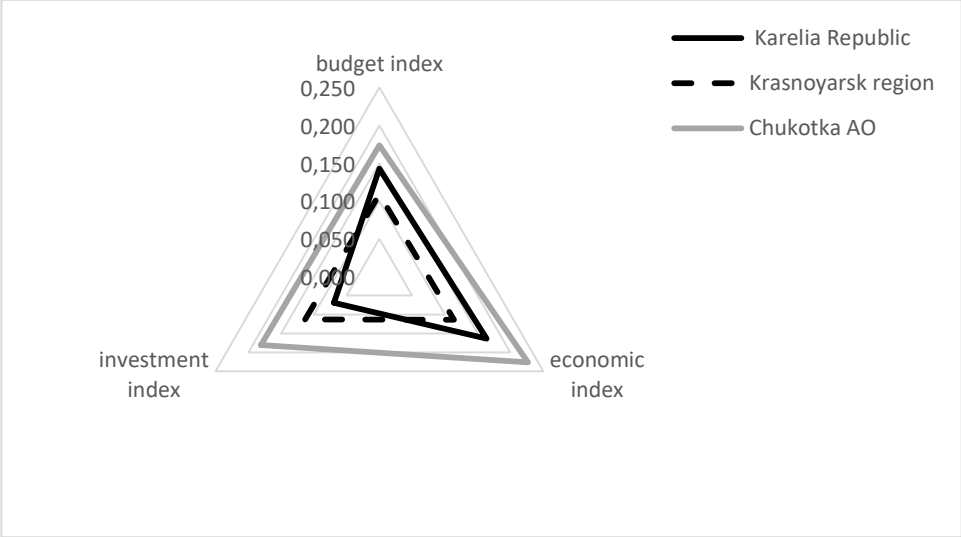

Fig. 1. Orientation of the financial development trajectory of the regions.

For example, the economy of Chukotka is based on the extraction of minerals (gold mining accounts for more than 40% in the structure of gross value added); therefore, the prospects for the development of this region are seen as increasing its investment attractiveness. Since 2016, the Beringovskiy ASEZ has been operating in the Chukotka Autonomous Okrug, which includes a significant part of the Anadyrskiy municipal district and the city district of Anadyr [8]. Within the framework of the ASEZ, it is possible to implement large investment projects on preferential terms, which will enable the region to attract additional investment and increase its budget revenue base. The economy of the Republic of Karelia, on the contrary, is quite differentiated, so the main vector of development should be aimed both at rebooting industrial policy and developing the potential of individual industries. A distinctive feature of this region is a significant number of cultural heritage objects of the federal level: the Valaam Archipelago, the Solovetsky Islands, the Alexander Svirskiy Monastery, the Muromskiy Svyato-Uspenskiy Monastery, the Uspenskiy Cathedral in Kem, the Germanovskiy Skete with the Church of Alexander Nevskiy, the Museum religious buildings of the ancient Saami, the museum “Martsial'nye vody”, the museum “Runopevtsy Kalevaly” and others (more than 1500) [9], which is the basis for the development of tourism in Karelia.

[9] Proekt Strategii sotsial'no-ekonomicheskogo razvitiya Respubliki Kareliya na period do 2030 goda [Draft Strategy for the socio-economic development of the Republic of Karelia for the period up to 2030]. URL: https://www.economy.gov.ru/ (accessed 10 October 2021).

It should be noted that most of the recreational areas and cultural heritage sites are concentrated in the regions referred to the Arctic zone of the Russian Federation.

According to the results of the analysis, the Krasnoyarsk Krai turned out to be the most harmonious region in terms of financial development in the Russian Arctic, that is, the considered indices form an almost isosceles triangle (Fig. 1). The assessment of financial viability showed that this territory has a sufficient level of budgetary resources (the budget index is 0.113), a relatively high investment potential (the investment index is 0.114) and a strong foreign economic sector (the economic index is 0.109). Nevertheless, it is possible to outline the contours of the further development of this region. It is necessary to continue to stimulate investment activity by creating a comfortable business environment and providing investors with additional state guarantees and support measures. Changing the usual structure of the economy through advanced development of processing industries, introduction of innovative technologies and production of innovative products will diversify it. The region's high resource potential makes it possible to develop existing enterprises and does not limit the possibility of locating new production facilities (including innovative ones), which would increase regional budget revenues. However, the extensive prospects for the creation of new industries, which the region possesses, are not a reason for locating ecologically dangerous and harmful enterprises there. Therefore, it is necessary to implement measures of state regulation on compensation of ecological damage, restoration of damaged natural ecological systems, which will lead to reduction of negative impact on the environment and will improve ecological living conditions.

The trajectory of the region's development with high values of the investment index

Trajectory context. The level of financial solvency of the regions is determined to a greater extent by the investment index. Regions with a high investment index are characterized by high investment activity, as well as a high level of savings of the population and enterprises, which, under favorable financial conditions, can be transformed into investment resources of the region.

The development trajectory of the region with high values of the investment index is typical for regions from cluster 2, namely the Nenets Autonomous Okrug, the Yamalo-Nenets Autonomous Okrug, the Krasnoyarsk Krai, the Republic of Sakha (Yakutia).

***Drivers*:**

- investment attractiveness;
- ethno-cultural potential of the territories.

The economy of the Russian Arctic is generally focused on the development and exploitation of the mineral resource base, taking into account the system-forming role of the Northern Sea Route, which primarily determines the investment attractiveness of these regions. For example, due to the high investment activity, the Krasnoyarsk Krai occupies a leading position among Russian regions, entering the "Top 10" regions in terms of investment in fixed assets. In the period 2002–2015, the volume of investments in the region increased by 4.5 times, which is twice as

much as the Russian average. Investment activity in the region is supported by the implementation of major investment projects at the federal level: the Nizhneye Priangarye integrated development project, the Vankor cluster field development project, the construction of the Kuyumba-Tayshet main oil pipeline for transporting oil from the south of Evenkiya, and a development project for the Siberian Federal University [10].

An important driver for the development of territories in cluster 2 is their ethno-cultural potential, which is one of the main components for the development of ethno-cultural tourism in order to diversify the economy and create new jobs. For example, in some arctic regions of the Republic of Sakha, Evenks, Evens, Yukaghirs, Dolgans, Chukchis, northern Yakuts, and Russian old-timers (Russko-Usti and Pokhodchans) are actively engaged in traditional economic activities. This region is a leader among Russian regions in matters of protecting the rights and interests of small indigenous peoples; it has a law on ethnological expertise [11].

More than 49 thousand inhabitants of the Yamal-Nenets Autonomous Okrug belong to the indigenous peoples of the North who have preserved their life practices and a distinctive culture of economy. Today, the region has developed a network of trading posts along the main reindeer herding routes, which are becoming centers for providing various types of services to the tundra people: medical, educational, cultural, and social. The register of trading posts of the Yamalo-Nenets Autonomous Okrug has been approved, which includes 30 stations [12].

Threats:

- increased resource intensity and northern rise in the cost of all types of work and services, due to the geographical features of the territories;
- probability of failure to implement investment projects in case of low solvency;
- shortage of labor resources (active migration outflow, reduction in the number of able-bodied population);
- reduction of opportunities for traditional nature management of the indigenous peoples of the North due to climate change and industrial development.

Vector of financial development. The main vector of financial development along this trajectory should be the strengthening of the budget and economic indices of the territories, thanks to the development of small and medium-sized businesses in alternative mining and manufactur-

[10] Investment policy // Krasnoyarsk Territory: official portal. URL: http://www.krskstate.ru/2030/plan/8_4 (accessed 11 September 2021).
[11] Strategiya sotsial'no-ekonomicheskogo razvitiya Arkticheskoy zony Respubliki Sakha (Yakutiya) na period do 2035 goda [Strategy for socio-economic development of the Arctic zone of the Republic of Sakha (Yakutia) for the period up to 2035]. URL: https://www.economy.gov.ru/material/file/57bec8bd660db6b7908430e5d5f73238/proekt_ark_zony_resp_saha.pdf (accessed 11 July 2021).
[12] Strategiya sotsial'no-ekonomicheskogo razvitiya Yamalo-Nenetskogo avtonomnogo okruga na period do 2035 goda [Strategy for socio-economic development of the Yamalo-Nenets Autonomous Okrug for the period up to 2035]. URL: https://www.economy.gov.ru/material/file/54b0ca97c75f0c789e733191c545aaf5/PROEKT_STRATEGII.pdf (accessed 11 July 2021).

ing industries, the formation of an energy-efficient economy and the introduction of innovations, the provision of comfortable living conditions, cultural diversity for the population (Fig. 2).

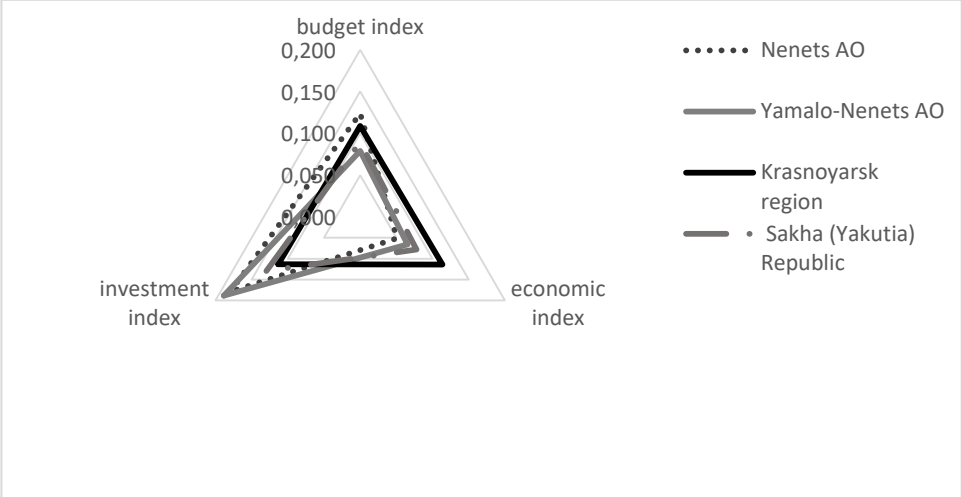

Fig. 2. Orientation of the financial development trajectory of the regions.

In order to increase the financial viability of regions from cluster 2, it is necessary to use an integrated approach that takes into account not only their own financial investment resources, but also such fiscal incentives as subsidized lending, state guarantees, tax benefits and preferences.

Taking into account, that the Nenets Autonomous Okrug produces 0.4% of the total GRP of the Russian regions, the disproportions in budgetary security and in various amounts of revenue raise questions. In order to replenish budget revenues, the Nenets Autonomous Okrug needs to develop and diversify its economy and create high-paying jobs in micro- and small enterprises.

At the same time, geological exploration and development of minerals in these territories should be primarily aimed at additional budget revenues, socio-economic development, and improvement of the standard of living and quality of life of the population.

Strengthening the diversification of the economy of the Russian Arctic regions, supporting northern traditional activities and alternative forms of employment and self-employment, including the development of the tourism sector and infrastructure that enables the population to earn a decent income and a high level of social services, will help to increase the economic index.

The trajectory of the region's development with high values of the budget index

Trajectory context. The regions with high values of the budget index are characterized by the following features of financial development: sufficiently balanced budget; average level of budget security; small amount of subsidies to equalize budgetary security; low level of public debt; effective level of tax administration. Regions with such characteristics form cluster 3: Murmansk and Arkhangelsk (without the Nenets Autonomous Okrug) oblasts, Komi Republic.

Drivers: high level of tax potential and economic diversification.

The issue of budgetary independence and self-sufficiency is currently debatable. Predominance of own revenues in the structure of consolidated budgets of the territories identified above, presence of effective tax administration and sufficiently diversified economy allowed them to

form greater financial independence than in other Arctic regions. The exceptions are the autonomous okrugs — Yamalo-Nenets and Nenets (donor regions), so they were not included in this cluster as strongly distinguished regions. In addition, the indicators characterizing the fiscal system show that the level of tax potential of the Murmansk and Arkhangelsk oblasts and the Komi Republic is high compared to other Arctic regions (excluding donor regions) (Table 2).

The most important prerequisite for the regional development of this cluster is a diversified economy (Fig. 3). The greatest diversification of the economy of the three regions included in cluster 3 is observed in the Murmansk Oblast, where fishing, mining and processing of mineral resources, production and repair of machinery and equipment, and transport predominate. The economy of the Arkhangelsk Oblast and the Komi Republic is less diversified, and the share of hunting, agriculture and forestry practically corresponds to the average Russian level (for example, the Arkhangelsk Oblast — 4.3%, the Russian Federation — 5.0%), this is due to significant timber reserves in these regions (in the Arkhangelsk Oblast — about 3.2% of the total timber reserves of the country, in the Komi Republic — 3.6%) [9, Baklanov P. Ya., Moshkov A.V.].

Table 2

Indicators characterizing the financial independence of the territory, 2019 [13] [14]

Arctic regions	Budget security	Equity level	Level of tax burden	Cost coverage ratio [15]
Republic of Karelia	0.540	0.501	0.102	0.629
Komi Republic	0.970	0.902	0.130	0.799
Murmansk Oblast	0.998	0.828	0.141	0.875
Arkhangelsk Oblast (without NAO)	0.621	0.565	0.111	0.730
Krasnoyarsk Krai	0.960	0.742	0.108	0.783
Republic of Sakha (Yakutia)	0.511	0.516	0.168	0.632
Chukotka AO	0.370	0.361	0.160	0.605

In the rest of the Arctic regions, the sectoral structure of the economy is represented mainly by mining and manufacturing (Table 3). For example, in the Yamalo-Nenets Autonomous Okrug, gas and oil production in the structure of gross value added is 67.3%, in the Nenets Autonomous Okrug — 83.2%. In the Krasnoyarsk Krai, the economy is based on the mining and manufacturing industries (25.6% and 31.8%, respectively). In the Republic of Sakha (Yakutia) and Chukotka, the basis of value added is the extraction of ores, non-ferrous and precious metals (40–50%).

[13] The level of tax burden is calculated for 2019 (no data on GRP for 2020).
[14] The authors' calculations are based on the database of Chapargin A.N., Dyadik N.V. Database registration certificate RU 2019621273, 07/15/2019. Application No. 2019621164 dated 07/02/2019.
[15] Based on data from [10, Badylevich, Verbinenko].

Table 3

The structure of gross value added produced in the Arctic regions of Russia by industry in %, 2019 [16]

Arctic regions	Agriculture, forestry, hunting, fishing and fish farming	Mining	Manufacturing industries	Constructing industries	Wholesale and retail trade; repair of motor vehicles and motorcycles	Transport and storage	Activities of hotels and catering establishments	Other services
Republic of Karelia	6.1	17.1	20.8	3.5	5.3	11.3	0.9	35
Komi Republic	1.5	44.1	11.5	5.7	4.7	6.9	0.6	25
Nenets Autonomous Okrug	0.7	83.2	0.2	3.5	0.7	5.8	0.1	5.8
Arkhangelsk Oblast without AO	6.3	5.1	27.4	4.9	10	11.5	1.5	33.3
Murmansk Oblast	14.4	12	11.5	7	9.1	10.7	1.7	33.6
Yamalo-Nenets Autonomous Okrug	0.1	67.3	1.6	12.4	6.4	3.8	0.3	8.1
Krasnoyarsk Krai	2.5	25.6	31.8	4.6	6	5.9	0.5	23.1
The Republic of Sakha (Yakutia)	1.6	51.5	1.1	9.6	5.7	6.3	0.8	23.4
Chukotka Autonomous Okrug	2.5	40.3	0.3	7.3	6.3	4.3	0.4	38.6

Threats: constant changes in federal legislation (within the framework of budget and tax policy) may cause a slowdown in the growth of own tax and non-tax revenues, an increase in the deficit of financial resources and public debt, which, in turn, may provoke the regions to exist in conditions of severe budget constraints and, as a result, will threaten the long-term sustainability and balance of the regional budget system.

Vector of financial development. In general, the trajectory of the financial development of this cluster should be aimed at (Fig. 4):

- increasing investment attractiveness (development of legislative framework for the formation of a favorable investment environment, development of small and medium businesses);
- increasing the level of the economic index (expanding the volume of non-commodity non-energy goods).

[16] Compiled by the authors on the basis of the database Chapargina A.N., Dyadik N.V. Database registration certificate RU 2019621273, 07/15/2019. Application No. 2019621164 dated 07/02/2019.

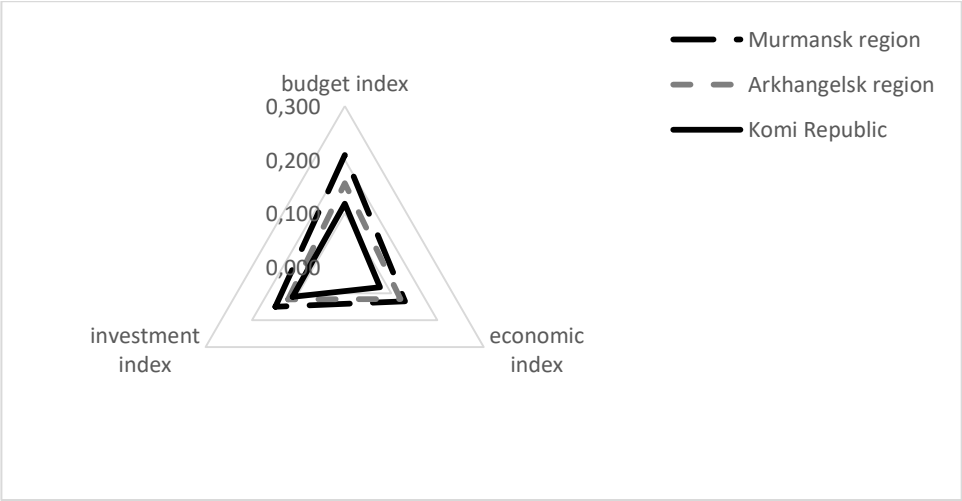

Fig. 3. Orientation of the financial development trajectory of the regions.

Moreover, the development strategy for each region will depend on the resource component and the structure of the regional economy. For example, in the Murmansk Oblast, the growth of export potential will be aimed at increasing the volume of exports of fish and seafood; in the Arkhangelsk Oblast (without the Nenets Autonomous Okrug) — at increasing the share of highly processed goods in the export structure of the timber industry complex [11, Vasiliev A.M., Lisunova E.A., 12, Myakshin V.N. et. al.]. The development strategy of the Komi Republic will focus on creating a favorable investment climate (organizing a system that ensures effective interaction between municipal authorities and participants in investment activities) and implementing major investment projects, in particular the formation of "transport corridors" [17] to create an optimal transport network for the European and Ural North of Russia due to "inclusion the Arctic ports Sabetta (under construction) and Indiga (promising) in the transport network of this territory" [18], as well as the development of the coal industry (development of the Usinskoye deposit, coal mining at the Verkhnesyaginskoye deposit, coal mine "Promezhutochniy").

Conclusion

Attention to the previously established specific features and non-specific patterns allows us to take a more comprehensive look at solving the problems of the Arctic territories and develop a certain trajectory for the financial development of the region, indicating its individual path. The values of the integral indicator calculated by the authors served as the basis for developing the trajectories of the financial development of the Arctic territories. The authors tried to determine three possible trajectories of financial development taking into account obtained values of aggregated financial indices, as well as the results of the SWOT analysis (the drivers of the region and possible threats were identified).

[17] Investment projects. Informational portal. URL: https://investprojects.info (accessed 20 July 2021).
[18] Proekt Strategii sotsial'no-ekonomicheskogo razvitiya Respubliki Komi na period do 2035 goda [Draft Strategy for the socio-economic development of the Komi Republic for the period up to 2035]. URL: https://www.economy.gov.ru/material/file/2937c9a389fa4de5ca44afc8e0bcff8a/komistrateg.pdf (accessed 20 January 2021).

The first trajectory is characterized by high economic potential of the regions; therefore the main strategy of development should be focused on budget resource increase and realization of accumulated investment potential. It is necessary to change conditions for large integrated structures, to expand regional tax privileges and to introduce various tax innovations that enhance investment potential.

The second trajectory is the development of the region with a high level of investment potential, which involves the development of a strategy focused on strengthening the budgetary and economic potential. Recommendations include supporting the development of state programs, expanding project-based management principles and applying a special economic regime in the Arctic zone in order to move towards a circular economy. In the context of measures to improve fiscal capacity, one can specify the improvement of tax revenue administration and the gradual formation of a unified information space in the budgetary and tax sphere.

The third trajectory of financial development characterizes a high level of budget independence of the regions with reduced indicators of their investment and economic activity, so the main vector of regional financial development should be aimed at increasing investment attractiveness and the level of export potential of non-commodity goods. According to the authors, this requires ensuring the effective implementation of investment projects through infrastructure support, subsidizing insurance premiums for new jobs and interest rates on investment loans. Improving export potential of non-resource commodities may also require a substantial boost to the investment process and introduction of innovative technologies in manufacturing and agriculture.

Thus, in the presence of a competent state policy, the outlined development trajectories will make it possible to effectively use all the advantages to ensure the livelihoods and dynamic social and financial development of the Arctic territories.

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The Estimation of Remuneration Efficiency in Monopsony: Concerning the Arctic Fishing Industrial Cluster *

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Abstract. At present, new financial mechanisms of interaction between employees and employers in the context of market relations are being formed and improved in Russia. The decisive factor in workers' performance is their financial motivation and stimulation. The determinative of productivity of an enterprise activity is remuneration efficiency as a base of laborers' financial motivation and stimulation. The remuneration is a flexible element of distributive relations and it is impossible to create an effective motivational mechanism without an establishment of its communication with final results. Such indices as salary distribution and salary intensity as basic indicators of wage efficiency assessment have been used in the paper. The object of the research is sixteen large and medium-sized fishing enterprises in the Arkhangelsk region as a part of the Arctic fishing cluster. These enterprises catch fish in the Barents and Norwegian seas, as well as in the North Atlantic. It has been shown that the financial results of fishing enterprises depend on external conditions — primarily on the quotas for fish catch and the price of fish products. In the research, the authors have proceeded from the following hypotheses: the Arctic fishing cluster's enterprises operate in a monopsony on the labor market; there is a pattern between the size of wage fund and financial performance of the Arctic fishery cluster enterprises; the change in wage fund is an effective mechanism to improve the efficiency of the Arctic fishery cluster. In the course of the research, the following interrelated tasks have been solved: the identification of the features of the Arctic fishing cluster's labor market; the assessment of the effectiveness of the wage fund use for the Arctic fishing cluster's enterprises based on the author's methodology; the identification of the importance of the problem of insufficient efficiency of wage fund use in the Arctic fishing cluster.
Keywords: *labor market, monopsony, Arctic fishing cluster*

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Introduction

Wages and salaries are the most important part of the remuneration and incentive system, influencing performance. The decisive factor in the employees' activities is their wages as an element of financial motivation. The crucial factor in the performance of the enterprise is the effectiveness of wages as the basis for financial motivation and stimulation of employees. Repre-

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senting the main element of distribution relations in any commercial system, wages are quite flexible and easily manageable. Without establishing its interrelation with the final financial results, it is impossible to create an effective motivational mechanism at the enterprise.

The research problem is the following. The Russian fishery, like many other sectors of agriculture, is currently in the process of formation and development. One of the forms of territorial association of enterprises is a production cluster of a certain specialization. The development of not only individual agricultural enterprises, but also the economy of the territorial cluster and the country as a whole depends on how effective wages are in relation to the final result. At the same time, taking into account the peculiarities of the fishing industry cluster functioning, the methodological apparatus for assessing the effectiveness of wages is not well developed.

The aim of the paper is to assess the effectiveness of wages of fish processing enterprises in the Arkhangelsk Oblast, which are included in the Arctic fishing cluster.

In order to achieve the goal it is necessary to solve a number of interrelated tasks:

- to identify the features of the labor market of the Arctic fishing cluster;
- to assess the effectiveness of wage fund use for the enterprises of Arctic fisheries cluster on the basis of the author's methodology;
- to determine the significance of the problem of insufficient wage efficiency in the Arctic fishing cluster.

In our study, we proceeded from the following hypotheses:

- enterprises of the Arctic fishing cluster operate under monopsony conditions in the labor market;
- there is a correlation between the size of wage fund and the financial performance of enterprises in the Arctic fisheries cluster;
- change in the wage fund is an effective mechanism for improving the efficiency of the Arctic fishing cluster.

Literature review

Salary is a complex and multifaceted economic category. Wages determine the standard of living of employees and their families. Ultimately, the pace and scale of the socio-economic development of the state and the social balance of society depend on wages.

Wage is formed at the intersection of production and distribution relations. It reflects interaction of different subjects of economic relations. It is no coincidence that scientific literature constantly discusses issues such as the nature of remuneration, wage efficiency scheme, etc.

For developing a qualitative program of pay scheme improvement, it is very important to define efficiency of existing scheme correctly. What does a payment efficiency scheme mean? From the point of view of some scientists, pay efficiency is a measure of achieving goals [1, Savina S.V., p. 30; 2, Rosefield S., p. 103].

Thus, the results of the "useful" work affect the cost of labor. Provision of enterprises with human resources and efficiency of their use affect the volume of production and sales [3, Stebakova T.A., p. 56; 6, Marinescu I., Ouss I., Pape L.-D., p. 507; 5, Meer J., West J., p. 511].

Researchers agree that wage efficiency evaluation should be based on theoretical developments of the essence of the employer–employee relations. Then efficiency theory can provide a unified explanation for wages and employment trends of some key labor market [6, Schlicht E., p. 2; 7, Goldin C., Katz L. F., p. 150]. At the same time, as S.V. Savin notes, remuneration has national and regional aspects [1, p. 25]. This is confirmed by the work of Megan Millea and Miria Garcia-Vega et al., which examines wage strategies in six industrialized countries with different labor market institutions [8, Millea M., p. 320; 9, Garcia-Vega M., Knellerb R., Stiebalec J., p. 3]. Robert Drago, studying the incentives, wages and productivity of employees of Australian companies, notes the trend of decoupling the relationship between wages and economic efficiency [10]. Such a situation is also observed in Russia [11, Dmitrieva S.O., Abubekerova D.P., p. 6; 12, Derkach P.V., Shamrina I.V., p. 478].

The problem of assessing wage efficiency lies in the lack of the possibility of using a single aggregate indicator [13, Borisova V.Yu., Piven I.G., p. 85, 14, Sandrini L., p. 6, 15, Westerman J., p. 176]. This is due to the fact that there are many factors influencing the economic performance, and only one of them is wages. This, in particular, is noted in the works by Sushil Wadhwani and Martin Wall [16, Wadhwani S.B., Wall M.A., p. 530]. Arindrajit Dube, who studied the minimum wage in the long term, proposed his system of performance evaluation [17, Dube A., p. 820]. In terms of assessment methodology, the work of John Addison is of interest [18, Addison J., p. 7]. Christopher Martin and Bingsong Wang offer their methodology for studying the effectiveness of wages in conditions of instability in the labor market [19, Mar-tin Ch., Wang B., p. 7].

Russia has been living in market economy for only 30 years. This is an extremely short period of time. The Russian labor market, like other sectors of the economy, is changing rapidly. In particular, we have written about it in our publications [20, Samarina V.P., Skufina T.P., Samarin A.V., p. 712; 21, Skufina T. Baranov S.V., Samarina V.P., Samarin A.V., p. 3]. Reforming labor incentives is a necessary prerequisite for Russian industry to emerge from the systemic crisis.

Methodology

The effectiveness of the remuneration system is assessed in practice by means of special index indicators. The ratio of the financial results of the enterprise (revenue, net profit) to the payroll can be considered as one of the main methods for assessing the effectiveness of the incentive system. This indicator is called payroll or production cost per one ruble of the wage fund. The second indicator of efficiency is the wage intensity of labor, i.e. the share of wages in the cost of production [6, Schlicht E., p. 6; 13, Borisova V.Yu., Piven I.G., p. 85]. It is obvious that the higher the wage rate and the lower the wage intensity, the more effective the system of remuneration and incentives.

In order to assess the balance between the use of the wage fund and the achievement of financial results, we propose to use the criteria for efficiency indices. Index of revenue, net profit and cost will be evaluated, which represent the growth rates of the corresponding indicators (Table 1).

Table 1

Formulas for calculating index indicators of efficiency of payroll usage [1]

Indicators	Formulas
The coefficient of the ratio of the revenue growth index (ΔВ) to the payroll growth index (ΔФЗП)	$\frac{\Delta В * 100\%}{\Delta ФЗП}$
The ratio of the net profit growth index (ΔЧП) to the index of wage growth (ΔФЗП)	$\frac{\Delta ЧП * 100\%}{\Delta ФЗП}$
The coefficient of the ratio of the index of the increase in wages and salaries (ΔФЗП) to the index of growth in the cost of sales (ΔС)	$\frac{\Delta ФЗП * 100\%}{\Delta С}$

Balance criteria:

- positive index coefficient indicates a balance between the use of the wage fund and the achievement of financial results;
- negative index coefficient indicates an imbalance in the use of the wage fund and the achievement of financial results.

The proposed methods for assessing the effectiveness of wages will be tested on the example of sixteen large and medium-sized fishing enterprises of the Arkhangelsk Oblast, which are included in the Arctic fishing cluster.

The research was carried out over five-year period in 2015–2019. This time series is not particularly long, but it makes it possible to identify trends in the balance between the indicators of the use of wage fund and financial results.

Results and discussion

Features of the Arctic fishing cluster from the perspective of labor market formation

Fishing enterprises of the Arkhangelsk Oblast, which are included in the Arctic fishing cluster, catch fish in the Barents and Norwegian Seas, as well as in the North Atlantic. The volume of production of the main commercial fish species in 2019 amounted to 133 thousand tons. The choice of the object of research is explained by the importance of enterprises for the Arctic fishing cluster and the industry as a whole. Fishing enterprises of the Arkhangelsk Oblast produce 20% of the volume of fish catches in the Northern Basin and 3% of the total volume of fish catches in Russia.

The enterprises under consideration operate in severe climatic conditions associated with fishing in high latitudes [22, Jungsberg L., Copus A., Nilsson K., Weber R., p. 20; 23, Kudryashova E.V., Lipina S.A., Zaikov K.S., Bocharova L.K., p. 449; 24, Samarina V. P., Samarin A. V., Skufina T. P., Baranov S. V., p. 1]. The activities of enterprises are also important due to their high social significance: as long as there is work, the residents of fishing settlements do not leave for other settlements [25, Skufina T., Bazhutova E., Samarina V., Serova N., p. 1030; 26, Larchenko L. V., Gladkiy

[1] Source: authors' developments.

Yu. N., Sukhorukov V. D., p. 2; 27, Samarina V.P., Baranov S.V., Skufyina T.P., p. 208]. Thus, fishing enterprises support the socio-economic development of the region [28, Samarina V. P., Skufina T. P., Baranov S. V., Samarin A. V., p. 7; 29, Jennings S., Leocadio A. M., Metcalfe J. D., p. 901; 30 Toropushina E.E., p. 620].

In addition to the enterprises that catch fish in the Barents and Norwegian Seas, as well as in the North Atlantic, there are about 200 small and medium-sized enterprises focused on the development of inland water bodies — the White Sea, rivers and lakes. The Arctic fishing cluster also includes shipbuilding, ship repair and maintenance enterprises, port workers, educational and scientific organizations of the Arkhangelsk, Murmansk, Leningrad oblasts and St. Petersburg. Their indicators were not considered in the analysis of the effectiveness of wages.

Taking all factors into account, a labor market with the following characteristics has formed in the Arctic fishing cluster:

- the enterprises of a regional cluster of the same industry and narrow specialization, closely connected by economic ties, act as employers;
- the labor force is represented by numerous independent wage-earners of approximately the same qualification;
- the enterprises of the cluster are in collusion regarding the wages of workers;
- employees have limited mobility and do not have a real opportunity to change their working environment and employer when selling their labor.

The identified characteristics indicate that the fishing enterprises of the Arkhangelsk Oblast, included in the Arctic fishing cluster, operate under monopsony in the labor market.

Estimation of wage intensity and wage return indicators

Industrial fishing and corresponding processing industry are traditionally developed in the Arkhangelsk Oblast. In recent years, there has been an enlargement of fish farms and enterprises. Strong industrial and financial ties are formed between them.

Let us estimate the indicators of wage intensity and wage return of the fishing enterprises of the Arkhangelsk Oblast, which are included in the Arctic fishing cluster, and present them in Table 2.

Table 2

Wage intensity and wage efficiency of the fishing enterprises in the Arkhangelsk Oblast, which are included into the Arctic fishing cluster [2]

Indicators	2015	2016	2017	2018	2019
Wage return on revenue, rub./rub.	24.64	25.08	24.15	24.28	17.08
Wage return on net profit, rub./rub.	0.23	0.24	0.22	0.17	0.18
Wage intensity, %	4.35	4.22	4.20	4.14	6.12

The analysis shows that the wage intensity in terms of net profit is low over the whole period of the survey. This indicates that the enterprises effectively spend the wage fund. Net profit wage-intensity in 2015–2018 is more than a hundred times lower than revenue wage-intensity. At

[2] Source: authors' calculations.

the same time, the salary return on revenue was quite high in 2015–2018. The payroll ratio in terms of revenue dropped sharply in 2019, while the payroll intensity increased. This is due to the fact that the fishing quota was reduced to 133 thousand tons compared to 150 thousand tons in 2015. Consequently, profit margins decreased as well. At the same time, the wage fund continued to grow. Thus, it is possible to note the instability of indicators.

Official statistical information indicates that wage intensity in Russia is quite high: in 2019, the indicator was 38.9%, having increased by 15% over 20 years [31, Korchak E.A., Serova N.A., Emelyanova E.E., Yakovchuk A.A., p. 4]. This is due to the fact that the increase in wages in Russia in recent years has not been supported by the growth of labor productivity [32, Zaikov K.S., Kondratov N.A., Kudryashova E.V., Lipina S.A., Chistobaev A.I., p. 4; 33, Kryukov V.A., Kryukov Ya.V., p. 32; 34 Shokhin A.N., Akindinova N.V., Astrov V.Yu., Gurvich E.T., Zamulin O.A., Klepach A.N., Mau V.A., Orlova N.V., p. 21].

Against the general background, the fishing enterprises of the Arkhangelsk Oblast, which are included in the Arctic fishing cluster, demonstrate good indicators. Salary intensity in 2015–2018 was less than 4.5%. In 2019, wage intensity increased, but remained low.

Estimation of the balance between the wage fund and financial indicators of enterprises of the Arctic fishing cluster

We used index coefficients to identify the balance between the wage fund and financial indicators of the enterprise (Table 3). If the index coefficient is positive, the use of the wage fund and the achievement of financial results are balanced. If the index coefficient is negative, the use of the wage fund and the achievement of financial results are unbalanced.

Table 3

Index indicators of efficiency of wage fund use of fishery enterprises in Arkhangelsk Oblast, which are included in the Arctic fishing cluster[3]

Indicators	2015-2016	2016-2017	2017-2018	2018-2019
Wage fund growth index (ФЗП), %	1.97	4.78	13.40	16.01
Revenue growth index, %	3.78	0.92	14.00	-18.41
Net profit growth index, %	6.39	-1.29	-12.56	19.54
Cost of sales growth index, %	5.23	5.30	14.93	-21.45
Ratio of the revenue growth index to the wage growth index (КΔВ/ΔФЗП), %	191.92	19.23	104.51	-115.00
Ratio of the net profit growth index to the wage growth index (КΔЧП/ΔФЗП), %	323.95	-26.97	-93.76	122.06
Ratio of the wage growth index to the cost of sales growth index (КΔФЗП/ΔС), %	37.66	90.17	89.76	-74.64

The analysis revealed an unstable situation. The coefficient values indicate that in 2015–2018 the use of wage fund is balanced with revenue and cost of sales (positive coefficient values), but unbalanced with net profit (negative coefficient values). Conversely, in 2018–2019, the use of

[3] Source: authors' calculations.

the wage fund is unbalanced with revenue and cost (negative coefficients), but balanced with net profit (positive coefficients).

In general, the study shows that the dynamics of the financial results of the fishing enterprises of the Arkhangelsk Oblast, which are included in the Arctic fishing cluster, has little relation to the dynamics of the wage fund. Wage efficiency is low. This conclusion is based on comparison of the financial results of the enterprise and the wage fund using the indicators of wage return and wage intensity.

Significance of the problem of insufficient wage efficiency of fish industry cluster

At the present stage of development of industrial relations in the fishing industry in the Arctic, the problem of insufficient efficiency of wages is actualized by several interrelated aspects. Let us outline some of them.

Firstly, the Arctic fishing industry cannot be considered as successful one. This is due to a number of objective reasons of natural and climatic genesis and subjective reasons related to management, which we will not dwell on in this article.

Secondly, the internal and external institutional conditions of fishery business are constantly changing. There are fewer and fewer levers left for a quick anti-crisis response. The crisis forces entrepreneurs to look for ways to cut costs, primarily by reducing the wage fund.

Thirdly, wages are the main source of income for a working person in Russia. Wages are especially important in a monopsony environment, where the choice of employers is very limited.

Fourthly, the fishing industry in the regions of Russia is increasingly taking on a cluster character. Enterprises, united in clusters, develop a joint economic policy, including payment and incentives for the work of employees.

Fifthly, the financial results of fishing enterprises largely depend on external conditions — on quotas for fishing and current price of fish products. On the other hand, the constant rise in prices for resources, primarily for fuel, reduces the profits of fishing enterprises.

Conclusions

1. The hypothesis that the fishing enterprises of the Arkhangelsk Oblast, which are included in the Arctic fishing cluster, operate under monopsony conditions in the labor market, has been confirmed. The situation is characterized by the fact that enterprises of the same industry and narrow specialization, closely related economically, act as employers; the labor force is represented by numerous independent hired workers of approximately the same qualification; cluster enterprises are in collusion regarding the wages of employees; employees have limited mobility and do not have a real opportunity to change their field of activity and employer when selling their labor.
2. The stated hypothesis that there is a pattern between the size of the wage fund and financial results for the fishing enterprises of the Arkhangelsk Oblast, which are included in the Arctic fishing cluster, has not been confirmed. Such a conclusion is based on a

comparison of the financial results of the enterprise and the wage fund with the use of indicators of wage return and wage intensity.

3. The problem of insufficient efficiency of wages is significant due to several interrelated aspects: the Arctic fishing industry cannot be considered to be successfully developing; the internal and external institutional conditions for fishery business are constantly changing; wages are the main source of income for a working person, while the choice of employers is extremely limited; enterprises uniting in clusters develop a joint economic policy, including in relation to payment and stimulation of the work of employees; the financial results of the activities of fishing enterprises largely depend on external conditions.
4. Under these conditions, further development of the Arctic fishing cluster, which, in addition to fishing enterprises, includes shipbuilding enterprises, ship repair and maintenance enterprises, ports, educational and scientific organizations of the Arkhangelsk, Murmansk, Leningrad oblasts and St. Petersburg, seems very promising for reducing costs, increasing profits and wage efficiency.

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Assessment of the Current State of Innovative Development of the Northern and Arctic Territories *

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Abstract. In the modern realities of the global change in the technological order and the emergence of a post-industrial society, innovative activity strengthens its significance as the most important resource for socio-economic development. Territorial differences in the potential for innovative development, which impede the effective integration of the northern regions into a single innovation system of the country, predetermine the need for a deep study of the problems of their development and the study of the main factors and prospects in the field of innovation. The study focuses on the northern regions of the European part of Russia, since they concentrate more than half of the human potential of the North and determine the strategic prospects for the development and strengthening of national security in the Arctic zone of the Russian Federation in the face of existing risks and challenges: environmental, social, economic and geopolitical. The purpose of this work is to identify prospects and to assess the current state of innovative development of the northern regions of the European part of Russia. In order to achieve the goal, the methods of statistical and comparative analysis, the dialectical method were used. The informational basis of the study was made up of data from Rosstat and the departmental civil service at the regional level. The analysis demonstrates the differentiation of the regions of the northern European part of Russia at the level of innovation and regional economic systems that include it. The most important prospect of overcoming the weaknesses of regional innovation systems is their integration and mutual complementarity, which is sometimes achievable with new systemic tools for the spatial organization of the economy, in particular, the special economic regime of the Arctic zone of Russia. The study was conducted on the example of five regions of the European North of Russia: the Arkhangelsk Oblast, the Murmansk Oblast, the Republic of Karelia, the Komi Republic and the Nenets Autonomous Okrug.
Keywords: *innovation, northern region, prospect for innovative development, innovation potential, special economic regime, Arctic zone*

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foundations for sustainable development of the northern and border belts of Russia in the context of global challenges" and No. FSRG-2020-0010 "Patterns of spatial organization and spatial development of socio-economic systems of the resource-type northern region".

Introduction

Innovative development of the Russian economy is constrained by the unresolved problems related to its structural features, technological dependence on foreign enterprises, including critical sectors of the economy, and a set of infrastructural, socio-demographic, legal, financial and informational challenges. One of the key unresolved problems is the low innovation activity and limited innovative potential of many northern regions, caused by the implementation of the above-mentioned set of challenges. Over the last 15 years, the level of innovation activity and potential has fluctuated markedly, there was a decrease in indicators in the early 2000s, stabilization and a decline again.

The structure of the economy of the Russian Federation, especially the Arctic zone, has changed significantly over the past 15 years, with an increase in the share of some industries and their influence on the existing model of the Russian economy development, and a decrease in the share of others. However, a significant role played by the northern and Arctic territories in the development of the country's economy [1, Tsukerman V.A., Goryachevskaya E.S.], continues to be in a de facto resource-oriented and depleting model of exploitation of natural potential [2, Gritsenko D., Efimova E.]. During the same period, transformational processes took place in the world economy that determined the features of the new way of life: "energy transition" from fossil energy sources to renewable ones [3, Escribano G.], ecologization and introduction of appropriate measures of tax and customs incentives [4], transition to Industry 4.0 and 5.0 economies [5, Kurt R.; 6, Fukuda K.; 7, Bessonova E., Battalov R.; 8, Klóska R.]. Gaining strength, these processes accelerate the exhaustion of prospects for further preservation of the resource-oriented development model of the Russian economy, including social and political aspects [9, Agyekum E.B.; 10, Romanova T.]. In addition, sanctions pressure has a major impact [11, Shapovalova D., Galimullin E., Grushevenko E.]. Taken together, these internal and external circumstances form the urgent challenges to Russia's economic development, making it necessary to activate its innovation potential and find a new model of development of the northern regions [12, Plotnikova T.N., Konyakhina T.B., Solomonova E.B.; 13, Kookueva V., Tsertseil Y.].

Specifics of the northern regions as a research object

The northern regions are important for the development of the country, primarily for meeting its needs for natural resources. They provide 100% of the demand for apatite concentrate, from 40% to 100% of the reserves of gold, oil, natural gas, chromium and manganese, platinum and diamonds are concentrated in the North [14, Tatarkin A.I., Loginov V.G.; 15, Lazhentsev

V.N.]. A significant part of these resources is concentrated in the Arctic zone. Murmansk and Arkhangelsk oblasts, Karelia and Komi republics are fully or partially included in the Arctic zone of the European part of the Russian Federation [16, Druzhinin P.V., Potasheva O.V.].

However, the Arctic zone of Russia at the present stage of development is characterized by a tendency to exhaust resources for the reproduction of the regional socio-economic system within the framework of the previously existing raw material reproduction model. This reflects a large and, in some territories, critical accumulated environmental damage from economic activities, low energy efficiency of the economy, negative demographic dynamics and erosion of the settlement system established at the previous stage of the Arctic development, a significant degree of depletion of explored and developed deposits of strategic resources. Within the framework of the article, major challenges are considered as a system of technological, resource and environmental constraints, as well as emerging geopolitical risks.

The northern regions included in the NWFO have a number of specific features and many prerequisites for scientific and innovative development. These features include:

- favourable geographical position, including a cross-border location;
- special climatic factors, resulting in harsh natural conditions, limited activity of the population, heating costs, construction of buildings with thermal insulation, high energy costs for production, etc.;
- development of transport and logistics routes (Northern Sea Route, port infrastructure, icebreaking fleet, offshore mining);
- predominance of resource-extracting industries in the regional economy [17, Rumyantsev A.A.; 18, Mikhailov A.S., Gorochnaya V.V., Mikhailova A.A., Plotnikova A.P., Volkhin D.A.];
- population decline from 20 to 40% over the past decades;
- dependence on the supply of food, fuel and various products;
- high material consumption of manufactured products [19, Druzhinin P.V.];
- “Northern rise in prices” and high costs of maintaining the territories, which determine the low level of human capital development and low innovative activity [20, Naberezhnaya A.T.; 21, Glukhov V.V., Detter G.F., Tukkel I.L.].

Research methodology and information base

When analyzing the innovative development of the northern territories of the European part of Russia, the authors used the methods of statistical and comparative analysis, the dialectical method. Information sources of the study include official statistical information, as well as data from government services and departments.

The methodology for ranking the innovative development of regions (IDR) is based on the methodology of the Institute for Statistical Studies and Economics of Knowledge of the National

Research University Higher School of Economics (NRU HSE) [1]. The rating of innovative development of the constituent entities of the Russian Federation is based on ordering them by decreasing values of the consolidated innovation index — the Russian Regional Innovation Index (RRII). It is formed on the basis of 53 indicators grouped into 16 sections and distributed into five thematic blocks. The final RRII value is determined as the arithmetic average of normalized values of all indicators included in the rating.

The main key indicators given in the official statistical collections of Rosstat [2] and Rospatent [3], as well as in the materials of NIAC MIIRIS [4], can be used for comparative analysis and dynamics of the level of innovation potential of the regions (Table 1).

Table 1

Key indicators of innovative development of the Northern Regions of the NWFO

Designation	Name of indicator
I_1	The level of innovation activity of organizations, %.
I_2	The share of people engaged in research and development per 10000 of the average annual number of people employed in the economy of the region, %.
I_3	The share of internal research and development costs to Gross Regional Product (GRP), %.
I_4	The share of innovation activity costs in the total volume of goods shipped, works performed, services, %.
I_5	The number of patents granted for inventions, utility models and industrial designs per 10000 of the workforce, units.
I_6	The volume of innovative goods, works, services in the total volume of goods shipped, works performed, services, %.
I_7	The share of budget funds in internal research and development costs, %.

For ease of perception and interpretation of the assessment results, numerical calculations are performed on the basis of normalized average values of the key indicators of regional IDR, which are given in a comparable form in the range from 0 to 1. At that, 1 point characterizes the subject as a leader, and 0 points — as an absolute outsider [22, Bobylev N.G., Gadal Sebastien, Konovalova M.O., Sergunin A.A., Tronin A.A., Tyunkynen Veli-Pekka].

Empirical results of the study

The result of the rating assessment of the NWFO regions according to the RRII for 2018/2019, normalized to 1 relative to the value of the leading subject of the Russian Federation (in this case, Moscow), is shown in figure 1.

[1] Rating of innovative development of subjects of the Russian Federation. URL: https://www.hse.ru/primarydata/rir (accessed 10 September 2021).
[2] Regions of Russia. Socio-economic indicators. 2020 URL: https://rosstat.gov.ru (accessed 10 September 2021).
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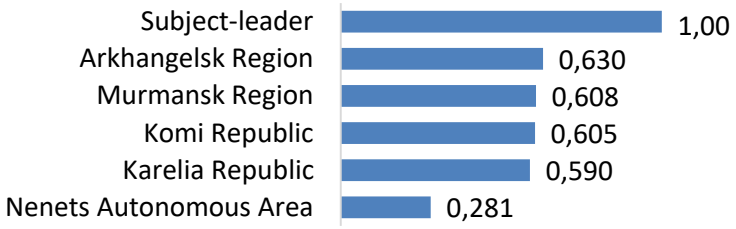


Fig. 1. Rating of the IDR level in 2018/2019.

As the rating results show, all regions, except for the Nenets Autonomous Okrug, have comparable RRII values (0.59–0.63). Table 2 shows the IDR levels by the difference between the values of RRII from the value of the leading subject in the Russian Federation.

Table 2

Estimated IDR level in 2018/2019 [5]

Regions	The difference between the average values of the RRII from the leader, %	IDR level
Subject-leader	*0.0*	*high*
Murmansk Oblast	39.2	medium
Karelia Republic	41.0	low
Arkhangelsk Oblast	37.0	medium
Komi Republic	39.5	medium
Nenets Autonomous Okrug	71.9	extremely low

Analysis of the table 2 shows that there are no entities among the northern regions of the NWFO with a high level of innovative development, which includes the regions lagging behind the IDR values from the result of the leading subject less than 20%. The average level of IDR (20–40%) is in the Murmansk Oblast, the Arkhangelsk Oblast and the Komi Republic. Low (40–60%) and extremely low (>60%) levels are shown by the Republic of Karelia and the Nenets Autonomous Okrug, respectively.

Analysis of comparison of the IDR dynamics over 10 years showed different rates of growth in the level of indicators in 2019 compared to 2010 (Table 3). For example, three subjects of the NWFO (Arkhangelsk Oblast, Komi Republic, Nenets Autonomous Okrug) show a significant increase in funding for research and development at the expense of regional budgets in 2019 (indicator I_7), which characterizes the attention and support of local authorities for the innovative development of the region's economy.

Table 3

The rate of increase/decrease in the IDR indicators of the regions for 2019/2010, % [6]

Northern regions of the NWFD	I_1	I_2	I_3	I_4	I_5	I_6	I_7
Murmansk Oblast	-0.1	0.06	-0.4	-1.18	-0.50	2.3	3.0
Karelia Republic	0.5	0.14	-0.1	-0.78	2.02	0.9	-13.2
Arkhangelsk Oblast	5.3	0.01	-0.05	0.3	0.74	3.9	16.4

[5] Source: compiled by the authors based on HSE data.
[6] Source: compiled by the authors.

Komi Republic	-0.3	0.0	-0.2	0.5	0.8	-1.6	19.2
Nenets Autonomous Okrug	-2.6	-0.2	0.0	0.0	0.0	-0.4	18.6

Innovative activity of the regions (I_1) over the period under review is developing unstably: in 2019, the Arkhangelsk Oblast occupies the leading position in this indicator, with a growth rate of 5.3% over 10 years (Table 2). The rest of the regions, except for Karelia, show a decrease in the level of innovation activity (Fig. 2).

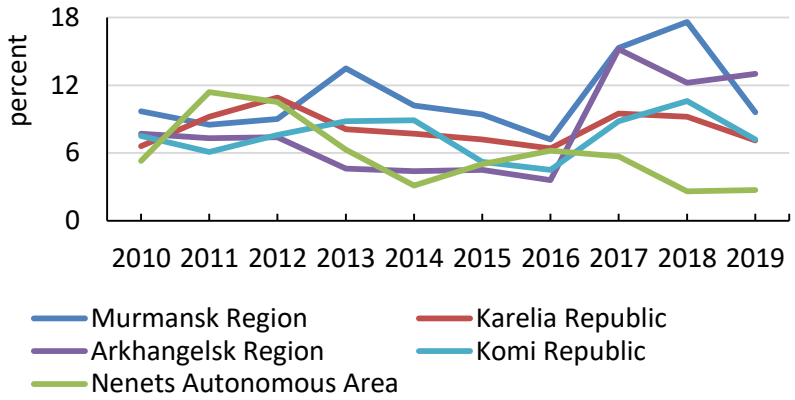


Fig. 2. Dynamics of the level of innovation activity of the NWFO regions.

Availability and professionalism of people engaged in research and development have the main influence on the effectiveness of innovation activity. This indicator is relatively stable in the regions, except for the Nenets Autonomous Okrug due to the small population compared to other subjects (Fig. 3). It should be noted that the Nenets Autonomous Okrug has practically no regulatory framework for innovation, including the absence of an independent innovation strategy [23, Egorov N.E., Kovrov G.S.].

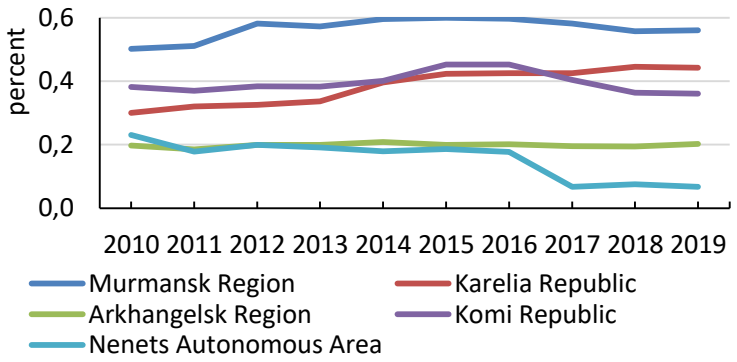


Fig. 3. Dynamics of the proportion of people engaged in research and development per 10 000 average annual number of people employed in the economy of the region.

The indicator of the share of internal expenditures on research and development to the gross regional product (GRP) is one of the main planning indicators included in most regulatory legal acts on the socio-economic development of the constituent entities of the Russian Federation. Regional authorities should pay special attention to this indicator, as in recent years there has been a steady decline in its level in the NWFO subjects (Fig. 4).

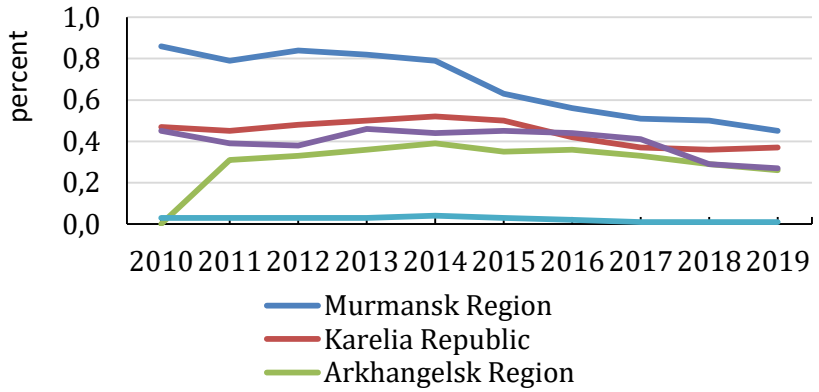


Fig. 4. Dynamics of the share of internal expenditures on research and development to GRP.

The value of expenditures on innovation activities, which characterizes the actual expenditures of an organization that are mainly directed to the development and implementation of technological innovations, is important for the development of the innovation economy. The Republic of Karelia (1.8%) has high indicators by this criterion in 2019 with a wide margin over other regions, although it has consistently had low values in the dynamics of its development. In 2011–2012, the Republic of Komi, the Arkhangelsk Oblast and the Nenets Autonomous Okrug have high values of organizations' expenditures on innovation activities (Fig. 5).

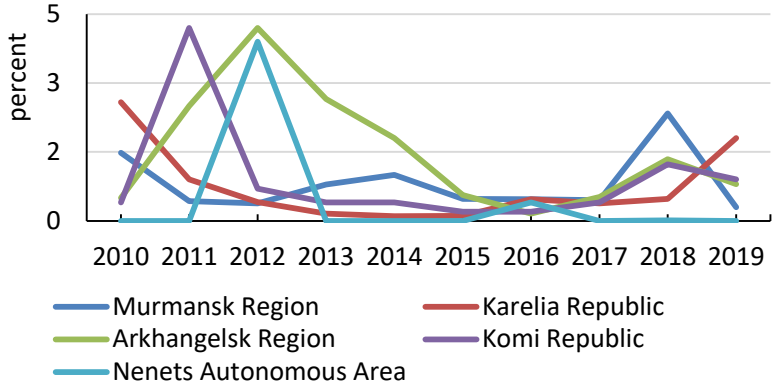


Fig. 5. Dynamics of the share of innovation activity costs from the total volume of goods shipped, works performed, services.

Patent statistics is the main indicator of the effectiveness of innovation activity and one of the key indicators of the technological development of countries and regions [24]. Generally, the coefficient, defined as the number of invention applications submitted by domestic applicants to the patent office of the country per 10 000 people, is used to assess the inventive activity of the population. Since the intellectual abilities of a person to work are most manifested at the age of 15 to 72 years (economically active population), it is advisable to use the number of labor force (LF) given in the annual statistical collections of Rosstat in the calculation.

In terms of the number of patents issued for inventions, utility models and industrial designs per 10 000 LF, the Republic of Karelia occupies the leading position among the northern regions of the NWFO in 2019 and in 10 years as a whole (Fig. 6). As can be seen from the above chart, the dynamics of issued patents in the regions shows a positive trend.

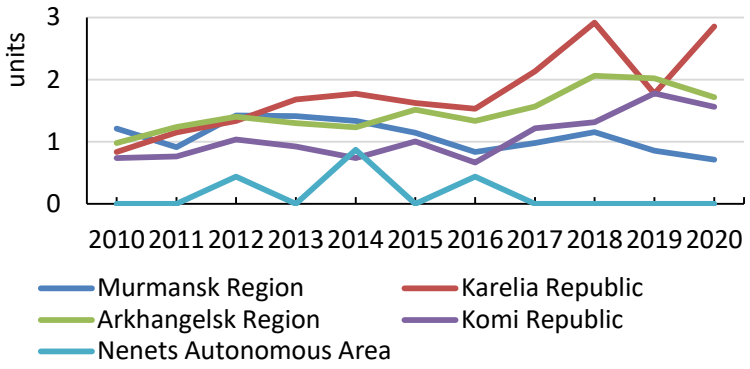


Fig. 6. Dynamics of the number of patents granted for inventions, utility models and industrial designs per 10000 labor force.

The main key indicator characterizing the final result (efficiency) of innovative activity is the volume of innovative products produced. According to this indicator, the Arkhangelsk Oblast shows significantly high values among the northern regions of the NWFD (in this regard, the graph is presented separately, Fig. 7). However, according to 2019 data, the first place is occupied by the Murmansk Oblast (4.7%), in which the volume of innovative products in the total volume of shipped goods increased by 5.9 times compared to the previous year. It should be noted that in 2019 the indicator in the Republic of Komi decreased by 4.9 times compared to 2011, when the highest peak of its level (7.8%) was observed.

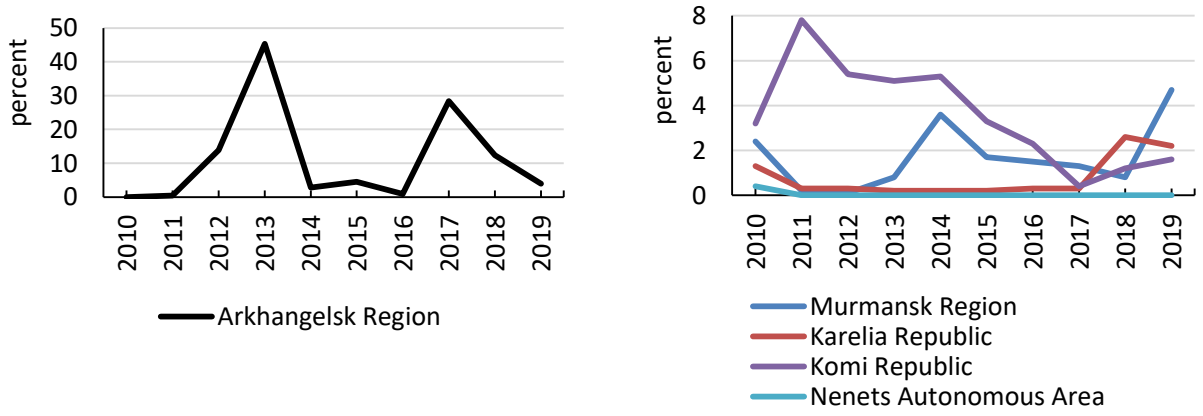


Fig. 7. Dynamics of the volume of innovative goods, works, services in the total volume of goods shipped, works performed in 2010–2019.

The main indicator reflecting the assistance and support of the regional authorities to the development of an innovative economy is the allocation of funding for scientific research and applied developments from the local budget through the relevant regional programs. Since funding is

allocated to specific organizations that carry out research and development and have their own internal costs for innovation, the amount of budget funds depends on the number of these organizations, 32 of which are in the Nenets Autonomous Okrug, so this ratio is higher there than in other subjects (Fig. 8). The trend of increasing budget funding in the Komi Republic over the past 3 years (2017–2019) by 28.4% with the number of organizations (25–27 units) should be noted.

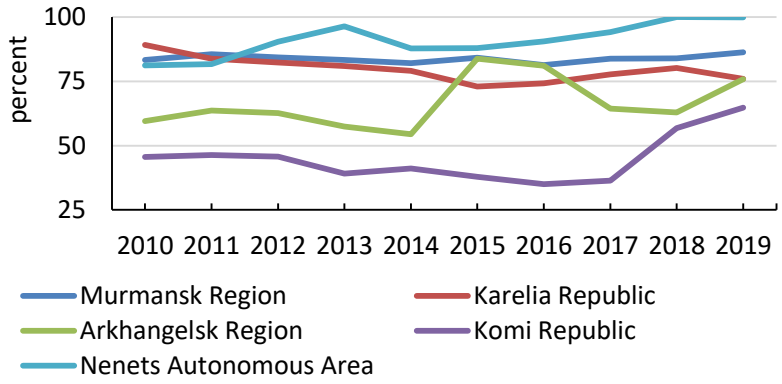
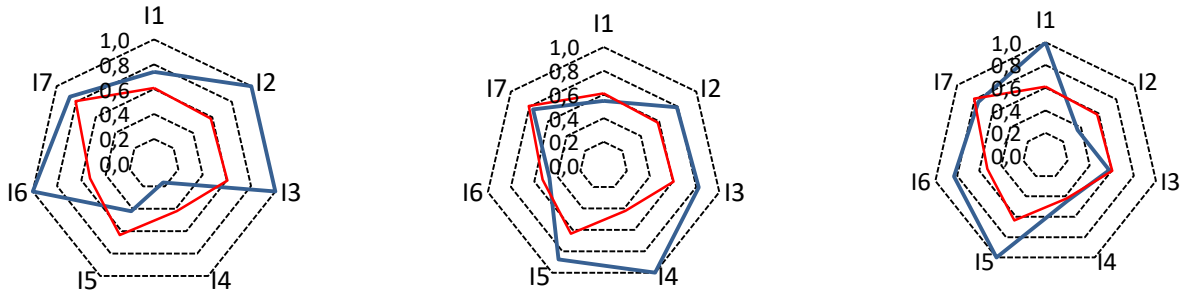
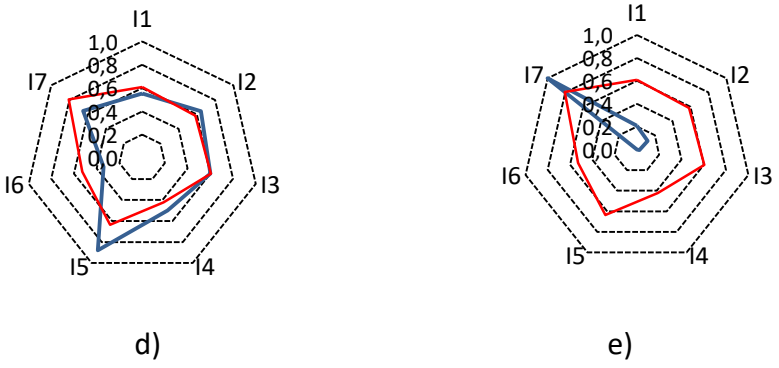


Fig. 8. Dynamics of the share of budget funds in internal research and development costs in 2010–2019.

In order to identify and analyze the strengths and weaknesses of the IDR, an innovative profile in the form of a petal histogram is used (Fig. 9). Red color indicates the distribution of normalized average values of key IDR indicators for the NWFO macroregion for 2019. As can be seen from Fig. 9a, the Murmansk Oblast has a high level (value 1.0) of R&D employment per 10,000 average annual number of people employed in the regional economy (indicator I_2), the share of domestic costs for research and development to GRP (I_3) and the volume of innovative goods, works, services in the total volume of shipped goods, performed works, services (I_6). In general, apart from indicators I_4 and I_5, the innovative potential of the region is higher than the average for the considered macroregion.



a) b) c)



d) e)

Fig. 9. Innovation profiles of the northern regions of the NWFO in 2019: a) Murmansk Oblast; b) Karelia Republic; c) Arkhangelsk Oblast; d) Komi Republic; e) Nenets Autonomous Okrug.

The level of innovation development in the Komi Republic almost coincides with the average level in the macroregion (Fig. 9d), but differs by the large number of issued patents for inventions, utility models and industrial designs per ten thousand LF (I_5 = 0.9). As can be seen from fig. 9c, the maximum value of this indicator belongs to the Arkhangelsk Oblast. The Nenets Autonomous Okrug, as an outsider in the macroregion, has a low innovation potential, although the regional authorities make certain efforts to support innovation financially (I_7), which, as usual, appear after a certain time lag. Thus, the research results confirm the fact that there is a significant difference in the level of innovation development between the regions of the Far North of the Russian Federation [25, Egorov N.E., Kovrov G.S.].

Prospects for innovative development of the northern regions based on the creation of industrial and technological parks

Technopark structures are created to provide a range of services for investors when locating innovative business in a region. Today, there are 80 technoparks in Russia, 36 of them are functioning. Most of the parks (31) were created after 2006. They have already accommodated 958 resident companies and created 56 thousand jobs. The largest parks employ between 5 000 and 7 000 people. Technoparks have been created in 33 subjects of the Russian Federation [26, Tishkov S.V.; 27, Tretyakova E.A., Noskov A.A.].

The vast majority of the technoparks are private (34 out of 36 operating parks). In contrast, the parks under development are characterised by a higher share of state parks and parks established as public-private partnerships. The interest of the state in technoparks as a tool for attracting investments is associated with the high efficiency demonstrated by the private parks. Moreover, in those regions where technoparks have already been created and are functioning, new ones are being designed. Only 14 of 44 technological parks being designed today, are the first in their regions.

Today, there is a tendency to reduce the area of technoparks, which minimizes investment risks. Brownfield parks are characterized by higher fillability rate due to the increased demand for

ready-to-use production space from small companies in recent years. The average number of residents for Greenfield parks is 11, for Brownfield projects — 51.

In terms of industry, technoparks represent a fairly wide range of sectors, with mechanical engineering, automotive, chemicals and metallurgy, woodworking and construction materials predominating. As a rule, the park also houses companies whose business is focused on the needs of other residents of this technopark. A high concentration of resident companies can be a factor in the formation of a cluster.

Generally, technological parks are only one of the instruments of investment and innovation policy [10, Romanova T.; 28, Ivanova I., Strand O., Leidesdorff L.]. Northern regions have a number of technoparks of various forms of ownership. The list of operating parks is presented in Table 4.

Table 4

Operating technoparks of the northern regions of the North-West of Russia [7]

Region	Name of the technopark	Technopark status	Type of technopark	Form of ownership
Arkhangelsk Oblast	“Shies”	Intentions	Greenfield	State
Murmansk Oblast	“TECHNOPARK-NOR AS”	current	Greenfield	Private
Murmansk Oblast	“Quantorium 51”	current	Brownfield	State
Karelia Republic	“Technograd PetrSU”	current	Brownfield	State
Komi Republic	“Quantorium”	current	Brownfield	State
Komi Republic	“The City of the Future”	current	Brownfield	State

Five technological park, mostly state-owned, have been created and are operating in the northern regions. There are plans to create a technopark in the Arkhangelsk Oblast. The type of technological parks is predominantly Brownfield, which means that they are built on old areas.

The main problem in the formation and development of techno-practical structures, as cited by researchers N.I. Komkov and V.A. Zuckerman, is the lack of effectiveness of state regulation, for example, the abundance of tools leads to the fact that they duplicate each other, making it difficult for enterprises to use them [29; 30; 31].

In the case of attracting a large “anchor” investor interested in large industrial areas, it may be a Greenfield Park. Typically, the location of such parks is conditioned either by the proximity of the sales market or by the availability of necessary resources (labor or natural). If there is one, the location and conditions for the establishment of a technopark will be determined by its individual requirements for the investment site. Attracting an “anchor” investor requires a detailed assessment of the region's competitive advantages and an analysis of innovative product markets, which can be carried out as part of the preparation of a regional innovation development strategy.

The possibility of creating technoparks in northern cities is due to the trend of releasing production space on the territory of city-forming enterprises. At the same time, the city-forming enterprise itself can act as the founder of the technopark management company, providing itself

[7] Source: compiled by the authors.

with an additional source of income. The emergence of new production facilities for the northern regions will diversify the local economy and provide employment for the population.

A technopark focused on small and medium-sized innovative enterprises can perform (if necessary) the functions of a business incubator and its management company could function as a consulting centre. A shared-use centre may be created as part of this option, providing access to the most in-demand manufacturing equipment. If a technopark of a certain specialization is created (for example, the production of building materials), the management company can promote the products of resident companies in the markets.

Conclusion

Dependence on raw materials and low level of innovative development determine a system of restrictions and risks for the development of the vast northern and border areas of the Russian Arctic, which, for all its colossal strategic importance, is a problematic periphery.

The current development strategies (both regional and federal) do not contain a holistic vision of the driving forces of spatial and innovative development, do not fully reflect geopolitical and geoeconomic aspects, and do not have the necessary development of implementation tools. This distorts managerial decisions, leaving both global trends and deep contradictions of internal development without attention.

The need to form a new economic and legal regime in the Arctic requires the intensification of research work in the field of both information and analytical preparation of managerial decisions, and justification of a new paradigm of regional development. At the same time, it is extremely important to develop transitional socio-economic mechanisms that allow the transfer to a new development paradigm, the formation of which is witnessed today, without damaging the ecological systems and society of the Arctic and with maximum economic effect both in the short and long term. Taking into account the experience of the development of the Arctic regions of Russia and foreign countries, it can be reasonably assumed that such promising areas are:

- creation of innovative industrial clusters based on promising mineral resource centers (MRCs) and existing production facilities;
- creation of tourism clusters based on the strengthening and integration of the infrastructure of existing and prospective tourist destinations;
- development of the biofuel sector (biodiesel, biogas) working in cooperation with the innovation clusters (for example, biotechnology cluster and aquaculture cluster).

The principle provision in the formation of a transitional development model is reduction of the burden on the environment, energy saving and decline in the accumulated environmental damage to the Arctic ecosystems.

The main proposals for improving the innovative development of the Northern regions have been developed as part of the study:

- improving the tools for collecting, processing and analyzing information on the socio-economic development of the region of the Arctic zone of Russia based on the use of interdisciplinary methods, including the use of advanced computer and network technologies of crowdsourcing and communication planning;
- identification of relevant parameters of socio-economic dynamics, scenarios for innovative development of the Arctic zone of Russia in the context of technological, resource, environmental constraints and geopolitical risks;
- development of fundamental theoretical provisions that systematically substantiate a fundamentally new stage in the formation of the socio-economic architecture of the Arctic zone of Russia. Development of these provisions in the relevant internal and external challenges tools for substantiating and developing management decisions, forecasting socio-economic development in conditions of high uncertainty of a number of environmental parameters;
- development of models and mechanisms for the transitional stage of the development of the Arctic zone, based on the activation of the innovative component of the economy, while simultaneously activating mechanisms to reduce the burden on the environment, save energy and reduce the accumulated environmental damage to the ecosystems of the Arctic;
- formation of a new information resource, characterized by the completeness, reliability and relevance of the information provided, corresponding to the new management agenda, implementation of tasks at a qualitatively new level due to innovative means of their justification;
- development of analytical bases for improving the regulatory and legal framework of the new economic and legal regime of the Arctic zone of the Russian Federation at the federal and regional levels.

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The State Transport Policy for Development of the NSR in the USSR and the Russian Federation in the 20th Century *

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Abstract. The article examines the development and use of the Northern Sea Route (hereinafter: the NSR) during the Soviet era. It also considers various trends in the development of the state transport policy in the world and significant aspects of its assessment. The above-mentioned transport route is significant from a geopolitical point of view. Although the USSR failed to realize the commercial potential of the NSR and its year-round operation, it made significant progress in the development of the NSR to achieve the political and strategic goals of the Soviet Union. The article analyzes the essential aspects of Soviet and Russian transport policy in the XX century. The author argues that transport innovations caused by the energy crises of the 1970s and 1980s and related environmental problems largely bypassed the Soviet economy due to the period of stagnation. The author concludes that if the USSR had kept pace with modern trends in technology and the Soviet Union had not collapsed, the NSR could have become a self-sustaining route and the goal of year-round navigation on the NSR would have been achieved in Soviet times in the 20th century.
Keywords: *USSR, Arctic, NSR, transport policy, transport communications*

Introduction

The purpose of this article is to study the evolution of the Northern Sea Route (NSR) during the Soviet era, taking into account the specifics of transport policy. The analysis will focus on how the Soviet Union sought to develop the Arctic region through the development of the NSR. The theoretical part of the article analyzes the concepts of transport policy and various methods used in developed countries to evaluate transport policies and plans, considering the evolution of the development of the NSR in the USSR, as well as specific strategies and plans in support of this strategy.

The relevance of the study lies in the need to emphasize the importance of using methods for assessing the transport policy and plans of any government. The purpose of the article is to emphasize the primacy of political will in the development of the NSR in the USSR in comparison with an objective assessment of transport policy and plans.

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This goal can be achieved by solving the following tasks:

- to analyze the development of the NSR in the USSR;
- to study transport policy and assessment methods;
- to show the applicability of assessment methods to the NSR;
- to emphasize the need to use sound assessment methods in determining the state transport policy in the field of development of transport routes (on the example of the Northern Sea Route).

The object of the study is the development of the NSR in the USSR. The subject of the study is the development of the transport policy of the NSR in the USSR and the application or applicability of methods for assessing the transport policy and plans for the development of the NSR in the USSR.

The methodological basis of the research is analysis and synthesis, description and explanation, dialectical approach, system analysis and comparative analysis.

System analysis made it possible to study the problem as a whole, as well as to consider individual elements of the system of phenomena under study. The method of comparative analysis is implemented by comparing the evolution of transport policy and assessment in the world with the development of the NSR in the USSR. Based on the methods used, it was concluded that although the development of the NSR of the USSR had many positive aspects, it could not be sustainable due to the lack of periodic assessment and economic base.

Transport policy and assessment

Transport policy is the development of strategies and the implementation of activities aimed at achieving specific goals related to social, economic and environmental conditions, as well as the functioning and efficiency of the transport system. Transport planning is associated with the preparation and implementation of activities aimed at solving specific problems [1, Rodrigue J.P., Comtois C., Slack B., p. 322–323]. The purpose of transport policy is to make effective decisions on the distribution of transport resources, including the management and regulation of existing transport activities. Thus, transport policy can be both public and private [Ibid.]. However, governments are often more involved in the policy making process as they either own or operate many components of the transport system and have varying levels of jurisdiction over all existing modes of transport. Governments are also often aware that their role is to manage transport systems by virtue of the fact that they provide essential public services in addition to enacting a regulatory framework [Ibid.].

Transport services and infrastructure have long been considered key components of the pace and geographic structure of economic growth. Thus, transport investments were aimed at providing basic services (including to the population, industry, trade) and achieving state policy and political goals [1, p. 322–329]. Key examples of this were the construction of the Suez and

Panama Canals. These considerations have exacerbated concerns about economies of scale, monopoly, and destructive competition, leading governments to look for ways to control key transport infrastructure and some key transport services [Ibid.]. In the United States, the tradition of private ownership has led to economic regulation of private transport companies. In many other countries, national transport systems started with private railways and transformed into state structures for both political and economic reasons [Ibid.]. The option of allowing private property and enforcing government regulation was rejected by most countries, so that only the United States and a few other countries had transport "entry points" that included regulated private sectors of industry. Most countries have a long legacy of state-owned enterprises and a direct government role in the operation, investment, and ownership of transport [2, Oster C.V., Strong J., p. 19].

In many countries it has been considered that each mode of transport plays a unique and well-defined role in the transport system and that these roles overlap very little, if any at all [Ibid.]. Each of them was considered separately, without taking into account other modes of transport, and no special attention was paid to the impact of competition between suppliers or consumers on transport services [Ibid.]. Even when intermodal competition was evident, public policy tended to protect individual modes of transport. Attempts by international maritime shippers to provide domestic services have often met with resistance, especially in Japan, China and Korea [Ibid.]. Perhaps, the most striking example was the regulation of freight traffic in the United States, which was stimulated by railroad fare discrimination and railroad price wars [Ibid.].

In the second half of the 20th century, the transport sector was privatized and deregulated, and governments were faced with different responsibilities, demands and challenges. It has been accepted to identify five key tasks for the public sector in the new transport policy [2, p. 24]:

- Restructuring
- Concession management
- Competition policy
- Preservation of access
- Safety and environmental control.

In transportation, as in any other area of public policy, payments are done by charging or by taxation. The value of the method of evaluating transport investments based on the method of cost-benefit analysis follows from the review of international practice that has been presented in various studies. Most developed countries have adopted the method of cost-benefit analysis as a means of providing decision makers with advice on the justification of the scheme of recommendations and justifications for projects [3, Worsley T., Mackie P., p. 42]. This method was developed during the period 1960–1975 [3, Worsley T., Mackie P., p. 3–4]. There were differences across countries in the degree to which distributive and spatial factors outside of cost-benefit

analysis influence decision-making, as well as differences in the distribution of power in federal countries. However, the similarity of assessment methods in the seven countries studied significantly exceeded the number of differences [3, Worsley T., Mackie P., p. 42].

The evaluation system will cease to be useful if it becomes ossified and distant from the interests of decision makers. We will discuss how to respond to current challenges, but firstly, it is useful to outline how we arrived at these conclusions and what role economic analysis plays in the policy process [Ibid.]. It can be concluded from various transport policy studies that economic analysis has played a variable but relatively modest role in policy development. Politics is often presented as "non-negotiable" [Ibid.]. It is part of a prior commitment, and decision makers may reject policy alternatives as inconsistent with their goals [Ibid.]. By way of example, the British Secretary of State for Transport, Nicholas Ridley, who served from 1983 to 1986, had policy objectives for the bus industry in 1984: deregulation, privatization and complete elimination of subsidies to the industry. When he was told that he could achieve the first two goals, but not the third, he agreed to this [3, p. 27]. Various studies in Europe have shown that there is an "institutionalized" economic and political bias in favor of public spending on land transport infrastructure. The EU's Motorways of the Sea policy has recognised these distortions and mechanisms have been put in place to allow shipping to develop further. However, there is still a discrepancy: transport policy across Europe allows for permanent public funding of road and rail infrastructure, but not maritime infrastructure.

Political science experts argue that the cost-benefit analysis system (CBA) encroaches too heavily on the freedom of choice of democratically elected politicians to make choices on behalf of society [3, Worsley T., Mackie P., p. 15]. Proponents say that such attempts are largely useless exercise that can both confuse and produce results [3, Worsley T., Mackie P., p. 14–15].

In the second half of the 18th and early 19th centuries, many transportation routes were created for political reasons such as national accessibility, job creation or security. Economic expediency began to play a more important role in the second half of the 20th century. Transport is an important factor influencing economic activity, but it is also shaped by it. Therefore, many Western countries began to make policy decisions on transport projects, including privatization or joint public-private ownership, based on economic cost-benefit analysis, in the 1970s and 1980s. Thus, we can say that governments play a critical role in transport as the initiators of investment and regulation. The political role of transport cannot be denied, as governments subsidize the mobility of people and goods.

USSR Development Strategy of the NSR

"The tsarist government had the most powerful icebreakers in the world, built abroad, in England, but could not use them... Soviet workers in the Arctic were able to use icebreakers in the Arctic Ocean with great success" [4, Joffe S., p. 22].

Russia's pre-revolutionary period of the NSR development

The exploration of the Arctic began in Tsarist Russia. Nansen and Amundsen became national heroes in their countries at a time when Europe was carrying out important Arctic research, because their activities were fully in line with the spirit of the time. Russian efforts to develop the Arctic were aimed at eliminating the Northern Sea Route from international competition, mainly from the northern European countries, although these expeditions did not yet have a clear profit value [5, Kitagawa H., p. 12].

Tsarist Russia also sent a number of expeditions to explore the NSR, but only a limited number of them were successful [6, Zubkov K.I., Karpov V.P., p. 46–55]. In the period from 1876 and 1919, 122 expeditions were registered in search of a sea route along the Kara Sea, which was studied and promoted by the polar explorer A.E. Nordenskjöld. One reason for their interest was the richness of the region's natural resources [5, Kitagawa H., p. 12]. Unfortunately, most of these voyages were quite dangerous, so the probability of their success was not expected to be high [5, Kitagawa H., p. 12]. For example, in the period from 1874 to 1901, 87 expeditions were organized along the Northern Sea Route to the Ob-Yenisei basin, of which only 60 reached their goal, 22 more could not reach and returned to the port, and 5 were shipwrecked [5, Kitagawa H., p. 12]. By 1910, commercial flights along this route had completely ceased [5, Kitagawa H., p. 12].

The Russo-Japanese War of 1904–1905 forced the tsarist government to address the problems of the Northern Sea Route seriously. Diplomatic and other difficulties associated with sending a squadron of Admiral Rozhestvenskiy across three oceans, and then the Tsushima tragedy, made the authorities think that there is a shorter way to the country's eastern possessions, completely passing through their own waters [7, Shirokorad A.B., p. 12]. The first icebreaker for the purposes of the Arctic navigation was the Yermak, built in the British port of Newcastle under the leadership of the Russian admiral S.O. Makarov, and on March 4, 1899, he brought him to Kronstadt [8, Belov M.I., p. 70]. Successful initiatives were associated with the fact that Admiral Makarov launched the purchase of icebreakers and the discovery of Novaya Zemlya (the Taimyr and Vaigach voyages) in 1913 [6, Zubkov K.I., Karpov V.P., p. 46–55]. This is the pinnacle of what tsarist Russia could achieve in studying the NSR, but it did not solve the problem of regular Arctic navigation [8, Belov M.I., p. 75–78]. Although many initiatives were put forward, no State Transport Policy for the development of the Northern Sea Route was made public during this period.

Period after the Revolution of 1917

After the October Revolution of 1917, the planned development of the NSR began, which became an urgent national economic task [6, Zubkov K.I., Karpov V.P., p. 56–57]. In 1921–1922, the White Guards brought hundreds of Russian ships abroad [8, Belov M.I., p. 6]. Some of these vessels were sold, including the Mikula Selyaninovich icebreaker (5.250 tons), which was sold to

Canada [9, Shirokorad A.B., p. 4]. Other icebreakers — Ilya Muromets (2.500 tons) and Volorets (3.600 tons) — were also sold and seized by Finland, respectively. Other smaller icebreakers with a displacement of 500–1.000 tons were also stolen and seized [9, Shirokorad A.B., p. 4]. Despite the loss of several icebreakers and merchant ships, the Soviet leadership was determined to develop the Arctic and the NSR [9, Shirokorad A.B., p. 6].

V.I. Lenin paid great attention to the development of Arctic shipping and scientific research in the Soviet North [10, Bulatov V.N., p. 23]. He initiated the transportation of food along the NSR in 1920 from Siberia to the central regions of Russia through Arkhangelsk. He also signed a decree dated March 10, 1921 on the establishment of a floating naval scientific institute (Plavomornin) [9, Shirokorad A.B., p. 5]. In 1920, the NSR Committee for planning the Kara expeditions was formed [9, Shirokorad A.B., p. 5]. The Kara expeditions (carried out since 1921) and the Kolyma voyages (since 1923) paved the way for the opening of navigation along the entire NSR route [9, Shirokorad A.B., p. 6]. By the Decree of the Presidium of the Central Executive Committee of the USSR of April 15, 1926, the territory of the USSR is declared to be "all lands and islands, both discovered and which may be discovered in the future, not constituting by the time of publication of this decree the territory of any foreign states recognised by the Government of the USSR, located in the Arctic Ocean, north of the coast of the USSR to the North Pole between the meridians thirty two degrees four minutes thirty five seconds east longitude ($32^0$4'5'' E) from Greenwich, passing along the eastern side of Waida Bay through the triangulation mark on the cape Kekurskiy, and the meridian one hundred sixty-eight degrees forty-nine minutes thirty seconds west longitude ($168^0$49'30'' W) from Greenwich, passing in the middle of the strait separating the Ratmanov and Kruzenshtern islands of the Diomede Islands group in the Bering Strait" [1].

Glavsevmorput

In December 1932, the state organization "Main Directorate of the Northern Sea Route" (abbreviated as Glavsevmorput) was created, the purpose of which was to ensure navigation along the NSR and the national economic development of the Arctic, the main duties of which are "finally lay the Northern Sea Route from Beliy to Beringov strait, equip this route, keep it in good condition and ensure navigation along this route" [11, Timoshenko A.I., p. 3]. Initially, O.Yu. Schmidt, head of the Sibiryakov Research Group, was put in charge of Glavsevmorput [5, Kitagawa H., p. 12]. In 1934, the Soviet government announced its plans to build icebreakers in the Soviet Union, which until then had been built only outside the country [12, Lloyd, T., p. 108]. In retrospect, the decision to build icebreaker steamships was controversial, although it seemed logical at the time, given the shortage of oil and availability of coal in the North [12, Lloyd, T., p.

[1]SSSR. Ob ob"yavlenii territoriey Soyuza SSR zemel' i ostrovov, raspolozhennykh v Severnom Ledovitom okeane. Prezidium Tsentral'nogo Ispolnitel'nogo Komiteta Soyuza SSR ot 15 aprelya 1926 goda [USSR. On declaring lands and islands located in the Arctic Ocean as the territory of the USSR. Presidium of the Central Executive Committee of the USSR of April 15, 1926]. URL: https://docs.cntd.ru/document/901761796 (accessed 05 February 2022).

108]. According to an article by a Western expert on the NSR, there was a crisis in 1937–1938 that forced 26 ships, including 7 out of 8 icebreakers, to stay at sea in the winter. This led to a sharp reduction in the powers of the Glavsevmorput [13, Amstrong T.E., p. 136–138]. In 1939, Ivan Papanin, an outstanding figure in the Arctic navigation, was appointed head of the organization [13, Amstrong T.E., p. 145]. Under his leadership, in addition to geological exploration, several new ports were opened, four Stalin-class icebreakers were built, and the merchant fleet was enlarged.

Unfortunately, at the peak of the development of the NSR, the World War II broke out, and the NSR began to be used not only for national economic purposes, but also for military ones [11, Timoshenko A.I., p. 12]. During the Great Patriotic War, the NSR became more in demand compared to peacetime. This proved the effectiveness of the transport policy of the Soviet government [11, Timoshenko A.I., p. 12]. For example, in 1942, the first Soviet navy, supported by an icebreaker, managed to pass from Vladivostok to Polyarniy [11, Timoshenko A.I., p. 12], military auxiliary materials were delivered from the USA through the Bering Strait to the northern coast of Siberia [8, Belov M.I., p. 195–197].

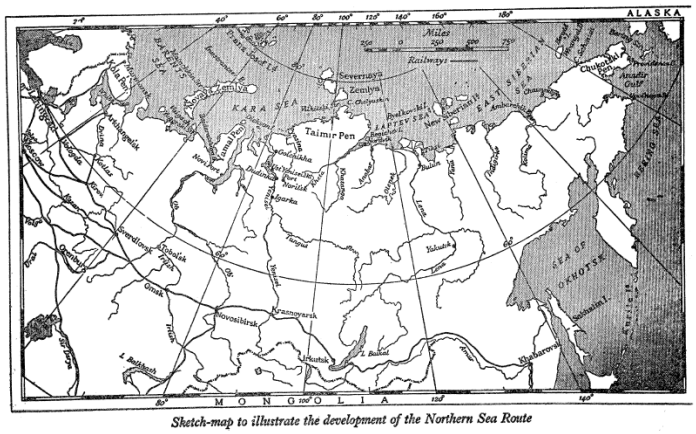

Fig. 1. Map sketch to illustrate the development of the NSR [12, Lloyd T., p. 100].

Period after World War II

After the end of World War II, the Soviet leadership, began to pay even more attention to the NSR for reasons of defense strategy. In 1959, a nuclear power plant was launched on the Lenin icebreaker, which opened a new stage in the development of the Arctic and the NSR. The USSR is the first state in the world to apply the above technologies in the Arctic, which made it possible to consolidate its leadership position in the region [14, Fomichev A.A., p. 123].

In the 1950s and 1960s, a major reorganization of the Main Directorate of the Northern Sea Route began [10, p. 120]. In March 1953, a law on the unification of the Ministry of the Navy of the USSR, the Ministry of the River Fleet of the USSR and the Main Directorate of the Northern Sea Route into a single Ministry of the Sea and River Fleet of the USSR was adopted [10, Bulatov V.N., p. 120]. In 1963, the following were separated from the Glavsevmorput system: polar aviation, which became subordinate to the Main Directorate of Civil Aviation, the Arctic Research

Institute, polar stations and observatories (which came under the control of the Chief Hydrometeorological Service Administration under the Council of Ministers of the USSR). Even earlier, various economic enterprises of the Glavsevmorput were transferred to the jurisdiction of the all-Union ministries. By 1969, the main functions of the management of the NSR were fully performed by the Ministry of the Navy of the USSR [10, Bulatov V.N., p. 120].

International legal regime and the Northern Sea Route

Contrary to popular belief, Canada was the first Arctic country to regulate shipping in its Arctic waters [15, Bankes N.D., p. 286]. In 1970, Canada took measures to strictly regulate all navigation in Canadian Arctic waters in order to protect the environment [15, Bankes N.D., p. 286]. Unlike the Canadian Arctic, where human presence was minimal, the Soviet Arctic for several decades was the object of large-scale, sustainable and systematic development by the state. Soviet claims to "all lands and islands" within certain geographical coordinates (excluding Svalbard), the so-called "sector theory", are based on a decree of April 15, 1926 [10, Bulatov V.N., p. 1], which in turn was copied from a similar Canadian act of 1925 [16, Vylegzhanin V., Bunik I., Torkunova E., Kienko E., p. 289]. However, the waters in this sector outside the twelve-mile territorial sea were considered open seas in Soviet practice and were open to foreign shipping as ice conditions permitted [17, Butler W.E., p. 462–463]. The generally accepted norms of the sectoral method did not provide for any sovereign rights for countries outside the Exclusive Economic Zones. At that time, no country challenged the rights accepted by Canada and Russia [16, Vylegzhanin V., Bunik I., Torkunova E., Kienko E., p. 289]. Passage through Soviet territorial waters in the Arctic was governed by prevailing international law and laws or regulations of the Soviet government applicable to territorial waters in general [17, Butler W.E., p. 462–463]. This was the case despite various legal theories put forward in the Soviet legal media about sovereignty over ice, closed seas, or historical seas [17, Butler W.E., p. 462–466].

In September 1971, the Soviet government took the first of a series of measures aimed at preventing environmental pollution in the region [17, Butler W.E., p. 462–463]. The administration of the NSR was given additional powers to prevent and eliminate the consequences of pollution on the coast of the NSR [17, Butler W.E., p. 462–463]. In 1972, there was another organizational change in the management of the NSR. The Administration of the NSR under the Ministry of the Navy of the USSR was created in order to ensure the safety of Arctic shipping, as well as to take measures to prevent and eliminate the consequences of pollution of the marine environment and the northern coast of the USSR [2]. The administration of the NSR was given broad powers to develop and implement pollution control requirements (including minimum technical standards

[2] USSR Statute. Administration of the Northern Sea Route attached to the Ministry of the Maritime Marine Fleet. International Legal Materials, 1972, vol. 11, no. 3, pp. 645-646. URL: https://www.jstor.org/stable/i20690906 (accessed 05 February 2022).

for ships intending to navigate the Northern Sea Route); with the power to send inspectors to ships to determine if these standards are being met, to suspend navigation in areas where pollution may be a problem, and to impose fines for violations [17, Butler W.E., p. 462–463]. The Administration did not formulate or enforce anti-pollution regulations in such a way that they would discriminate against foreign vessels [17, Butler W.E., p. 463]. However, no efforts have been made to make the Northern Sea Route a commercially attractive alternative for international shipping in the Atlantic and Pacific Oceans while protecting the environment [17, Butler W.E., p. 463]. Western analyst Armstrong wrote that there was an invitation to foreign shippers to use the Northern Sea Route in 1967 [18, Amstrong T.E., p. 123–124]. This is also noted by the Russian researcher [19, Gudev P.A., p. 133]. However, no foreign shipper took advantage of this offer. According to the Western analyst, it is possible that this proposal was tacitly withdrawn after the 1967 Arab-Israeli war [18, Amstrong T.E., p. 123–124]. When the United States sent icebreakers to the Vilkitskiy Strait in 1965 (Northern Wind) and in 1967 (Edisto and Eastwind), the Soviet Union refused to allow the ships to pass, citing a requirement under federal law that warships requested prior permission [16, Vylegzhanin A., Bunik I., Torkunova E., Kienko E., p. 289; 20, Franckx E., p. 270–275]. During the third UN Conference on the Law of the Sea (1973–1982), free passage was granted to both merchant and military vessels [20, Franckx E. p. 270–275]. However, the Soviet Union and the USA disagreed on what constituted innocent passage, but they agreed that the disagreement would be resolved diplomatically in accordance with a joint statement in 1989 [3]. This joint statement does not mention the NSR, which was disputed by the two parties in the 1960s. According to Russian researchers, the Arctic was not the focus of the UN Convention on the Law of the Sea, despite the introduction of Article 234, which provides special rights to the coastal states of the Arctic [19, Gudev P.A., p. 132–133, 21, Vylegzhanin A.N., p. 27–29].

1970s and 1980s

The Northern Sea Route was the main national communication of the USSR in the Arctic, and one of the main goals was to ensure the safety of Arctic navigation. In December 1970, the administration of the NSR was established under the Ministry of the Navy of the USSR, the main tasks of which were to ensure the safety of Arctic navigation and to exercise state supervision over the rational use of the Northern Sea Route as the main national communication of the USSR in the Arctic [10, Bulatov V.N., p. 120]. The task of the administration also included the organization of Arctic shipping in all aspects [10, Bulatov V.N., p. 120]. In subsequent years, the Soviet Union allocated large funds for navigation along the NSR. In December 1972 – January 1973, the cargo icebreaker “Indigirka” made its first passage along the NSR from Murmansk to Dudinka in just 12 days [5, Kitagawa H., p. 12]. From February 24 to March 5, 1976, the XXV Congress of the CPSU

[3]USSR-USA. Joint statement with attached uniform interpretation of rules of international law governing innocent passage. URL: https://www.jstor.org/stable/20693384 (accessed 05 February 2022).

was held [10, Bulatov V.N., p. 116]. In the new five-year plan, sailors, rivermen and polar explorers were given a responsible task: "To implement measures to extend navigation along the NSR and in freezing ports" [10, Bulatov V.N., p. 116]. Since 1978, the sea freight route between Dudinka and Murmansk has been expanded [5, Kitagawa H., p. 12]. Achievements in the development of the Northern Sea Route were truly impressive, and in the western sector of the Arctic, the navigation season was extended to a full twelve months [22, Barr W., Wilson E., p. 1]. Sailing along the NSR all year round did not seem like a dream. Progress in this direction was comprehensively summarized and analyzed by T.E. Armstrong (British polar geographer, sea ice specialist) in 1952 and 1980 [23, Barr W., Wilson E., p. 1].

By 1983, the Soviet Union had accumulated a very large fleet of icebreakers and cargo ships with ice reinforcement to operate in Arctic waters [22, Barr W., Wilson E., p. 1]. It consisted of more than 14 polar icebreakers, three of which were nuclear-powered. [22, Barr W., Wilson E., p. 1]. With this powerful fleet of ships and a sophisticated support system, including weather stations, ice reconnaissance aircraft and satellites, it turned out that year-round navigation along the entire Northern Sea Route is real and achievable. In the summer–autumn navigation of 1983, the ice conditions in the eastern Arctic region were extremely difficult [10, Bulatov V.N., p. 121]. Arctic ice could still seriously disrupt navigation: there were reports of very severe ice conditions in the Long Strait, between Wrangel Island and the mainland (Fig. 2), of a large number of ships stuck in the ice and a crushed and sunk ship [23, Barr W ., Wilson E., p. 1]. This topic was widely covered in the Soviet press, interpreted as skill, heroism and devotion to the duty of sailors and scientists, but there were also articles in which accusations were made [23, Barr W., Wilson E., p. 1–2].

Fig. 2. The main places of Chukotka associated with the crisis of the Soviet Arctic shipping in 1983 [22, Barr W., Wilson E., p. 1].

The posthumous crisis of Soviet Arctic shipping in 1983

In his final assessment, Tolstikov, Deputy Chairman of the State Committee for Hydrometeorology and Environmental Monitoring, made a very eloquent conclusion that sending old,

less powerful cargo ships into heavy ice behind the stern of even the most powerful icebreaker would be a disaster [22, Barr W., Wilson E., p. 11]. Some analysts commented on the division of powers between various ministries, suggested re-creating a single organization, like the Glavsevmorput, which was abolished in the 1960s. The issue of annual ice reconnaissance and its possible addition with satellite images was also discussed. All analysts agreed that most of the blame is attached to the shippers. An excessive amount of time was wasted handling cargo, and there was excessive spoilage when the cargo was outdoors in the Arctic [23, Barr W., Wilson E., p. 1–2].

In 1976, the government declared the long-term goal of the Ministry of the Navy to extend the navigation of the entire Northern Sea Route [10, Bulatov V.N., p. 116], although this goal, as expected, would not be achieved before 1990, which would require time, money and new technologies [22, Barr W., Wilson E., p. 11–12]. The introduction of more powerful nuclear icebreakers made it possible to increase the navigation period, as well as to reduce the distances between ports due to the possibility of using routes located at higher latitudes [23, Selin V.S., Istomin A.V., p. 11–12].

In 1987, in a speech by M.S. Gorbachev at the solemn meeting dedicated to the awarding of the Order of Lenin and the Gold Star medal to the city of Murmansk, the words that the North Pole should become the Pole of Peace and Friendship were first spoken [10, Bulatov V.N., p. 137]. The “Polar Bridge” across the North Pole between the USSR and Canada was laid by the first ever Soviet-Canadian Trans-Arctic Skiing Expedition [10, Bulatov V.N., p. 137]. In 1987, the first domestic oil field in the Arctic Ocean started operating [10, Bulatov V.N., p. 137]. On August 15, 1987, the tanker Nefterudovoz-56 set a course from Kolguev Island to Kandalaksha. It carried 2700 tons of Arctic oil [10, Bulatov V.N., p. 137].

In 1988, the State Commission for Arctic Affairs under the Council of Ministers of the USSR was formed to intensify and coordinate scientific and economic activities in the Soviet Arctic [10, Bulatov V.N., p. 137]. Almost sixty years have passed since the establishment of the Glavsevmorput, shipping in the Arctic has gone through several stages during this time, with a new one in perspective — the most complex and the most necessary — ensuring year-round navigation in all Arctic seas [10, Bulatov V.N., p. 137]. The 1970s–1980s were also focused on quantitative economic indicators, rather than on quality and diversification, which led to the final desolation of towns on the NSR, such as Igarka, in the 1990s [24, Zamyatina N.Yu., p. 789]. Studies show that none of the party congresses set the task of making the NSR economically self-sufficient [10, Bulatov V.N., p. 116–156]. The transport policy of the USSR remained isolated from the changes in transport policy in the West.

1990s

Strategic planning and public administration practices in relation to the territories of the Far North in the Russian Federation have undergone significant changes in the 1990s. The economic

technocratic approach prevailing in these years appealed to the need to reduce the costs of maintaining infrastructure in harsh climatic conditions, and called for "cost optimization" and an increase in the "efficiency of expenditure by the state and by companies" [25, Panikar M.M., Shaparov A.E., p. 33–44]. Government policy was dictated by Western countries and the World Bank [26, Melnikova, L.V., p. 34–47]. The political leadership accepted them without serious consideration of the socio-economic consequences for the Arctic [26, Melnikova, L.V., p. 34–47]. This led to the degradation of the infrastructure of the NSR, and research in the Arctic came to a standstill. It can be considered a lost decade for the NSR [24, Zamyatina N.Yu., p. 789]. However, in accordance with the Federal Law of the Russian Federation "On inland sea waters, the territorial sea and the adjacent zone of the Russian Federation", adopted in 1998, the NSR is recognized as the historical national transport route of Russia in the Arctic [4].

Changes in shipping volume

Table 1

Dynamics and directions of NSR cargo transportation in 1945–1995 (thous. tons) [5]

	1945	1960	1970	1980	1987	1990	1991	1992	1993	1994	1995
Deliveries to the Arctic from other regions of the USSR, total	71.4	349.1	1563.0	2279.9	2943.6	2490.4	2261.6	1806.9	1413.6	795.3	829.3
Of which: from the West	63..9	188.1	932.0	1418.9	1808.1	1355.1	1193.8	974.4	768.9	573.5	576.8
Of which: from the East	7.5	161.0	631.0	861.0	1135.5	1135.3	1067.8	834.5	644.7	221.8	252.5
Deliveries from the Arctic to other regions of the USSR, total	116.2	113.4	392.7	1292.3	1684.7	1556.0	1450.7	1272.2	728.5	710.3	766.0
Inside the Arctic Coastal Shipment	85.4	88.0	340.7	398.6	358.6	136.2	170.0	169.7	95.3	18.3	10.8
External commercial supplies	171.1	412.0	683.6	980.6	1590.7	1212.8	745.5	456.1	520.3	636.0	655.5
Of which: export	51.3	412.0	616.9	888.1	1080.9	1201.0	743.6	450.8	517.3	578.9	606.0
Of which: import	119.8	0	66.7	92.5	509.8	11.8	1.9	5.3	3.0	57.1	49.5
Transit	0	0	0.1	0	1.0	115.1	176.2	202.3	208.6	140.2	100.2
Total	441.1	962.5	2980.1	4951.4	6578.6	5510.5	4804.0	3909.2	2966.3	2300.1	2361.8

Shipping along the NSR reached its highest volume in history in 1987 — 6.58 million metric tons [5, Kitagawa H., p. 90]. Since that time, shipping along the NSR has been declining (Table 1).

[4] RF. O vnutrennikh morskikh vodakh, territorial'nom more i prilezhashchey zone Rossiyskoy Federatsii ot 31 iyulya 1998 goda N 155-FZ [RF. On internal sea waters, territorial sea and contiguous zone of the Russian Federation dated July 31, 1998 N 155-FZ]. URL: http://www.consultant.ru/document/cons_doc_LAW_19643/ (accessed 05 February 2022).

[5] Source: [5, Kitagawa H., p. 90].

With the exception of a slight rise in 1995 compared to the previous year [5, Kitagawa H., p. 90], this decline is not interrupted until 2000 (1.60 million metric tons) [27, Goldin V.I. p. 35]. The volume reached 2.36 million metric tons in 1995, then fell to 1.64 million metric tons in 1996, which is less than a quarter of the volume at the peak of the SMP in 1987 [5, Kitagawa H., p. 90]. The main reason for the growth in volumes in the late 1980s was the extraction of natural resources. In the West of the NSR, an increase in the volume of inland navigation was supported by the extraction of oil and gas, as well as copper, nickel and scarce metals in Norilsk [5, Kitagawa H., p. 90]. Scarce and non-ferrous metals, including gold, were shipped to the east from Chukotka and Yakutia, but their volume was significantly lower than in the West [5, Kitagawa H., p. 90]. The introduction of nuclear icebreakers led to the expansion of shipping along the NSR, but also made it economically viable only for more expensive cargoes, such as oil and nickel [24, Zamyatina N.Yu., p. 793–794]. A tax on the maintenance of icebreakers and navigational facilities along the NSR was introduced [6]. This also led to the decline of ports on the NSR, not associated with expensive cargo [24, Zamyatina N.Yu., p. 789]. Less expensive goods, such as timber, could no longer be transported along the NSR [24, Zamyatina N.Yu., p. 793–794].

Table 2 shows the breakdown of import and export items. The export of nickel and other metals from Norilsk began in 1968 and reached 2.5 million metric tons, accounting for 40% of the total supply [5, Kitagawa H., p. 90]. In 1976, gas fields began to be developed on the Yamal Peninsula, and by 1988, a total of 102 thousand metric tons had been produced [5, Kitagawa H., p. 90]. In connection with this project, equipment for the construction of pipelines was exported from Japan. Timber from Siberia, which was extracted mainly in the Igarka area, tended to increase up to 700–750 thousand tons in the 1980s [5, Kitagawa H., p. 90]. This export peaked in 1990 at 1.2 million metric tons, then declined significantly in 1991 and 1992, and then rose again in 1993 [5, Kitagawa H., p. 91]. Table 2 shows the breakdown of import and export items in 1990–1995. [5, Kitagawa H., p. 91].

Table 2

Export and import of cargo along the NSR 1990–1995 (thous. tons) [7]

	1990	1991	1992	1993	1994	1995
Export, total	1201.8	743.6	450.8	517.3	578.9	606.0
Which the:						
Forest from Igarka	711.3	448.2	247.2	296.5	297.6	272.7
Forest from Tiksi	147.6	47.6	67.2	95.9	42.4	19.6
Non-ferrous metals from Dudinka	164.1	90.7	80.3	116.7	222.8	302.4
Brushed nickel from Dudinka	29.3	17.1	13.7	6.0	2.6	-

[6] SSSR. Tarify na perevozki gruzov morskim transportom v kabotazhnom plavanii. Utverzhden Postanovleniem Goskomtsen SSSR ot 27 marta 1989 g. № 274. Moskva: Goskomtsen SSSR, 1989 [USSR. Tariffs for the carriage of goods by sea in coastal navigation. Approved by the Decree of the USSR Goskomtsen of March 27, 1989 No. 274. Moscow: USSR Goskomtsen, 1989]. URL: https://docs.cntd.ru/document/568906074 (accessed 05 February 2022).

[7] Source: [5, Kitagawa H., p. 91].

Sulfur from Dudinka	106.6	15.1	-	-	-	-
Coal from Yakutia	25.9	108.7	39.0	-	-	-
Condensate from the Yenisei and Yamal	-	-	-	-	13.5	11.3
Import, total	11.8	1.9	5.3	3.0	57.1	49.5
Of which:						
Coal to Novaya Zemlya from Poland	8.9	-	-	-	-	-
Steel pipes in the Gulf of Ob	-	-	-	3.0	1.3	-
Steel pipes to Dudinka	2.9	-	0.1	-	30.5	20.4
Steel pipes in Pevek	-	-	-	-	30.5	20.4
Steel pipes in Cape Schmidt	-	-	-	-	14.4	19.5

Discussion

The development of the NSR by the Soviet government after the collapse until 2000

The Soviet government considered it necessary to develop the NSR for the development of the country's economy and strengthening the military-political position of the state [28, Timoshenko A.I., p. 23]. Resources scattered over a vast territory, and constant disputes between neighboring countries and ideologies created conditions for unstable dynamic growth [28, Timoshenko A.I., p. 20].

During the first five-year plan (FYP), railway lines were built to gain access to natural resources and create domestic production [28, Timoshenko A.I., p. 23]. The plan of the second five-year plan called for a sharp reduction in capital investments, collectivization plans were more important [28, Timoshenko A.I., p. 20]. However, the Soviet government provided the Main Directorate of the Northern Sea Route with the necessary funds for the practical development of the great sea polar highway. As a result of the exceptionally large scale of work carried out according to the plan that was outlined by the government, the task of establishing merchant shipping along the Northern Sea Route was basically resolved within seven to eight years [29, Vize V. p. 106].

However, the NSR did not have the same priority as other modes of transport due to the changing geopolitical climate before the World War II [11, Timoshenko A.I., p. 7–12]. One of the important things that the Soviet government made was to provide higher wages in order to attract labor resources for the development of not only the Arctic region, but also the NSR [11, Timoshenko A.I., p. 7–12]. Adequate priority was given to the creation of social infrastructure, which continued throughout the Soviet period [11, Timoshenko A.I., p. 7–12].

According to Western analyst T. Lloyd, the northern route was developed by the USSR government for practical reasons [12, Lyoyd T., p. 98–99]:

- the entire route lies within Soviet-controlled waters, well protected from enemies in wartime and protected from spying in peacetime [12];
- the natural resources of North Asia can be exploited with the help of long rivers flowing north and gathered in ports built at their mouths [Ibid.];
- the route itself, as well as seaports, polar stations and navigation aids, provide a base for exploration and occupation of the Far North, which is necessary to preserve sovereignty [Ibid.];
- the route provides a connection with the indigenous inhabitants of the northern coast and increases the degree of their participation in Soviet life [Ibid.].

According to the discussion of Western experts in 1954, the Soviet leadership realized that the priorities should be the following:

- improved meteorological reports,
- ice reports, etc.;
- improved maps and sailing directions;
- solving problems of transport, supply and communication between their various outposts.

These experts believed that the West had a lot to learn from the Soviet Union [30, Cornwall J.M., p. 146–148]. They also noted that after 1947, there was a lot of secrecy regarding information about the NSR, which probably indicated that its military use had become more important than economic aspects [30, Cornwall J.M., p. 146–148].

In the 1960s and 1970s, Soviet capital investments seem to have been allocated more to sea and river transportation [31, Bej E., p. 29]. Under the Soviet policy of “self-sufficiency” and central planning, less attention was paid to the development of transport in all areas on a rational basis, except for serving the needs of heavy industry or the extraction of natural resources. For example, from 1913 to 1956, capital investment in heavy industry increased 32.6 times, and in transport — only 8.2 times, while capital expenditures on transport decreased from 23% to 10% (in 1928 and 1955, respectively) [31, Bej E., p. 30]. Academician Khachaturov argued that such a policy is a normal feature of all socialist countries; however, to ensure efficient work in the future, it will be necessary to stop this downward trend and take more care of creating a strong transport reserve [31, Bej E., p. 22]. The share of transport in the national income is about 7%, in the gross domestic product (GDP) — only 4% [31, Bej E., p. 23]. Despite its cost-effectiveness, the share of transport is too low and could be increased through a more rational allocation of resources and/or productivity factors. [31, Bej E., p. 23]. However, efficient economic activity requires a strong and reliable transport system based on self-sufficiency.

During the Soviet era, significant progress was made in the development of the Northern Sea Route [8, Belov M.I.; 9, Shirokorad A.B.; 10, Bulatov V.N.]. However, not all Russian analysts

agree with this opinion [6, Zubkov K.I., Karpov V.P., p. 8–17]. Some say that the Soviet government received more than it returned to the regions, and it had a bad effect on the environment [6, Zubkov K.I., Karpov V.P., p. 313–323]. In addition, there are critics of the Soviet economic policy, which was based on maximum production at minimum cost [6, Zubkov K.I., Karpov V.P., p. 322]. It cannot be denied that everything that was received by the state was distributed among all citizens in the form of social benefits such as free housing, education, health care, and heavily subsidized food prices. This kind of system was unparalleled in the world. No single company profited in favor of a few privileged people.

The entire history of the Soviet period of the development of the Arctic, which was closely connected with the organization of navigation along the Northern Sea Route, was at the same time the history of the creation of a very expensive infrastructure [32, Mogilevkin I.M., p. 202–203]. The results have been impressive. However, one cannot but admit that this colossal work from an economic point of view was carried out “in advance”, in fact, prematurely [32, Mogilevkin I.M., p. 202–203]. Only now there comes an era when these investments of capital and human labor begin to pay for themselves commercially (in a purely market sense) due to the fact that the technical possibility of oil and gas production in the Far North in conditions when the level of prices for oil and gas on world markets has risen to an extent that justifies the production of energy resources in the Arctic [32, Mogilevkin I.M., p. 202–203].

However, with the exception of a few laws regarding the Arctic adopted in 1926 and 1971, as well as the creation of the Glavsevmorput and its subsequent reorganization at regular intervals in 1938, 1953, 1957, 1969 and 1970, no state transport policy related to the development of the Northern Sea Route was promulgated during this period. The tasks to be carried out were periodically announced by the party congress, but these tasks do not replace the State Transport Policy. A small number of researchers have considered the historical or organizational aspects of the development of the NSR, but until 1990 (before the collapse of the USSR) there were no works on economic evaluation or cost-benefit analysis of the NSR, comparing transport policies with Western countries.

In the 1990s, in the Russian Federation, the economic and technocratic approach was applied in strategic planning and public administration with regard to the territories of the Far North [25, Panikar M.M., Shaparov A.E., p. 35]. Its supporters emphasized the need to reduce costs and optimize the costs of maintaining infrastructure in harsh climatic conditions, due to which the efficiency of funds spent by the state and companies will increase [26, Melnikova L.V., p. 34–35]. However, this policy did not take into account that other Arctic states such as Canada also

receive subsidies [8]. The United States, a supporter of free market economics, also has a policy of protecting its merchant shipping [9].

Conclusion

The Arctic is a zone of Russia's strategic interests. This is due, firstly, to the historical past of the country and, in particular, its great contribution to the study and development of the region, and secondly, the scale of the presence of the Russian Federation in high latitudes (the largest share of the population, the largest territory and the most powerful industrial complex in world Arctic), thirdly, the share of the Arctic economy in the overall balance of the country and its prospects, fourthly, the huge potential of the Arctic mineral resource base, fifthly, the longest border in the Arctic (almost 60% of the world's Arctic coast).

One of the most interesting and, perhaps, the most spectacular events in the Soviet Arctic was the development of a cargo sea route along the NSR, which many sailors dreamed before. The transport system of the Soviet Union was determined by the harsh climate and economic geography, in which natural resources were located at great distances from markets. The state policy towards heavy industry and economic development has strengthened the geography of these resources and created a transport system with high traffic intensity per unit of GDP. Within modes of transport, the railroad was dominant, partly because of operating conditions, but also because of industrial policy choices and an emphasis on unit costs rather than quality or value of services. The NSR was promoted primarily to facilitate the development of the Arctic region and for military reasons. Incredible achievements were noted, such as the development of the Arctic region; a rich knowledge base of the NSR and cargo transportation has been steadily replenished. Important elements of the heroic Soviet effort to develop the NSR should not be forgotten. The leaders of the USSR did not forget about the growing role of the Arctic in world geopolitics. But prices and tariffs were kept artificially low, helped by energy prices that were much lower than world prices. This meant, for example, that transport innovations caused by the energy crises of the 1970s and 1980s and associated environmental problems largely bypassed the Soviet economy.

Perhaps the most important legacy of the Soviet system was an economic organization characterized by large state monopolies, controlled prices, and administrative directives. This structure created a transportation system with low rates of technological innovation and artificial government deficits, driven by the government's focus only on heavy industry, space and defense,

[8] Touchette Y. Gass, P., Echeverría D. Costing Energy and Fossil fuel subsidies in Nunavut: A Mapping Exercise // International Institute for Sustainable Development. URL: https://www.iisd.org/publications/costing-energy-and-fossil-fuel-subsidies-nunavut-mapping-exercise (accessed 06 February 2022).

[9] United States Department of Transportation. Cargo Preference FAQs. Maritime Transportation.2020. URL: https://www.maritime.dot.gov/ports/cargo-preference/frequently-asked-questions-faqs-cargo-preference (accessed 06 February 2022).

and by subsidizing the economies of other countries considered friendly to Soviet interests by providing loans at heavily reduced rates. Prolonged isolation from the international market economy, extensive energy subsidies, and a lack of environmental concerns also meant that transport innovations were simply “missed” in the Soviet Union. This disparity has created both serious problems and opportunities for modernizing and integrating the economy into global transport systems.

The stagnation of the 1980s, economic restructuring since 1985 without proper planning or political control, the collapse of the USSR, a dramatic weakening of statehood and the breakdown of previous economic relations threatened the functioning of the Northern Sea Route. There was a rapid degradation of the NSR and its infrastructure; there was an outflow of people who worked here. As a result, its use in the 1990s and the first decade of the 21st century decreased sharply. The infrastructure has not been upgraded. According to the author, this prevented the achievement of year-round navigation along the NSR. Taking into account the previous planned structure of the economy, a large-scale transport reform was required, which made slow progress in the USSR and the Russian Federation in the 20th century. Transport, especially the Northern Sea Route, long subsidized and undervalued in the Soviet economy, must be used rationally. A reliable system is needed to assess the suitability of any new transport route, prepared by an independent government department. This will contribute to the adequacy of audits and the rationality of public spending. It is expected that this will also facilitate the adoption of corrective measures in relation to the State transport policy and plans, if deemed necessary. Taking into account the specifics of climate, socio-economic factors and strategic-political features, a self-sufficient transport system of the Northern Sea Route could contribute to the development of the economy and stand the test of time. Since transport has historical, social, political, economic and environmental ties, transport policy must take into account interdisciplinary aspects.

The conclusions drawn from the analysis of the state transport policy for the NSR in the 20th century can be applied to improve the current policy. For example, it seems worthwhile to establish a reliable system, preferably using the National Transport Modeling System, studying the methods used in different countries, both in West and Northeast Asia, to assess the suitability of the NSR, especially in relation to the ambitious goals of 80 million tons and 110 million tons to be achieved by 2024 and 2030, respectively. Given current trends, it seems important and necessary to involve the Transport Committee in greater depth in the study of the national transport model and the independent assessment report before they are translated into a government action plan. This will help to create appropriate checkpoints and balances before setting such ambitious public spending targets. Although the plan was drawn up in 2019, there is reason to believe that its reliability and cost-effectiveness should be subject to independent evaluation.

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The Impact of the Implementation of the Welfare State Concept on the Level of Poverty in Russia and Norway *

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Abstract. At present, the problem of poverty is urgent for both Russia and Norway. According to Federal State Statistics Service of the Russian Federation, 12.1% of the Russian population was below the poverty line in the second quarter of 2021. According to the World Bank, the national poverty rate in Norway in 2018 was 12.7%. At the same time, both states position themselves as having overcome extreme poverty. Both states use the social-democratic type of the welfare state concept as the basis of social policy. The purpose of this study is to research the influence the welfare state concept application on the national level of poverty in Russia and Norway. The research methods are the analysis of official statistics of Russia, Norway and the World Bank, international reports, legislative acts and the analysis of media texts. The conclusions of this study highlight that the use of the welfare state concept in the Russian Federation and the Kingdom of Norway can positively affect the national level of poverty, but it contains a set of significant risks. The results show that further use of elements of the welfare state concept to combat poverty is possible in both countries, but taking into account the current realities, namely, the application of the principles of multidimensional evaluation, targeting in implementation and consideration of regional specificity in practical work with the phenomenon of poverty, and the involvement of other (besides the state) social institutions in this process. The conclusion of this paper formulates recommendations for state and municipal authorities of the Arctic subjects of the Russian Federation (mainly) and the Kingdom of Norway (to a lesser extent) to adjust the social practices used with regard to current trends and taking into account the identified risks.

Keywords: *poverty reduction, Norway, Russia, Arctic, welfare state, social policy, social support measure, social contract*

Introduction

Worldwide practice has repeatedly attempted to build a welfare state as a model capable of overcoming inequality and poverty. The social-democratic direction of the realization of this concept is of particular interest. It is the type of state structure, according to the authors, that not only declares, but also tries to put into practice the principle of universal equality. The start was made by egalitarians; the development of theoretical models, as well as practical implementation, were undertaken both in the countries of the socialist system (primarily in the USSR) and in a

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number of countries of Northern Europe (in particular, in Norway). The communist concept has been transformed over time, but new systems have been built on its basis, which, to a greater or lesser extent, continue to use the principles of general welfare. The Scandinavian model is still being implemented (including in Norway), but it raises more and more questions. Is there a future for the implementation of the idea of general welfare? What are the risks and how can they be overcome? How does the implementation of the model affect the level of poverty in the country? These are the questions the authors attempted to answer in this article.

According to preliminary data from the Federal State Statistics Service of the Russian Federation, in the 2nd quarter of 2021, 12.1% of the Russian population was below the poverty line [1]. At the same time, by 2008, the share of the people living on US$1.9 a day (according to PPP for 2011) decreased to 0.1%, and in 2011, according to the World Bank, it became equal to zero [2]. Norway is positioning itself as a state that has overcome absolute poverty through the implementation of the concept of universal welfare. According to the World Bank, the proportion of the population living on US$1.9 a day was 0.3% in 2018 [3]. But the national poverty rate in Norway in 2018 was 12.7 [4]. More recent data is not available either on the World Bank website or on the Norwegian official statistics website.

The welfare state model has been implemented in Norway for the last 60 years. In our opinion, thanks to the study of this experience, the Russian scientific and economic community has a unique opportunity to “look beyond the horizon” of 20–25 years and see not only effective social practices, but also the risks associated with the implementation of the social democratic model of social policy.

The authors hypothesize that the implementation of elements of the welfare state concept in the Russian Federation and the Kingdom of Norway can positively influence the national level of poverty, but it carries a set of significant risks. The object of this study is the social policy systems of Russia and Norway, implemented according to the social democratic type of the welfare state. The subject of the study is the factors influencing the concept of the welfare state on the level of poverty in the countries under consideration. The purpose of this study is to investigate the impact of the implementation of the welfare state concept in the Russian Federation and the Kingdom of Norway on the national level of poverty.

In order to achieve the goal of the study, the authors formulated a number of tasks:

[1] O sootnoshenii denezhnykh dokhodov naseleniya s velichinoy prozhitochnogo minimuma, ustanovlennoy na 2021 god, i chislennosti maloimushchego naseleniya za I i II kvartaly 2021 goda [On the ratio of monetary incomes of the population with the subsistence minimum established for 2021 and the number of poor people for the I and II quarters of 2021]. URL: https://gks.ru/bgd/free/B04_03/IssWWW.exe/Stg/d02/143.htm (accessed 13 October 2021).

[2] Poverty headcount ratio at $1.90 a day (2011 PPP) (% of population) — Russian Federation. URL: https://data.worldbank.org/indicator/SI.POV.DDAY?locations=RU (accessed 27 September 2021).

[3] Poverty headcount ratio at $1.90 a day (2011 PPP) (% of population) — Norway. URL: https://data.worldbank.org/indicator/SI.POV.DDAY?locations=NO (accessed 13 October 2021).

[4] Poverty headcount ratio at national poverty lines (% of population) — Norway. URL: https://data.worldbank.org/indicator/SI.POV.NAHC?locations=NO (accessed 15 September 2021).

- to justify theoretically the possibility of continuing the application of the welfare state concept in the Russian Federation and the Kingdom of Norway at the present stage;
- to analyze the current systems of social policy in Russia and Norway;
- to identify effective social practices, current trends and risks of implementing this concept in both countries;
- to formulate recommendations to state and municipal authorities on further fight against poverty.

The main research methods include the analysis of official statistics from Russia, Norway and the World Bank, a series of international reports and surveys, legislative acts, as well as an analysis of materials posted in the media.

The possibility of applying the welfare state concept in Russia and Norway at the present stage

As practical experience of realization of egalitarian and Marxist ideas has shown, the problem of inequality and poverty cannot be solved simply by redistribution and by communalization of property. In his essay "Citizenship and Social Class" (1949), the British sociologist Thomas Humphrey Marshall [1, Marshall T.H.] called modern welfare states a combination of democracy, welfare and capitalism. The term "welfare state" starts to be used when a country combines social rights with civil and political ones. Despite the unsuccessful experience of the Soviet Union and a number of socialist countries, the implementation of the welfare state concept is declared almost all over the world, for example, in Canada, Germany, the Netherlands, France, India, Brazil. But in practice, in our opinion, the model was implemented only in a number of countries of the social democratic type, including Norway.

In the book "The Three Worlds of Welfare Capitalism" of 1990, the Danish sociologist Gösta Esping-Andersen identified three subtypes of welfare state models: social democratic, liberal, and conservative [2, Esping-Andersen G.]. The model used in Norway is of the social democratic subtype. Its main principles are universal coverage, on the one hand, and the need for large-scale taxation for the implementation of social policy, on the other hand.

In this study, we analyze the experience of the Russian Federation and the Kingdom of Norway. The choice of these countries for a joint study of effective social practices aimed at combating poverty is justified by the following aspects:

- social-democratic type of the country's social protection system: Russia and Norway have similar positions in the formation of a model of social policy systems based on the categorical principle, with the welfare state concept at its core;
- geographic and climatic features: this aspect of Norway has much in common with the northern territories of the Russian Federation, and therefore, the social practices used and the list of risks can be applied in the Arctic and subarctic territories of Russia;

- similar economic structures: dependence on oil and gas resources and global hydrocarbon prices is a serious challenge and risk for the economies of both countries;
- results of analysis of various world rankings (for example, happiness index [3, Helliwell J.F., Layard R., Sachs J., De Neve J.-E., Wang S., p. 18], human development index [4, Conceição P ., p. 397]) show Norway's leading position in overcoming inequality, despite high public spending on the social sphere, difficult climatic conditions and serious economic risks.

Analysis of the existing systems of social policy implementation in Russia and Norway

The Norwegian welfare model differs from other types of welfare states in that it uses a complex of interrelated aspects, namely, the principles of full employment, gender equality, a wide range of social benefits and services, as well as large-scale income redistribution in favor of the poor through tight market control and use of fiscal policy mechanisms. Norway's social security system is mainly funded by taxation. The primary analysis shows that the Norwegian model of the formation of the welfare state shows positive results in terms of a real reduction in the level of inequality among citizens and the formation of a wide range of social services for the general population. Another question: how much does it cost the state? And how long can Norway afford to finance it at this level?

The main characteristics of the Norwegian model of social policy [5, Andersen T.M., Holmström B., Honkapohja S., Korkman S., Söderström H.T., Vartiainen J., p. 13–14]:

- free education, universal, state-guaranteed health care coverage and a wide range of social services, which entails high public expenditure in these areas;
- state pension system that provides for the maintenance of the older generation;
- low rate of corruption in state power;
- developed trade union movement;
- constant constructive communication between trade unions, employers and authorities, including informal cooperation aimed at clarifying working conditions and protecting the rights of workers;
- serious guarantees from the state for those who have lost their jobs (high level of benefits);
- transparent conditions for doing business.

However, there are a number of risks that make the system not ideal or easy to implement in the long term:

1. The increase in life expectancy leads to the aging of the nation [5]. The growth in the share of the older generation [6] increases the financial burden on the state both in terms of paying pensions and providing other social services.

2. The working generation is experiencing an additional tax burden to ensure the above tasks. At the same time, more and more able-bodied population is forced to link their professional activities with the provision of social services, thereby increasing the already high burden on the state.

3. Communication of three institutional forms (trade union, employer, state), as well as the fight against corruption and the active work of trade union organizations provoke the growth of the bureaucratic machine and periodically reduce the effectiveness of system management.

4. High tax rates and one of the most serious tax burdens in the world on business carry the risk of demotivating entrepreneurs to develop their own business.

5. An additional demotivator can be a high level of wages and social guarantees. Even now, Norwegian companies prefer to hire employees with secondary specialized rather than higher education, as they cost the company less. Experts attribute the lack of unemployment growth in the country to the phenomenon of “eternally learning youth”. Having received a higher education and faced with employment problems, citizens continue their education at public expense, increasing the already significant social spending. It is also worth noting the risk of hidden unemployment among young professionals with higher education. Many of them continue their studies because they cannot find vacancies in the labor market. A new concept "ung-voksenperiode" (period of youth and maturity) appeared in the country. This is a group of people aged from the end of adolescence to 35 years old who do not want to grow up, start a family, seeing the meaning of life in having fun.

6. In connection with the growth of life expectancy and the increase in the proportion of the older generation, the burden on the healthcare system is seriously increasing, which begins to experience both a shortage of personnel and the necessary equipment, and a shortage of funding.

7. Another serious risk is the dependence of the country’s economy on hydrocarbon production. A significant share of Norway’s GDP is provided by the oil industry [7]. On the one hand, this has become the starting point and an important factor in the current prosperity of the country, but on the other hand, it is a serious risk due to the high share of the industry in the national economy and the exhaustibility of the resource. The Norwegians found a way out in the creation of the State Oil Fund, which concentrates excess income from the oil industry and invests them in various projects around the world. Although the fund’s original purpose was to care for future

[5] Deaths. URL: https://www.ssb.no/en/befolkning/fodte-og-dode/statistikk/dode (accessed 16 September 2021).
[6] Population. URL: https://www.ssb.no/en/befolkning/folketall/statistikk/befolkning (accessed 16 September 2021).
[7] National accounts. URL: https://www.ssb.no/en/nasjonalregnskap-og-konjunkturer/nasjonalregnskap/statistikk/nasjonalregnskap (accessed 13 October 2021).

generations, in 2006, it was renamed the State Global Pension Fund, which confirms one of the main socio-economic risks in Norway today — the aging of the nation. The Fund is one of the world's largest investors, while it practically does not finance either economic or social projects within the country, rightly fearing inflation.

The Norwegians quite early switched to a democratic political regime and began to redistribute income from wealthy citizens to the poor. And this, in our opinion, was one of the reasons for the low level of poverty in the country. An additional success factor is a small and compact population, as well as the absence of a dominant role of hereditary classes. In comparison with the majority of both developed and developing countries, the level of absolute monetary poverty in Norway is extremely low, almost nonexistent. The level of extreme poverty ($1.9 per day according to the World Bank method) in the country was 0.3% in 2018 [8].

Understanding poverty as the lack of resources sufficient for life in the society in which the individual exists, the Norwegians naturally use a relative approach in their assessment. In 2018, the national poverty rate in the country was 12.7% [9]. In our opinion, this is a significant level for a country that positions itself as a state where opportunities are equal for everyone, and resources are distributed evenly. The multidimensional approach gives even more serious results —16.1% [10].

At the same time, children, as in many countries of the world, are one of the most vulnerable categories of the population. The proportion of children living in low-income conditions in Norway increased from 7.7% (2008–2010) to 10.7% (2015–2017) [6, Mølland E., Vigsnes K.L., Bøe T., Danielsen H., Grimastad Lundberg K., Haraldstad K., Ask T.A., Wilson P., Abildsnes E., p. 571]. Among other profiles of the poor, the following were identified: young single people, single parents, couples with small children and families with three or more children, immigrants (mostly of non-European origin), long-term unemployed, long-term sick, pensioners (mostly single), people with mental disorders, recipients of social assistance. The total number of recipients of social assistance in Norway at the end of 2020 was about 124 thousand people [11], or 2.3% of the population. About 49 thousand people use social benefits as the main source of income at the end of 2020 [12]. This is 0.9% of the population, which, with the abolition or loss of social support, can potentially become extremely poor.

Ways to combat the phenomenon of poverty in Norway are quite traditional. These are, first of all, ensuring low unemployment, maintaining a high average income, and general social

[8] Poverty headcount ratio at $1.90 a day (2011 PPP) (% of population) — Norway. URL: https://data.worldbank.org/indicator/SI.POV.DDAY?locations=NO (accessed 17 September 2021).
[9] Poverty headcount ratio at national poverty lines (% of population) — Norway. URL: https://data.worldbank.org/indicator/SI.POV.NAHC?locations=NO (accessed 15 September 2021).
[10] Multidimensional poverty headcount ratio (% of total population) — Norway. URL: https://data.worldbank.org/indicator/SI.POV.MDIM?locations=NO (accessed 17 September 2021).
[11] Social assistance. URL: https://www.ssb.no/en/sosiale-forhold-og-kriminalitet/trygd-og-stonad/statistikk/okonomisk-sosialhjelp (accessed 16 September 2021).
[12] Social assistance. URL: https://www.ssb.no/en/sosiale-forhold-og-kriminalitet/trygd-og-stonad/statistikk/okonomisk-sosialhjelp (accessed 16 September 2021).

support for the population. Sociologists V. Korpi (Sweden) and G. Esping-Andersen (Denmark), who introduced the concept of "welfare state", believe that the current situation in Norway is the result of socio-economic reforms and the transformation of the ideology of the Norwegian social democracy in the presence of a clear succession of the ruling class [7, Zaikov K.S., p. 9]. In the works of S. Kühnl and A. Hatland, the influence of political and socio-economic factors is questioned, and the influence of culture, which caused the appearance of this phenomenon, is put forward [7]. Anyway, the main promoter of the welfare state policy is the Norwegian Labour Party (hereinafter referred to as the NLP) that started the formation of this system in 1935–1965, subsequently losing the leading position periodically, but systematically coming back to rule the country. In 2021, the NLP was able to regain the majority in the Norwegian national parliament and thereby form the government and hence determine the course of the country for the next four years. The leadership of the NLP announced a renewed focus on reducing social inequalities. According to experts, this may mean further tax increases for those who earn a lot, reducing the number of private schools, strengthening the public health system [13].

The social sphere in Norway is financed by taxing citizens and legal entities and partly by the State Global Pension Fund. Tax rates in Norway are among the highest in the world. There is a progressive taxation scale and, depending on the income, the tax burden averages over 40% [5, Andersen T.M., Holmström B., Honkapohja S., Korkman S., Söderström H. T., Vartiainen J., p. 67]. Corporate taxation is also one of the highest in the world. According to the concept of the welfare state, every resident has the right to free education, health care, as well as, if necessary, social services, guarantees for pensions, provision for people with disabilities and temporarily unemployed. Those who work can count on a guaranteed sufficient income, which allows them to maintain their financial situation above the poverty line. Trade unions control the risk of a working person getting into a difficult financial situation. Another feature of the Norwegian labor market is that the majority of the adult population works, and many retirees also continue to work after they retire.

One of the main profiles of poverty in Norway is migrants. Lack of language skills and qualifications make it difficult for them to find work. Having a high level of unemployment benefits, this category of the population often fails to meet the challenge of integrating into the country's labor market. They have other skills and competences (e.g. handicrafts or agriculture) which are not in demand in Norway. The use of social benefits does not have the necessary effect to overcome the poverty line. Gradually, a certain marginalized underclass is being formed, in which yesterday's refugees are the basis. A distinctive feature of this category is the high proportion of children and

[13] Levotsentristy vernutsya k vlasti v Norvegii posle vos'miletnego pereryva [The centre-left will return to power in Norway after eight years break]. URL: https://tass.ru/mezhdunarodnaya-panorama/12375945?utm_source=yxnews&utm_medium=desktop&nw=1631690487000 (accessed 15 September 2021).

elderly people. The former are not yet able to work; the latter are not entitled to state pensions under the law. As a result, a new lower class is forming, which consists mainly of recent immigrants. The children of immigrants are trapped in poverty because of their origins, their lack of knowledge of the language, their lack of understanding of the culture and rules of behavior of their new society. The formed psychological aspect of the perception of one's condition is very important (poverty in the historical homeland and in Norway is different). A pseudo-prosperous existence in the north of Europe relaxes the representatives of this social group, which is one of the reasons for the criminalization and radicalization of its youth [8, Rodionova M.E., p. 42–47].

When analyzing the general economic situation in Norway, trends were identified that, in our opinion, should be taken into account in the formation of social policy in general and tactics to combat poverty in particular in this state in the long term:

1. Decrease in the employment rate by 3% (from 78% in 2000 to 75% in 2018) [9, Manyika J., Madgavkar A., Tacke T., Woetzel J., Smit S., Abdulaal A., p. 6]. At the same time, there is a 7.9% increase in this indicator among people over 65 (in 2018 compared to 2000). In other age categories, there is a decrease, this is especially noticeable in the category "15–24 years old" — 8.4% [9, Manyika J., Madgavkar A., Tacke T., Woetzel J., Smit S., Abdulaal A., p. 42]. At the same time, there is a decrease in all types of employment (full, partial, etc.), which indicates an increase (albeit insignificant) in unemployment in the country [9, Manyika J., Madgavkar A., Tacke T., Woetzel J., Smit S., Abdulaal A., p. 48].

2. Decline in real average wages. Over two five-year periods (1995–2000 and 2013–2018), it was 2.4 percentage points. At the same time, there is an increase in the relative level of poverty after taxes and transfers among the working-age population (2000–2017) by 3.5% (the indicator for 2000 is 6%) [9, Manyika J., Madgavkar A., Tacke T., Woetzel J., Smit S., Abdulaal A., p. 9] with the general trend of rising poverty in this period [14].

3. The net share of compulsory pension compensation decreased in 2018 compared to 2004 by 13% (from 65% to 52%). At the same time, net pension assets provided only 10 years in 2018 with an expected life expectancy in retirement of 20 years [9, Manyika J., Madgavkar A., Tacke T., Woetzel J., Smit S., Abdulaal A., p. 15].

4. Norway has a high degree of institutional intervention in market relations and high costs of the public sector [10, Pipia L. K., Dorogokupets V. S., Osipova O. E., Shashkova N. V., Khokhlova V. A., p. 87]. Public sector spending includes public sector wages and social spending, defined as cash benefits or the direct provision of goods and services in kind, and social tax credits; the exception is education and infrastructure, which reflect general government spending. In 2000, Norway scored 134 points on the index of intervention in the market structure, which is the highest among the member countries of the Organization for Economic Cooperation and Develop-

[14] Poverty headcount ratio at national poverty lines (% of population). Norway. https://data.worldbank.org/indicator/SI.POV.NAHC?locations=NO (accessed 14 October 2021).

ment, while public sector spending amounted to 43% of GDP [10, Pipiya L.K., Dorogokupets V.S., Osipova O.E., Shashkova N.V., Khokhlova V.A., p. 51–52]. Norwegian government spending on direct support to individuals (including social spending on old-age and survivor's pensions) between 2000 and 2018 increased by 9% [10, p. 49].

5. There is a low growth in personal well-being, which is confirmed by a combination of a rather modest amount of savings from the population and low income from investments. In fact, the cumulative annual growth rate of the average wealth of Norwegian residents in 2013–2018 has a negative trend (-11.9%). Between 2015 and 2017, the real growth rate of average net wealth was negative [10, p. 41]. The problem is the ratio of debt to household assets. High (and growing) debt levels continue to be a concern in Norway. This figure in 2017 was 28% [10, p. 42].

Thus, the main points of application of the efforts of the Norwegian government can be youth employment (15–24 years old), further removal of the risks of falling into the poverty trap of the older generation (including the search for alternative sources of pension payments) and migrants (especially children). The question of the degree of influence of the state on the market economy remains open.

When analyzing the implemented concept, we identified a number of factors that influenced the effectiveness of the fight against poverty in Norway:

- historical prerequisites, including the early building of a democratic society, the use of the principle of redistribution of income from the rich to the poor, as well as the absence of the dominant role of hereditary classes;
- long period of economic growth;
- geographic features, including a small and compact population;
- specificity and continuity of the existing state system (social-democratic type of social policy, implementation of the welfare state concept, the role of the NLP and trade unions).

The Norwegian Labor Party's return to power in 2021 presents the country with a difficult choice: to continue the implementation of the welfare state concept or to look for other ways to overcome social inequality and fight poverty. After all, this strategy is both a mechanism for overcoming the phenomenon under consideration and the main source of the above risks. There are many problems with this system. Every year they become only more serious, although it cannot be said that positive dynamics do not exist. As described above, over the past few years, Norway has been in the top ten, and often tops the ranking of countries with the highest standard of living. Many people call Norway the country they would like to live in. However, one should understand that the Norwegian welfare system is not as indestructible as it might seem, and has its own risks that both the Norwegian government and countries wishing to borrow certain mechanisms to combat poverty should take into account.

Turning to the analysis of the present situation in the Russian Federation, one cannot but mention the historical prerequisites for the formation of the modern social policy of the state. In the Soviet Union, the system of social support and assistance to the poor was extensive and varied, despite the fact that the problem of the existence of poverty in the country was not recognized in this historical period. As early as the 1930s, it was declared defeated, and no open research was conducted until the 1960s. Subsequently, the Soviet system of social benefits and payments became the basis of the modern Russian system. This situation has both positive and negative aspects. According to the authors, the Russian Federation can be classified as a country of the social democratic type of organization and implementation of national social policy. This is evidenced by a number of characteristics, including a universal minimum income guarantee, an egalitarian social policy, and an extensive system of social protection. These aspects bring Russia closer to Norway and provide a potential opportunity for the mutual use of social practices. However, universality and non-application of the criteria of need gives rise to the development of a dependent model of behavior of a part of the population. Lack of targeting also leads to inefficient spending of funds. All this generally leads to the formation of two types of dysfunctions of the current system, namely:

- inclusion errors, when social payments are received not only by the poor, but by people who are simply in this category;
- exclusion errors, when payments and assistance do not reach the truly poor.

Despite the difficult “legacy” of the Soviet Union, the number of people with cash incomes below the subsistence level in the Russian Federation has a stable downward trend. The Soviet system of social support made it possible to survive (in the truest sense of the word) part of the Russian population in the most difficult 1990s. Since 2000, there has been a steady decline in the poverty rate: from 29% in 2000 to a historic low of 10.7% in 2012 [15]. This is due to the strong economic growth in the country in 2000–2007, and to the development and improving the system of social assistance and support (including the introduction of criteria for need and targeting, an increase in the minimum wage, unemployment benefits and the level of pensions). The adoption of several important pieces of legislation is worth noting as major milestones. In our opinion, there is a fairly high-quality set of federal regulations in the Russian Federation that define the concept of the subsistence minimum, average per capita income, form methods for calculating the main indicators and models for the distribution of assistance, and also put the fight against poverty at the level of national goals.

Since 2005, the regions have been given the opportunity to develop their own targeted social support programs for low-income citizens. This step is very important, since Russia is a country

[15] Rosstat. Statisticheskiy byulleten' «Sotsial'no-ekonomicheskie indikatory bednosti» [Rosstat. Statistical bulletin "Socio-economic indicators of poverty"]. Moscow, 2021, p. 15. URL: https://rosstat.gov.ru/compendium/document/13293 (accessed 11 August 2021).

with many subjects, which often differ greatly even in the behavior patterns of specific individuals. Consequently, the adaptation and formation of regional mechanisms for the implementation of the national task [16] is vital. This becomes possible when the responsibility and authority are transferred to the regional level.

In 2014, due to global negative economic phenomena, real incomes of the population began to decline, which led to an increase in the share of the poor in the Russian Federation. Russia reached a historical peak in the 2000s at 13.4% in 2005. A gradual decline began then, which led to an indicator of 12.1% at the end of 2020. On the one hand, this trend cannot but rejoice (the proportion of the poor is declining). On the other hand, the rate of decline may not be sufficient to achieve the goal set by the President to reduce poverty by half by 2030 compared to 2017.

In the Russian Federation, attempts to increase the impact of targeting have been made since the early 2000s, but the historically used categorical approach and the principle of communality to the provision of social support continued to dominate, as the state decided that the amount of social payments should not be reduced and conditions should not deteriorate. Thus, the regions found themselves in a certain trap. They had all the powers to develop their own targeted programs, but did not have the necessary funding. Subsequently, additional measures of targeted social support began to be introduced at the federal level, which made it possible to bring certain groups beyond the poverty line. For example, the additional payment to the pension of non-working pensioners up to the subsistence level in 2010 or the formulation of the basic principles for providing a social contract as a mechanism to help low-income families in 2013. In 2015, the regions were able to establish eligibility criteria for providing individual measures of social support [17].

However, despite all the measures taken and the awareness of the need to apply a targeted approach, only 7% [11, Maleva T.M., Grishina E.E., Tsatsura E.A., p. 13–14] of the total amount of all expenditure on social assistance is implemented with the needs-based approach by 2016. Categorical mechanisms continued to prevail. On the one hand, this was a clear dysfunction of the current system, and on the other hand, it provided an undoubted potential for the development of the targeting concept. The task of the modern Russian state is to make the transition to a social policy that takes into account the needs of the individual household as gently as possible.

In contrast to Norway, there are large regional disparities in Russia. This is due to climatic, geographical and economic features, and to the national composition of the population. Therefore, there is a difference in the share of the poor population. With a level of 12.1% for the whole of the Russian Federation, the spread ranges from 5.0% in the Yamalo-Nenets Autonomous Okrug

[16] Reducing the poverty rate by 2 times by 2030 compared to 2017.
[17] In accordance with the Federal Law of December 29, 2015 No. 338-FZ "On amendments to certain legislative acts of the Russian Federation in terms of accounting for and improving the provision of social support measures based on the obligation to comply with the principle of targeting and apply the criteria of need".

to 34.1% in the Tyva Republic [18]. This once again confirms the need for a differentiated approach to the formation of regional programs to improve the welfare of citizens of a particular subject of the Russian Federation. Today, almost all regions of the Russian Federation have launched programs to reduce the proportion of the population of the region with incomes below the subsistence level.

From the beginning of the formation of the monitoring system for the level of poverty in the Russian Federation, an absolute approach was used. This was justified both from the point of view of ease of measurement, and from a political point of view (this approach gives the lowest value of the poverty rate). At the same time, being aware of the risks of expanding the dysfunctional impact of inclusion and exclusion errors, the Russian government carried out systematic work to prepare for the transition to a relative model in assessing the level of poverty. Rosstat, as an experiment, used optionally appropriate methods, and the country officially switched to such a concept as “median income” from January 1, 2021.

The transition to a relative approach in assessing the level of poverty partially solves the issue of the “exclusion error” dysfunction and at the same time carries the risk of expanding the category of citizens who receive social assistance, but are not poor at the same time (the “inclusion error” dysfunction and the categorical approach as a whole). That is why it is important to develop the concept of targeting, including ongoing regional studies (disaggregated by municipality) of the profiles and causes of poverty. The transition to a relative approach was an important step towards the formation of a multidimensional model of poverty, expanding the categories and profiles that fall into this social group. In parallel with the transition to a relative assessment, Russia uses multidimensional approaches for analytical and research purposes.

The use of a relative approach does not negate the need to work with deprivations and restrictions on the main profiles of poverty. This is the focus of the national projects launched in 2018, as well as a number of government programs and projects that have recently been implemented in the Russian Federation. For example, in March 2021, the state program “Socio-economic development of the Arctic zone of the Russian Federation” was launched [19], the implementation of which, according to the Chairman of the Government of the Russian Federation Mikhail Mishustin, “will create tens of thousands of new jobs and increase people’s incomes, provide support to businesses in implementation of promising projects and attract investors and qualified

[18] Rosstat. Statisticheskiy byulleten' «Sotsial'no-ekonomicheskie indikatory bednosti» [Rosstat. Statistical bulletin "Socio-economic indicators of poverty"]. Moscow, 2021, p. 15. URL: https://rosstat.gov.ru/compendium/document/13293 (accessed 11 August 2021).
[19] Approved by the Decree of the Government of March 30, 2021 No. 484 "On approval of the state program of the Russian Federation "Socio-economic development of the Arctic zone of the Russian Federation".

specialists to the regions of the Arctic, ensure the inflow of private capital in volumes that are many times greater than the investments of public funds" [20].

The main goals of the document are: 1) accelerating the economic development of the territories that are part of the Arctic zone of the Russian Federation; 2) increasing the contribution of the territories included in the Arctic Zone of the Russian Federation to the economic growth of the country. The basis of the program is an attempt to attract additional investment flows to these territories by creating comfortable economic conditions. The subprogram "Creating conditions for attracting private investment and creating new jobs in the Arctic zone of the Russian Federation" is responsible for this area.

However, in order for people to come and stay in the Arctic regions, it is necessary to create not only economic, but also additional social infrastructure and environment. The main criterion for the sufficiency of these conditions is the ability to maintain an average Russian standard of living. Subprogram No. 2 "Creating conditions for sustainable socio-economic development of the Arctic zone of the Russian Federation" should be responsible for this (according to the name). At the same time, there is no funding in the basic document, and the activities are either legislative or monitoring in nature. According to the authors, this is clearly not enough to achieve a qualitative indicator of improving the living standards of the population of the Arctic zone of the Russian Federation.

In order to achieve a level comparable to the national average, it is necessary to adopt a special development program that includes infrastructure projects. The draft of such a program was developed by the Government of the Arkhangelsk Oblast and presented at the federal level in 2019. It provided for bringing the main indicators of the standard of living in the Arctic municipalities to an acceptable level through the implementation of a number of measures in all major social spheres. We recommend that the regional authorities bring the project in line with reality and make a new attempt to defend it at the federal level. Otherwise, there is a risk of an even more active outflow of the population from the above areas. It is also recommended that the poverty level of a particular municipality should be taken into account when formulating the list of measures.

Speaking about the poor in Russia, it is necessary to realize that in addition to the groups already below the poverty line and experiencing various depths of the phenomenon, there is a fairly large risk group. These are those who are in a borderline condition and, in the event of job loss, illness, etc., can quickly cross the line. That is why it is necessary to systematically, on an ongoing basis, conduct regional sociological research, using not only a household, but also a settlement as a unit of measurement. According to Rosstat [11, Maleva T.M., Grishina E.E., Tsatsura E.A., p. 20], the most risky categories include rural households, residents of small towns (popula-

[20] Pravitel'stvo utverdilo gosudarstvennuyu programmu razvitiya Arktiki [The government approved the state program for the development of the Arctic]. URL: http://government.ru/docs/41894/ (accessed 29 September 2021).

tion up to 100 thousand people), families with underage children, and the working poor. However, it is possible to determine specifically, in which municipality, who and in what ways to help, only as a result of field research work.

The risks of the middle class becoming poor are increasing at a time of economic and epidemic hardships all over the world, so the government's attention to the phenomenon of poverty must not only remain strong, but become even stronger. At the same time, one should not underestimate the risk that an inert layer of the population has already formed in both Russia and Norway (according to experts, it makes up 10–11% of the population of the state [11, Maleva T.M., Grishina E.E., Tsatsura E. .A., p. 23]), which does not have any significant economic and social assets, while not reacting to external stimuli in any way. Even with an increase in cash income, these households do not change their social position and do not improve their social status. This can be a significant factor in the difficulty of achieving the national goal of reducing poverty in the Russian Federation and deserves special attention from the professional community.

As a result of the analysis, we identified several social groups and features that were noted in the post-COVID period for the first time in Russia. This is, first of all, the growth of the share of "professional unemployed". According to the Ministry of Labor, during the 4.5 months of the state program for subsidizing hiring of the unemployed in 2021, employment services received applications from companies for 143 thousand jobs, but in fact they were able to employ only 25 thousand people (with a total number of this category of 350 thousand people) [21]. The second category is NEET youth (young people under the age of 24 who are not studying anywhere, not working and not trying to find a job). According to the Ministry of Labor of Russia, this is every tenth representative of this age group. Some of them are those who cannot find a job after graduating from universities [22].

At the same time, two trends were observed in 2021 that can partially balance the negative phenomena described above, namely:

1. The deterioration of the financial situation of families (lack of the necessary financial resources to get high scores when passing the Unified State Examination, lack of opportunities to move), as well as the desire for an earlier entry into the labor market for successful employment, high wages and a prestigious profession or specialty stimulates young people (graduates of grades 9–11) to choose a vocational education system instead of entering universities to obtain a working specialty and enter the labor market 2–3 years after graduation [12]. This trend will make it possi-

[21] U armii bezrabotnykh svoi generaly. V programme subsidirovaniya rabochikh mest ne khvataet zhelayushchikh trudit'sya [The army of the unemployed has its own generals. In the program of subsidizing jobs, there are not enough people willing to work]. URL: https://www.kommersant.ru/doc/4947406?utm_source=newspaper&utm_medium=email&utm_campaign=newsletter (accessed 30 August 2021).

[22] Mintrud otsenil chislo ne zanyatykh rabotoy i ucheboy molodykh rossiyan [The Ministry of Labor estimated the number of young Russians who are not busy with work and study]. URL: https://www.rbc.ru/rbcfreenews/61167fb39a794765c7c222a9 (accessed 30 August 2021).

ble to solve the shortage of a number of working professions in the medium term, as well as to reduce the level of poverty in a number of households. The state needs to pay special attention to the quality of education in this category and, above all, to the relevance of professions and an increase in the number of budget places in the system of secondary vocational education [23].

2. The second trend is an increase in the number of self-employed citizens, which undoubtedly indicates a decrease in shadow employment. According to the Federal Tax Service of the Russian Federation, as of the end of June 2021, there were 2.5 million officially registered self-employed citizens in Russia, and since the launch of the tax regime in 2019, they have earned more than 463 billion rubles. But not all performers have yet “come out of the shadows”: according to the Higher School of Economics, at the end of 2020 there could be about 7.2 million self-employed in total in Russia, and the total market size with such calculations amounted to 1.58 trillion rubles [24]. This activity allows not only to increase the well-being of a number of households, but also to work with errors of inclusion in state social support programs, strengthening the targeting of measures to combat poverty, and, consequently, ensuring the growth of the well-being of people who really need help. The experts’ estimates suggest that this trend will intensify, as the difference between those who have actually "come out of the shadows" and those who are still there is substantial. The Russian government needs to provide additional incentives for this category, for example, in the credit sphere.

According to preliminary data from Rosstat [25], the share of the population of the Russian Federation with incomes below the subsistence level increased to 14.4% (or to 21.1 million people) at the end of the first quarter of 2021. This can be explained by a change in the methodology of calculation, as well as by seasonal fluctuations in incomes (for example, the payment of many types of social assistance and December pensions in December 2020, and not in January 2021). However, in the second quarter of 2021, the share of this category of citizens again decreased to 12.1%, or by 3.4 million people. At present, this is the largest decrease in the share of the poor population for many years in the Russian Federation, which, according to the authors of the article, is associated primarily with the targeted support for children from three to seven years, im-

[23] Molodezh' vynuzhdena vybirat' PTU vmesto MGU. Monitoring neravenstva [Young people are forced to choose vocational schools instead of Moscow State University]. URL: https://www.kommersant.ru/doc/4919065?utm_source=newspaper&utm_medium=email&utm_campaign=newsletter (accessed 30 August 2021).

[24] HeadHunter i YouDo svyazala samozanyatost' [HeadHunter and YouDo linked self-employment]. URL: https://www.kommersant.ru/doc/4910122?utm_source=newspaper&utm_medium=email&utm_campaign=newsletter (accessed 30 August 2021).

[25] O sootnoshenii denezhnykh dokhodov naseleniya s velichinoy prozhitochnogo minimuma, ustanovlennoy na 2021 god, i chislennosti maloimushchego naseleniya za I i II kvartaly 2021 goda [On the ratio of monetary incomes of the population with the subsistence minimum established for 2021 and the number of poor people for the I and II quarters of 2021]. URL: https://gks.ru/bgd/free/B04_03/IssWWW.exe/Stg/d02/143.htm (accessed 30 August 2021).

plemented by the Government of the Russian Federation in 2021 [26]. Since the measure is permanent, the influence of this factor will remain, and the effect of such targeted work in the main profile (according to the Russian Ministry of Labor, 82% of the poor are families with children) can increase.

Of course, other factors also had an impact on the reduction of the proportion of poor people in Russia in the second quarter of 2021, for example, the expected post-COVID growth in incomes of the population in almost all areas, as well as a decrease in unemployment and a recovery in consumer activity in the service sector [27]. It is highly probable that the share of the poor will continue to decrease due to other support measures. These are benefits for single parents with children aged 8 to 17 years (1/2 of the regional subsistence minimum, 1.2 million people by the end of the year), and measures to support expectant mothers (1/2 of the subsistence level of the working population, 400 thousand families).

Undoubtedly, the indicator for 2021 was influenced by one-off payments to families with children by September 1, pensioners and employees of the law enforcement agencies [28]. We would like to mention development of a social contract mechanism as the main systemic measure of target-oriented social policy in modern Russia. The implementation of this model can be a decisive factor in achieving the national goal of reducing poverty.

After analyzing recent developments and trends, the indicator declared in the national poverty reduction target does not look unattainable. The victory over the so-called "statistical" poverty sets even more complex goals for overcoming poverty on the basis of a multidimensional assessment, which includes not only monetary indicators, but also social deprivations and subjective assessments of the individual. For this reason, it is already necessary to pay special attention

[26] From April 1, 2021, the rules for the largest social payment — support for families with children aged three to seven years old — have changed in the system of social support measures: if in the first quarter of 2021 it was still "non-addressed", then from the second quarter — targeted and focused on "surcharge" poor families 50%, 75% or 100% of the subsistence minimum, depending on income level. According to the Ministry of Labor, since April 1, 1.73 million of such payments have been submitted or reassigned, of which 1.33 million are one hundred percent of the minimum, in total, parents of almost 4 million children receive such assistance. Another measure of social support is payments to families with children under three years of age for families with a per capita income of less than two living wages per person: this is more than 1.8 million families.

[27] Wages in the II quarter of 2021 are higher than a year ago by 14.2%, entrepreneurial income — by 56.2%, other cash receipts — by 31.8%, property income — by 10.6%, a decrease in unemployment (at the beginning of the year — 5.8%, in June — 4.8%, only seasonal employment is not provided), an increase in average wages (from 52.1 thousand rubles in I quarter to 56.2 thousand rubles in II quarter).

[28] One-time payments to pensioners and the military, as well as the allocation of 21 billion rubles for additional monthly payments to low-income families with children aged three to seven years will cause an increase in the annual nominal disposable income of the population by 0.8–0.9% (by 0.6–0.9% in real terms), and if only recipients of payments, the increase will be more than 5%. This assessment of the consequences of Vladimir Putin's initiative was given by ACRA analysts. They noted that the transfers will cause a short-term reduction in income inequality, as they are mainly recipients of the less well-off segments of the population.

to the development of the next stage, both in assessing poverty and in finding new solutions in the fight against it [29].

Another significant risk is the fact that the concept of targeting is actively declared in Russia, but its application in practice is still ineffective. This is due, first of all, to the prevalence of the categorical approach and the unwillingness to work on overcoming "inclusion errors". Overcoming is associated with the introduction of unpopular measures, which may have a negative impact on the attitudes, including political ones, of a significant part of the population. An additional constraint is that the use of targeting requires efforts on the part of the region and municipalities (search for sources of funding, formation of criteria for need, maintaining a register of low-income citizens, accounting for income and expenses of applicants, etc.).

Despite the active development of regional programs to reduce poverty, there are a number of points in the Russian Federation that require special attention, namely:

1. At the moment, the regional anti-poverty programs are mainly a compilation of measures that have already been announced in other programs and projects at both the federal and regional levels. That is, according to the compilers, their combination should create some additional effect that will lead to a reduction in the level of poverty. In our opinion, along with the use of standard methods, it is necessary to formulate new measures that form new mechanisms and social practices.

2. Imperfection and insufficient mass use of the social contract mechanism. It is necessary to constantly improve and replicate this measure of providing state social assistance. One of the measures may be the introduction of compulsory entrance psychological testing to determine predisposition and level of motivation of service user as well as constant supervision by a psychologist during implementation of the contract to adjust activities if necessary.

3. Insufficient institutional forms (other than state support measures) in the fight against poverty; for example, development of charity among large companies and use of the non-profit organizations' resources in specific settlements.

4. Shifting the vector towards irrevocable measures of social assistance without using the criteria of need and the principles of targeting. Most government executives and representatives of municipalities believe that poverty alleviation is a task of the regional Ministry of Labor (or its equivalent) and its subordinate agencies. It is impossible to overcome poverty without the involvement of organizations responsible, for example, for the development of agriculture or small and medium-sized businesses. It is only possible to increase the risks of strengthening the dependent model of citizens' behavior.

All actors involved in the implementation of regional anti-poverty programs should realize that this is not so much a humanistic or political task as an economic one. An increase in the num-

[29] Den'gi detyam ne igrushka [Money is not a toy for children]. URL: https://www.kommersant.ru/doc/4935646 (accessed 30 August 2021).

ber of poor people reduces both the number of consumers (and this is the loss of corporate income) and the regional level of human capital, which in turn leads to a slowdown in economic growth, and often to an increase in government spending. For example, the trend towards criminalization of the marginalized sections of the poor is driving up the cost of law enforcement. The awareness that poverty reduction leads to an increase in the well-being of society as a whole will undoubtedly increase the motivation of all actors involved in the fight against poverty. It is precisely through the multidimensionality in the assessment, in the awareness of poverty, it is possible to more actively involve and realize their role in the fight against this phenomenon, not only other state and municipal authorities, but also other institutional forms (for example, more active development of charity by commercial companies through awareness of the loss of a consumer).

According to experts [11, Maleva T.M., Grishina E.E., Tsatsura E.A., p. 17], the change in the system must be carried out through the transition from supporting mass categories to socially vulnerable categories based on the criteria of need. Undoubtedly, indigence should be determined not only on a monetary basis, but on the principles of multi-criteria and complexity. A household, rather than an individual, should be regarded as the unit of assessment, and subsequently as the unit of support, which corresponds to the poverty profile identified on the basis of sociological research. It is advisable to involve business and non-profit organizations more actively, and to develop the participation of other institutional forms in the fight against poverty, for example, to use the experience of Norway on the more active involvement of trade unions.

Finally, the authors consider it appropriate to summarize the conclusions obtained as a result of the analysis of social practices and risks aimed at combating poverty in the countries under consideration in Table 1.

Table 1

Approaches used in assessing and combating poverty in Norway and Russia

Country	**Decision making at the regional level**	**Involvement of social institutions other than the state**	**Targeting of social support measures**	**Multidimensional approach to poverty assessment**	**Other**
Russia	Applies	State component prevails	Applies, but weakly	Applies	Course continuity over a long period of time
Norway	Impractical	Active work with trade unions	Applies, but weakly	Applies	Progressive income tax rate. Strict state regulation of the market.

Each of the countries considered above has had and continues to have their own model for combating poverty. There are commonalities, there are significant differences. Obviously, without the leading role of the state, which determines the strategy of struggle, and permanent long-term (for several decades) work, it is impossible to achieve the goal. At the same time, in our opinion, there are key aspects, the involvement or non-involvement of which in the struggle has a serious

impact on the results. According to the authors, to date, 4 areas determine the success of further actions, namely:

- ensuring the targeting of social support measures;
- implementation of the model, when tactical and operational actions are conducted at the level of the region and municipality;
- active involvement of other social institutions and institutional forms (besides the national and regional relevant ministry or department);
- application of a multidimensional approach in assessing the level of poverty.

Conclusion

Overall, an analysis of social policy models in Russia and Norway shows that the use of any one type (liberal, conservative, social-democratic) is already a thing of the past. Most countries are moving towards combining different approaches, taking into account modern realities. The world is changing rapidly, the composition and psychology of residents is changing (for example, due to migration), and the state should quickly respond to new realities, often going beyond the usual, standard schemes. At the same time, the implementation of the principles of the social-democratic type of the welfare state concept, undoubtedly, has a very serious impact on reducing the national level of poverty.

The prevailing understanding that poverty is a multifactorial phenomenon, not limited only by the concept of “income”, also makes adjustments to the strategy for the formation of national social policy. At the same time, the understanding of poverty is still different among Russians and Norwegians, but everyone has already realized the need for an integrated approach, including absolute, relative, deprivation and subjective criteria. Combination of methods expand the understanding of the phenomenon of poverty that political and economic decisions are made, although this often broadens the scope of those in need of help and support.

After analyzing the social practices and social policies responsible for combating poverty in Norway and Russia, it was found that the following factors have played and still play a decisive role:

1. Prioritization of the anti-poverty task and its legislative formulation at the national level. The necessary legislative package, a clear action plan and a separate management system have been prepared.

2. The strategy remains at the national government level, the financial authority and the tactics are the prerogative of the regional authorities, while the operational level should be in the municipalities, most often in specific settlements. Households rather than individuals should be the target of evaluation and further impact.

3. Apart from the state, which undoubtedly is and will be the basic social institution in overcoming the phenomenon of poverty, other institutional forms should be involved: business (through the expansion of charity), mass media and new media (forming scenarios of specific people's behavior), the scientific community, non-profit organizations (for example, in implementing the functions of local committees to organize applied work with a specific household), volunteer organizations, professional unions and associations.

4. In the public sector of Russia, the fight against poverty should be dealt with not only by the Ministry of Labor, its counterparts and regional organizational forms, but also by other state and municipal authorities. This involvement should be stimulated by the understanding and awareness that reducing the number of low-income citizens is not so much a humanistic task or a matter of national pride, but an economic category associated with the development of consumption (business interests) and the development of the country's human capital (the main interest of the state and its citizens).

5. The new realities imply a transition from monetary estimates of the level of poverty to a comprehensive multidimensional approach, the use of monetary principles, especially the absolute approach, is to minimize the problem and serve primarily the political declarative goals of the state. A multidimensional method that uses deprivation principles, subjective assessments of an individual's well-being, allows for a more qualitative and effective approach to the problem in terms of human capital development. The deprivation approach should pay particular attention to the limitations of preventive health care (including health promotion for every citizen), education and the creation of comfortable living conditions.

6. The use of an integrated approach undoubtedly leads to an expansion of the target audience, and consequently, to an increase in the financial and organizational resources spent. Resources are limited both in Russia and Norway, and "flooding" entire social groups with money can lead to the formation of a dependent model of human behavior, to uncontrolled rise in inflation in the country, and to undermine the national economic system. There is only one recipe — a gradual departure from the categorical approach, and even more so from the social democratic approach towards the targeted concept. The application of the categorical principle of the implementation of social policy should ultimately be used only in overcoming the phenomenon of absolute poverty — compensating for part of the shortfall in income up to the subsistence level. All other assistance and support measures (above the subsistence minimum) should be strictly targeted.

7. The basis of the targeted concept should be the mechanism of the social contract, which provides not only the principle of point impact on the problem, but also carries the principle of temporary stimulation of the activity of the household, taking into account the motives of specific individuals included in it. Undoubtedly, this mechanism needs further development and adaptation. For example, in involving psychologists to identify the basic motives of the individual and to

classify the types of support and assistance, as well as to assess the psychological state during the process of escaping from the poverty trap and to adjust the trajectory. Financing should be carried out at the expense of a progressive tax scale, by redistributing the incomes of rich and super-rich citizens. Here the experience of Norway will be especially relevant for Russia.

8. It is impossible to have operative information about the main profiles of poverty and its causes without continuous sociological research. It is impossible to typify the poor and select the right model of care without information about profiles. Research should be carried out in two stages: 1) identifying the poorest areas, for example, based on a multidimensional poverty index; 2) conducting a selection of households to develop a trajectory and model for getting out of the poverty trap in areas with low rates.

9. Further development and improvement of the state social insurance system. The mechanisms formed in the Russian Federation are a good basis, and this path of development should by no means be abandoned, especially in terms of medical insurance. Undoubtedly, not all elements are sufficiently funded today, but it is necessary to work on establishing a clear relationship for each citizen between the obligation to pay insurance premiums and the right to receive a certain list of services not only from the Compulsory Medical Insurance Fund (CMIF), but also from Social Insurance Fund (SIF) and the Pension Fund of the Russian Federation. It may be worth considering the option of transferring the functions of insurance companies to the CMIF and the SIF to actively develop the area related to the improvement of citizens, with their rehabilitation.

In conclusion, the authors would like to draw attention to two fundamental principles. Firstly, it is the permanent economic development of the country, based on the growth of labor productivity, diversification of the national economy (taking into account the risk of price fluctuations and exhaustibility of hydrocarbons) and the desire to achieve full employment of the able-bodied population. Secondly, this is a constant work to smooth out the economic and deprivation inequality of the population, in particular, the reduction of the value of the Gini index. This is possible by continuing to work on the differentiation of the personal income tax scale and the implementation of the principle used in Norway, when the rich pay for the poor, and the activation of large-scale charitable programs.

Thus, it is possible to continue using elements of the welfare state concept in Russia and Norway, but taking into account modern global realities, namely, the principles of multidimensionality in assessing the phenomenon, targeting in the implementation of programs to combat it, involvement of other institutional forms (besides the relevant executive authorities) in the process and taking into account regional specifics in practical work with the phenomenon of poverty. Despite the existing differences, both Norway and Russia should take into account each other's experience and the risks identified above. The main risks of both countries are related to the economic growth, the aging of the nation, the application of a categorical model of social policy and the formation of a dependent model of behavior of a part of the population.

The leadership of the Norwegian Labor Party, which won the election in 2021, has stated not only to continue working to combat poverty within the country, but also to increase interaction and cooperation with the Russian Federation. Perhaps this will be the starting point for further poverty reduction in both countries.

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Consistency and Adaptability: New Aspects of the Arctic Policy of Sweden *

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Abstract. The article is an analytical review of Sweden's Arctic policy since the adoption of the country's first Arctic strategy in 2011 until nowadays. The priorities of Sweden's 2011 Arctic Strategy in the areas of environmental protection, economic cooperation and human life in the Arctic are analyzed. Sweden's chairmanship programs at the Arctic Council for 2011–2013 and at the Barents Euro-Arctic Council for 2017–2019 are assessed for compliance with the national Arctic strategy priorities. The participation of Sweden in projects under the auspices of the Arctic Council in the 2010s and at present is presented. The content of the updated Sweden's Arctic strategy of 2020 is analyzed. The updated strategy is compared with the strategy of 2011; the reasons for the enlargement of the thematic coverage of Sweden's Arctic strategy of 2020 (additional priorities are international cooperation in the Arctic, security and stability in the region, and scientific cooperation) are explained. The reasons for Sweden's emphasis on security issues in the Arctic are explained. It is concluded that Sweden's Arctic policy from 2011 to the present is consistent and adaptable due to the changing climatic, economic, political and military situation in the Arctic region. The desire of Sweden to cooperate with the Nordic countries and NATO in the field of military cooperation in the Arctic is marked as a new tendency in Sweden's Arctic policy. The new role of the European Union, Canada and Germany in the implementation of Swedish Arctic policy at the present stage is traced. Sweden's Arctic strategy is also estimated in correspondence to the provisions of the Arctic Council Strategic Plan for 2021–2030.
Keywords: *Sweden, strategy, Arctic policy, Arctic security, Arctic Council, Barents cooperation*

Introduction

The Arctic, being a complex geopolitical region and a home to a set of problems that have gained global significance in recent decades (climate change and ecosystem degradation, mining, prospective transport communications, etc.), postulates the need for a consistent solution of these problems through strategic tools. Establishment of the Barents Cooperation, the Arctic Council and the Northern Dimension in the 1990s catalyzed a renewed international focus on the Arctic region, and the development of Arctic policy as a separate area of domestic and foreign policy activity for developed countries. Consequently, the past decades have also seen a number of strategic policy documents adopted on the Arctic, not only by the Eight Arctic states but also by various European and Asian countries.

In September 2020, Sweden adopted a new national Arctic strategy[1], almost a decade after the release of the previous one, falling into a certain trend to update Arctic conceptual documents

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among neighboring countries. In October 2020 (in continuation of the principles of state policy in the Arctic adopted at the beginning of 2020 [2]) Russia approved a new strategy for the development of the Arctic zone [3], traditionally mostly focused on aspects of the development of its own Arctic territories, but taking into account international challenges in the region. In addition, at the end of 2020 (just three years after the release of the previous concept paper on the Arctic [4]) Norway issued an updated concept of the Arctic policy [5], encapsulating both foreign policy activities in the Arctic region and domestic development priorities in northern Norway in one strategic document. Also, although the Finnish government adopted the updated Arctic strategy later than Sweden [6], in summer 2021, it is important to emphasize that the actual updating of Finland's Arctic policy was done in spring 2017, when the country entered into a two-year chairmanship of the Arctic Council.

Undoubtedly, since the release of Sweden's previous Arctic strategy in 2011, the problems of international politics in the Arctic region and its surroundings have changed significantly. The Crimean events of 2014 triggered a chain of mutual sanctions between Russia and Western countries. Few European Union countries were not affected by the social problems caused by the European migration crisis that started in 2015. The turbulence of internal European integration processes culminated in Brexit. New challenges to international security and the special position of the United States towards NATO in recent years have provoked a new configuration of forces and priorities within the North Atlantic Alliance [1, Sauer T., p. 215; 2, Koivula T., pp. 157–158]. Finally, globalization in the region was driven by scientific evidence of deterioration of the environment in the Arctic due to negative consequences of climate change [3, Box J.E. et al.]. All these circumstances (together with the Arctic policy of the European Union, which acquired more and more conceptualized forms during the 2010s) influenced the content of the new Swedish strategic document on the Arctic.

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[1] Sweden's strategy for the Arctic region. URL: https://www.government.se/4ab869/contentassets/c197945c0be646a482733275d8b702cd/swedens-strategy-for-the-arctic-region-2020.pdf (accessed 10 September 2021).

[2] Osnovy gosudarstvennoy politiki Rossiyskoy Federatsii v Arktike na period do 2035 goda [Fundamentals of the state policy of the Russian Federation in the Arctic for the period up to 2035]. URL: https://www.consultant.ru/document/cons_doc_LAW_347129/b47e2d435797dc3a7274b6564259fbe47d16a565/ (accessed 10 September 2021).

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[4] Norway's Arctic Strategy – between geopolitics and social development. URL: https://www.regjeringen.no/contentassets/fad46f0404e14b2a9b551ca7359c1000/arctic-strategy.pdf (accessed 10 September 2021).

[5] The Norwegian Government's Arctic Policy. URL: https://www.regjeringen.no/en/dokumenter/arctic_policy/id2830120/ (accessed 10 September 2021).

[6] Finland's Strategy for Arctic Policy. URL: https://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/163247/VN_2021_55.pdf (accessed 10 September 2021).

Arctic Strategy 2011 and its implementation

Compared with many other northern European countries, Sweden issued its first Arctic strategy later, in May 2011 [7]; thus, it can be noted that this document can be considered as a response to the previously published positions of other European state actors in the Arctic region. Moreover, shortly before that, in 2008–2011, political statements in relation to the Arctic were presented in official documents of the EU governing bodies: the EU Council of Ministers [8], the European Commission [9] and the European Parliament [10]. Thus, Sweden, being a member of the European Union, was able to strengthen its position, including the interests of this supranational institution, in its first Arctic strategy (looking ahead, the EU's role in the implementation of Swedish Arctic policy was not clearly defined and fragmented in the text of this document).

The priorities of Sweden's Arctic policy included **environmental and climate change** (environmental protection, biodiversity, and research), **economic growth** (implementation of the commercial and industrial potential of Northern Europe and the Arctic region as a whole), **human life in the Arctic** (health and demography, indigenous peoples). This set of policy directions in the Arctic generally corresponded to the range of development issues for the region previously set by other Arctic countries. The thematic areas of the Swedish Arctic Strategy 2011 are detailed in the figure 1.

[7] Norway published a strategy for the development of the Far North in 2006, supplementing its provisions in 2009. The foundations of the state policy of the Russian Federation in the Arctic were approved in 2008. The Arctic strategy of Finland was adopted in June 2010. Iceland's Arctic policy was declared in the form of a resolution Al-Thinga in March 2011. It should be noted that the Danish Arctic strategy was released later than the Swedish one, in August 2011.

[8] Council of European Union conclusions on Arctic issues. URL: https://webgate.ec.europa.eu/maritimeforum/system/files/arctic_council_conclusions_09_en.pdf (accessed 16 September 2021).

[9] Communication from the Commission of the European Communities to the European Parliament and the Council "The European Union and the Arctic Region". URL: https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0763:FIN:%20EN:PDF (accessed 16 September 2021).

[10] European Parliament resolution of 20 January 2011 on a sustainable EU policy for the High North. URL: https://www.europarl.europa.eu/doceo/document/TA-7-2011-0024_EN.html (accessed 16 September 2021).

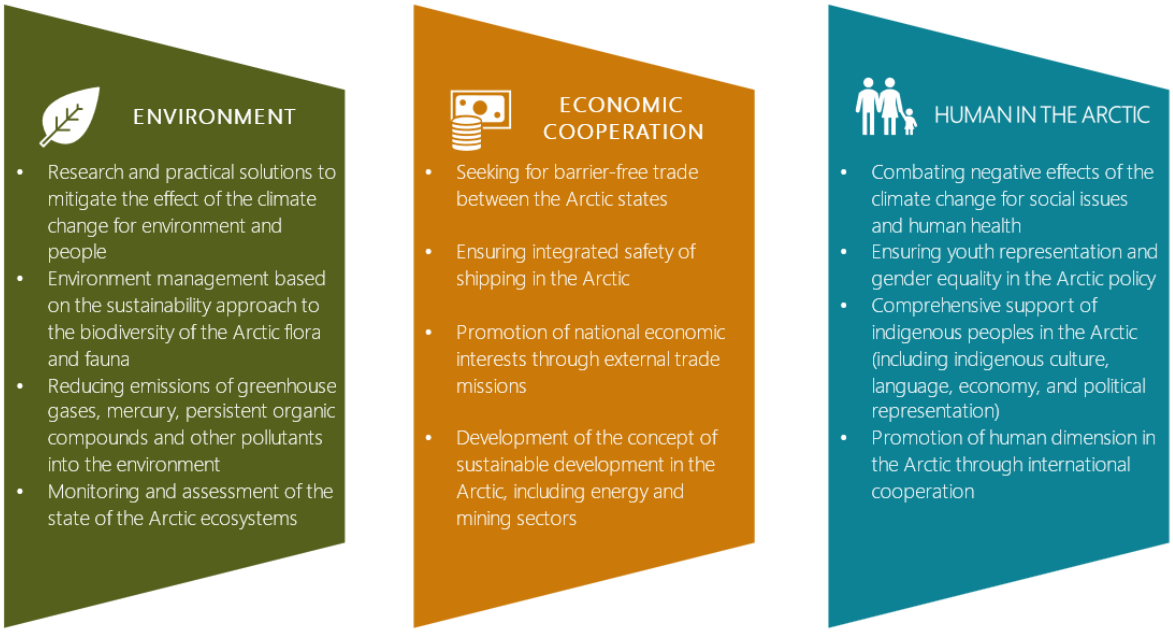

Fig. 1. The main directions of Sweden's activities in the Arctic (according to the Arctic strategy 2011) [11].

The foreign policy plans outlined in the strategy were mainly presented by the message that the Arctic should remain a friction-free area. To fulfill this goal, it was supposed to use the negotiating potential of the already established Arctic cooperation platforms: the Arctic Council and the Barents Cooperation. Plans were also announced for the implementation of the Arctic cooperation track within international structures of a broader thematic focus: the Nordic Council, the European Union, the United Nations, as well as through the interaction of the Saami parliaments of Norway, Finland and Sweden with the participation of observers from the Russian Saami.

The two-level system of cooperation in the Barents region was considered as a platform for the implementation of the priorities set out in the strategy in the field of the environment, economic relations and human life in the Arctic. Through activities within the Nordic Council, Sweden intended to support the projects of the Arctic Council and the Barents Cooperation via initiatives funded by the Nordic Council of Ministers aimed at the development of the Arctic territories. The strategy also emphasized the negotiating capacity of UN structures in the areas of Arctic territorial disputes, environmental protection, climate policy, health and indigenous peoples. In relation to the work of the Arctic Five, Sweden, on the contrary, proposed to stop using such a negotiation format, expanding the Arctic Eight agenda and legitimizing the position of Iceland, Finland and Sweden in this matter (by that time, the coastal countries of the Arctic had already held two ministerial meetings in 2008 and 2010, confirming their common position on territorial claims in the Arctic) [4, Koptelov V.V., p. 193].

Particular emphasis in the implementation of Sweden's international Arctic policy was placed on strengthening the political and institutional role of the Arctic Council, which was, on the

[11] Source: Author's development based on the Swedish Arctic Strategy 2011.

one hand, in line with the general trend of Arctic cooperation shared by most countries in the region, and, on the other hand, was very timely, given the Swedish chairmanship in 2011–2013. It is important to note that the Swedish strategy, while seeking to strengthen the potential for cooperation in the fields of economic activities and social issues, also proposed to consider expanding the mandate of the Arctic Council to include collective security issues [12], but in practice this proposal was not implemented.

The Swedish chairmanship program for 2011–2013 proposed three blocks: environment and climate, people in the Arctic, and the strengthening of the Arctic Council [13]. The thematic priorities within these blocks generally reflected the corresponding issues in the Swedish Arctic strategy. Thus, the thematic continuity of the agenda of the Swedish Arctic Council Chairmanship with the national Arctic strategy can be noted, with the proviso that economic cooperation is not identified as a separate block; however, this topic was disclosed through an emphasis on responsible environmental management, as well as an approach to shipping and mining in the Arctic, which meets the concept of sustainable development.

Several notable projects during the Swedish Chairmanship can be mentioned. The Working Group on the Arctic Monitoring and Assessment Program (AMAP) has released a report on the acidification of the Arctic Ocean. The Emergency Prevention, Preparedness and Response (EPPR) Working Group developed initiatives aimed at preventing oil spills. The Arctic Biodiversity Assessment project was carried out by the Working Group on the Conservation of Arctic Flora and Fauna (CAFF). The Working Group on the Protection of the Arctic Marine Environment (PAME) has released an overview of the state of ecosystems in the Arctic Ocean, and proposed developments on the use of an ecosystem approach in project management in the Arctic The Sustainable Development Working Group (SDWG) proposed corporate social responsibility and corporate sustainability projects, Arctic public health initiatives, and a program on adaptation of Arctic communities to changing environmental conditions. The Arctic Contaminants Action Program (ACAP) implemented a project to combat furan and dioxin emissions at Russian industrial enterprises, as well as to improve storage conditions for obsolete pesticides in the North of Russia (most of the projects of this working group were implemented in Russia) [14]. The negotiating potential of Arctic cooperation was realized in the form of 16 high-level meetings, among them the meeting of the Eight Arctic States Environment Ministers in February 2013 (with the participation of representatives of indig-

[12] Sweden's strategy for the Arctic region, p. 19. URL: https://www.government.se/4ab1ed/contentassets/85de9103bbbe4373b55eddd7f71608da/swedens-strategy-for-the-arctic-region (accessed 20 September 2021).
[13] Sweden's Chairmanship Programme for the Arctic Council 2011–2013. URL: http://hdl.handle.net/11374/1610 (accessed 20 September 2021).
[14] Senior Arctic Officials' Report to Ministers (Kiruna, Sweden, 15 May 2013). URL: http://hdl.handle.net/11374/848 (accessed 23 September 2021).

enous peoples), as well as the meeting with representatives of the Council Nordic Ministers, the Council of the Baltic Sea States and the Council of the Barents Euro-Arctic Region in March 2012

Thus, we can conclude that the Swedish chairmanship of the Arctic Council was able to implement the set thematic priorities and was successful. Not surprisingly, the points raised by Swedish Foreign Minister Carl Bildt at the Kiruna ministerial meeting were devoted to the problems of climate change and the global significance of their consequences, measures to develop economic ties in the Arctic and the institutional development of the Council [15]. The ministerial meeting also adopted a joint statement "Vision for the Arctic". This document proposed to the participants of the Arctic Council the implementation of such areas as the priority of peaceful cooperation in the region, environmental protection, improving the quality of life of the population of the Arctic (including indigenous peoples), sustainable economy and environmental management, scientific and educational cooperation, issues of integrated security in the Arctic, as well as strengthening the role of the Arctic Council as a leading forum for the Arctic dialogue [16]. Thus, Sweden was able to ensure that its national Arctic priorities were transferred into the international agenda of the Arctic dialogue already beyond the period of its chairmanship of the Arctic Council.

It is noted that, in general, the Sweden's Arctic policy after 2013 continued in a similar thematic tracks [5, Eklund N.]. Projects under the Arctic Council that were initiated after the Swedish chairmanship, and in which Sweden was or continues to be one of the executors, demonstrate the country's commitment to previously selected thematic priorities in the Arctic activities: environmental protection [17], sustainable development [18], social issues [19].

The Barents Euro-Arctic Council Chairmanship in 2017–2019 can be seen as a step in the progressive renewal of Sweden's Arctic policy agenda. An analysis of the chairmanship program shows that the Barents cooperation priorities proposed by Sweden for this period were a steady continuation of the thematic priorities of the national Arctic strategy, taking into account the regional dimension of the BEAR. In the proposed program, issues of environmental protection were closely intertwined with the climate agenda, aspects of economic cooperation were related to issues of integrated security and sustainability (including the need to develop sustainable tourism), and the social sphere covered the problems of healthcare, academic mobility , cultural coopera-

[15] Statements and speeches from the Kiruna Ministerial Meeting, 15 May 2013. URL: http://hdl.handle.net/11374/1569 (accessed 23 September 2021).
[16] Vision for the Arctic. URL: http://hdl.handle.net/11374/287 (accessed 23 September 2021).
[17] ACAP project "Demonstration of Rapid Environmental Assessment of Pesticide-Contaminated Sites". URL: https://arctic-council.org/projects/demonstration-of-rapid-environmental-assessment-of-pesticides-contaminated-sites/ (accessed 25 September 2021); PAME project "Synthesis Report on Ecosystem Status, Human Impact and Management Measures in the Central Arctic Ocean (CAO)". URL: https://www.pame.is/projects-new/ecosystem-approach-to-management/ea-activities/446-synthesis-report-on-ecosystem-status-human-impact-and-management-measures-in-the-central-arctic-ocean-cao (accessed 25 September 2021).
[18] SDWG project "Arctic Resilience Action Framework (ARAF)". URL: https://sdwg.org/what-we-do/projects/arctic-resilience-action-framework-araf/ (accessed 25 September 2021).
[19] SDWG project "Gender Equality in the Arctic". URL: https://arcticgenderequality.network/ (accessed 25 September 2021).

tion and youth involvement. It can also be noted that the Swedish chairmanship intended to make the Barents region more visible on the map of international Arctic partnerships through strengthening communication and streamlining structures within the Barents cooperation [20]. Having considered the results of the Swedish chairmanship in the BEAR, it can be summarized that the activities within the framework of the Barents cooperation during this period corresponded to the priorities outlined in the program. Separately, it can be noted that significant progress has been made in some areas: in particular, in 2019, comprehensive recommendations on the involvement of young people in the work of the Barents cooperation structures were issued; in 2019, a meeting of the ministers of transport of the BEAR countries approved the updated Joint Transport Plan for the Barents Region [21].

Thus, we can conclude that for almost ten years since the adoption of the first Arctic strategy, Sweden has consistently implemented the policy directions outlined in the document. Projects in the field of environmental protection, improving the quality of life in the Arctic, sustainable economic development during this period remained in the focus of attention and activity of Sweden, both during its chairmanship of the Arctic Council and the Council of the Barents Euro-Arctic Region, and in the intermediate stage. Sweden also strengthened the communication and organizational components of these structures during its presidency. Nevertheless, the changed situation in the Arctic region on several fronts made it necessary to adopt an updated national policy document on the Arctic.

An updated look at current challenges

The new Swedish Arctic strategy [22] was released in September 2020 by the Ministry for Foreign Affairs, emphasizing the focus of the document on the country's foreign policy activities in the Arctic region. As we noted, updating the Arctic conceptual documents has become a definite trend in 2019–2021; in particular, Arctic policy concepts were revised in Canada [23] and Germany [24] in 2019 and Russia approved a renewed Arctic public policy framework in early 2020, which would have an impact on the range of issues raised by the strategy and the tools for implementing Swedish Arctic policy.

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[20] Swedish Chairmanship of the Barents Euro-Arctic Council 2017–2019. URL: https://www.barentsinfo.fi/beac/docs/SwedishChairmanshipprogram2017-2019.pdf (accessed 26 September 2021).

[21] More detailed information on the results of the Swedish presidency is presented in the report: Summary of the priorities and achievements of the Swedish Chairmanship of the Barents Euro-Arctic Council 2017–2019. URL: https://www.barentsinfo.fi/beac/docs/Rapport_2017_2019.pdf (accessed 26 September 2021).

[22] Sweden's Strategy for the Arctic Region. URL: https://www.government.se/4ab869/contentassets/c197945c0be646a482733275d8b702cd/swedens-strategy-for-the-arctic-region-2020.pdf (accessed 30 September 2021).

[23] Canada's Arctic and Northern Policy Framework. URL: https://www.rcaanc-cirnac.gc.ca/eng/1560523306861/1560523330587 (accessed 30 September 2021).

[24] Germany's Arctic Policy Guidelines. URL: https://www.auswaertiges-amt.de/blob/2240002/eb0b681be9415118ca87bc8e215c0cf4/arktisleitlinien-data.pdf (accessed 30 September 2021).

Thus, the priorities of the new Swedish Arctic Strategy included **international cooperation** in the Arctic, **ensuring security and stability in the region, climate policy and environmental protection, Arctic research** (with emphasis on ecosystem monitoring), **sustainable economic development and improving the quality of life of the Arctic population**. The areas of the renewed Arctic policy in Sweden are shown in more detail in the figure 2.

Fig. 2. Priorities of the Arctic policy of Sweden (according to the Arctic strategy 2020) [25].

Despite the seeming balance between domestic and foreign policy objectives within the strategy, it should be noted that despite the double increase of the number of priority topics in the new Swedish Arctic strategy document, the substantive focus of these priorities is roughly the same as in the previous strategy. Thus, Arctic cooperation and security issues in the region (pre-

[25] Source: author's development based on the Swedish Arctic Strategy 2020.

sented in the 2011 Strategy in a separate section of the document) were transformed and included as separate priorities in the 2020 Strategy. In addition, the need for research on a wide range of Arctic issues, including environmental, economic and social concerns, was already highlighted in the 2011 strategy under the respective priorities; however, this priority deserved separate attention in relation to the need to implement the Agreement on Strengthening Arctic International Scientific Cooperation [26], signed under the auspices of the Arctic Council.

However, it cannot be concluded that Sweden's new Arctic strategy duplicates its previous version. The arguments for each selected priority are supported by updated data on the state of problems in this area. In addition, the updated political document reveals a more comprehensive overview of the potential for international (both multilateral and bilateral) cooperation and security policy. Let us consider the factors that have contributed to the focus on these areas.

Security and cooperation in the Arctic. New roles for partnerships and partners

The focus on security issues traditionally prescribed by the Swedish government (including in the Arctic region) is not a research stereotype. As early as the 2011 strategy pointed out, security in the Arctic was already an issue in Sweden during the Cold War and the overarching goal of the country's Arctic policy was to achieve a state of security in the region through the implementation of identified economic, environmental and social priorities [27]. The updated Arctic strategy also retains the general principle of implementing the country's activities through the prism of ensuring security in the Arctic. However, this policy document takes a more varied view of security issues, complementing the concept of "hard" threats with responses to human security challenges (implementation of human capital and securing its component) [28].

The reason why Sweden has focused so much attention on security issues in the Arctic region is the set of circumstances that became more relevant in the 2010s. Climate change in the Arctic not only affects the degradation of local ecosystems, but also triggers natural disasters, rising sea levels, and other global impacts [6, Palosaari T., Tynkkynen N., p. 91]; these circumstances cause risks for the life of northern communities. In addition, climate change in the Arctic opens up additional opportunities for the economic exploitation of the region: minerals, animal and plant resources of the Arctic become more accessible for extraction, the navigation period of Arctic shipping increases [7, Crépin A.-S., Karcher M., Gascard J.-C.]. It is important to note that due to easier access to hydrocarbon deposits in the North, the situation in the global energy market may

[26] Agreement on Enhancing International Arctic Scientific Cooperation. URL: http://hdl.handle.net/11374/1916 (accessed 02 October 2021).
[27] Sweden's strategy for the Arctic region, p. 14–15, 23. URL: https://www.government.se/4ab1ed/contentassets/85de9103bbbe4373b55eddd7f71608da/swedens-strategy-for-the-arctic-region (accessed 02 October 2021).
[28] Khorrami N. Sweden's New Arctic Strategy: Change and Continuity in the Face of Rising Global Uncertainty. URL: https://www.thearcticinstitute.org/sweden-new-arctic-strategy-change-continuity-face-rising-global-uncertainty (accessed 02 October 2021).

change significantly, but the risks of environmental problems grow due to potential oil spills, increased shipping volumes and other related reasons.

The growth of the economic attractiveness of the Arctic resources also causes an increase in the interest of non-Arctic countries and transnational corporations in the region. Notably, the Swedish Chairmanship of the Arctic Council at the Kiruna ministerial meeting resulted in the granting of observer status to five Asian countries, as well as Italy (seven countries were granted observer status during the 2010s). Thus, the geopolitical situation in the Arctic is gradually changing as a result of the inclusion of new legitimate actors in Arctic politics.

The consistent expansion of the military presence of Russia and NATO forces in the region in recent years [8, Sergunin A.] determines the presence of statements about the country's aspirations for military cooperation in the Arctic through NORDEFCO (which is natural due to the importance of the Nordic Council for Sweden) and NATO (which is a necessity, given the membership of a number of Arctic countries in the alliance) [9, Voronov, K.V., p. 36–37]. Taking into account the country's traditional policy of neutrality, the explicit emphasis on military cooperation in the Arctic in the strategic document is a novelty in the Swedish Arctic policy. It can be noted that the events outside the Arctic region, including the Crimean crisis and the chronic conflicts between Sweden and Russia related to crossing the state border in the Baltic region, also contributed to the strengthening of military rhetoric in the text of the updated strategy. It should also be emphasized that Sweden's political issues on Arctic security may have been influenced by the Arctic strategies of the armed forces in the US and France [29].

Thus, given the range of security challenges presented in the Arctic region, it is clear that the main tool Sweden relies on in Arctic policy is the consolidation of its position with other friendly countries. It goes without saying that in multilateral cooperation formats, this direction will mainly be reflected in the coordination of Sweden's Arctic policy with other members of the Nordic Council. In bilateral relations, the United States plays a key role in ensuring security in the Arctic for Sweden. This approach was outlined in the 2011 strategy and continues in the 2020 update.

The role of the European Union in Sweden's Arctic policy has also evolved. Thus, in addition to the previously declared desire of Sweden to implement the provisions of the common foreign and security policy of the EU in the Arctic region, a new thesis about the European Union as one of Sweden's strategic partners in the national Arctic policy has appeared. In addition, the Swedish government intends to support the EU's plans to join the Arctic Council as an observer. Given these circumstances and the recent exit of the UK (a country with its own Arctic policy) from the European Union, it seems that the EU will try to strengthen the implementation of its Arctic policy through Sweden. At the same time, a separate question arises: can the economy of Northern

[29] In 2019, the US Department of Defense released a new Arctic strategy. In 2020, the US Air Force Arctic Strategy was released. A similar document is being developed by the US Navy. In 2019, the French Ministry of Defense adopted the Arctic strategy.

Sweden, which depends, among other things, on the forestry and mining industries, fully fit into the new EU carbon neutrality policy?

Sweden's updated Arctic strategy makes Canada and Germany strategic partners in its Arctic policy. With Canada, Sweden expects to strengthen cooperation within the framework of the Arctic Council. Germany is attractive to Sweden as a strategic partner, since both countries share a commitment to the rule of law in world politics, have similar defense policy positions and advocate for the implementation of the sustainable development agenda.

Speaking about the role of partnerships in Swedish Arctic policy, one cannot but touch upon the issue of the updated status of the Arctic Council in connection with the adoption of the Strategic Plan of the Arctic Council for 2021–2030 at the ministerial session in Reykjavik in May 2021 [30]. The introduction of the first of its kind long-term guidance for action for this international structure is crucial because, in expanding on the ministerial declarations (which evaluated the progress of the Arctic Council during the past two years and endorsed the working groups' plans for the coming years), the plan sets the direction for substantive cooperation among council participants over a ten-year period.

The Strategic Plan proposes the implementation of a series of measures to achieve seven strategic goals in the Arctic, covering the areas of climate change, the state of ecosystems and biodiversity, sustainable social and economic development, knowledge sharing and strengthening the Arctic Council. It is reasonable to assume that the practical implication of the adoption of such a strategic document under the auspices of the Arctic Council is that legitimate activities in the Arctic (of both Arctic and non-Arctic actors) will henceforth be considered those that take into account the provisions of this strategic plan. In this context, the current priorities of Sweden's Arctic policy (whether climate and sustainable development or Arctic research issues) are reflected in every goal set in the strategic plan of the Arctic Council. In particular, it can be noted that in its national Arctic strategy, Sweden also emphasized the need to strengthen the role and influence of the Arctic Council, thereby creating prerequisites for strengthening the institutional component of the security system in the Arctic.

Conclusion

The strategic documents and the implementation of Sweden's policy in the Arctic have created a certain image of a country which, on the one hand, is a participant in various formats of Arctic cooperation, and, on the other hand, is strongly committed to ensuring national security in the Arctic region. While these political vectors are not opposing, the Swedish government is regularly faced with the dilemma of Arctic cooperation: how can one consistently implement measures to improve the state of the international Arctic region and at the same time fully cooperate with

[30] Arctic Council Strategic Plan 2021-2030. URL: https://oaarchive.arctic-council.org/handle/11374/2601 (accessed 21 November 2021).

(potential) rivals among other Arctic countries (for example, Russia) or other countries present in the Arctic (e.g. China)?

Since the adoption of the new Arctic strategy, which confirmed the previously selected priorities of the national Arctic policy, Sweden continued to implement its activities in the Arctic in the same way. Thus, through the Arctic Council, Sweden continues to participate in the implementation of projects that correspond to the priorities of the new Arctic strategy [31]. Furthermore, the Swedish region of Västerbotten, despite the Covid-19 pandemic, successfully implemented the Barents Regional Council chairmanship program in 2019–2021 in close cooperation with Norway (as chair of the Barents Euro-Arctic Council); at a council meeting in October 2021 in Tromsø, the governor of Västerbotten, H.H. Knutsson very kindly handed over the chairmanship to the Governor of the Nenets Autonomous Okrug Yu.V. Bezdudniy.

Thus, we can state that, despite the periodic changes of power in the national government, the strategic priorities and implementation of the Arctic policy of Sweden have been maintained and have been able to adapt to the external conditions changes during the 2010s. At the current stage of the global Arctic dialogue, we can characterize Sweden as a moderate Arctic conservative, true to its basic principles, but ready to adjust the chosen settings due to the general change in the Arctic system. An example of such an adjustment is the strengthening of the role of the European Union in the country's Arctic policy. For example, Sweden earlier contributed to the formation of the EU Arctic agenda and generally supported the Arctic vector of EU policy [10, Biedermann R., p. 179], but was not an agent of its direct implementation. Today, Sweden considers itself as a more active representer of the EU's Arctic priorities.

The 2011 Arctic Strategy highlighted the similarities between Sweden's and Finland's positions on many Arctic policy issues. However, it is worth mentioning that during the 2010s, Finland's Arctic activities have transformed towards leadership in certain areas related to the economy and innovation in the Arctic. In the new strategy, Sweden is setting similar goals, aiming to become a leader in smart investments and innovative mining solutions in the Arctic [32].

It is also necessary to note a certain thematic harmony between the priorities of the Arctic strategy of Sweden and the goals of the Strategic Plan of the Arctic Council for 2021–2030, showing the potential for Swedish commitment to the Arctic Council as a key element in the region's security.

It is noteworthy that for all Sweden's concern about security issues, for some reason, the current Arctic strategy does not pay attention to such an important tool of "soft power" in foreign policy as the formation of a regional identity. Moreover, this direction is one of the strategic prior-

[31] Arctic Council projects. URL: https://arctic-council.org/fr/projects/ (accessed 07 October 2021).
[32] Khorrami N. Sweden's New Arctic Strategy: Change and Continuity in the Face of Rising Global Uncertainty. URL: https://www.thearcticinstitute.org/sweden-new-arctic-strategy-change-continuity-face-rising-global-uncertainty accessed 08 October 2021).

ities of the Council of the Baltic Sea States [33] and can be traced within the framework of the Barents cooperation [11, Cambou D., Heninen L., p. 20–22]. In addition, Sweden de facto uses some of the "soft power" tools in its foreign policy towards other Arctic countries. These include the Swedish Institute (geographically focused on the European countries of the post-Soviet states and Poland), which supports projects in the areas of civil society, innovation, security, regional development, energy, environmental protection, healthcare and the social sphere [34]. There is also the Swedish-Karelian Information Business Center, which organizes regional cooperation projects between Västerbotten and the Republic of Karelia and actively cooperates with the Nordic Council of Ministers (in recent years, it has also been implementing projects in the field of cultural exchange, social issues, sustainable development, natural resource and waste management, promotes non-profit organizations working in the fields of culture, education and information [35]).

There are also some questions over the implementation of Sweden's Arctic policy from 2020. The ministerial meeting of the Council of the Barents Euro-Arctic Region, held on 26 October 2021 in Tromsø, brought together all the foreign ministers of the key countries of the BEAR, except for Ann Linde, who was participating in a NATO seminar in Stockholm that day and sent her deputy [36]. This choice of the Swedish Ministry of Foreign Affairs, however, also fits into the Swedish concept of ensuring security in the Arctic through various formats of cooperation.

It also should be noted that the ambitious and obvious task for the Swedish Arctic policy to propose a collective instrument for negotiations on military presence and security in the Arctic was not a priority in the new national Arctic strategy. This range of issues (important for the geopolitical situation in the Arctic) was not included in the plan of the Arctic Council for the next decade. Therefore, at the present stage, Sweden will probably not change its standpoint in the disposition of the Arctic countries, consistently adhering to the previously selected priorities.

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[35] Activity reports // Swedish (Västerbotten) Karelian Business and Information Centre. URL: https://skbic.ru/en/reports/ (accessed 09 October 2021).
[36] Big blow for Barents Council as Swedish FM skips meeting with Lavrov in Tromsø to host NATO seminar. URL: https://thebarentsobserver.com/en/life-and-public/2021/10/lavrov-barents-cooperation-demonstrates-persistent-immunity-changing (accessed 24 October 2021).

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Main Theoretical Approaches in the Arctic Policy Studies *

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Abstract. The article identifies and analyzes the main theoretical approaches used in the studies of international relations and politics in the Arctic. Contemporary studies of the Arctic use elements of several main approaches in the field of international relations: realism, liberalism, social constructivism and global governance, as well as some others. The theoretical alternative between realism and liberalism manifests itself primary in the issues of Arctic security. Liberalism and the concept of global governance play an important role in explaining the multilevel and multi-actor nature of political processes and governance in the region. Social constructivism contributes to the understanding and functioning of Arctic political narratives. However, in most cases, they exist in the form of implicit assumptions rather than as systematically developed and substantiated models. The theoretical differences are mainly related to the definition of units and levels of analysis, particularly the role of states and other types of actors, and the nature of the relationship between them. Despite the fact that realistic approaches considering Arctic politics as inevitable competition of states in the logic of "zero-sum games" remain quite common, the general tendency is to search for more complex theoretical models that recognize the diversity of actors involved in Arctic processes, as well as the possibility of cooperative relations.
Keywords: *Arctic, international relations, world politics, theory, realism, liberalism, social constructivism, global governance, regime complex, new regionalism, paradiplomacy*

Introduction

In the scientific study of international relations, international political processes and management systems, the role of theory is characterized by two specific features that distinguish it from other social disciplines. Firstly, the actual political analysis used in the study of specific issues, such as state policy, inter-state relations, or international institutions, rarely relies on a well-defined set of concepts and propositions that establish key relationships between the phenomena under study, is ad hoc in nature, and claims to generalize conclusions. Although theory is an indispensable element of scientific discourse, its factual usefulness in political analysis is insignificant, and theoretical provisions (which are hypotheses in the epistemological sense) are often accepted as implicit suppositions, without reflection and critical analysis.

Secondly, as F. Chernoff notes, the prescriptive component is extremely important in the theory of international relations: although some theories seek to describe only the interrelations of phenomena, theoretical analysis often goes beyond a strict description and explicitly or implicit-

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ly formulates certain political goals and normative criteria used to evaluate a certain actual or hypothetical course of action [1, p. 3–4]. The latter leads to the fact that political theory acts as a discursive justification of a certain political model and as a basis for a political narrative that legitimizes a certain course of action.

Let us consider, for example, a simple theoretical statement, corresponding to the position of the realist paradigm: "The only type of actors whose actions matter for international politics and international relations are states". Taking this statement as an implicit assumption focuses political analysis exclusively on the actions and decisions taken by the highest levels of state power, without even allowing the question of the possible role of non-state actors. If such political analysis is faced with the need to explain the behavior of non-state actors (for example, NPOs), they will be interpreted either as insignificant or as instrumental, that is, as tools of state actors' decisions. If this theoretical premise becomes the basis for policy-making, the consequence is that any meaningful processes in international relations have to be interpreted as resulting from the decisions of state actors. Any actions of non-state actors are construed as being inspired by the governments of other countries, and the actors themselves are deprived of subjectivity, including in a practical political sense.

Such uncritical acceptance of theoretical propositions and the failure to distinguish between descriptive and prescriptive elements of theory have important negative consequences for both the scientific study of political processes and political practice. In a practical sense, this incorrectly evaluates information, makes erroneous decisions, and narrows the range of available behavioral strategies. In analytical terms, the focus of attention is distorted and the risk of misinterpretation of the observed phenomena increases. For example, the systematic efforts of China to influence the regional policy in the United States [2, de La Bruyère D., Pikarsic N.] in case of uncritical acceptance of the postulate of the state as the only actor in the world political arena should be recognized as meaningless and not having rational justification.

These problems of the theory of international relations are also typical for the study of the Arctic. The authors of publications citing the results of empirical research and political analysis do not always rely on clearly formulated theoretical positions and analytical models, and the descriptive characteristics of the subject under study (for example, the Arctic strategy of a particular state) are explicitly or implicitly based on the adoption of certain political goals, in according to which the situation and decisions are evaluated. At the same time, explicitly formulated theoretical provisions play an important role both in scientific research and in formulation of practical recommendations. Theory performs several important functions: defines the focus of research and the specific subjects to be studied and analyzed; establishes the content and relationships between key variables used for explanation and prediction; allows to evaluate alternative mechanisms for achieving political goals (without a priori determination of these goals).

The purpose of this article is to identify and analyze the key theoretical models and approaches that are de facto used in modern research on Arctic international politics and governance.

Realism and liberalism in Arctic security studies

The two main issues concerning which alternative theoretical perspectives have emerged in Arctic studies relate to the definition of the role of state actors and the predominant nature of the relationship between them. Traditionally, realism and liberalism are considered as the two main paradigms in the theory of international relations [1, Chernoff F.]. The paradigm of realism, in a greatly simplified form, assumes that the main actors in international relations are states that struggle for domination with other states. The objective interests and motivation of states remain unchanged and are associated with ensuring and strengthening their own security and position in the world hierarchy. The liberal paradigm, recognizing states as important actors, asserts that absolute advantages derived from actions in the international arena are more important than relative ones, hence the preference for states to behave in a predominantly cooperative manner which can ensure mutually beneficial development in the logic of "nonzero-sum games". However, since the general logic of political liberalism requires a limited role for state intervention, this theory also allows for a possible role for other types of actors — non-state actors — and limits the violent consequences of anarchy in international affairs through the development of international institutions and regulatory regimes.

Although these paradigms, as well as their contemporary versions — neorealism and neoliberalism — include many specific theories that are not restricted to the above theses or even represent a broader view, for example, of the state interests or the role of non-state actors. Such a simplified understanding is nevertheless useful to identify common motives and alternatives found in Arctic security research. In Arctic studies, the difference between the realist and liberal traditions is most pronounced in the area of security. In a narrow sense, security in international relations can be understood as the absence of military conflicts threatening the state borders. This interpretation is more consistent with the logic of the realism paradigm. Later, a purely military understanding of security was extended to include the ability of states to pursue their interests in the international arena not only by military, but also by diplomatic means. However, as S. Tarry points out, over time, this understanding of security became perceived by many researchers as insufficient, and was expanded by two assumptions reflecting the logic of the liberalism paradigm [3]. The first one was to expand the types of threats and sectors to which the concept of security was applied at the expense of economic, environmental and social problems that threaten the state, especially in Third World countries. The second assumption challenges the idea of the state as the only or main object of security studies and includes individuals, the entire human civilization and the environment.

The theoretical alternatives given by the "traditionalist" and "non-traditionalist" interpretations of security, as shown by B. Padrtova, proved to be fully applicable to the Arctic [4]. According to the logic of the traditionalist approach, security in the Arctic should be considered, first of all, as a reflection of the military-political confrontation between states. Moreover, it follows from the general logic of the realistic paradigm that the states with the greatest resources and capabilities have the biggest influence on the entire system of international relations in the region. Russia and the USA are claiming to be such states in the region, and therefore the Arctic system of international relations should be analyzed through the prism of geopolitical confrontation between the two "great powers" [5, Hough P; 6, Huebert R., 7; Goltsov A.G.; 8, Konevskikh O.V.]. Undoubtedly, attributing a broader theoretical position to authors who study security issues only on this basis is not entirely justified. However, in the absence of a more general theoretical framework, such a traditionalist view provides a well-defined logic of political analysis, which focuses on the militarization of the Arctic and the role of the geopolitical confrontation between Russia and the United States, and this logic is reflected in the public narrative of the "New Cold War" in the region. An interesting implication of the traditionalist approach, illustrating the practical, normative dimension of international relations theorizing, is the justification for China's role in the Arctic, which follows directly from the recognition of its status as a "great power" [9, Li X., Peng B; 10, Kopra S.; 11, Pincus R.]. We should also note that in the logic of traditionalist political theory, international systems are built precisely around the interests and strategies of specific nation-states, rather than blocs or alliances. Therefore, the role of NATO or the EU in this theoretical model should be seen as secondary and derived from the interests of the most influential state actors.

One of the main problems of the traditionalist approach is the fact that, despite the widespread public narrative of "geopolitical confrontation" in the Arctic, the region is de facto characterized by an extremely low level of conflict and a predominantly pragmatic and cooperative nature of international relations. It is worth noting that the Heidelberg Institute for International Conflict Research, which regularly monitors conflicts in the world, included only one purely regional conflict (between Russia and Norway) in its latest barometer and gave it a score of only 2 out of 5, while 53 conflicts were recorded in Europe alone in 2020 [1]. While traditionalist interpretations of security issues in the Arctic are as relevant as ever, they are not on the whole dominant and are giving way to broader theoretical approaches. Most authors recognize the exclusive significance of economic interests in the analysis of international relations in the region, as well as the environmental and climate agenda and social development of the population of the region, which corresponds to the logic of the "expanding" version of non-traditionalist approaches to security [12, Konyshev V., Sergunin A.; 13, Weber J.; 14, Heininen L.; Exner-Pirot H.; Barnes J.; 15, Gjørv

[1] Conflict Barometer 2020. Heidelberg: HIIK, 2021. URL: https://hiik.de/wp-content/uploads/2021/05/ConflictBarometer_2020_2.pdf. Pp. 59-60 (accessed 20 October 2021).

G.H., Lanteigne M., Sam-Aggrey H.]. However, there are significant differences on the issue of key actors.

Despite the acknowledgement of the multidimensional nature of security, a number of studies advocate the unconditional priority of not just state actors, but precisely the "great powers", which, due to their position and resources, are responsible not only for the political and military stability, but also for other aspects of security important for the international system, including addressing environmental and climatic problems and ensuring sustainable development in the Arctic [10, Kopra S.; 11, Pincus R.]. An alternative view is based on the concept of "middle powers", which states that the leading role in maintaining international order, peace and cooperative relations is played by countries that are sufficiently developed economically and institutionally, have a high reputation, but do not have exceptional economic and military power and geopolitical ambitions [16, Behringer R.M.; 17, Carr A.]. According to this concept, the middle powers are most interested in maintaining an international order based on rules, as well as diplomatic ways to resolve contradictions between states and find a basis for cooperation.

Applying this theory to the Arctic region seems quite natural. With the exception of Russia and the United States, all other Arctic countries can claim the status of "middle powers", and Canada is considered to be a textbook example of one. Academic publications tend to use the concept of middle power when describing the foreign policies of individual countries: both Arctic and non-regional [18, Dolata-Kreutzkamp P.; 19, Kim E., Stenport A.; 20, Østhagen A.; 21, Rosamond A.B.], as well as in the analysis of the formation of alliances, which are considered the strength of such countries [22, Watson I.].

One of the most interesting theoretical constructs developed within a non-traditionalist approach to security and applicable to the analysis of the Arctic has become the theory of regional security complexes (RSC). This theory, based on the general assumption that any country views its security primarily in terms of its relations with its neighbours, justifies the exclusive role of small and medium-sized states in formation of a regionally-centric view of security problems [23, Buzan B., Waever O.]. Moreover, considering states as the main actor, it proceeds from the interpretation of security, based on the social constructivist paradigm: the latter reflects what the states themselves attribute to their threats and security areas, and in the regional aspect, especially for medium and small states, such problems are not limited to military security, but include economic, social and environmental aspects. As the analysis of B. Padrtova showed, the application of the RSC theory to the Arctic has its own specifics [4, p. 32–34]. Unlike the standard RSC model, the borders of the region cannot be defined as the borders of the Arctic states, and the leading Arctic countries, especially Russia and the United States, can refer to different regional complexes. At the same time, the Arctic is characterized by an anarchic regime of governance, multipolarity and the predominance of pragmatic and cooperative relations, accompanied by an increase in tension in certain areas. Far from being an explanatory model, the RSC theory sets the key directions for the

analysis of regional international relations. Its main theoretical limitations are related to the problem of defining the Arctic borders, underestimating the strategic importance of relations and threats posed by geographically distant countries, as well as the limited nature of the "state-centric" view of security.

The second direction in modern non-traditionalist approaches to security partly solves these problems, abandoning the primacy of the state as the only type of actors that deserves attention as an object of analysis. This direction is largely a logical development of the "expansive" theory of international security. Military security is the exclusive responsibility of states, and the focus on military security naturally makes them the main reference object of the theory. However, a shift in attention to economic, environmental and social aspects provides opportunities for a more active role of other types of actors [14, Heininen L. et al.]. After the end of the Cold War, the military importance of the Arctic began to decline, albeit unevenly and with some reverse trends, and the main areas of cooperation and cooperation were environmental issues, scientific and monitoring activities, and, to a lesser extent, economic cooperation and social development. Such a profile of cooperation contributes both to the de facto activation of non-state actors (international organizations, indigenous associations, companies, scientific institutions, regional and global NGOs, etc.), and to the greater willingness to include them in political analysis as a legitimate and important category of actors with their own security interests and resources.

Non-state actors in the Arctic: paradiplomacy, new regionalism, global governance

The tendency of liberalism to recognize the role of non-state actors in Arctic research has been reinforced by a shift of attention away from security issues (even broadly understood) to a wider range of issues of international interaction and governance in the Arctic region. One striking example of this shift away from the primacy of state actors is the active use of the concept of paradiplomacy in Arctic studies. The theory of paradiplomacy claims that the subnational level of government and subnational actors (including non-state actors) play a relatively independent role in the formation of international relations and can influence them through horizontal interregional interaction [24, Kuznetsov A.S.]. As an example of the application of the concept of paradiplomacy, M. Ackren compares paradiplomacy in the Arctic with the traditional channels of diplomatic relations [25, Ackren M.]. Considering it as a response to globalization processes, the author identified three levels of governance, where regional Arctic actors participate in paradiplomatic relations:

- economic cooperation aimed at attracting foreign investment and developing export markets (first of all, these efforts relate to fishing and the mining industry);
- cooperation in non-economic areas: environmental protection, cultural contacts, formation of a common Arctic identity;

- interaction in the legal field in order to participate in international agreements and organizations.

However, the ratio of diplomacy and paradiplomacy in the activities of different countries varies significantly. A selective analysis by M. Ackren has shown that in some cases, regions (for example, the Faroe Islands, Greenland, Nunavut) received significant autonomy (including participation in international activities) and actively use it: they participate in international organizations, conclude agreements, establish foreign representations. However, in other cases, the regions, participating in paradiplomatic activity, are de facto an instrument of state policy and interstate relations, as in the case of Russian—Norwegian cooperation in Svalbard. This allows us to argue that the theory of para-diplomacy in relation to Arctic cooperation cannot be considered as a completely independent type of political processes and should take into account both the nature of interstate relations at the highest level and the nature of the "center-regions" relations within each state.

Another theoretical interpretation of the role of subnational actors in Arctic politics is based on the concept of new regionalism. This approach introduces the concept of the degree of regionalization, that is, the degree to which a certain geographical area can be considered as a political region. Some variations distinguish up to five different levels (regional space, regional complex, regional society, regional community, regional state), reflecting the growth of integration and interdependence of states. According to S. Knecht, the Arctic, being in many ways a unique region, is characterized by a gradual movement from simple cooperation to full-fledged integration, in which the evolution of the Arctic Council plays a key role [2].

A more complex version of the theoretical description of the role of non-state actors is presented in the approach of A. Sergunin, which is based on a combination of "new regionalism" and the concept of "global region" [26, Sergunin A.]. New regionalism proposes a rejection of the state-centric analysis of regional processes in favor of a multi-level and polycentric one, exploring the triple relationship between states, civil society institutions and private companies as the basis of international relations. The actions of subnational Arctic actors are considered precisely through the prism of this more complex system of relations, and not just within the framework of the "center-regions" relationship and inter-regional horizontal interaction. The Arctic, in turn, is considered as a "global region" — a region, for which the factor of territorial proximity and connectivity is not unconditionally decisive. The idea of global regionality suggests that the formation of the international regime in the region is under a significant influence, including supranational and extraterritorial relations, in which both state and non-state actors play their role.

[2] Knecht S. Arctic regionalism in theory and practice: from cooperation to integration? // Arctic Yearbook. 2013. URL: https://arcticyearbook.com/images/yearbook/2013/Scholarly_Papers/8.KNECHT.pdf. 20 p. (accessed 27 November 2021).

The greatest potential for the inclusion of non-state actors in the theory of international relations is currently represented by the concept of global governance. Theories of global governance combine descriptive and normative elements and reflect the idea of "governance without managers" in international relations, based not on a hierarchy of subordination, but on complex multi-level systems of agreements, formal and informal mechanisms for coordinating and reconciling interests between actors of different types [27, Rosenau J.N.; 28, Zürn M.A.]. Accepting the thesis of liberalism on the negative consequences of the excessive presence of the state, which is the main source of threats in international relations, the theory of global governance argues that the solution of many modern problems is transboundary in nature, while resources and capacities relevant for their solution are located not only in the state, but also in other actors. Depending on the scope of analysis and theoretical perspectives, particular attention may be given to global NGOs, transnational corporations, regional and municipal authorities, local civil initiatives, international organizations, etc. These resources and capabilities may include collective willingness to act, competencies, social and symbolic capital, and, less frequently, financial and organizational capabilities. Of particular relevance to global governance issues are the processes of cross-border and cross-level transfer of knowledge relating to a specific problem.

Considering the lack of a unified international legal regime in the Arctic and the predominantly coordinated nature of the main institutions, such as the Arctic Council, the application of global governance theory to the analysis of politico-governance processes in the region looks promising. However, it is rarely used systematically and explicitly as a tool for analysis and explanation. One of the few examples of the opposite is the work of R. Bertelsen, who analyzes the positive role of transnational scientific relations and exchanges in compensating for new lines of tension in the region [29, Bertelsen R.G.]. A look at these conflict relations from the perspective of global governance reveals an alternative system of processes and institutions based on an intensive exchange of scientific and expert knowledge in different fields and the cooperation between the academic sector, business, civil society and governmental structures based on it. Since scientific knowledge is of particular importance in the complex Arctic region, the results of such multi-level and intersectoral cooperation influence decision-making, the system of international relations in the Arctic has certain features of global governance. A number of researchers point to the features of the Arctic Council (consensual nature of decision-making, multi-level interaction, active participation of non-state actors) as corresponding to the general principles of global governance [30, Wehrmann D.; 31, Chater A.]. In some cases, this concept is used in a more specific way, in particular, to justify China's more active involvement in the Arctic management [9, Li X., Peng B., p. 204–206; 32, Jiang Y.].

Finally, the concept of the regime complex used by O. Young for the Arctic region is close to the logic of global governance [33, Young O.R.; 34, Young O.R.]. It is based on the idea of the "integration/fragmentation" continuum as the main variable that characterizes the international re-

gime or approaches to solving international problems. At one pole of this continuum is the creation of well-integrated hierarchical systems with a developed bureaucratic organization and a formal legal basis. In the Arctic, the basis of such a regime could be the creation of a comprehensive treaty. At the opposite side of the continuum is a fragmented set of largely unrelated initiatives, programs, agreements developed independently and aimed at solving individual issues (for example, the regulation of fisheries in a certain area, pollution monitoring, cultural cooperation etc.). According to O. Young, both alternatives are unsuitable for characterizing the Arctic, and the regional management system should be defined as a regime complex. Such complex is a set of several regimes (elements) related to a particular problem or region, which are connected to each other in a non-hierarchical way, and which interact with each other, exerting mutual influence [33, p. 394]. The applicability of the idea of a regime complex in Arctic is due to the fact that the region has historically developed a set of distinct elements, which ensured international cooperation in resolving specific issues and proved their usefulness. Some of these elements are quite general (UNCLOS, Polar Code, Arctic Council), others are more focused on issues in the areas of shipping, tourism, oil and gas, fisheries, rescue operations, protection of ecosystems and the rights of indigenous peoples, scientific cooperation, arms control. Although the Arctic Council has limited capacity for direct management and binding decisions, it serves as an important platform for coordination and exchange between the individual programs and mechanisms.

While the concept of a regime complex is not identical to the idea of global governance (as it refers primarily to regulatory mechanisms), they can be considered as part of a general theoretical model that represents international processes as a kind of network of institutions and mechanisms that bring different types of actors together to solve common problems without overarching binding rule systems and hierarchical structures. Nevertheless, the potential of such a theoretical approach to the description and analysis of the Arctic policy remains largely unrealized, and many of its proponents use it more as a normative rather than an analytical model or explanatory theory.

Social constructivism and other approaches

The theoretical alternatives described above are most often found in recent political studies of the Arctic, although often in an unsystematized and implicit form, reflecting the logic of the most general approaches in international relations. However, a number of works also use other theoretical models, in particular, social constructivism. In the field of public policy and international relations, constructivism differs from both realism and liberalism as it does not recognize the “objective” interests and identity of the state and claims that they are the object of “negotiations” of various interested parties, subject to conjunctural influences and social factors, not reducible to materialist (economic, military) factors and reflecting the sphere of public, shared perceptions and norms. In Arctic studies, the constructivist paradigm manifests itself to the greatest extent in the analysis of the political identity of various groups and actors (states, international

organizations, Arctic regions, indigenous peoples, etc.), as well as political narratives that various actors use to form — formation and promotion of a specific world view and justification of certain decisions.

One of the most interesting and striking examples of a "conflict of interpretations" is the difference between the political discourse of securitization and militarization, which plays a key role in the political narratives of public policy (especially in Russia and the United States), and the discourse of local communities, where ideas of problem-oriented cooperation across borders to protect their socioeconomic interests, habitat protection and self-government play a key role [35, Shadian J.M.]. Another example of a constructivist approach is the use of frame theory by R. Pinkus and S. Ali to analyze the formation of Arctic discourse and its impact on Arctic diplomacy [36, Pinkus R., Ali S.H.]. Analysis of the content of media devoted to Arctic affairs in the English-language political sphere allowed R. Pinkus and S. Ali to trace how current topics and trends are interpreted in terms of conflict, setting the appropriate public perception of various aspects of Arctic policy, whether it is the development of the region ("battle for the Arctic"), international relations ("Cold War") or oil production (conflict between oil companies and environmentalists).

Narratives describing the Arctic as the province of Arctic states or, conversely, as a "common heritage of mankind", emphasizing its exceptionalism or inclusion in a more general context of world politics, framing it as a privileged area of competition or cooperation and as the sphere of responsibility of great or middle powers or international organizations, are per se part of international relations [37, Auerswald D.P.]. Whereas the more traditional theoretical models have to look at such narratives purely from an instrumental point of view — as part of the explicit strategies of states carrying out a legitimating function — constructivism starts from a more complex system of factors determining their content and dynamics. Since narratives, as well as group identity, belong to the symbolic sphere, any actors and systems of social relations that influence their content and distribution can also influence political processes. For example, the spread of the "green" agenda in a democratic society forms a public demand, to which the government cannot fail to respond in determining the priorities of the Arctic policy and position in interstate negotiations. Similarly, the declarative recognition at the level of the Arctic Council of the rights of indigenous peoples in the definition of Arctic policy sets certain frameworks, or frames of perception, which state actors, for whom a Westphalian worldview and securitization discourse are preferable, are forced to take into account, among others. Therefore, the constructivist approach, in our opinion, has significant potential, primarily for expanding analytical capabilities in the study of factors influencing domestic and foreign Arctic policy, international relations and the regime of governance in the region.

In addition to constructivism and other approaches described above, other theoretical orientations, approaches and models can also be found in Arctic studies. For example, S. Cole, S. Izmailkov and E. Sjoberg described the prospects for applying game theory to identify sources of

conflict and the best ways to resolve them in such areas as the extraction of natural resources (in particular, fishing) and environmental regulation in the Arctic [38]. Game theory has been used fairly regularly in the history of international relations studies, but its use in the Arctic is surprisingly rare. According to the authors, many Arctic problems are typical situations of the "tragedy of the public domain", in which the general availability of a resource leads to its depletion and, ultimately, is bad for all players. The authors believe that game theory can help create compensation mechanisms for the use of common resources, as well as improve the quality of their management through more efficient dissemination of information between the "players" (the key role is assigned to the Arctic Council). However, it should be noted that in this work, game theory is used more as a heuristic; the formal apparatus and the corresponding operationalization of specific Arctic problems are not given by the authors. In addition, game theory can be viewed more as a formal branch of political analysis in the logic of the realism paradigm.

Key issues in the theory of international relations in the Arctic

Summarizing a brief review of the theoretical approaches actually used in modern publications on international relations and governance in the Arctic, we can conclude that they form a very heterogeneous, but rather superficial and fragmentary basis for political analysis. For the most part, they reflect general discussions in the theory of international relations, especially concerning the role of the state and other actors as well as the nature of the relationship between them (conflict or cooperation). In most cases, such approaches are not so much theories formed by a coherent set of logically connected propositions explaining and predicting a range of phenomena and systematically subjected to empirical verification, as analytical tools the authors use to describe the object of study and determine the focus of attention and which are strongly contextualized. Mixing descriptive and normative aspects of theory is a typical problem. Many promising theories and approaches have only limited development and their potential remains largely unrealized. In most studies of Arctic policy, however, there is no clearly formulated set of theoretical assumptions and arguments that would determine the logic of political analysis.

As an alternative view on the state of theoretical understanding of political processes in the Arctic and generalization of key conclusions and provisions, it is advisable to use the list of eight main questions proposed by F. Chernoff that determine the most important differences in theoretical approaches [1, p. 41–46]. Let us consider each of these questions in relation to the research of the Arctic.

1. Level of analysis (What type of actors or other units of analysis are best suited to explain global politics?)

In many cases, the analysis of the various problems of international relations in the Arctic is limited to considering the level of the state. However, this cannot be considered a theoretical necessity or inevitability. The idea of the state as the only entity influencing the international situa-

tion and trans-border problems was formed at a time when the state was the main center of concentration and mobilization of resources important in the international arena. Nevertheless, this is obviously not the case in modern society and world politics. Large corporations have resources, opportunities and interests that have not just international, but global significance and effects. The largest NPOs also have symbolic and organizational capital that allows them to influence policy in certain areas. The growing importance of knowledge as a resource necessary for making rational decisions determines the possibilities of independent centers of expertise and research. It is obvious that any category of actors that have their own interests and resources to influence a particular sphere of world politics or a problem area should be considered as a legitimate object of analysis.

Numerous Arctic studies show the usefulness of analyzing various non-state actors: international organizations, non-governmental structures, regional authorities, companies, etc. Even at the formal institutional level, states recognize the independence, for example, of associations of indigenous peoples, which have formal status (and opportunities for influence) in the Arctic Council. Obviously, a priori limitation of the focus of attention to state actors is associated with high risks of misjudgment and ignoring potentially important factors influencing regional policy. It can be argued that the question of which categories of actors are factors in Arctic politics is essentially an empirical rather than a theoretical one. Any object capable of political action, having its own interests, goals and resources sufficient to significantly influence the Arctic processes, should be included in the analysis.

2. State unitarity (Should we accept states as integral actors and ignore the complex structure of the state system in the study of international relations?)

The recognition of non-state actors as potentially significant for international processes becomes a prerequisite for taking into account the complex internal structure of the state. In the case of Arctic policy, there are good reasons for highlighting the sub-national level of government as a legitimate object of analysis. First of all, this concerns regional authorities and local communities that are able to lobby for political interests at the state level and directly participate in international politics through paradiplomacy or involvement in international organizations. The specificity of the Arctic regions of nation states and the high level of interregional differences within them (especially in large countries) is an objective prerequisite for recognizing the relative autonomy of the subnational level. In a more general sense, it is advisable to proceed from the multilevel nature of interactions in the analysis of international Arctic policy. Although the level of states is the main one, understanding of international processes will be incomplete without taking into account, the subnational level (the northern regions of the Arctic countries, as well as their influence on national policy), and the place and role of the entire Arctic region in global context.

3. Rationality of states (Are the actions of states and leaders in the international arena subject to the principle of rationality, that is, based on the choice of the most effective way to achieve the goal?)

The notion of the rationality of political actors is an important methodological principle, in the absence of which consistent analysis and forecast of political actions are almost impossible. The highly formalized decision-making structure of institutional actors suggests that impulsive, irrational actions are difficult to implement even in the presence of such personal factors at the individual level. At the same time, the adoption of the principle of rationality does not mean that political decisions are made on the basis of a general and universal picture of the world. The mechanisms of coordinated worldviews and objective descriptions of the Arctic processes should be considered as the basic precondition for describing interstate relations (and, more broadly, relations and interactions of all actors) in a general logic of rational action (in which actors share the same understanding of their mutual goals and interests).

4. State interests and identity (Are the preferences and interests of the state or other actors considered as stable and fixed?)

The example of the security issue shows that states and other actors can change their understanding of their political identity and foreign policy priorities, although such changes vary considerably. The fact that “great” and “medium” powers demonstrate pronounced differences in the priorities of security and international cooperation, as well as a sharp increase in the interest of most developed countries in the climate agenda, also seems to be evidence of a more dynamic and complex view of the interpretation of national interests and identities.

5. Conflicts (Should public policy and interests be seen in terms of inevitable competition and preparation for conflict?)

Although the Arctic conflict narrative is widespread in the public sphere and found in policy analysis, it can hardly be considered as a justification for the theoretical logic of classical realism. The latter is applicable only in a situation where states are accepted as the only actor on the world stage, are unitary and compete for limited resources. However, for modern international relations in general, and in the Arctic in particular, such situations are not the only possible ones, and the existence of a large number of actors of different types and levels, as well as the presence of common, transboundary and global problems, make the logic of zero-sum games inapplicable as a universal explanatory mechanism. In addition, from an empirical point of view, the Arctic remains a zone of predominantly cooperative relations, demonstrating the practical readiness of states to cooperate. At the same time, the presence of situations of direct conflict of interest, which can be described in terms of zero-sum games (for example, the definition of intra-Arctic borders or sovereign rights to develop resources), is beyond doubt and should be taken into account. Theoretically, it is more correct to talk about the presence of problem areas and situations in the Arctic that (objectively) structure relations in a more conflicting or more cooperative way.

6. Overcoming anarchy (Should anarchy in international affairs be considered by analogy with anarchy in a separate society, and are conflicts and wars its inevitable consequence?)

The weak institutional organization of the Arctic governance, as well as the absence of a single and comprehensive international legal regime, corresponds to the idea of the predominantly anarchic nature of international relations in the region. However, as noted above, this does not prevent the formation of a predominantly peaceful, cooperative nature of interaction and resolution of contradictions in the region. The theory of global governance substantiates the possibility and mechanisms for maintaining non-violent interaction in solving international problems without creating binding institutions and mechanisms based on the use or threat of force.

7. Linking moral principles and theory (Should normative principles be included in theory along with descriptive ones, and if so, in what way (as part of the description of society or as prescriptive statements?)

The theoretical description of cause-and-effect relationships and mechanisms underlying the development and implementation of the Arctic policy, international relations, the interaction of various actors, the formation of international institutions, etc., should be clearly separated from the characteristics of normative models of foreign policy or the system of international relations. The normative dimension of theory should be autonomous and independent of the descriptive dimension, but this is possible when the normative criteria for evaluating political goals, means of achieving them, and expected consequences are clearly defined.

8. The role of international institutions (Are international institutions seen as having no real value and power, as a means to increase the effectiveness of policies, or as the main source of legitimacy for certain policies, particularly, in the use of force?)

The fundamental acceptance of non-state actors as a legitimate unit of analysis means recognition of the relative autonomy of international organizations as well. The principal justification for their inclusion in the theory of Arctic international processes is based on the key ideas of the principal-agent theory [39, Hawkins D.G. et al.]. State participation in the work of international organizations implies the delegation of certain powers to them. Even if such representation is assumed to be fully controlled and included in the centralized system of government decision-making, the agent has the potential to play an independent role, in particular by managing information flows, developing its own international social capital, etc., and such a role can be effective even in the case of pro-organizations with very limited formal powers, such as the Arctic Council.

The need to take into account the specifics of the Arctic context when answering the key general questions of the theory of international relations makes it relevant to develop framework theoretical concepts suitable for studying a wide range of Arctic political and managerial processes. A consistent and systematized set of theoretical perspectives on the Arctic, however, has yet to be developed, and the theoretical underpinnings used are often implicit and vague.

Conclusion

Elements from most of the key theoretical perspectives on international relations, both traditional (realism, liberalism) and more recent (social constructivism, global governance, etc.), can be identified in current Arctic political studies. However, their respective theoretical assumptions are usually adopted implicitly, without explicitly identifying key proposals and theoretical logic, which limits the scope for analysis and the search for alternative explanations of Arctic processes and phenomena. Frequently, theoretical assumptions that are implicitly accepted are politically conditioned or dependent on the problem area under study. For example, studies of security, understood in a narrow military-political sense, tend to rely on the paradigm of realism, accepting the postulates of the state as the only object of attention and a unitary actor, as well as the predominantly competitive nature of relations between states. Such theoretical position limits the possibility of explaining the numerous facts of successful cooperation in the Arctic, including the active participation of non-state actors.

In turn, the concept of global governance, which analyzes the solution of trans-boundary problems based on multi-level and non-hierarchical relations of cooperation and coordination, successfully reflects some specific features of governance in the Arctic (lack of a comprehensive legal regime, institutional features of the Arctic Council as the main international mechanism), seems unsuitable for analysis of policies and strategies of individual actors, especially states, which are carried out in the logic of “zero-sum games”. Overcoming the limitations of individual theoretical orientations is possible through more integrative framework models, based on the recognition of greater flexibility and variability in determining the key actors, their levels of action, the nature of the relationship between them, and, most importantly, the recognition of the diversity of problem areas, within which interaction takes place.

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Tourism Development in the Regions of the European North [1*]

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Abstract. The European North of the Russian Federation is a unique northern (Arctic) tourist destination with ecologically vulnerable system, original traditions and culture of the locals, attracting Russian and international tourists. The aim of the work is to form a comprehensive view of the development of tourism in the European North of the Russian Federation based on identifying general trends and specifics of its development in the regional context. The model platform is six constituent regions of the European North of the Russian Federation (the Republics of Karelia and Komi, Arkhangelsk, Vologda and Murmansk oblasts, as well as the Nenets Autonomous Okrug). The research is based on investigation of seven main blocks: tourist and recreational potential and its promotion in the Internet; development of tourist infrastructure; strategies of the tourism development; dynamics of tourist flows (domestic and organized international); economic factor in the development of domestic tourism; regions in the National Tourism Rating; factors hindering tourism development. The impact of the COVID-19 pandemic on the development of tourism in the European North is presented. The study is based on open statistical data from Rosstat, the official website of the National Tourism Rating for the period 2016–2020. The median indicators are calculated in the work. The results of the study allow us to form a general idea of the development of tourism in the Russian regions of the European North. The specific characteristics and general trends of the regional development of tourism in the regions are revealed.
Keywords: *European North, region, tourism development, tourist destination, Russian Federation*

Introduction

The European North of the Russian Federation is a unique northern (Arctic) tourist destination with fragile ecological systems, original traditions and culture of the local population, attracting the attention of visitors from all over the world. Increasing interest in the tourism and recreational opportunities of the northern (Arctic) territories materializes in an increasing number of scientific studies by both Russian and foreign scientists devoted to the problems of tourism development, its regional specifics, limitations and prospects for the functioning of this sphere of economic activity. The aim of the work is to form a complex view of the development of tourism in the European North of the Russian Federation on the basis of general tendencies and specifics of its development in the regional context.

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Theoretical aspects of tourism development in the European North

The studied regions of the European North cover a small part of the northern (Arctic) territories of the Russian Federation (the Murmansk Oblast and the Nenets Autonomous Okrug are fully referred to the Arctic zone of Russia, the Republics of Karelia and Komi, as well as the Arkhangelsk Oblast — partly). The location in the northern (Arctic) latitudes (with the exception of the Vologda Oblast) forms the harsh natural and climatic characteristics of the territory of the European North with vulnerable ecological systems. Remoteness from the economic center of the state and peripherality are reflected in most economic areas of development, playing a deterrent role in the development of domestic and international inbound tourism in general.

The unique tourist and recreational potential of territories with preserved original traditions, culture and hospitality of the local population annually attracts increasing flows of Russian and foreign tourists (with the exception of the period of restrictions of the COVID-19 pandemic). According to L. Agafonov, managing director of EastRussia, a member of the Public Council under the Ministry for the Development of the Russian Far East, Murmansk Oblast (about 400 thousand people) and Arkhangelsk Oblast (over 200 thousand people) receive the largest tourist flow among the Russian Arctic destinations [2].

The growing interest in the tourist and recreational opportunities of the northern (Arctic) territories materializes in an increasing number of scientific studies by both Russian and foreign scientists devoted to the problems of tourism, its regional specifics, limitations and prospects for the development. Researchers emphasize the significant role of tourist and recreational activities in the socio-economic development of the regions of the European North, as a factor in the development of territories. Sufficiently generalized research can be divided into several main blocks.

First of all, it is necessary to indicate the scientific background on the development of Arctic tourism. Thus, Arctic tourism is positioned as one of the promising tourist areas of development for the northern territories of the Russian Federation, including the European North. The research of scientists reveals the issues of tourist and recreational potential, socio-economic development of tourism, as well as the limitations and prospects of its functioning [1, Lukin Yu.F.; 2, Lukin Yu.F.; 3, Kharlampyeva N.K.; 4, Sevastyanov D.V.]. An example is the work of Yu.F. Lukin, Professor of the Northern (Arctic) Federal University named after M. V. Lomonosov, focusing on the conceptual foundations, essence and delimitation of the definitions of “Arctic tourism” and “Northern tourism”, representing the tourist and recreational potential and strategic opportunities for the development of tourism in the Arctic and the North [1; 2]. The specifics of the development of the Arctic tourism (including three regions of the European North: the Republics of Karelia and Komi, Murmansk Oblast) are presented in the study of an international team [6, Kuklina V., Kuklina M., Ruposov V., Rogov V.]. Some aspects of the competitiveness of the Nenets Auton-

[2] Arkticheskiy turizm – novye vyzovy dlya biznesa [Arctic tourism – new challenges for business]. Kommersant, 2020, 4 June. URL: https://www.kommersant.ru/conference/645 (accessed 09 September 2021).

omous Okrug as a destination for Arctic tourism are described in the Russian-Norwegian study [7, Ilkevich S.V., Stremberg P.].

Secondly, scientific research focuses on the functioning of individual components and the tourism sector as a whole in the northern (Arctic) regions of the Russian Federation, including analysis in a regional context. Regarding the territory of the European North, it is necessary to cite works on the assessment of the development of the tourism sector, including in the municipal context [8, Selyakova S.A., Dubinicheva L.V., Markov K.V.; 9, Zhagina S.N., Pakhomova O.M.; 10, Shchenyavskiy V.A.; 11, Stepanova S.V.; 12, Lebedeva E.A.; 13, Yakovchuk A.A.; 14, Zhelnina Z.Yu.], tourism infrastructure [15, Velichkina A.V.; 16, Stepanova S.V.]. Special attention should be paid to studies devoted to the problems of domestic tourism and leisure opportunities for the local population of the northern (Arctic) regions of the Russian Federation on the basis of official statistical and sociological data, conducted by scientists from the Karelian Scientific Center (Petrozavodsk) [17, Morozova T.V., Murina S.G., Bulaya R.V.; 18, Moroshkina M.V., Potasheva O.V., Gienko G.V.] and Northern (Arctic) Federal University [19, Sidorovskaya T.V., Volovik O.A.; 20, Sidorovskaya T.V., Volovik O.A., Sidoruk A.Yu.; 21, Tsvetkov A.Yu.]. The works of scientists emphasize the high importance of availability of tourism and recreation as a necessary condition for the restoration of vitality in the conditions of severe natural and climatic characteristics of residence and life activity.

The next large block of works reveals the general trends and specifics of the development of certain types of tourism in the northern (Arctic) regions of the Russian Federation. The papers analyze the opportunities and modern challenges of the cruise industry development [22, Grushenko E.B.; 23, Pashkevich A., Lamers M.] ecological [24, Zhagina S.N., Toporina V.A.], religious [25, Balabeykina O.A., Gavrilova K.S., Kuznetsova Yu.A.], gastronomic [26, Morozov A.A.], cultural and educational and other types of regional tourism.

One of the tools for assessing the development of the tourism and recreational sphere of activity is the rating of regions, which makes it possible to identify leaders and outsiders in the development of domestic and international inbound tourism in the Russian Federation. In addition, tourism rating contributes to the formation of Russian citizens' preferences for leisure and recreation opportunities, stimulating the development of domestic tourism. Among Russian researchers, the assessment of the tourist potential of the regions of the European North (based on the author's calculation methods) is devoted to the works of V.S. Orlova, associate professor, Vologda State University [27; 28]. However, despite the advantages of the methodology, exclusively expert (subjective) assessments that allow similarity, inconsistency and dependence on the qualifications of the respondents, along with the laboriousness of the procedures, make it difficult to replicate the practice [29, Myakshin V.N., Shaparov A.E., Tikhanova D.V.]. Based on the methodology of system and structural-functional analysis of N. Leiper, the team of authors of the Northern (Arctic) Federal University named after M.V. Lomonosov (Arkhangelsk) proposed an assessment of the tourist potential of the subjects of the Arctic zone of the Russian Federation [29, Myakshin V.N.,

Shaparov A.E., Tikhanova D.V.]. Unfortunately, the scientists have considered only four of the six regions under study, which does not allow us to fully form a comprehensive representation of the European North destination as a whole and to compare the potential of the Russian Federation subjects. The assessment of the positions of the tourist rating of the regions of the European North in this work is based on the open data of the National Tourist Rating [3].

Special attention should be paid to works that reveal the regional tourism development limitations in order to develop a set of measures to overcome the existing challenges. The impact of the new challenge of our time — the COVID-19 pandemic — caused the introduction of restrictions and their strengthening, which negatively affected the functioning of the tourist and recreational sphere of the state in general and its individual regions in particular. An analysis of changes in the tourism sector under the influence of the pandemic is reflected in an increasing number of scientific papers. The regions of the European North are no exception: both emerging negative consequences and the possibility of developing domestic tourism are being studied [30, Eliseeva N.V.; 31, Leonidova E.G.; 32, Leonidova E.G.].

Research methodology

The model platform is six constituent entities of the Russian Federation belonging to the territory of the European North of the Russian Federation: the Republics of Karelia and Komi, the Arkhangelsk, Vologda and Murmansk oblasts, as well as the Nenets Autonomous Okrug.

In order to identify the specifics and general trends of tourism development in the regions of the European North, the paper consecutively considers the following seven blocks:

1. tourist and recreational potential and its promotion on the Internet;
2. tourism infrastructure development;
3. tourism development strategy;
4. dynamics of tourist flows (domestic and organized international);
5. economic factor of domestic tourism development;
6. regions in the National Tourist Rating;
7. factors hindering the development of tourism.

The work also takes into account the impact of the COVID-19 pandemic on the development of the tourism and recreational sphere in the regions of the European North.

The study is based on open statistical data from Rosstat, the official website of the National Tourism Rating for the period 2016–2020. The paper summarizes the theoretical and practical sci-

[3] National rating. Official site. URL: http://russia-rating.ru/info/category/%D1%81%D0%BF%D0%B5%D1%86%D0%BF%D1%80%D0%BE%D0%B5%D0%BA%D1%82%D1%8B (accessed 17 August 2021).

entific developments of Russian and foreign scientists on the subject under study. Median indicators are calculated.

The limitation of the work is a sufficient level of generalization of the research results due to the use of a limited set of statistical data in the regional context. The results can be considered as a general idea of the development of tourism in the regions of the European North of the Russian Federation based on the identified general trends and specifics, which corresponds to the purpose of the work. This study seems to be a scientific foundation for further detailed studies of the development of the tourist and recreational sphere of activity, which will allow obtaining more specific results and developing recommendations on the basis of them for the development of this sphere of economic activity.

European North of the Russian Federation: general characteristics

The European North is a unique tourist destination with vulnerable ecological systems, preserved original traditions, culture and hospitality of the local population, along with harsh natural and climatic conditions.

From the position of socio-economic geography, the European North is the largest economic region of the European part of the Russian Federation, occupying an area of less than 1.5 thousand km^2, or about 9% of the total area of the state. The regions that make up the European North differ in socio-economic (for example, demographic aspects, Table 1) and geographical characteristics.

Table 1

General characteristics of the regions of the European North (as of 01/01/2020) [4]

No.	region	population (thousand people)	large cities (thousand people)	population density, person/km^2	natural increase, decrease per 1 thousand people, 2019
1	Republic of Karelia	614.1	Petrozavodsk — 281.0 Kondopoga — 29.2 Kostomuksha — 29.6	3.4	-5.3
2	Komi Republic	820.5	Syktyvkar — 244.4 Ukhta — 93.7 Vorkuta — 52.8	2.0	-2.4
3	Arkhangelsk Oblast (excluding AO)	1092.4	Arkhangelsk — 347.0 Severodvinsk — 182.0 Kotlas — 62.0	1.9 (including AO)	-4.4
4	Vologda Oblast	1160.4	Vologda — 310.3 Cherepovets — 314.8 Sokol — 36.4	8.0	-4.5
5	Murmansk Oblast	741.4	Murmansk — 287.8 Apatity — 54.7 Severomorsk — 53.6	5.1	-2.4
6	Nenets AO	44.1	Naryan-Mar — 25.1	0.2	4.7

**- the administrative centers of the regions are marked in bold*

[4] Compiled by the author based on the source: Rosstat data.

In comparison with the central regions of the Russian Federation, the transport network of the regions of the European North is rather underdeveloped; there is a significant regional differentiation. From the standpoint of tourism development, this seems to be one of the limiting factors; transport accessibility plays a key role in the development of domestic and international inbound tourism. It should be pointed out that the Republic of Karelia and the Murmansk Oblast, unlike the other constituent entities under study, are border regions of the country, with the Russian Federation state border and related border and customs infrastructure running along the external border. This circumstance is important in the development of international tourism, materializing in the dynamics of socio-economic and tourism indicators.

Research results

Regions of the European North as tourist destinations

1. Tourist and recreational potential and its promotion on the Internet

The territory of the European North of the Russian Federation has a unique natural and cultural-historical potential (some types of which are given in Table 2), revealing opportunities for the development of various areas of tourist and recreational activities. For instance, in the territory of the Arkhangelsk Oblast alone, about 10 thousand monuments of history and culture were discovered, including 1.4 thousand objects of cultural heritage of federal significance, in the Republic of Karelia — more than 1.6 thousand [5].

Table 2

Tourist and recreational potential of the regions of the European North

No.	UNESCO World Heritage Sites, year of inscription	SPNA, year of establishment
Republic of Karelia		
1	- architectural complex of the Kizhi Pogost (1990) - petroglyphs of Lake Onega and the White Sea (2021)	- Reserve Kivach (1931) - Kandalaksha Reserve (1932) - Kostomuksha Reserve (1983) - Vodlozersky NP (1991) - Paanajärvi NP (1992) - Kalevalskiy NP (2006) - Ladoga Skerries NP (2017)
Komi Republic		
2	- virgin forests of Komi (1995)	- Pechoro-Ilych Biosphere Reserve (1930) - Yugyd Va (1994) - Koygorodsky NP (2019)
Arkhangelsk Oblast		
3	- cultural and historical complex “Solovki Islands” (1992)	- Pinezhskiy Reserve (1974) - Vodlozerskiy NP (1991) - Kenozerskiy NP (1991) - Russian Arctic NP (2009) - Onega Pomorye NP (2013)
Vologda Oblast		

[5] Strategiya sotsial'no-ekonomicheskogo razvitiya Respubliki Kareliya na period do 2030 goda. Rasporyazhenie Pravitel'stva Respubliki Kareliya ot 29.12.2018 g. N 899r-P. [Strategy of socio-economic development of the Republic of Karelia for the period up to 2030. Decree of the Government of the Republic of Karelia dated December 29, 2018 N 899r-P.].

4	- complex of the Feropontov monastery (2000)	- Darwin Biosphere Reserve (1945) - Russian North NP (1992)
Murmansk Oblast		
5	-	- Lapland Biosphere Reserve (1930) - Kandalaksha Reserve (1932) - Pasvik Nature Reserve (1992) - Khibiny NP (2018)
Nenets Autonomous Okrug		
6	-	- Nenets Nature Reserve (1997)

With an increase in living standards, mobility and computer literacy of the population, the possibilities of the Internet acquire high importance in promoting the tourist and recreational potential and tourist services of the region. There is an increase in the share of independent tourists in the total inbound tourist flow (for example, in the Arkhangelsk region, the share of organized tourists is about 10%) [6]. In this regard, one of the important roles is assigned to tourist portals, which allow potential visitors to form a comprehensive idea of the unique natural, cultural and historical possibilities of the territories, to get acquainted virtually with the original culture and traditions of the chosen destinations, to create their own route for visiting or to use the services of regional tourism companies. The surveyed regions are quite clearly represented in the Internet (table 3) However, with the exception of the Republic of Karelia, the content about the tourist and recreational opportunities of the territories is focused exclusively on the Russian and English-speaking audience, and a number of portals have no English version or its work is significantly limited.

Table 3

Tourist portals of the regions of the European North

Tourist portal	Web site	Foreign language
Republic of Karelia		
Karelia. Tourist portal	http://www.ticrk.ru/	English
Tourist portal of Petrozavodsk	http://visitpetrozavodsk.ru/	English and Finnish
Komi Republic		
Tourist Information Center of the Komi Republic	https://tourism.rkomi.ru/	English
Arkhangelsk Oblast		
Tourist portal of the Arkhangelsk Oblast	https://pomorland.travel/	-
Vologda Oblast		
Tourist portal of the Vologda region	https://welcomevolgograd.com/	English
Tourist Information Center of the Vologda region	https://vologdatourinfo.ru/	English
Official tourist portal of the city of Vologda	https://turvologda.ru/	English (partially)
Murmansk Oblast		
Tourist portal of the Murmansk Oblast	http://murman-turist.ru/	-
Tourism portal of Murmansk	https://tour.murman.ru/	English
Nenets Autonomous Okrug		
Arctic tourism center	http://www.visitnao.ru/	-

[6] Kontseptsiya razvitiya turizma v Arkhangel'skoy oblasti. Utverzhdena postanovleniem Pravitel'stva Arkhangel'skoy oblasti ot 19 yanvarya 2021 g. № 1-pp. [The concept of tourism development in the Arkhangelsk region. Approved by the Decree of the Government of the Arkhangelsk Region dated January 19, 2021 No. 1-pp.].

It should be noted that all regions of the European North are presented on the website of the National Tourist Portal Russia travel (https://russia.travel/). In addition, in order to form a positive tourist image and position the European North in the Russian and international tourism services markets, the regions regularly, independently or jointly, take part in the largest international tourism exhibitions in Russia and abroad.

2. *Tourism infrastructure development*

The tourism infrastructure seems to be one of the key elements of the effective functioning of the tourism and recreational sphere of activity, the provision of a range of competitive tourism services in the face of increasing competition for tourist flows and investments. To a large extent, determining the possibilities of using the tourist and recreational potential of the territory, the tourist infrastructure saturates the interests of not only domestic and international tourists, but also satisfies the needs of the local population in recreation and recreation [16, Stepanova S.V.; 33, Stepanova S.V.].

The study of tourist infrastructure development in the European North is based on the calculation of comparable specific indicators to the number of local population in the regional context (units/1 thousand people) of the following components of the infrastructure:

- accommodation infrastructure — the number of collective accommodation facilities (CAF) and the number of sanatorium-resort organizations;
- food infrastructure — the number of restaurants, cafes, bars;
- leisure and recreation infrastructure — the number of museums of the Ministry of Culture of the Russian Federation, the number of tour operators included in the unified federal register.

Comparison of the tourist infrastructure of the European North (Table 4) with the median values of the regions, fully or partially belonging to the Arctic zone of the Russian Federation, allows us to form a general idea of the level of its development and specifics in the regional context. The comparison reveals the low positions of the European North destinations in terms of the development of tourism infrastructure. According to the presented specific indicators, the leading positions are occupied by the Vologda Oblast, the only studied region not included in the Arctic zone of the Russian Federation. Among the Arctic regions, the Murmansk Oblast and the Nenets Autonomous Okrug are the leaders.

Table 4

Comparative characteristics of the level of development of tourism infrastructure in the regions of the European North, 2020

No.	region	number of tour operators included in the unified federal register [7]		number of collective accommodation facilities [8]		number of health resort organizations [9]		number of museums of the Ministry of Culture of the Russian Federation [10]		number of restaurants, cafes, bars [11], 2019	
		un.	un. /thous. people	un.	un. /thous. people	un.	un. /thous. people	un.	un. /thous. people	un.	un. /thous. people
1	Republic of Karelia	55	0.09	245	0.4	5	0.008	18	0.03	433	0.7
2	Komi Republic	6	0.01	114	0.14	10	0.012	24	0.03	423	0.5
3	Arkhangelsk Oblast (without AO)	21	0.02	164	0.15	9	0.008	28	0.03	875	0.8
4	Vologda Oblast	42	0.04	255	0.22	14	0.012	41	0.04	799	0.7
5	Murmansk Oblast	64	0.09	185	0.25	8	0.011	12	0.02	638	0.9
6	Nenets AO	1	0.02	8	0.18	0	0	2	0.05	34	0.8
	regions fully or partially related to the Arctic, median	-	-	-	0.19	-	0.012	-	0.035	-	0.84

The COVID-19 pandemic has had a significant negative impact on the development of the tourism and recreational activities in the regions of the European North of the Russian Federation, which materializes in the dynamics of the decline in the following indicators. Compared to 2019, the volume of paid services to the population of the studied regions per capita also decreased in 2020 (median):

- *hotel services and similar temporary accommodation services* — by 20%. The only exception was the Republic of Karelia, the only region with positive growth (+10%), which may be due to the high tourist attractiveness of the territory as a unique destination in the north of Europe, formed by a tourist and transport and logistics infrastructure, as well as an advantageous economic and geographical position to the central cities of Moscow and St. Petersburg. The most significant drop in the indicator was in the Vologda Oblast (-36%) and the Komi Republic (-33%).
- *services of specialized collective accommodation facilities* — by 28.5%. This category of accommodation facilities includes sanatorium and resort organizations, houses and recreation centers, campsites, tourist camps, tourist trains, cruise and pleasure boats, etc. The enterprises of the Murmansk Oblast (-61%) and the Komi Republic (-57%) suffered the most.

[7] Unified federal register of tour operators. Official site of the Federal Agency for Tourism. URL: https://tourism.gov.ru/operators/ (accessed 08 December 2021).
[8] Number of collective accommodation facilities. Official website of the EMISS state statistics. URL: https://www.fedstat.ru/indicator/ (accessed 08 December 2021).
[9] Number of health resort organizations. Official website of the EMISS state statistics. URL: https://www.fedstat.ru/indicator/42106 (accessed 08 December 2021).
[10] Number of museums of the Ministry of Culture of Russia. Official website of the EMISS state statistics. URL: https://www.fedstat.ru/indicator/37797 (accessed 08 December 2021).
[11] Number of public catering facilities Official website of EMISS state statistics. URL: https://www.fedstat.ru/indicator/43260 (accessed 08 December 2021).

- *services of travel agencies, tour operators and other booking services and related services* — by 54.5%. The sharpest decline is observed in the Komi Republic (-73%), the Arkhangelsk Oblast and the Nenets Autonomous Okrug (-64–65%)

3. Tourism development strategy

Currently, tourism development in the regions of the European North is positioned as one of the priority and/or promising areas of economic activity, which is reflected in the main strategic documents of socio-economic development of the studied subjects of the Russian Federation. Thus, the Strategy for the socio-economic development of the Republic of Karelia for the period up to 2030 [12] defines the development of tourism and the hospitality industry as one of the priority areas for regional development. According to the Strategy for the socio-economic development of the Arkhangelsk Oblast up to 2035, the region "will take the place of a leader in the field of Arctic tourism, a network of rural tourist destinations of ethnographic, ecological and agro-tourism will be developed" [13]. The high importance of tourism and recreation in regional development is the basis for the development, improvement and implementation of the system of target documents for strategic planning of tourism promotion. The legal bases for the development of these regional policies are the documents of the federal level:

- Federal Law No. 132-FZ dated November 24, 1996 "On the fundamentals of tourism activities in the Russian Federation";
- Federal Law No. 193-FZ dated July 13, 2020 "On state support for entrepreneurial activities in the Arctic Zone of the Russian Federation";
- Strategy for the development of the Arctic zone of the Russian Federation and ensuring national security for the period up to 2035 (Decree of the President of the Russian Federation of October 26, 2020 No. 645);
- The State Program of the Russian Federation "Economic Development and Innovative Economy" (Decree of the Government of the Russian Federation of April 15, 2014 No. 316);
- Strategy for the development of tourism in the Russian Federation for the period up to 2035 (Decree of the Government of the Russian Federation dated September 20, 2019 No. 2129-r);

[12] Strategiya sotsial'no-ekonomicheskogo razvitiya Respubliki Kareliya na period do 2030 goda. Rasporyazhenie Pravitel'stva Respubliki Kareliya ot 29.12.2018 g. N 899r-P. [Strategy of socio-economic development of the Republic of Karelia for the period up to 2030. Decree of the Government of the Republic of Karelia dated December 29, 2018 N 899r-P.].

[13] Strategiya sotsial'no-ekonomicheskogo razvitiya Arkhangel'skoy oblasti do 2035 goda, utverzhdennaya oblastnym zakonom ot 18 fevralya 2019 goda № 57-5-OZ. [Strategy for socio-economic development of the Arkhangelsk region up to 2035, approved by the regional law of February 18, 2019 No. 57-5-OZ.].

- Strategies for socio-economic development of the North-Western Federal District for the period up to 2020 (Decree of the Government of the Russian Federation of November 18, 2011 N 2074-r);
- Concepts of the federal target program “Development of domestic and inbound tourism in the Russian Federation (2019-2025)” (Decree of the Government of the Russian Federation of 05.05.2018 N 872-r).

Summarizing the main goals of regional strategic documents for the development of tourism, it is possible to formulate a single general direction for applying efforts: creating conditions for growth and improvement of competitiveness of the tourism sector in the Russian and international markets for tourism services with detailed implementation tasks [14]. In addition, examples of strategic documents for the development of tourism at the level of municipalities in the regions of the European North (for example, Syktyvkar and Vorkuta of the Komi Republic; Kostomuksha, the Republic of Karelia; Vologda, Vologda Oblast, etc.) should be given.

4. Dynamics of tourist flows

One of the indicators that, with a certain degree of conventionality, allow to comprehensively assess the volume of both organized and unorganized tourist flows (including both individual tourists and visitors of regions with business and other visiting purposes), is the number of citizens (foreign and Russian) placed in collective accommodation facilities (CAF). For reference: CAF combine hotels with similar accommodation facilities and specialized accommodation facilities. According to calculations, the leading positions in quantitative indicators of accommodation of

[14] Kontseptsiya razvitiya turizma v Arkhangel'skoy oblasti. Utverzhdena postanovleniem Pravitel'stva Arkhangel'skoy oblasti ot 19 yanvarya 2021 g. № 1-pp; Strategiya razvitiya turistsko-rekreatsionnogo klastera Murmanskoy oblasti na 2021–2025 gody. Rasporyazhenie Pravitel'stva Murmanskoy oblasti ot 21.04.2021 g. № 72-RP; Strategiya sotsial'no-ekonomicheskogo razvitiya Respubliki Komi na period do 2035 goda. Postanovlenie Pravitel'stva Respubliki Komi ot 11.01.2019 g. N 185; Gosudarstvennaya programma Respubliki Kareliya «Razvitie turizma». Postanovlenie Pravitel'stva Respubliki Kareliya ot 28.01.2016 g. № 11-P s izm. ot 30.03.2021 g.; Strategii razvitiya turistsko-rekreatsionnogo klastera Nenetskogo avtonomnogo okruga na peri-od do 2022 goda. Postanovlenie Gubernatora Nenetskogo avtonomnogo okruga ot 15.12.2017 g. № 105-pg; Gosudarstvennaya programma Respubliki Komi «Razvitie kul'tury i turizma». Postanovlenie Pravitel'stva respubliki Komi ot 31.10.2019 g. № 524 s izmeneniyami ot 08.09.2021 g.; Strategiya sotsial'no-ekonomicheskogo razvitiya Arkhangel'skoy oblasti do 2035 goda, utverzhdennaya oblastnym zakonom ot 18.02.2019 g. № 57-5-OZ; Programma razvitiya territorial'nogo turistskogo klastera Vologodskoy oblasti. Postanovlenie Pravitel'stva Vologodskoy oblasti ot 28.03.2016 g. № 265 [The concept of tourism development in the Arkhangelsk region. approved by Decree of the Government of the Arkhangelsk oblast dated January 19, 2021 No. 1-pp; Strategy for the development of the tourist and recreational cluster of the Murmansk oblast for 2021–2025. Decree of the Government of the Murmansk oblast dated April 21, 2021 No. 72-RP; Strategy for socio-economic development of the Komi Republic for the period up to 2035. Decree of the Government of the Republic of Komi dated January 11, 2019 N 185; State program of the Republic of Karelia "Development of tourism". Decree of the Government of the Republic of Karelia dated January 28, 2016 No. 11-P, as amended on March 30, 2021; Development strategies for the tourist and recreational cluster of the Nenets Autonomous Okrug for the period up to 2022. Decree of the Governor of the Nenets Autonomous Okrug dated December 15, 2017 No. 105-pg; State program of the Republic of Komi "Development of culture and tourism". Decree of the Government of the Republic of Komi dated October 31, 2019 No. 524, as amended on September 8, 2021; Strategy for socio-economic development of the Arkhangelsk oblast up to 2035, approved by the regional law of February 18, 2019 No. 57-5-OZ; Program for the development of the territorial tourist cluster of the Vologda Oblast. Decree of the Government of the Vologda Oblast dated March 28, 2016 No. 265.].

citizens in CAF in 2019–2020 (Table 5) are occupied by the Republic of Karelia and the Vologda Oblast, while the Nenets Autonomous Okrug is at the bottom of the list of surveyed regions. Examination of flows in terms of citizenship of those accommodated in the CAF reveals the predominant role of in-state flows, including domestic tourism, which, however, is typical for all Russian regions. On average, about 14.4 thousand foreign citizens stayed in collective accommodation facilities in the Russian regions in 2019. The Murmansk Oblast and the Republic of Karelia exceed the Russian median: 3.9 times and 3.3 times, respectively.

Table 5

Indicators of Russian and foreign citizens' accommodation in the CAF, 2019–2020 [15]

No.	region	Number of Russian citizens accommodated in CAF [16], pers.		Number of Russian citizens, %	Number of foreign citizens accommodated in CAF [17], pers.		Number of foreign citizens, %	Decline in the number of citizens accommodated in 2020 by 2019	
		2019	2020	2020/ 2019	2019	2020	2020/ 2019	pers.	%
1	Republic of Karelia	435 269	381 268	0,88	47 548	6 786	0.14	94763	0.2
2	Komi Republic	228 144	141 619	0.62	5 229	2 094	0.4	90056	0.39
3	Arkhangelsk Oblast without AO	334 343	194 103	0.58	12 433	2 095	0.17	150578	0.43
4	Vologda Oblast	468 083	279 338	0.6	9 045	2 821	0.31	194969	0.41
5	Murmansk Oblast	263 791	226 461	0.86	55 789	30 799	0.55	62320	0.26
6	Nenets Autonomous Okrug	12 685	8 262	0.65	333	69	0.21	4687	0.36

Under the COVID-19 pandemic, the year 2020 saw a dramatic decrease in the number of foreigners accommodated in the CAF compared to the figures for 2019, which was not compensated by the number of Russian citizens, also characterized by a decline in flow.

The calculation shows that the Vologda and Arkhangelsk oblasts (excluding AO) suffered the most serious losses in the number of Russian and foreign citizens accommodated in 2020 compared to 2019: -195 thousand people and -151 thousand people, respectively. Despite the most significant reduction in the number of foreign citizens accommodated in the CAF (more than 40 thousand people or by 86%), the Republic of Karelia is characterized by the lowest share of losses in guest arrivals (-20%).

Considering the importance of international inbound tourism development, it is important to consider the organized inbound tourist flow, as well as to compare it with the outbound one in the regions of the European North for the period 2016–2019 (Table 6).

[15] Source: Compiled and calculated by the author based on State Statistics data.
[16] The number of citizens of the Russian Federation placed in collective accommodation facilities (Rosstat). Official site of the Federal Agency for Tourism. URL: https://tourism.gov.ru/contents/analytics/statistics/chislennost-grazhdan-rossiyskoy-federatsii-razmeshchennykh-v-kollektivnykh-sredstvakh-razmeshcheniya/ (accessed 08 December 2021).
[17] The number of foreign citizens placed in collective accommodation facilities (Rosstat). Official site of the Federal Agency for Tourism. URL: https://tourism.gov.ru/contents/analytics/statistics/chislennost-inostrannykh-grazhdan-razmeshchennykh-v-kollektivnykh-sredstvakh-razmeshcheniya-rosstat/ (accessed 08 December 2021).

Table 6

Comparative characteristics of the development of international organized tourism [18]

	region	Total inbound tourism flows, 2016–2019 [19], pers.	Intensity of international arrivals, 2019, persons/thousand people	Total outbound tourism flows, 2016–2019 [20], pers.	Intensity of international departures, 2019, persons/thousand people
1	Republic of Karelia	21 489	14.0	368 275	155.7
2	Komi Republic	148	0	158 819	62.1
3	Arkhangelsk Oblast	267	0.05	274 574	78.8
4	Vologda Oblast	141	0	298 094	93.6
5	Murmansk Oblast	12274	4.3	112 225	47.6
6	Nenets AO	132	0.57	8 248	51.8

Calculation of the total volume of international organized tourism in terms of inbound and outbound tourist flows for the period 2016–2019 allows avoiding sharp fluctuations in the number of foreign tourists hosted in the studied regions, as well as in the number of Russian tourists sent abroad by tourist companies of the Russian Federation. The indicator of international tourist arrivals and departures intensity, calculated to the population of the constituent entities of the Russian Federation (person/thousand people), allows a full comparison of the level of international tourism development in the regional context.

Comparison of inbound and outbound international organized tourist flows reveals a significant prevalence of international outflows in both quantitative and specific indicators. At the same time, it should be emphasized that the regions of the European North in the development of outbound tourism are significantly ahead of the average Russian values (the median intensity of international arrivals is 0.05, departures — 42.4). The development of international inbound tourism can be discussed only in relation to two subjects under study: the Republic of Karelia and the Murmansk Oblast, characterized by a significant excess of the median value in Russia (which is confirmed by the data on the accommodation of foreign citizens in the CAF). In addition, it should be noted that, being border regions, these regions have international road border crossings that allow increasing the cross-border tourist flow to the region [11, Stepanova S.V.] at the expense of independent tourists from neighboring countries (including day-shopping tourists and travelers with medical and other purposes), not included in these statistics.

5. Economic factor of domestic tourism development

The accessibility of tourism and recreation to residents of the northern (Arctic) regions, characterized by harsh natural and climatic conditions of life, is becoming an important factor in the restoration of physical and emotional power of a person, the reproduction of human capital. Taking into account the significant role of the economic factor that determines the possibility of

[18] Source: Compiled and calculated by the author based on State Statistics data.
[19] Number of foreign tourists received. EMISS. Government statistics. URL: https://fedstat.ru/indicator/31598 (accessed 08 December 2021).
[20] The number of Russian tourists sent on tours. EMISS. Government statistics. URL: https://fedstat.ru/indicator/31591 (accessed 08 December 2021).

tourist travel, the choice of destination and leisure activities for the population of the studied regions, two calculated indicators are considered: the index of priority spending on recreation and cultural events; the index of priority spending on services of hotel and catering enterprises. The calculation of the indicators is based on the structure of consumer spending of households according to the results of a sample survey of household budgets (%, Rosstat data), reflecting the propensity of the regions' population to spend money on leisure and cultural activities, on receiving hotel and catering services. The study presents data for 2018 as the period of the most complete presentation of available statistical information on the regions of the European North (Table 7).

Table 7

Expenditures of the population in the regions of the European North for tourism and recreation, 2018 [21]

No.	region	organization of recreation and cultural events	hotels, restaurants and cafes
1	Republic of Karelia	0.83	0.46
2	Komi Republic	0.75	0.66
3	Arkhangelsk Oblast	1.04	1.11
4	Nenets Autonomous Okrug	0.69	0.00
5	Vologda Oblast	1.01	1.00
6	Murmansk Oblast	1.01	0.86
	median across Arctic regions	0.75	0.66

Comparison of the calculated indicators with the average for the Arctic regions (the values are generally similar for the Russian Federation) reveals the leading positions of the Arkhangelsk and Vologda, and then the Murmansk oblasts. The position of the Republic of Komi reflects the average values for the regions of the Russian Arctic. In summary, it can be said that the economic opportunities of the population of the European North in organizing and carrying out leisure and recreation activities are higher than the average in the Russian Federation and the Arctic.

6. Regions in the National Tourist Rating

One of the tools for assessing development of tourism and recreation is the rating of regions, which allows identifying leaders and outsiders in the development of domestic and international inbound tourism in the Russian Federation. Moreover, tourism rating contributes to the formation of Russian citizens' preferences for leisure and recreation opportunities, stimulating the development of domestic tourism.

The assessment of tourist potential of the regions of the European North, calculated on the basis of the author's methodology (taking into account the image of the tourist region, the level of tourist infrastructure development, tourism labor potential, transport accessibility of the region, environmental attractiveness of the territory, comfort and safety of tourists), allowed V.S. Orlova (Vologda State University) to rank the subjects of the Northwestern Federal District. The Republic of Karelia and the Vologda Oblast take the leading positions among the studied regions, yielding to

[21] Calculated by the author on the basis of State statistics: Regions of Russia. Socio-economic indicators. 2020: R32 Stat. Sat. / Rosstat, M., 2020. 1242 p.

St. Petersburg and the Leningrad Oblast, while the Murmansk Oblast, according to the researcher, closes the tourist rating [27]. In general, according to the calculations, "the competitive component of the tourist market of the European North... is under development" [28, Orlova V.S.]. However, despite the advantages of the methodology, exclusively expert (subjective) assessments, allowing similarity, inconsistency and dependence on the qualifications of the respondents, along with the complexity of the procedures, make it difficult to replicate the practice [29, Myakshin V.N., Shaparov A.E., Tikhanova D.V.].

Based on the methodology of systemic and structural-functional analysis of N. Leiper, the team of authors of the Northern (Arctic) Federal University named after M.V. Lomonosov (Arkhangelsk) proposed an assessment of the tourist potential of the subjects of the Arctic zone of the Russian Federation [29, Myakshin V.N., Shaparov A.E., Tikhanova D.V.]. Unfortunately, out of the six regions studied, scientists have considered only four ones, which does not allow to form a comprehensive representation of the destination of the European North as a whole and to compare the potential of the subjects of the Russian Federation. The advantages of calculating the National Tourist Rating, developed by the Center for Information Communications "Rating" together with the magazine "Recreation in Russia", are its comprehensiveness, the consideration of official statistics, as well as the assessment of all Russian regions, which makes it possible to form an idea of the "tourist" positions of the regions and trends in its development [22].

According to the National Tourism Rating, the criteria for assessing the development of the tourism sector of Russian regions are nine main groups of indicators that allow a comprehensive evaluation of tourist attractiveness and potential of territories [23]: level of development of the hotel business and infrastructure; importance of the tourism industry in the economy of the region; profitability of the tourism and hospitality industry in the region; popularity of the region among tourists who come for several days; popularity of the region among foreigners; tourist uniqueness; crime level; interest in the region as a place of recreation on the Internet; promotion of the region's tourism potential in the information space. It should be pointed out that the methodology of rating calculation has changed slightly over time, but this is not decisive when comparing data from different years.

According to the open data of the National Tourist Rating for the period 2016–2020, the regions of the European North, with the exception of the Nenets Autonomous Okrug, belong to the second group, labelled as "strong pros" [24]. At the same time, in our opinion, the generalization

[22] National rating. Official site. URL: http://russia-rating.ru/info/category/%D1%81%D0%BF%D0%B5%D1%86%D0%BF%D1%80%D0%BE%D0%B5%D0%BA%D1%82%D1%8B (accessed 17 August 2021).
[23] Ibid.
[24] National rating. Official site. URL: http://russia-rating.ru/info/category/%D1%81%D0%BF%D0%B5%D1%86%D0%BF%D1%80%D0%BE%D0%B5%D0%BA%D1%82%D1

of the values of places in the rating from 21 to 69 seems to be quite extensive; more details on the levels of tourist attractiveness is required.

In general, the regions of the European North (Table 8) are characterized by the retention of their positions in the ranking for the study period of 2016–2020, with the only exception of the Murmansk Oblast (decrease). In addition, it should be noted the high values of the rating in 2016 for all the studied regions, which may be due to the first experience of compiling it.

Table 8

Positions of regions in the National Tourism Rating for the period 2016–2020 [25]

No.	region	2016	2017	2018	2019	2020
1	Republic of Karelia	22	35	38	29	31
2	Vologda Oblast	29	49	47	37	34
3	Arkhangelsk Oblast	31	47	49	54	38
4	Murmansk Oblast	26	46	46	48	53
5	Komi Republic	61	74	68	68	69
6	Nenets Autonomous Okrug	81	84	83	85	83

Based on the median values, it can be concluded that the tourist attractiveness of the studied regions decreases from the Republic of Karelia and the Vologda Oblast to the Murmansk and Arkhangelsk oblasts, the Komi Republic; the Nenets Autonomous Okrug becomes the last in the ranking. According to the National Tourism Rating, the impact of the COVID-19 pandemic on the tourist attractiveness of regions in 2020 compared to 2019 manifested itself differently. For example, three constituent entities of the Russian Federation strengthened their positions in the National rating (the Arkhangelsk Oblast raised by 16 points, the Vologda region and the Nenets Autonomous Okrug raised by 2–3 points).

7. Factors hindering the development of tourism

On the basis of regional strategic documents for the development of tourism in the regions of the European North and the theoretical and practical developments of researchers, the main negative factors that have a restraining effect on the use of the tourist and recreational potential of the studied territories and the functioning of the tourism sector have been identified. Factors hindering the development of tourism include:

- insufficient level of development of tourism infrastructure, including accommodation, catering, leisure and recreation infrastructures;
- insufficient level of development of transport infrastructure, including the level of development of roadside and water infrastructure;
- inaccessibility and remoteness of objects of tourist display, including territorial remoteness and seasonal factor;
- insufficient level of tourist services, including compliance with international standards of tourist services;

[25] Source: compiled by the author based on data from the National Tourism Rating.

- insufficient recognition of the regional tourist product in the Russian and international markets of tourist services, including the lack of promotion, including the European North destination;
- insufficient level of qualification of personnel serving tourists;
- lack of uniformity of tourism products, including lack of inter-regional cooperation.

In addition, the high cost of tourism services and tourism products, due to the natural and climatic conditions of the regions and the decreasing ability to pay for Russian tourists, should be pointed out. The continuation of the action, as well as the strengthening of restrictive measures in connection with the new challenge of our time — the COVID-19 pandemic, can have a significant negative impact on the functioning of the tourism sector in the regions of the European North.

Conclusion

The study made it possible to form a general idea of the development of tourism in the European North of the Russian Federation based on the identified general trends and specifics of the development of the tourism and recreational activities in the regional context. The European North, represented by six subjects of the Russian Federation, is quite heterogeneous in terms of tourist and recreational potential and the level of development of the tourist and recreational sphere. At the same time, the destination has specific opportunities for the development of tourism and recreation and is characterized by general trends in its development. Summarizing the above, several main conclusions about the development of the tourist destination of the European North (according to the blocks considered) can be highlighted:

- the territory has a unique natural and cultural-historical potential, including original traditions, culture and hospitality of the local population, a large number of objects of tourist display, including objects of the UNESCO World Heritage List;
- the level of development of tourism infrastructure requires strengthening positions in the market of tourism services, including the infrastructure of accommodation, food, leisure and recreation;
- the development of tourism in the regions of the European North is positioned as one of the priority and/or promising areas of economic activity, which is reflected in the main strategic documents of the socio-economic development of the studied subjects of the Russian Federation;
- Russian tourists prevail in the inbound tourist flow to the European North; the international organized inbound flow is underdeveloped, significantly yielding to the outbound flow of Russians abroad;

- the economic opportunities of the population of the European North in organizing and conducting leisure and recreation are higher than the average for the Russian Federation and the Arctic.
- the regions of the European North are characterized by holding their positions in the National Tourism Rating for the study period 2016–2020 (decrease in Murmansk Oblast).
- the main constraints to tourism development are the following: insufficient level of development of tourism and transport infrastructure, insufficient level of tourism services, insufficient recognition of the regional tourism product in the Russian and international markets for tourism services, inaccessibility and remoteness of tourist display facilities.

Summarizing the above, it is necessary to focus on the uniqueness of the northern (Arctic) tourist destination of the European North of the Russian Federation. The COVID-19 pandemic, having had a significant negative impact on the development of the tourism and recreational activities in the regions of the European North, has made significant adjustments to the functioning of organizations focused on tourist services (up to the closure of individual enterprises). In this regard, the tourist and recreational sphere of the destination requires rethinking of the directions of development and vectors of focus.

Orientation towards Russian domestic tourists, promotion of the northern (Arctic) destination in the market of Russian tourist services seems to be one of the key areas for the development of tourism in the face of modern challenges and the termination of the international tourist flow. It seems important to cooperate with tourism business enterprises and related organizations involved in servicing vacationers in order to offer target group-oriented tourism products, which requires separate sociological studies to identify the key needs of consumers of tourism services.

It is necessary to identify the needs for recreation and tourism of the local population of the European regions with a significant narrowing of the choice of destinations under the influence of modern restrictions. It should be emphasized that in addition to the interests of business, the restoration of the physical and emotional strength of the local population is of high importance for the socio-economic development of the northern (Arctic) regions. Residents of the studied regions of the Russian Federation are among the most vulnerable from the standpoint of the severity of the natural and climatic conditions of life, therefore they need full-fledged recreation and rest. Tourist and recreational services for the local population should be focused on the tourism business, forming and offering tourist products oriented to local demand and needs (weekend tours, special offers, family vacations, etc.).

The search, including the identification of needs of target groups of tourists and recreationists, the formation of unique tour products, including through the combined efforts of tourism business regions of the European North, competent promotion of tour services will increase the

competitiveness of destinations in the domestic tourism market, creating a platform for getting out of modern challenges and, after the opening of national borders, for the development of international tourism.

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Resilience in the Theory and Practice of Arctic Communities' Adaptation to Environmental Challenges *

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Abstract. The aim of this study is to describe the individual and collective characteristics of the rural population of the Russian Arctic, which determine their vital activity and are internal factors of adaptation to climate change. The scientific novelty of the study consists in describing the phenomenon of resilience on the example of island and coastal communities of the Primorskiy district of the Arkhangelsk Oblast, which are characterized by high natural and socio-economic instability. Based on the empirical data, it is shown that the territorial and socio-cultural integrity of the living space of local communities, the integrality of self-existence and self-consciousness of local residents, cooperative coexistence, as well as proactivity of life support create the foundation for the resilience of local communities and contribute to their social adaptation to the effects of climate change. Particular attention is paid to the issue of understanding the culture of mobility of northern communities in the face of increasing cases of adverse weather events due to climate change. Based on the results of an empirical study, an approach to adaptation to climate change based on the use of the knowledge potential of local communities is proposed. The results of the study can be used to develop the theory of the development of the North of Russia, as well as the development of specific measures for adaptation to climate change at the local level.
Keywords: *rural settlement, climate change, adaptation, resilience, Russian Arctic, Arkhangelsk region*

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Introduction

In the 20th century, the economic development of the North and the Arctic was one of the priorities of the Soviet state policy [1; 2]. The collapse of the USSR led to qualitative changes in the economic and social structure of the Russian state [3]. The negative consequences of socio-economic transformations in post-Soviet Russia include a reduction in number and a decrease in living standard of the rural population. These trends have been especially strong in the northern regions of Russia, where the social and economic viability of the population has been supported by the state for many years [4].

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In addition to economic difficulties, climate change has been affecting the livelihoods of local communities in recent years [5]. According to the reports of Roshydromet, as well the materials of specialized institutes of the Russian Academy of Sciences, such as Yu. A. Izrael Institute of Global Climate and Ecology, the Arctic is warming twice as fast as other regions of the Earth [1]. This conclusion is supported by data from the Intergovernmental Panel on Climate Change [2].

The consequences of global warming include the reduction of the Arctic ice cover, the earlier opening of most rivers out of ice, the later rate of ice formation, the increase in frequency and severity of meteorological anomalous phenomena arising from climate change, such as fogs, storm winds, floods, avalanches etc. [6]. In turn, the effects of climate change have a negative impact on the socio-economic situation of the northern territories. For example, an unstable or "jumpy" ice condition develops on the northern rivers in spring and autumn, affecting navigation and mobility of local communities of coastal and island territories, which are dependent on a continuous connection with the mainland. The residents of the Russian Arctic are particularly vulnerable to these negative trends [7]. In this regard, the issues of social adaptation to climate change and the development of measures to prevent the consequences of these changes become relevant.

The concept of adaptation was first discussed in detail in natural sciences, where it is traditionally defined as the genetic ability of living organisms to survive in the natural environment under the influence of external factors that emerged in the evolution process. Today, the concept of adaptation is used in various fields of scientific knowledge; there are many definitions and modifications of this phenomenon, which depend on the nature of the adapting objects, the reasons causing the need for adaptation, as well as the adaptation methods and mechanisms. Depending on the system, physical, biological, psychological and social adaptation types are distinguished.

For the purposes of this study, let us refer to the concept of social adaptation, which is understood as the process of person's adapting to various changes that occur in his natural, social, political, and economic environment. The process of social adaptation is well studied in sociology. For example, E. Durkheim characterizes it as an individual process of responding to the impact of external factors, which can be expressed both in adaptation to the environment and in its change [8]. N. Luhmann, the creator of the theory of social systems, defines adaptation as a process of evolution, during which an adapting system adjusts to the environment by complicating its internal structure [9]. The American philosopher E. Toffler considers that any changes, both external and internal, are an ontologically rooted characteristic of human life, therefore adaptation is life [10]. Thus, external factors are decisive in a person's (society's) choice of ways of social adaptation

[1] Doklad ob osobennostyakh klimata na territorii Rossiyskoy Federatsii za 2020 god [Report on climate features in the Russian Federation for 2020]. URL: http://climatechange.igce.ru/index.php?option=com_docman&Itemid=73&gid=27&lang=ru (accessed 25 August 2021).
[2] Intergovernmental Panel on Climate Change. URL: https://www.ipcc.ch (accessed 27 August 2021).

to changing conditions. At the same time, the process of adaptation is influenced by subjective factors associated with the values of a person and society, their interests and goals.

In the 1930s, in connection with the active development of the North and the Arctic by the Soviet state, the study of the problem of human adaptation in the northern conditions began [11]. Then, in the 1960–1980s, due to the creation of large industrial and production complexes in the Far North, the issues of human adaptation to the conditions of the Far North were addressed by researchers under the guidance of Academician V.P. Kaznacheev [12]. Z.P. Sokolova is one of the authors who has examined in detail the problem of adaptation of the peoples of the North in nature and society. In work "Adaptive properties of the culture of the peoples of the North", the author singled out the dependence of people and their life activities on nature as one of the adaptation aspects [13]. The researcher points out that for many centuries, the northern people created a special folk culture (as a set of material and non-material (spiritual) subsystems), which allowed them to adapt to harsh natural conditions [13]. Subsequently, other Russian authors pointed out the adaptive properties of the culture of the peoples of the North, emphasizing that during the entire period of human development, culture allowed to maintain the stability and sustainability of society [14].

It is important to note that despite the growing attention to the theory of social adaptation, there is no consensus among researchers concerning its definition. This is due to the fact that human adaptation is carried out in different ways and is often a manifestation of individual qualities in a changing natural environment and in everyday life. Adaptation can go both passively (tolerant type), by adapting, subordinating to adverse environmental factors, and actively (resistant type), by resisting negative external factors and developing mechanisms to preserve vital functions. The fundamental point in consideration of social adaptation is that the existence of a person as a social being is often abstracted from the outside world, so this process is not so much about the natural environment but about the adaptation of the environment to human needs [15, p. 201–212]. A person changes his attitude to the environment in order to make it a place suitable for life. Man observes nature, forms knowledge and then uses this knowledge for his own purposes for his life support. The advantage of this approach of considering social adaptation is that it provides the potential to study the place-specific abilities of the population to adapt to the negative consequences of these changes.

In 1992, when the United Nations Framework Convention on Climate Change was created, the concept of adaptation was also applied to responses to climate change, focusing on the individual and collective capacity to reduce vulnerability caused by the effects of changing weather patterns. This aspect of adaptation, which in foreign literature is expressed by the term "resilience", is becoming increasingly relevant for the northern territories and the Arctic due to global climate change. In fact, it represents adaptive capacity — "the ability of a system to adapt to climate

change in order to mitigate potential damage, use existing opportunities or cope with the consequences" [16].

Russian studies of the concept of resilience in the context of socio-economic and environmental problems are still limited [17; 18; 19; 20; 21]. They are mainly focused on the content of the concepts of resilience, urban resilience, regional resilience and practically do not affect the features of resilience at the local level in relation to certain factors, for example, the resilience of rural settlements in the northern territories in the context of climate change. In their works, researchers note the substantive difference between the concept of "resilience" (or, "resistance", "shock resistance", "viability"), from the concept of "sustainability" [21]. The concept of "sustainability" or "sustainable development" was developed in the late 1980s in connection with the growth of environmental problems and the need to develop new approaches to the harmonious co-development of the economy and society without harming the natural environment [22]. In turn, resilience is the ability of a system (for example, natural, social) to anticipate and resist, adapt and respond, and recover in response to external influences [21]. Such an expanded understanding places emphasis on a particular approach to the phenomenon of resilience — sociocultural, which makes it possible to conduct various quantitative and qualitative assessments. Based on the assessment of the degree of impact of external factors, the degree of vulnerability of the system, the adaptive capacity of the system, it is also possible to develop strategies and measures for adaptation to climate change at different levels: global (on a global scale), regional (at the level of macroregions), national (at the state level), local (at the county, municipality level). It is worth noting that, so far, in the Russian Arctic, the response adaptation is most common, which is expressed in taking measures to address the consequences of climate change after they have been discovered.

In this article, we propose to address social adaptation to climate change by examining the livelihoods of the people of the island and coastal regions of the Russian North, and by looking at how resilience to the challenges of nature is manifested in practice. The relevance of the task is determined, firstly, by the fundamental nature of the problem of the socio-cultural organization of the northern territories and the insufficient study of the concept of the resilience of the rural population as the ability to withstand external influences; secondly, the need to create a new theory, as well as a model for the development of the northern and Arctic territories based on the study of the potential of local communities [23]; and thirdly, the significance of the research results for the modern development of the territories of the Russian Arctic.

Materials and methods

The Arkhangelsk Oblast includes several districts of the Arctic zone of the Russian Federation. Among them is the Primorskiy district, which includes islands in the delta of the Northern Dvina river and coastal areas of the summer and winter shores of the Onega Peninsula of the

White Sea. In summer 2019–2021, sociological studies were conducted in the settlements of these territories (hamlets: Kegostrov, Konetsdvorye, Lastola, Pustosh, Vyselki, Odinochka, Andrianovo, Pushhlakhta, Letnyaya Zolotitsa, Letniy Navolok, Lopshenga, Yarenga; villages: Voznesenye and Pertominsk) to collect data about the socio-cultural organization and lifestyle of local communities, identifying and describing the individual and collective characteristics of their life, social perceptions and expectations regarding the needs, prospects and acceptable ways of developing rural space in a changing climate. It should be noted that on the coast of the White Sea, complex field studies had significant limitations, consisting in difficult transport accessibility of coastal settlements.

The empirical study was carried out using the method of qualitative semi-structured interviews with local residents. The selection of respondents and the survey was carried out using the "snowball" method, when the respondents, selected at random (in households, on the streets, in grocery stores, at the post office, in the local administration), suggested other potential candidates for the study.

Table 1

The number of interviews conducted in settlements of the island and coastal territories of the Arkhangelsk Oblast in 2019–2021

No.	*Settlements of the island and coastal territories of the Arkhangelsk Oblast*	*Number of interviews*
1	Kegostrov	7
2	Pustosh	2
3	Vyselki	2
4	Odinochka	2
5	Voznesenye	8
6	Andrianovo	1
7	Lastola	4
8	Konetsdvorye	3
10	Pushlakhta	7
11	Letnyaya Zolotitsa	6
12	Letniy Navolok	1
13	Lopshenga	9
14	Yarenga	1
15	Pertominsk	4
Total		**57**

Almost all interviews, with the exception of cases where the respondents refused to talk using audio equipment, were recorded, transcribed and analyzed. In addition to interviewing, the study used a simple, non-standardized real-time observation of the everyday life of villagers. The materials obtained during the expeditions were supplemented with secondary data, namely historical information on the development of the islands and coastal territories of the Primorskiy district of Arkhangelsk Oblast, ethnographic and statistical data on population composition and size, data from scientific reports on climate change, as well as social information from the media.

Results

The hamlets of Konetsdvorye, Lastola, Pustosh, Vyselki, Odinochka, Andrianovo and the village of Voznesenye are located on the islands of the Northern Dvina River delta and are part of the Ostrovnoe municipality of the Primorskiy municipal district of the Arkhangelsk Oblast. They are the largest settlements with a permanent population remaining on their territory. In total, Ostrovnoe municipality includes 49 settlements. As of January 1, 2019, the indigenous population of Ostrovnoe municipality was 1896 people. According to official data, no population census is conducted for the individual villages of the municipality. This information was confirmed by a representative of the local administration, according to whom "the population has not been registered since 2014, because these powers were transferred to the passport office, which does not have these data".

Historically, the territory of the Northern Dvina delta islands was inhabited by the Verkhovenskiy Pomors (who lived in the upper reaches of the northern rivers), the mention of whom dates back to the 12th century. According to the All-Russian population census, in 2010, 504 people who identified themselves as Pomors lived in Primorskiy district of Arkhangelsk Oblast, which includes Ostrovnoe municipality [3].

The geographical feature of the island territories is their remoteness from the regional center and limited transport accessibility. During the navigation period from early May to late October, the connection between the islands and Arkhangelsk is maintained by regular river transport, and in winter — via ice crossings or winter roads, which the locals call "roads of life" [7].

The hamlets of Pushlakhta, Letnyaya Zolotitsa, Letniy Navolok, Lopshenga, Yarenga and the village of Pertominsk are located along the coast of the Onega Peninsula of the White Sea. Geographically, they are also part of the Primorskiy district of the Arkhangelsk Oblast. The White Sea coast was settled during the 12th–17th centuries as a result of Novgorod colonization and foundation of monasteries. Since ancient times, these territories were inhabited by Pomors, whose main occupations were navigation, sea fishing, and salt production [24]. After the collapse of the Soviet Union, the population decreased considerably.

Table 2

Size of the permanent population of the island and coastal territories of the Arkhangelsk Oblast

No.	Name of the settlement	Population as of 01.01.2021 (people)
1	Pustosh	221
2	Vyselki	25
3	Odinochka	30
4	Voznesenye	412
5	Andrianovo	23

[3] Distribution of the population by the most numerous nationalities in the Arkhangelsk region according to the results of the 2010 All-Russian Population Census. Office of the Federal State Statistics Service for the Arkhangelsk Region and the Nenets Autonomous Okrug. URL: https://arhangelskstat.gks.ru/search?q=поморы (accessed 18 July 2021).

6	Lastola	432
7	Konetsdvorye	31
8	Pushlakhta	31
9	Letnyaya Zolotitsa	102
10	Letniy Navolok	5
11	Lopshenga	187
12	Yarenga	74
13	Pertominsk	245

The traditional occupations of the indigenous population of the islands are fishing and collecting wild plants. The extraction of algae is developing on the coast of the White Sea, and hunting for sea seals is being developed in the village of Letnyaya Zolotitsa. During the Soviet period, agriculture was well developed on the island and coastal territories of the Arkhangelsk Oblast. With the transition to a market economy, the collective farms went bankrupt. Today, agriculture, fishing, sea animal and algae harvesting are carried out by private farm enterprises, the number of which has noticeably decreased in recent years. Thus, in the early 2000s, there were 22 private farms in Ostrovnoe municipality, today there is only one in the hamlet of Andrianovo. In Letnyaya Zolotitsa hamlet, there is a fishing collective farm and a private enterprise for the extraction of White Sea algae; the local residents of Pushlakhta harvest firewood for the needs of the Solovetsky Monastery. Each of the surveyed villages, with the exception of the hamlet of Letniy Navolok, which has a permanent population of only 5 people, has a small general store, and some of them have a post office.

Most households have small boats — small rowing and motor boats that are used by local residents to travel to neighboring villages: to visit, to relax, to pick mushrooms, berries or to go fishing. As one respondent noted, "private boats for locals are like a car for the population in the city". A resident of the Vyselki hamlet confirms: "A steamboat goes here, and residents from other distant villages — Kalchino, Zalakhati — come to us in the winter with sledges for shopping, and in summer they come by boat".

According to respondents, navigation plays an important role in the life of Pomor villages. In the Soviet years, the regularity and frequency of river transportation of passengers was supported by the state. "The ship used to run every half an hour", notes one of the respondents. With the transition to a market economy and the massive outflow of the rural population to the cities, river transportation became unprofitable and is maintained at the expense of subsidies from the local budget.

In recent years, climate change has affected navigation conditions. Based on personal observations, the majority of respondents noted that winters used to be colder, but now they are milder, everything melts faster. Climate warming results in shifting the opening and closing dates of navigation, as well as cases of forced opening of navigation in December and January. According to an official representative of the Arkhangelsk River Port, "while the opening of navigation traditionally takes place at the end of April or the beginning of May, its closure depends on the actual

onset of winter, but the timing of the opening of navigation has not changed significantly over the past 20 years. However, in recent years, navigation had to be opened in winter for several days or weeks after they were closed due to winter thaws". Despite the stability of passenger ships, residents report cases of cancelled voyages due to storms, ice conditions and fog. Forced closure of navigation due to storms and fogs occurs in the autumn season, but can also occur in the summer.

During the winter season, weather fluctuations often result in the occurrence of mudflows, which often cut off the inhabitants of the islands and the White Sea coastline from the mainland. In recent years, thaw has become a frequent phenomenon due to noticeable changes in climate and ice conditions occurring in the autumn-spring period. "Before, muddy weather took two to three weeks, but now it takes up to two months," said one of the residents. In autumn, the thaw lasts from the day when passenger ships stop moving on the river until the river ice becomes safe enough for winter roads to open, and vice versa in the spring. For example, in 2019, stable ice formation was not observed until the New Year [4]. During the thaw, communication with the islands is carried out by ice-class passenger ships — tugboats. Changes in the ice conditions have a significant impact on the livelihoods of the population of Pomor villages: "During the thaw, we are cut off from life for two weeks, or even a month."

The situation is even more dramatic in the villages located on the Onega coast of the White Sea. During the navigation period (from May till the end of September), passengers and cargo are transported to the villages of the summer and winter coasts of the Onega Peninsula once a month by the Belomorye motor ship. During the thaw, the population of seaside villages is "cut off" from the mainland for a long time, so from the beginning of autumn to the beginning of spring navigation, local residents try to leave for the cities. For those who stay in villages for the winter period, communication and delivery of the necessary goods is carried out through winter roads by snowmobiles.

Climate change affects not only the mobility of the Pomor population, but also traditional economic activities, such as fishing. Residents of the White Sea coast have noted a significant warming of sea water in recent years. It causes migration to the north of such cold-blooded fish species as cod, which seriously affects the possibility of its recreational fishing. At the same time, villagers notice that in recent years, there has been an increase in the population of pink salmon, which "used to come to spawn once every four years, and now — once every two years". This fact was also recorded in the territory of indigenous peoples in the Nenets Autonomous Okrug [25].

As the surveys have shown, most of the rural population is anxious about unpredictable changes in navigation conditions, as well as the lack of measures to support public mobility in the form of regular water, land and air transport, as well as transport infrastructure. As rightly noted

[4] Zhiteli Pomor'ya ostanutsya bez ledovykh pereprav do Novogo goda [Residents of Pomorye will be left without ice crossings until the New Year]. Rossiyskaya gazeta, 2019. URL: https://news.rambler.ru/other/43372591-zhiteli-pomorya-ostanutsya-bez-ledovyh-pereprav-do-novogo-goda/items/ (accessed 20 December 2019).

by A.N. Pilyasov, this is due to the fact that a significant part of the population of the North of Russia has an "innate desire for mobility", which is not only an important component of the culture and life of northern communities, but also the basis for overcoming peripheries and reducing the sense of isolation and detachment of territories from the rest of the country [26].

Changes in the conditions of mobility and traditional economic activities due to climate warming necessitate social adaptation of the inhabitants of the island and coastal territories in the Primorskiy district of the Arkhangelsk Oblast to new natural challenges. To date, social adaptation of local communities is usually a "response" to climate challenges that takes place after the effects of climate change have been discovered, and it is usually associated with adaptation of individuals, households or local authorities.

After analyzing the results of the empirical study, we identified the following factors that form the basis of community resilience and contribute to social adaptation to the impacts of climate change:

1) The system of natural, individual, socio-cultural and spiritual values of local residents that has developed over the years, which is decisive in choosing strategies for further actions. These include "connection with the parental home, village", "modest beauty of nature", "peace and quiet", "solitude". The results of the interviews showed that despite difficult economic conditions and limited transport accessibility, local residents do not want to leave their native villages. Closeness to nature, memories of a past life, as well as the hope for village revival keep them in their native lands. In most of the surveyed villages, we met initiative citizens who play an important role in maintaining the socio-cultural life. As a rule, these are people who were born and lived all their lives in their native village. Being retired, they are engaged in the revival and preservation of the history and culture of their native village, and also solve many organizational issues of the socio-economic life of residents. The integrity of the social and cultural structure of local communities increases the ability of local people to adapt to external influences.

2) The social collectivity of the local population. Most inhabitants of island and coastal territories are characterized by special forms of social organization, the main features of which are social community that ensures close ties and contacts of local residents, as well as special forms of human communication, significantly different from those that are formed in urban culture. In the village, social groups and collectives have more or less explicit control over all aspects of the livelihood of its inhabitants. The "village" is characterized by openness of communication: everyone's private life is visible at a glance. The consciousness of rural residents is formed with this "transparency" of behavior in mind; it is subject to direct regulation by society and is strongly oriented towards the opinion and assessment of its members. The basis of survival is personal connections, as well as a circle of friends and relatives, which contributes to a sense of security in a situation of uncertainty. In conditions of limited and unstable transport communication, remoteness of territories, social community and mutual assistance allow maintaining constant transport mobility of

rural residents, which is based on personal (good-neighborly) ties. The interviews with respondents show that in summer, in case of cancellation of the regular riverboat trip, the residents of the Northern Dvina river delta island territories use the services of acquaintances, private carriers who have small vessels to get to the city. On the coast of the White Sea, private motor boats are currently the only means of transporting local residents along the White Sea.

3) Preventive life support. During the Soviet era, there was a well-developed system of "northern delivery" of food, industrial goods and energy resources. With the transition to a market economy, state support for the northern regions was curtailed. Today, local residents of the island and coastal areas in most cases ensure their own food, industrial and energy security by planning the delivery of necessary products, goods and energy resources in advance. An important source of livelihood is subsistence farming, coastal fishing and harvesting of wild plants. In addition, the islands are supplied with food and manufactured goods by individual entrepreneurs with small shops in the larger villages. The consumer basket is formed according to the requests of the residents: "In winter, the villagers order canned food, frozen foods and juices". In summer, the store sells freshly caught and slightly salted fish, berries and mushrooms, which the locals deliver for sale. From conversations with shopkeepers, we found out that in recent years, climate change has had a negative impact on the supply chain of goods to the islands. Since the period of thaw has increased significantly, supplies are stocked for at least a month in the spring before the rivers are cleared of ice and in the autumn before the freeze-up. In the coastal villages of the White Sea, a significant role in the supply of goods is played by the Union of Consumer Societies of the Arkhangelsk Oblast, which has small shops in Pomor villages. From a conversation with the seller of one of the stores, we have learned that in summer, goods are imported once a month on a ship that belongs to the fishing collective farm, and in winter — on snowstorms. During a thaw, a store can be left without food for a month or even two.

4) Reliance on the experience of observing weather and natural conditions. Conversations with respondents revealed that locals often lack official information about weather and natural conditions to make decisions about river, sea trips or traditional fishing activities, so they often use knowledge based on their own observations of natural phenomena to determine navigational conditions. It should be noted that historically the life of the Pomors, who inhabited the riverine and coastal territories of the Arkhangelsk Oblast, was closely connected with navigation along the northern rivers and seas. Systematic observations of the natural environment led to the accumulation of practical knowledge about the dependence of navigation on weather conditions, which was passed down from generation to generation and was an element of traditional Pomor culture. The interviews with modern Pomors clarified that local residents still use knowledge based on their own observations of natural phenomena (the state of water bodies, tides, wind direction) to determine navigation conditions and engage in traditional crafts. "Those who live on the islands don't need any tips, as we know what will happen tomorrow by the color of water," said a resi-

dent of the Pustosh hamlet, answering a question about how the local population determines when the ice is melting or forming. She continued: "The people who live here have kept records since ancient times, analyzing and documenting everything. They were family sailing pilots, but today people keep notebooks and just study the weather: on such and such date the river has risen, on such and such date it has opened up". Local knowledge of the weather is used not only for forecasting, but also to cope with dangerous weather conditions as they arise, especially far from settlements when updates of official forecasts are not always available due to the fact that cellular phones do not receive signals. For example, in the hamlet of Lopshenga, one of the fishermen said that when they are in the sea and such a natural phenomenon as a "wall in the sea" appears, then "one should immediately swim away, because there will be either fog or a storm". Local knowledge of weather and natural conditions was found to be usually the result of systematic observation of the natural environment, comparing it with already existing knowledge and testing it in a specific location. In most cases, this knowledge is individual, not collective. They are recorded, preserved by individual modern residents of Pomor villages due to the existing long-term tradition and, in combination with official meteorological data, are used to predict and overcome dangerous weather and natural conditions. Of course, we are not suggesting that folk knowledge of weather can be considered as recommendations for making significant management decisions (this would be too bold and even dangerous), but they may be complementary to scientific knowledge and combined with official data to develop strategies for adapting to changing environmental conditions. For example, scientific meteorology can use people's knowledge of weather conditions to add empirical material on the current state of natural features (such as ice conditions) that are beyond official instrumental observations. Such examples already exist in other Arctic countries. For example, the Regos Internet platform in Norway (https://www.regobs.no/) allows local residents to register their environmental observations through a special application on a phone or personal computer. These observations are then used by national services to generate more specific forecasts and rapid notifications of possible changes in the natural environment. Despite the positive examples already available in world practice, questions about the objectivity, methods of assessment and applicability of local knowledge for predicting natural phenomena remain open. In order to address these issues, Canadian researchers propose setting up advisory groups to discuss how local weather knowledge can be incorporated into instrumental meteorological observations [27].

In summary, we were unable to identify any regularity in the mobility patterns of local people in a changing climate. When planning or carrying out river or sea trips, modern Pomors use rather situational and reactive approaches, starting from specific weather and natural conditions. At the same time, it was noted that local residents take a proactive approach to food security. Without thinking about the reasons, locals are increasingly recording the facts of changing navigation conditions due to climate warming, which gives them, in particular, grounds for making deci-

sions on creating stocks of food and other goods for the period of possible lack of water communication with the "mainland".

Discussion and conclusions

As follows from the results of the study, the scientific task set is complex. It involves a wide coverage of the studied objects, phenomena and processes, starting with the analysis of various theories and models of the development of northern spaces in the historical perspective and at the present stage, studying the current socio-economic state of northern communities, climate change and their consequences, and ending with the development of the concept of resilience, social adaptation and the development of specific measures for adaptation to climate change at the local level. For this purpose, we turned to the socio-economic life of the riverine and coastal communities of the Arkhangelsk Oblast, which have not been systematically studied since the 2000s. Using the example of the life of rural island and coastal settlements of the Primorskiy district, we have shown that they are characterized by high socio-economic instability, which is expressed in the absence of industrial production, jobs, and, as a result, in depopulation. Despite economic and demographic changes, the island and coastal territories of the Primorskiy district of the Arkhangelsk Oblast still retain a permanently residing population. Basically, these are residents of retirement age who were born and raised on the islands and the coast, have similar historical destinies and socio-economic status, and are also interconnected by the duration of neighborhood and communication. Many of the indigenous people with whom we were able to talk identify themselves as Pomors, explaining this by the presence of ancestors who were engaged in traditional Pomor types of economic activity, as well as by many years of connection with the Pomor land, which was reflected in their own worldview and perception of themselves as Pomors.

Modern Pomors, like their ancestors, continue to engage in traditional economic activities: fishing, collecting wild plants, growing vegetables, but the results of this activity do not fully cover their daily needs. In this regard, the dependence of the island population on navigation and communication with the "mainland" remains high. However, due to the lack of a developed road and limited water communication, the island and coastal territories of the North of Russia are actually on the "periphery" of innovative economy and social life [28].

In addition to socio-economic challenges, climate change has been affecting the livelihoods of local communities in recent years. These changes are expressed in weather fluctuations, which make adjustments to the traditional ways of life and mobility of the Pomors. That is why the issue of adaptation of local communities to climate change is so acute, the answer to which is proposed to be sought at the local level, at the core of social organization and the foundation of the resilience of Arctic island and coastal communities. These include the territorial and socio-cultural integrity of the living space of local communities; the habituality, the traditional way of life that has been formed over the years, which determines the integrality of the self-existence and self-

awareness of local residents; cooperative coexistence, proactive life support, and reliance on traditional knowledge. The listed aspects of resilience allow modern Pomors to survive in the conditions of external challenges, and it is the survival that is expressed in slow but constant adaptation to natural and socio-economic fluctuations. This adaptation is manifested, among other things, in the presence of a hidden (not immediately obvious to an outside observer) network social organization of island and coastal communities, but modern Pomors find ground for existence in such social structure (they are "alive and strong in peace"). These factors determine the peculiarities of planning and implementation of local mobility between villages (through personal ties), the supply of food and industrial goods, the study of which is especially important in the context of strategic plans for the development of the Russian Arctic and climate change. Obviously, in the context of global natural challenges, the so-called centralized, collective mobility is possible only if there are specific measures to adapt to the consequences of climate change. The literature analysis showed that Russia has strategic plans for the development of transport infrastructure in the context of climate change [5], but they do not take into account the real-life practice of the northern communities, which actually turned out to be "face to face" with natural challenges. In our opinion, innovative approaches to the organization of local transport communication in the new environmental conditions should be based on the study and understanding of the mobility of local communities, and, in particular, on the use of their knowledge potential and its further incorporation into existing strategies and plans for adapting to external challenges. The main advantage of local knowledge is that it can contribute to decision-making about potential environmental and climate impacts on local communities, because such forms of knowledge are directly relevant to specific places and situations. In addition, local knowledge may well complement scientific knowledge and can be used to develop strategies for adapting to changing environmental conditions.

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Peculiarities of Territorial Population Mobility in Yakutia under COVID-19 Pandemic Conditions *

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Abstract. The article discusses the special characteristics of the territorial mobility of the population of the Republic of Sakha (Yakutia). Changes in the migration situation, structure of migration and migration activity of the population in different social and economic zones of the region in the context of the coronavirus pandemic are analyzed. The analysis shows that the peculiarities of distribution of productive forces and human resources in the labor market retain a fairly high potential for labor migration to the Republic of Sakha (Yakutia) from the CIS countries and far abroad in the context of a pandemic, the share of arriving migrants indicating work among the reasons for migration continues to grow. The influence of socio-economic characteristics and urgent problems of the republic on the formation of migration activity and migration intentions of the population is considered. The article is based on the results of a mass survey in Yakutia (n=200). Analysis of the survey results shows that the features of territorial mobility, migration intentions of the population and absence of migration plans depend on the socio-economic conditions of residence, various factors of individual social status and position, and mobility resources. With mostly satisfactory assessments of the socio-economic situation in the republic and most factors of social life in the region, the respondents' migration intentions are conditioned by low incomes and territorial specifics — remoteness from the central regions of the country, the high cost of air fares and harsh climatic conditions. In the pandemic conditions, the spatial mobility of the population, as one of the most important social resources of society, is most characteristic of the part of young people who have financial resources, unmarried, seeking better socio-economic and climatic conditions, to regions with better infrastructure, where they can get a decent job, quality education, medical services, recreation and leisure.
Keywords: *territorial mobility, migration, labor migrant, Arctic zone, migration intention, Yakutia*

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Introduction

The COVID-19 pandemic has changed the current socio-economic reality; experts assess its impact as the largest global crisis. “The pandemic has become an impetus that triggered or intensified crisis processes in all areas of life, from family relationships and personal hygiene practices to the global economy and politics” [1]. According to experts, the death rate in Russia in 2020 was the highest over the past 10 years. Regional depopulation has accelerated with the onset of the pandemic against a backdrop of shortages of health facilities, doctors, medicines and basic protective equipment. In just 11 months of 2020, the natural decline in the population of the Russian Federation, according to official data, reached 574.8 thousand people. The total mortality of Russians in 2020 exceeded 2 million people [1, Moiseev V.V., Kolesnikova Yu.S., Smolenskaya O.A., p. 40].

In 2020, according to the UN Department of Economic and Social Affairs, the COVID-19 pandemic has severely disrupted all forms of human mobility, including international migration. According to preliminary estimates, by mid-2020, the pandemic may have reduced the number of international migrants by about 2 million [2]. In the Russian Federation, a crisis of migration mobility is noted, a halving of migration growth in 2020 compared to 2019, an increase in unemployment and worsening working conditions for migrants [2, Ryazantsev S.V., Bragin A.D. Ryazantsev N.S.; 3, Dyachenko A.N., Pechkurov I.V., Mamina D.A.].

UN Secretary-General A. Guterres’ Policy Brief on COVID-19 and People on the Move identified three forms of crisis as key challenges for spatial mobility. Firstly, there is a health crisis where people on the move are exposed to the virus without adequate protective equipment. Secondly, it is a socio-economic crisis affecting people on the move with precarious livelihoods, especially those working in the informal economy with little or no access to social protection measures. Thirdly, it is a protection crisis with border closures and other movement restrictions to contain the spread of COVID-19, which is having a serious impact on the rights of many people on the move, putting them in extremely dangerous situations [3].

In Yakutia, in 2020, the natural growth decreased by 1 200 people compared to 2019. The coefficient per 1 000 people in 2019 was 5.4‰, in 2020 — 4.1‰. According to the State Statistics for the Republic of Sakha (Yakutia), the natural increase in the republic is maintained by the num-

[1] Ilyin V.I. Voznikaet novaya real'nost', v kotoroy planka normal'nogo riska povyshena [A new reality is emerging in which the bar for normal risk has been raised] 02.09.2021. URL: https://covid19.fom.ru/post/vladimir-ilin-voznikaet-novaya-realnost-v-kotoroj-planka-normalnogo-riska-povyshena?fbclid=IwAR02csbdFN1J2QtREU6_zYyJ8xiFk2mrhkJylbYXXm9boi3pLusnslQoWsY (accessed 01 October 2021).

[2] Key indicators of international migration for 2020. January, 2021. URL: https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/imr2020_10_key_messages_ru_1.pdf (accessed 29 September 2021).

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ber of births exceeding the number of deaths. In 2020, the number of births exceeded the number of deaths by 44.2% (in 2019 — by 68.6%) [4]. The number of deaths increased by 1 480 people. In the distribution of deaths by causes for 2020, deaths from coronovirus infection caused by COVID-19 accounted for 7.8% [5].

In the Republic of Sakha (Yakutia), the formation of the size, ethnic and gender-age structure of the population, the system of social and labor resources, socio-economic and cultural and economic development have traditionally been associated with intensive migration processes. Throughout the 20th century, the model of industrial development of Yakutia was characterized by a massive movement and concentration of labor, in contrast to the industrialization of the polar regions of Norway, Finland and Sweden, where local labor resources were predominantly used [4, Ignatieva V.B., p. 86]. The Republic belongs to the most important mineral and mining regions of Russia and intensively attracts migrants to work in remote and inaccessible areas, where mining is predominantly performed. The territory of Yakutia is still one of the most isolated and hard-to-reach regions of the world in terms of transport: 90% of the territory does not have a year-round transport connection, which creates socio-spatial forms of restriction and alienation of the population. Features of the socio-economic development of modern society, global challenges, climate change, the COVID-19 pandemic have brought to the fore the issues of spatial mobility of the population, which characterize the standard of living and are a factor in the region's development.

Materials and methods

The goals, objectives and basic principles of the Concept of the State Migration Policy of the Russian Federation for 2019–2025 reflect the main modern domestic scientific approaches to the study of territorial mobility, migration: the complexity of approaches, taking into account the solution of problems in the field of socio-economic (reproduction of human resources of economic development, competition in labor market, etc.), spatial (including geographical), demographic (analysis of the size and gender-age structure of the population and migrants, their impact on the state of human populations), cultural (problems of cultural integration/disintegration), legal development (analysis of legal mechanisms) of the Russian Federation.

There are many different approaches to the definition of territorial mobility. According to experts, over the past decades, there has been a reassessment of researchers' attitude to mobility and its perception solely as movement in space. Currently, mobility tends to become a "whole", which includes the movement itself, everything that precedes, accompanies and prolongs it [5, Stroev P.V., Kan M.I., p. 36]. According to J. Urry, social life is a constant process of transition from being close to others (at work, at home, on vacation, etc.) to being at a distance. All social life,

[4] Population of the Republic of Sakha (Yakutia) as of January 1, 2021: Statistical compendium. Yakutsk: Territorial body of the Federal State Statistics Service for the Republic of Sakha (Yakutia), 2021. p. 6.
[5] Mortality in the Republic of Sakha (Yakutia) in 2020: Statistical compendium. Yakutsk: Territorial body of the Federal State Statistics Service for the Republic of Sakha (Yakutia), 2021. s. 9726.

work, family, education and politics involve relationships of periodic presence and different modes of absence, partly dependent on numerous technologies of travel and communication that transport objects, people, ideas and images at a distance [6, Urry J., p. 135].

J. Urry believes that social processes are based on five interdependent "mobilities" that organize social life at a distance and shape (and re-shape) its contours. The first type of mobility is the movement of people for work, leisure, family life, pleasure, migration or flight, organized in different ways in relation to contrasting spatio-temporal modalities (from daily trips to a once-in-a-lifetime exile from homeland), that is, the territorial mobility of the individual himself. The physical movements of people are interdependent with the physical movements of objects between producers, consumers and sellers, imaginary movements with the help of images of places and people carried out through various printed or visual media, virtual travels, often in real time, overcoming geographic and social distances, communication journeys through the exchange of SMS, texts, letters and telegrams, via fax, telephone or mobile phone [6, Urry J., p. 135].

In Urry's opinion, the ability to move and the interdependence of movement creates a new form of social or "network" capital. Moreover, he believes that "physical or virtual movement between different places can become a source of status or power, an expression of the right to move, temporarily or permanently. Where movement is blocked, social deprivation and inequality can arise" [6, Urry J., p. 76–77, 142].

M. Sheller develops this thesis: the theoretical understanding of mobility is focused on the material practices of movement, communicative mobility, infrastructures and control systems that help/hinder movement, representations, ideologies and meanings attached to movement/rest [7, p. 3]. While V. Kaufman and a group of researchers believe that socio-structurally embedded actors play a central role in spatial mobility, as do certain contexts that constrain or make movement possible. Causes, limitations, and implications for larger social processes will remain unclear if the geography of flows is considered in isolation, that is, unless we can explore the modus operandi of the social and political logic of movements in geographic space. In addition, the study of mobility potential will reveal new aspects of human mobility in terms of the possibilities and limitations of their maneuvers, as well as the wider social consequences of social and spatial mobility. Based on these considerations, they propose a theoretical concept of mobility capital relatively autonomous from economic, social and cultural capital. They define mobility capital or mobility as the ability of subjects (for example, goods, information or people) to be mobile in social and geographic space, or as the way in which subjects access and use opportunities for socio-spatial mobility according to their circumstances [8, Kaufmann V., Bergman M.M., Joye D., p. 749–750]. The purpose of this article is to study trends in the formation of spatial mobility of the population of Yakutia in the face of a new challenge — the COVID-19 pandemic.

Primary sociological information on the project "Ethno-demographic processes in Asian Russia: the current situation, forecasts and risks" was collected by means of a quota questionnaire

survey. Topic of the survey: the study of public perception of cultural diversity, migration and migrants. The purpose of the study: to assess the conflict and integration potential of the population in the field of migration relations, to study the problems of internal and international migration. A team of experts working at universities and scientific organizations in 12 regions of the Ural, Siberian, and Far Eastern federal okrugs was formed to conduct the research, including an ethnosociological survey. All experts are ethnologists, sociologists, demographers by profession, with experience in working on projects of the Distributed Research Center for Interethnic and Interreligious Problems. While preparing the study, a toolkit was developed for studying public opinion on the problems of internal and international migration in the regions of Asia [6]. This article uses the results of sociological surveys conducted in five regions of the Far Eastern Federal Okrug (n=1000) — the Republic of Buryatia, Primorskiy Krai, the Republic of Sakha (Yakutia), Khabarovsk Krai and Chukotka Autonomous Okrug.

The article is based on the results of a mass survey in Yakutia. A total of 200 respondents over the age of 18 years were interviewed in the Republic of Sakha (Yakutia) from October 1 to November 25, 2020 according to the established sample using standard project instruments. The survey results were additionally processed using IBM.SPSS.Statistics (Ver. 21) using descriptive statistics methods (cross-tabulations). The socio-demographic characteristics of the respondents are as follows: by gender, women accounted for 54%, men — 46%; age: 18–29 years old — 24.5%, 30–59 years old — 53.5%, 60 and older — 22.0%. Marital status of the respondents: not married, lives with parents — 12.5%, not married, lives alone — 17.5%, not married, lives with a partner — 6.5 %, single, lives in a hostel — 2%, single, has a child (children) — 9.5%, married, no children — 7%, married, has a child (children) — 40.5%; 3.5% indicated other answers about marital status.

By ethnicity: Yakuts — 83.0%, Russians — 12.0%, Evenki — 2.5%, indicated other answers about nationality — 2.5%. By type of activity, employed accounted for 73%, combining work and study — 7.5%, students — 1.0%, unemployed — 2.5%, pensioners — 14.5%; by field of activity: state and municipal administration — 13%, army, police, Ministry of Emergency Situations —2.5%, education — 19%, healthcare — 9.5%, energy — 2%, transport — 6.5%, finance — 4 .0%, extractive industry — 1%, trade — 8%, medium and small business — 16.5%, other — 1%; by official position: managers, deputy heads of enterprises, institutions — 6%, department heads — 10%, specialists — 53%, employees, technical performers — 6.5%, workers — 3.5%, other — 5%.

Respondents' income level: the funds I receive are not enough to live on, relatives help — 13.5%, enough to buy food, pay utility bills — 36.5%, enough to buy food, pay utility bills, buy clothes, buy consumer electronics or furniture — 30.5%, enough to buy food, pay utilities, buy

[6] Report on the implementation of the project "Ethno-demographic processes in Asian Russia: current situation, forecasts and risks" within the framework of the 1st stage of the program of scientific research and applied work related to the study of the ethno-cultural diversity of Russian society and aimed at strengthening the all-Russian identity. Omsk, 2020, p. 4.

clothes, buy consumer electronics or furniture, pay for travel — 15%, enough to buy food, pay utilities, buy clothes, buy consumer electronics or furniture, pay travel, buying a car — 4%.

In addition, the article used the author's field materials: semi-formalized in-depth interviews among labor migrants (n=8) from the most numerous ethnic groups (Kyrgyz, Armenians, Tajiks, Uzbeks). At the same time, the migrant was considered as a member of transnational social networks (family, compatriot). The search for respondents was carried out at the place of work. The informants were selected according to certain criteria: gender, age, marital status, reproductive intentions, level of education, presence/lack of work experience; frequency/absence of departure to the permanent place of residence regardless of the legitimacy of border crossing and method of employment; migration attitudes or their absence.

Results

Unlike compact European countries, Russia is a country with vast territories, where individual regions are larger than many European countries, and differences in social development of the regions are comparable to the differences between underdeveloped and advanced countries, and, as experts note, the Russian population in general has a very low mobility [9, Barkov S.A., et al., p. 66, p. 69]. Assessing the territorial mobility of the population of the Republic of Sakha (Yakutia) during the pandemic, let us turn to the indicators of migration activity in 2020. In the Republic of Sakha (Yakutia) in 2020, the migration loss was replaced by an increase for the first time since 1990. At the same time, there is a significant decrease in the share of migration growth due to movements within Russia, including within the republic. In general, the share of intra-republican out-migration in the structure of out-migration within Russia from the 2000s to date has averaged 89.8%, and this indicator has had an increasing trend. The coronavirus pandemic provoked a decrease in the number of intra-republican migrants: in 2019 — 24.816 people, in 2020 — 22.677 people.

The number of migrants increased by 26.5 times in 2020 compared to the pre-pandemic year of 2019 (-229 in 2019, +6065 in 2020) (Table 1). According to the State Statistics for the Republic of Sakha (Yakutia), the number of arrivals to urban and rural areas in 2020 (47.355 people) is 4.950 more than in 2019 (42.405 people), and departures are 1.344 fewer (41.290 people in 2020, 42.634 people in 2019)[7]. If previously domestic migration prevailed in the overall migration structure, then, despite the period of coronavirus control and anti-epidemiological restrictions, there is an increase in migration activity throughout the republic, mainly due to migration exchange of population with foreign countries (CIS countries — migration increased by 2.1 times, non-CIS countries — 19.5 times) and at the expense of the Central zone of Yakutia (migration growth increased by 8.1 times).

[7] Migratsiya naseleniya v RS (Ya) v 2020 g. Elektron. stat. sbornik. Yakutsk, 2021. T. 1. L. 8654 [Migration of the population in the RS (Y) in 2020. El. stat. collection. Yakutsk, 2021. vol. 1. p. 8654].

Thus, 24.678 people arrived in urban and rural areas from outside the republic in 2020, 17.589 — in 2019. Including 10.501 people from other regions of the Russian Federation, in 2019 — 11.282 people; 13.690 people arrived from the CIS countries in the year of the pandemic, in 2019 — 6.195 people; from far abroad — 487 and 112 people, respectively. According to the State Statistics for the Republic of Sakha (Yakutia), the number of those who left in 2020 (41.290 people) decreased compared to 2019 (42.634 people) by 1.344 people. Including 18.613 people who left the republic in 2020, and 17.818 people in 2019; 13.133 people left for other regions of Russia, in 2019 — 115.495 people; 5.363 people left for the CIS countries in 2020, 2.323 people in 2019; to non-CIS countries — 117 and 93 people, respectively.

It is necessary to note the difference between the information provided by the Territorial Body of the Federal State Statistics Service for the Republic of Sakha (Yakutia) and the statistics provided by the Ministry of Internal Affairs of the Republic of Sakha (Yakutia) on the migration situation in the region. So, for example, according to the Ministry of Internal Affairs for the Republic of Sakha (Yakutia), in 2020, 40.120 (in 2019 — 77.423) foreign citizens and stateless persons were registered for migration registration in the Republic of Sakha (Yakutia), which is 48.2% less than in the same period last year. The majority of foreign citizens are put on migration registration at the place of stay in the center of the republic, the city of Yakutsk — 18.204 people. (in 2019 — 38.279 people), in the regions of South Yakutia: Neryungri — 5.165 (in 2019 — 12.236 people) and Aldan — 3.656 (in 2019 — 4.940 people); and in the districts of Western Yakutia: Mirninskiy — 3.754 (in 2019 — 7.442 people) and Lenskiy — 1.458 (in 2019 — 4.794 people). 37.342 (in 2019 — 62.578) foreign citizens were removed from the migration register, including 978 people due to leaving the territory of the Russian Federation (in 2019 — 2.007 people), establishing the fact of fictitious registration — 742 people (676 people in 2019). The main migration flow is formed by citizens of the CIS member states — 88% (79.7% in 2019). The share of citizens of the states of the European Union is 3.6% (in 2019 — 4.3%). Citizens of other countries account for 8.3% of the migration flow (16% in 2019). The largest number of migrants who arrived in 2020 are citizens of the Kyrgyz Republic — 2.594 people (64% less than in 2019 — 7.190 people); Republic of Tajikistan — 1.843 people (69% less than in 2019 — 5.992 people); Republic of Uzbekistan — 1.045 people (73% less than in 2019 — 3.939 people); Republic of Armenia — 932 people (58% less than in 2019 — 2.201 people); Ukraine — 939 (62% less than in 2019 — 2.489 people) [8]. The difference between the data of the State Statistics and the data of the Ministry of Internal Affairs is a topic for a separate study. For the purposes of this article we will use the data of the State Statistics Service of the Republic of Sakha (Yakutia).

[8] Information and analytical note on the results of the activities of the internal affairs bodies in the Republic of Sakha (Yakutia) for January–December 2020. URL: https://mvd.ru/upload/site18/document_news/023/311/274/Informatsionno-analiticheskaya_zapiska_MVD_po_RSYa_za_2020_god.pdf (accessed 01 November 2021).

Table 1

Migration growth in 2019-2020, people [9]

Urban area	2019	2020	Rural area	2019	2020
within the republic	2 624	300	within the republic	-2 624	-300
between regions of the Russian Federation	-4 261	-2 753	between regions of the Russian Federation	48	121
CIS [2)]	3 830	8 345	CIS [2)]	135	-18
far abroad	16	368	far abroad	3	2

If we analyze the interviews conducted among labor migrants, we can conclude that the coronavirus pandemic has not predominantly affected their plans in the near future. None of the respondents is in a hurry to leave the republic, they value the available work, if their organization has suspended activities, they tend to look for alternative types of temporary jobs where restrictive measures are not applied — in taxis, construction, etc. For example, migrant M. from Uzbekistan says: “Here, anyway, we can earn more than at home, we’d better work here. I started working in a taxi, but I think we'll go back to construction soon.”

Long-term plans of labor migrants are connected with work in the republic. Migrant from Kyrgyzstan D. (works in the commodity market) believes that “it is not necessary to come back to homeland because of COVID-19, all the more, then, in order to return to Yakutia, you again need to collect money for the trip – it’s expensive. I'm with my family. When the market was closed, my husband had a job at a construction site. We held out. Moreover, the sister who invited me here has already moved to Moscow. Who will help us to come back here now? We will try to work here as long as possible.”

The situation with network opportunities (or with network capital) of labor migrants is no different, apparently, throughout the world. Thus, according to the results of international studies, our colleagues write: “This is because people need resources to move and are generally unlikely to migrate without concrete opportunities and prospects in destination countries such as jobs and family or network assistance. Obviously, they can motivate people to migrate, according to the “push-pull” model, but international and national economic inequalities have limited explanatory power compared to community-level inequalities” [10, De Haas H., Czaika M., Flahaux M.-L., Mahendra E., Natter K., Vezzoli S., Villares-Varela M., p. 896].

We agree with domestic researchers, who believe that the potential for labor migration from the CIS countries remains quite high during the pandemic. At the same time, the potential for resettlement and integration in Russia is quite high and unrealized [11, Denisenko M.B., Mukomel V.I., p. 102]. D. Ratha believes that the more clearly the definition and observance of the national borders of states, their sovereignties, citizenship and the rights of citizens, the greater the gap in development between people and places, which in turn contributes to the growth of migration. In his opinion, in the coming decades, migration pressure will increase significantly due to

[9] Migratsiya naseleniya v RS (Ya) v 2020 g. Elektron. stat. sbornik. Yakutsk, 2021. T. 1. L. 8654 [Migration of the population in the RS (Y) in 2020. El. stat. collection. Yakutsk, 2021. vol. 1. s. 8654].

income gaps, demographic differences between countries and climate change [12, Ratha D., p. 287].

The structure of general migration flows with the regions of Russia has remained unchanged for several years: the most dynamic migration exchange occurs with the Siberian Federal Okrug — 8.7%, and the Central Federal Okrug — 5.9%. Among the CIS countries, Kyrgyzstan (52.7%) and Ukraine (11.8%) stand out in terms of intensity of flows. Of the non-CIS countries (2.8%), it is mainly migrants from China (76.6%). During the pandemic, the share of incoming migrants significantly increased (by 11.5%), indicating work as the reason for their arrival: 3.8 times more migrants arrived in Central Yakutia, 1.5 times more migrants — in the Western zone. The share of arriving persons, indicating study among the reasons, has decreased (by 6.5%). The share of those returning after a temporary absence increased by 1.3%, and those returning to their former place of residence — by 0.3% (see Fig. 1).

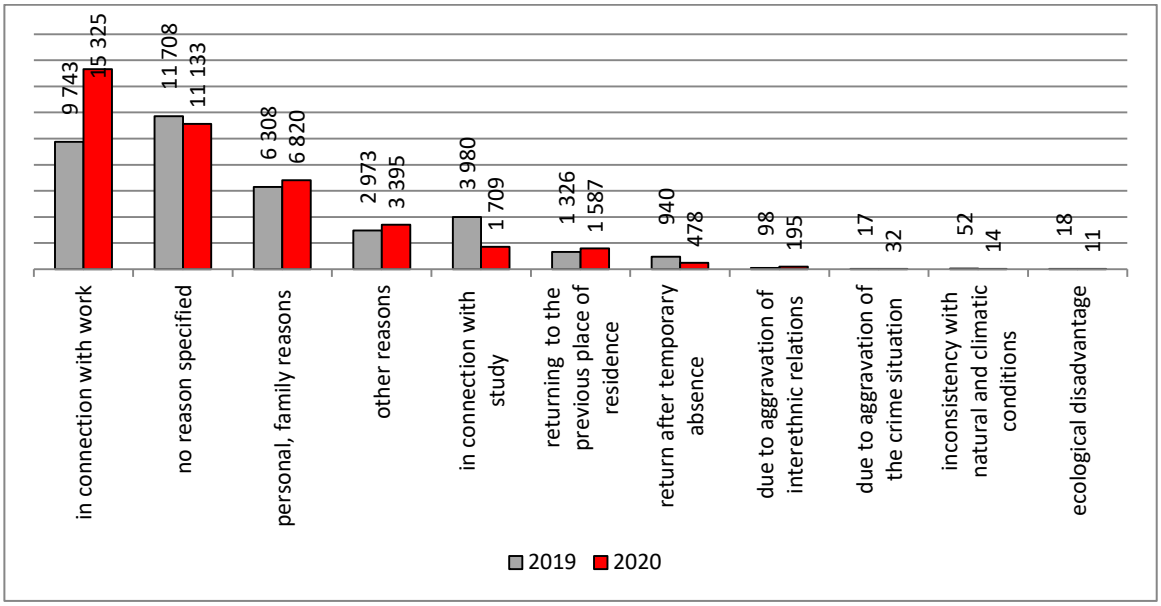

Fig. 1. Distribution of migrants aged 14 years and older by reasons for changing their place of residence, people [10].

The peculiarities of territorial mobility of Yakutia's population are determined by a set of factors-conditions of the natural and social environment of the region [13, Rybakovskiy L.L., p. 54]. The main determinant of migration processes is the uniqueness of the territory in terms of diversity, quantity and quality of minerals: in terms of the total reserves of all types of natural resources, Yakutia ranks first in Russia. In this regard, there are disproportions in the distribution of human resources in the labor market and an uneven territorial distribution of productive forces. Migration processes in the republic are determined by the remoteness from the center of the country, the lack of year-round transportation for almost 90% of the territory and extreme natural and climatic conditions: the climate ranges from sharply continental in the south to subarctic and arctic in the north of the republic.

[10] Migratsiya naseleniya v RS (Ya) v 2020 g. Elektron. stat. sbornik. Yakutsk, 2021. T. 1. L. 8712 [Source: Migration of the population in the RS (Y) in 2020. Electron. stat. collection. Yakutsk, 2021. vol. 1. p. 8712].

The Strategy for the Socio-Economic Development of the Republic of Sakha (Yakutia) up to 2032 with a target vision up to 2050 states that in terms of space, the territorial structure of the republic is formed by areas united into socio-economic zones — Central, Western, Eastern, Southern and Arctic, characterized by a common transport and energy infrastructure, specialization of the economy, similarity of natural and climatic conditions. Throughout the last century, Yakutia, as a territory of pioneer economic development, actively attracted people from other regions of the country. Migration flows formed the population of certain regions and cities of South, Western and Eastern Yakutia in connection with the attraction of labor resources for the development of the economy [14, Sukneva S.A., p. 97].

E.G. Maklashova in the analysis of the ethnic composition of the population of the Republic of Sakha (Yakutia) starts from the stages of industrial development of the northern territory, defining the republic as a typical multi-ethnic region. She offers the following typification of the ethnic composition of the regions of Yakutia: southern type (dominance of Russians), central (dominance of Yakuts), arctic (dominance of representatives of the indigenous peoples of the North), mixed (an approximately equal and proportional share of the three main population groups), eastern (majority of Russians and a growing proportion of representatives of the indigenous peoples of Yakutia) and the republican (capital) type (the ethnic structure of the region corresponds to the proportions of the ethno-national composition of the whole RS(Ya)) [15, Maklashova E.G., p. 227].

The largest in terms of population and the most attractive for migration is the Central zone of Yakutia (Fig. 2), where 55.6% of the population (546.293 people) live, including 33.7% of the total population of the republic in the capital of the republic, Yakutsk (330.615 people as of January 1, 2021). In the smallest area of Central Yakutia, 56.0% of the urban and 54.9% of the rural population of the republic live in 9 municipal uluses and two urban districts. National composition is the following: Yakuts — 64.5%; Russians — 27.5%; Ukrainians — 1.0%; Kyrgyz — 0.7%; representatives of the indigenous peoples of the North — 1.9% (Evenks (1.0%), Evens (0.8%), Yukagirs, Dolgans, Chukchi) and other peoples.

The economy of Central Yakutia is dominated by municipal, social, transport and personal services, public sector — state administration, educational and health care institutions, wholesale and retail trade, real estate operations, financial activities, etc. Agriculture is mainly represented by meat and dairy cattle breeding, horse breeding and farming, in urban areas —by industrial poultry farming and pig farming. “The Central Economic Zone is the undisputed leader in the production of gross agricultural output” [11]. The zone has a developed transport infrastructure, although there are also hard-to-reach settlements.

[11] Kondratyeva V.I. Tsentral'naya ekonomicheskaya zona v strategii sotsial'no-ekonomicheskogo razvitiya RS(Ya) na zonal'noy strategicheskoy sessii [Central economic zone in the strategy of socio-economic development of the Republic of Sakha (Yakutia) at the zonal strategic session] // Doklad GAU "Tsentr strategicheskikh issledovaniy Respubliki Sakha (Yakutiya)" [Report of the State Autonomous Institution "Center for Strategic Studies of the Republic of Sakha

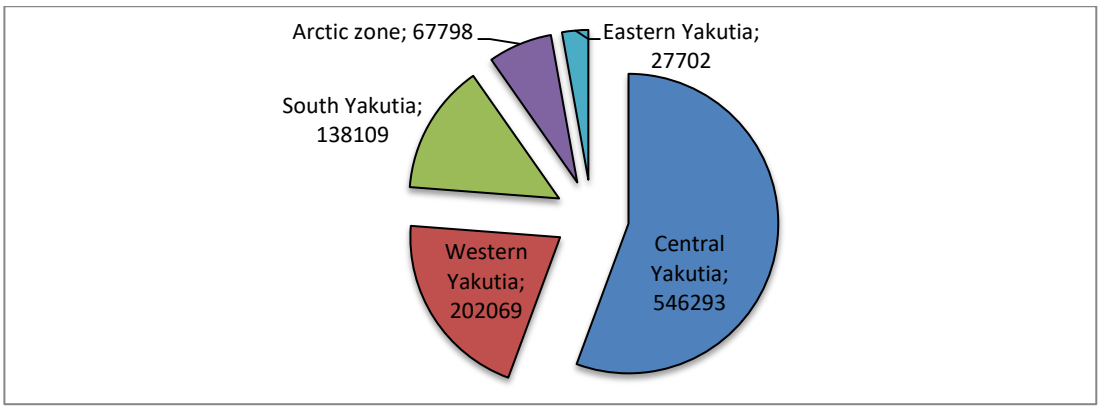

Fig. 2. Population of socio-economic zones of the Republic of Sakha (Yakutia), people. [12]

The city of Yakutsk is a political, economic, cultural, transport, energy, information and communication center of the region with a well-developed infrastructure. The capital attracts intra-republican rural, inter-regional and foreign migrants and has had a positive migration growth over the last 20 years, which has a significant impact on the migration structure of the Republic. Compared to 2019, the migration growth of Yakutsk increased by 3.6 times, and in Central Yakutia as a whole — by 8.2 times (Fig. 3). During the pandemic, the number of arrivals in the central zone of Yakutia (25.673 people) amounted to 54.2% of all arrivals in the republic, 1.7% more than in 2019 (22.250 people). And the share of those who left the republic decreased by 2.3% compared to the previous year (21.542 people) and amounted to 48.2% of all those who left the republic (19.882 people).

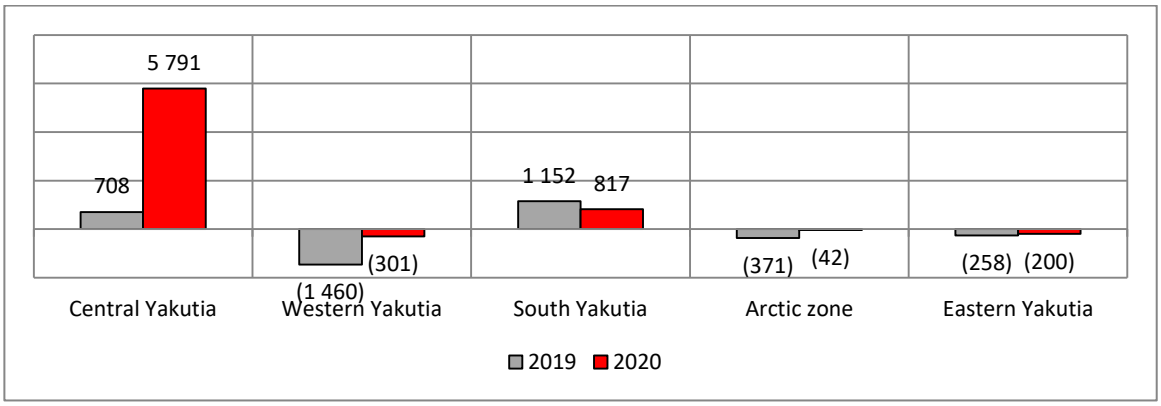

Fig. 3. Migration increase (decrease) by socio-economic zones of Yakutia, people. [13]

The next most populous zone is Western Yakutia, where 20.6% of the republic population (202.069 people) lives as of January 1, 2021 (Fig. 2). Western Yakutia is the center of the main sectors of the economy of Yakutia — diamond mining and oil and gas production. 19.2% of the urban

(Yakutia)"]. Yakutsk, 2018. URL: https://mineconomic.sakha.gov.ru/tsentralynaya-ekonomicheskaya-zona (accessed 29 September 2021).

[12] Chislennost' naseleniya Respubliki Sakha (Yakutiya) na 1 yanvarya 2021 goda: Statisticheskiy sbornik. Yakutsk: Territorial'nyy organ Federal'noy sluzhby gosudarstvennoy statistiki po Respublike Sakha (Yakutiya), 2021. S. 14 [Population of the Republic of Sakha (Yakutia) as of January 1, 2021: Statistical Compendium. Yakutsk: Territorial body of the Federal State Statistics Service for the Republic of Sakha (Yakutia), 2021. P. 14].

[13] Migratsiya naseleniya v RS (Ya) v 2020 g. Elektron. stat. sbornik. Yakutsk. 2021. T. 2. L. 8747 [Migration of the population in the RS (Y) in 2020. Electron. stat. collection. Yakutsk. 2021. vol. 2. s. 8747].

and 23.3% of the rural population of the republic live in 6 municipal uluses of the zone. By ethnic composition: Yakuts — 49.5%, Russians — 40.0%, Ukrainians — 2.9%, Tatars — 1.2%, and representatives of the indigenous peoples of the North — 0.9% (Evenks (0.6%), Evens (0.2%), Yukagirs, Dolgans, Chukchi) and other ethnic groups.

The transport infrastructure of the region is complex and ambiguous. There are federal and regional highways, technological passages along the oil and gas pipelines routes (ESPO and Power of Siberia), navigable sections of the Lena and Vilyui rivers, as well as a network of airports. Roads are not accessible all year round. Many rural settlements do not have permanent transport links with regional centers.

One of the significant negative trends is the decline in the population in all regions of Western Yakutia, mainly due to migration outflow. Since the 2000s, the dynamics of migration decline in the districts of Western Yakutia have been persistent. Migration loss and release of the labor force are mainly associated with reorganizations and layoffs at the enterprises of PJSC ALROSA. In the structure of migration of the republic in Western Yakutia, the share of arrivals in 2019 (8.520 people) decreased by 1.2%, departures (9.980 people) — by 1.0% and amounted to 18.9% in 2020 (8.928 people) and 22.4% (9.229 people), respectively. Compared to 2019, the migration loss of this region in the year of coronavirus infection decreased by 4.9 times (Fig. 3).

South Yakutia, the center of coal and gold mining, is home to 14.1% of the population of Yakutia (138.109 people) (Fig. 2). In the three municipal districts of South Yakutia account for 18.1% of the urban and 6.2% of the rural population of the republic. By ethnic composition: Russians — 73.8%, Yakuts — 17.8%, Ukrainians — 4.6%, Tatars — 1.7%, Buryats — 1.1%, representatives of the indigenous peoples of the North — 3.5% (Evenks (3.5%), Evens (0.5%), Yukagirs, Dolgans, Chukchi) and other ethnic groups. The region benefits from high year-round transport accessibility (in Aldan and Neryungri districts — railway, highway and air traffic) and has interregional significance in the republic.

According to S.A. Sukneva, a characteristic feature of the demographic development of the SEZ (Southern Economic Zone) of the RS(Ya) is high migration mobility. The population of these areas was formed mainly due to the migration influx in the economically active age. The decrease in the population of the SEZ of the RS(Ya) occurs due to two components — a decrease in natural increase and migration loss [14, Sukneva S.A., p. 99, 100]. The region has experienced a long-term migration loss of the population, except for 2019 (+1,152 people) and 2020 (+817 people). In South Yakutia, the share of departing migrants for 2020 increased by 3.0% compared to 2019, it amounted to 17.3% of departing migrants of the republic. The share of incoming migrants decreased (by 0.3%) and amounted to 16.8%. Compared to 2019, the migration growth in South Yakutia decreased by 1.4 times (Fig. 3).

The Arctic zone of the republic is the largest economic zone in terms of area and includes 13 Arctic regions (5 Arctic (coastal) and 8 northern regions). Only 6.9% of the population (67.798

people) live in a vast territory, the area of which is 52% of the entire territory of the republic (Fig. 2) — 4.0% of the urban and 12.6% of the rural population of the republic. By ethnic composition: Yakuts — 48.1%, Russians — 19.4%, Ukrainians — 2.1%, representatives of the indigenous peoples of the North — 27.6% (Evenks (12.1%), Evens (11.4%), Yukagirs (1.3%), Dolgans (2.1%), Chukchi (0.8%)) and other ethnic groups.

As indicated in the draft Strategy for the Socio-Economic Development of the Arctic Zone of the Republic of Sakha (Yakutia) for the period up to 2035, there is no year-round land transport system connecting the Arctic zone with neighboring territories and settlements within the zone. All passenger transportation, both in long-distance and intra-regional traffic, is carried out only by air, while seasonal modes of transport (winter roads and inland waterways) are also used for cargo transportation. At the same time, waterways are uncontested for the delivery of life-sustaining goods [14]. The key sectors of the economic specialization of the Arctic zone are mining and traditional forms of nature management (reindeer husbandry, hunting and fishing). In addition, due to the underdevelopment of transport infrastructure and the lack of a unified energy system, the economy of the regions is characterized by high energy and resource intensity [15].

The period of transition to a market economy, the closure of enterprises in the industrial complex of the Arctic have caused a significant outflow of the previously arrived working population of the Arctic regions. In 1990, 11.968 people left the regions of the Arctic zone. According to the State Statistics for the Republic of Sakha (Yakutia), in the period after the 1989 population census until 2002, 51 settlements in the regions of the Arctic zone with a total population of 16.291 people were excluded from the accounting data, mainly due to the actual loss of significance and functions settlements, the absence of a permanent population and the futility of the settlement due to the closure of industrial enterprises during the reforms of the 1990s. In the intercensus period between 2002 and 2010, of 108 rural localities of the Arctic zone, 13 more remained without population. The negative migration balance that has been stable for many years in both urban and rural settlements indicates significant migration losses in the Arctic regions of Yakutia [16, Tomaska A.G., p. 383, 386].

If we consider the migration activity of the population of the Arctic regions, from the 1990s to the present, the greatest number of migrants both among the outgoing and incoming ones is observed in the areas of industrial development. The smallest migration activity in absolute num-

[14] Proekt strategii sotsial'no-ekonomicheskogo razvitiya Arkticheskoy zony Respubliki Sakha (Yakutiya) na period do 2035 goda [Draft strategy for the socio-economic development of the Arctic zone of the Republic of Sakha (Yakutia) for the period up to 2035]. URL: https://economy.gov.ru/material/directions/ regionalnoe_razvitie/strategicheskoe_planirovanie_prostranstvennogo_razvitiya/strategii_socialno_ekonomicheskogo_razvitiya_subektov_rf/proekty_strategiy_subektov_rf/proekt_strategii_socialno_ekonomicheskogo_razvitiya_arkticheskoy_zony_respubliki_saha_yakutiya_na_period_do_2035_goda.html (accessed 07 October 2021).

[15] Kondratyeva V.I. Arkticheskaya zona v strategii sotsial'no-ekonomicheskogo razvitiya RS(Ya) [The Arctic zone in the strategy of socio-economic development of the Republic of Sakha (Yakutia)]. Yakutsk, 2018. URL: https://mineconomic.sakha.gov.ru/arkticheskaya-ekonomicheskaya-zona (accessed 07 October 2021).

bers is in the agrarian national uluses of the indigenous peoples of the North. According to experts, the curtailment of industrial enterprises in the Arctic zone of Yakutia in the 1990s reduced the level of its impact on the traditional economy and culture of the indigenous peoples of the North. It is no coincidence that, despite the socio-economic problems, many researchers characterize the period of the 1990s as the time of "ethnic rebirth" and cultural revival of the natives of the North [17, Vinokurova L.I. et al., p. 193–195]. So, for example, studies in the Arctic village showed that 73.5% of the respondents do not have any migration intentions [18, Tomaska A.G., p. 109]. The share of arrivals (by 0.4%) and departures (by 0.1%) of the region in the migration structure of the republic decreased slightly and amounted to 18.9% and 22.4%, respectively. However, the coronavirus pandemic provoked a reduction in the migration loss of the Arctic Zone of Yakutia by 8.8 times relative to 2019 (Fig. 3).

Eastern Yakutia is the smallest, with 2.7% of the urban population and 3.1% of the rural population, only 2.8% of the total population (27.702 people) (Fig. 2). There are large mineral deposits in Eastern Yakutia: the Nezhdaninskoye gold deposit, the Verkhnee-Menkechenskoye silver-polymetallic deposit, the Agylkinskoye copper-tungsten deposit with significant silver reserves. In Eastern Yakutia, one of the contenders for the northern cold pole was recorded — the area of Tomtor of the Oymyakonskiy ulus.

Although there are federal and regional highways, they do not have year-round access. Most of them are located in the mountains and are difficult to reach. The region also has significant migration losses since the 1990s. Since the 2000s, there was a gradual reduction in migration loss. In Eastern Yakutia, the share of arrivals (by 0.2%) and departures (by 0.1%) in the migration structure of the republic changed insignificantly and amounted to 18.9% and 22.4%, respectively. Compared to 2019, the migration loss of Eastern Yakutia decreased by 1.3 times (Fig. 4).

We are interested in the migration intentions of the respondents and the lack of migration plans, reasons and resources in the context of the COVID-19 pandemic, because the ability to move has become a new form of social capital [6, Urry J.] or mobility capital [8, Kaufmann V .]. According to the respondents' answers to the question "Are you thinking about moving to another region of Russia or to another country?", which reflects the presence and degree of migration intentions, we conditionally divided respondents into 5 groups.

Thus, 42.0% of participants would not want to leave Yakutia or move to another region of the republic, including 23.5% of women and 18.5% of men of the total number of respondents. We will conditionally classify this group of respondents as Group I — they can be designated as "sedentary". If we compare this indicator with the results of the survey conducted within the framework of the mentioned project in five regions of the Far Eastern Federal Okrug, this indicator occupies the penultimate position among other regions of the Far Eastern Federal Okrug after the Chukotka Autonomous Okrug (39.0%). Thus, the group of respondents who do not want and do

not plan to move is 45.5% in the Republic of Buryatia, in Khabarovsk Krai — 52.5%, in Primorskiy Krai — 54.5%.

Group II — "active", is a group of respondents who have decided to move to another region of Russia or to another country, they take active steps in connection with the move and make up only 3.0%, including 1.0% women and 2.0% men. Interestingly, this group is the minimum among the FEFO regions. So, for comparison, the highest level of respondents who definitely decided to leave their current place of residence and take active steps, is in the Chukotka Autonomous Okrug — 12.0%, in Buryatia — 10.5%, in Primorskiy Krai — 9.0% and in Khabarovsk Krai — 7.0%. It is noteworthy that with a relatively low indicator of "sedentarization" (42.0%), there are few people who actually intend to move. This can be interpreted in two ways: on the one hand, as satisfaction of the population with the socio-economic conditions of the region, on the other, as limited resources for the mobility of the population.

Groups II and III are united by the reality of migration intentions (13.0%). Group III — temporary migrants — are those wishing to leave temporarily — 10.0%, including 6.0% of women and 4.0% of men. In this group, Yakutia leads with Primorskiy Krai — 10.0% each. 8.0% of the respondents plan temporary migration from Khabarovsk Krai, 7.0% — from Buryatia, and 4.0% — from Chukotka Autonomous Okrug.

Group IV — "passive" — makes up almost a quarter of the respondents (23.5%). These are those who would like to move, i.e., in general, they are positively oriented towards migration, but have not done anything yet, including 12.5 % women and 11.0% men. Type V — "neutral" — these are those who sometimes think about moving (21.5%), but at the same time are not averse to being "settled", including 11.0% of women and 10.5% of men. The last two groups are united by the desire to change their place of residence, a certain declaration of intent, most likely due to dissatisfaction with the socio-economic situation in the region or in the country. Respondents in these groups do not take real action in relation to the move; they can also be conditionally designated as "hesitators" or "dreamers". In these groups of respondents, Yakutia and Chukotka Autonomous Okrug are in the lead in the Far Eastern Federal District (45.0%). The Republic of Buryatia accounts for 36.5% of respondents in these groups, the Primorskiy Krai — for 26.5%, and the Khabarovsk Krai — for 32.5%.

Among the total number of those who are thinking about migration, 9.0% plan to leave in the next year or two, 18.9% — within 3-5 years, 72.1% have not decided definitely. Among them, 28.8% want to go to another region of Russia, 35.1% — to another country, 11.7% want to go anywhere, if only to leave, 24.3% found it difficult to answer. The main reason for the migration intentions of the respondents, regardless of the reality of their implementation, is the low standard of living in the region as a whole: 53.5% of the respondents of group V, 50.0% of group I, 40.0% of group III and 38.3 % of group IV.

The next reason for migration intentions is the unfavorable climate. The official information portal of the Republic of Sakha (Yakutia) describes the climate of the region as follows: "The natural and climatic conditions of Yakutia are in many respects characterized as extreme. First of all, Yakutia is the coldest inhabited region on the planet. The climate is sharply continental, characterized by long winters and short summers. The maximum amplitude of the average temperatures of the coldest month, January, and the warmest month, July, is 70–75°C. In terms of the absolute value of the minimum temperature (in eastern mountain systems — basins, depressions and other reductions up to minus 70°C) and in terms of its total duration (from 6.5 to 9 months per year), the republic has no analogues in the Northern Hemisphere. Human activities and economic methods require special approaches and technologies, based on the conditions of each natural and climatic zone. So, on average, in the territory of Yakutia, the duration of the heating season is 8–9 months a year, while in the Arctic zone it is year-round" [16]. In addition, poor infrastructure, lack of development opportunities, lack of affordable housing and low wages are cited as the main reasons for migration intentions.

The main purpose of moving for the majority of respondents with migratory intentions is to find a permanent place of residence. Respondents of I (33.3%) and IV groups (36.2%) are in the lead here. Naturally, among those who think about temporary migration, this figure is only 5.0%. Sometimes, representatives of group V who think about moving consider the search for a permanent place of residence to be the main purpose of moving only in 16.3% of cases. Undoubtedly, the desire to find a permanent place of residence means dissatisfaction with the living conditions in the region, they strive for more prosperous conditions, with better infrastructure, where they can get a decent job, quality education, medical services, recreation and leisure.

The next main goal is rest and travel. Recreational and cultural needs are most likely to be met by temporary migrants (40.0%), followed by "neutral" (16.3%) and "passive" (14.9%) migrants. Those who definitely decided to leave and are taking active steps, i.e. Group I of respondents, did not indicate rest and travel as the purpose of moving. And, finally, among the main goals of moving, quite a lot of respondents indicated the desire to see the world, to expand the socio-spatial, cultural horizons — 16.7% of the Group II, 20.0% of the Group III, 10.6% of the Group IV, 20.9% of the Group V. In addition, the main reason for moving is socio-professional mobility, growth potential: the desire to earn more money, find a more attractive job. Among the main reasons for migration intentions were such channels of social mobility as successful marriage, access to a better quality health system.

Half of the respondents in Group II with "active" migration intentions are planning to move to another region of Russia. Most often, the places of migration preferences in Russia are St. Petersburg and other specific cities. A third of this group of respondents want to leave "anywhere,

[16] The Republic of Sakha (Yakutia): General information. URL: https://www.sakha.gov.ru/o-respublike-saha--kutiya-/obschiesvedeniya (accessed 01 October 2021).

just to leave", 16.7% found it difficult to answer the question about the place of the planned move, despite the fact that they are taking active steps in connection with the move, i.e. the degree of social and subjective dissatisfaction of these respondents is very high. Group III of "temporary" migrants and Group IV of "passive" migrants most often plan to leave for another country — 47.4% and 44.7%. Among the countries of migration, the United States and the Czech Republic are more frequently indicated. Respondents of Group V, "neutral", found it difficult to answer the question "Do you want to move to another region of Russia or to another country?" — 35.9%.

By marital status, there are more married respondents of Group I with no migration intentions — 55.4%. In all other groups, except for the active ones, where the number of married and unmarried respondents was distributed equally, single people predominate. Among the unmarried, most of the respondents live alone. It is noteworthy that only among those who have plans for temporary migration, there is a high proportion of single people living with a girlfriend/boyfriend (21.1%).

When considering the age factor in the formation of migration intentions, the respondents of the Group II with active migration intentions were divided equally into young people under 35 years old and respondents from 36 to 59 years old; there are no respondents aged 60 years and older in this group. Most of all young people under 35 are in groups III and IV of respondents: with the intention of temporarily leaving the republic — 70.0%, and "passive" migrants — 83.0%. That is, young respondents are more likely to focus on meeting educational, cultural and recreational needs and expanding their socio-spatial horizons, having temporarily left the region, or declare the intention to move, but the reality of the desire or the implementation of their intention to move is questionable. Probably, for the latter, this is due to the limitations of social, financial, qualification or educational and other mobility resources.

Temporary migration is considered by 20.0% of respondents aged 36 to 59 and 10.0% of those aged 60 and over. Among the "neutral" group V, those under 35 made up 51.2%, respondents aged 36 to 59 41.9%, and those aged 60 — over 7.0%. It is expected that there are more respondents older than working age in the Group I of "sedentary" — 45.2%. If we consider the age of the general array of respondents, then there are more young people under 35 years old in the Group IV of "passive" (19.5%), aged 36–59 years old (13.5%) and aged 60 years and older (19.0 %) among Group I "sedentary". In general, young respondents have a higher migration potential, probably associated with age characteristics — a transitional position in society, the stage of personal search and the formation of social status, etc. This is also due to the fact that in 2019, Yakutia topped the list of regions with the highest percentage of young people who, having received

diplomas, could not find a job. In the republic, this figure is the highest in the country and is 73.8% [17].

In terms of social status, among the respondents of group I — "sedentary" who do not want and do not plan to move, the lowest share is employed (65.5%) and the highest one is pensioners (29.8%). The highest proportion of workers in groups II and III with migratory intentions are "active" (83.3%) and "temporary" migrants (85.0%). Among the respondents of these groups, managers, deputy managers of enterprises, institutions and departments are the most numerous (40.0% and 32.4%, respectively). High migration potential is characteristic of those occupying managerial positions due to high socio-economic resources in comparison with representatives of other socio-professional groups. Among the people of groups II and III with migration intentions, the share of the unemployed is also high (16.7% and 5.0%, respectively). In the group of respondents of type IV, "passive", the employed make up 78.7%, of type V, "neutral" — 74.4%. There are more specialists in these groups — 68.2% and 73.2%, respectively. Obviously, specialists, having financial resources for migration, are thinking about improving their social status. In the last two groups of "dreamers", there is a relatively high proportion of respondents who combine work with study (12.8% and 14.0%, respectively) (Fig. 4).

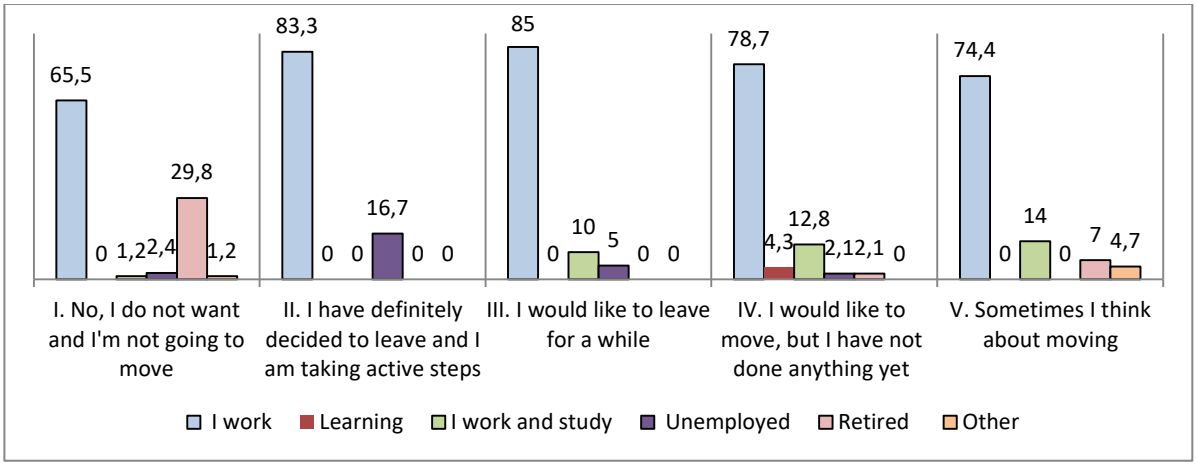

Fig. 4. Social status, in %.

One of the main factors of territorial mobility is the financial and economic resource of a potential migrant. According to estimates of the level of income, the lowest incomes belong to the respondents of the I group of "sedentary" ones, who have no migration intentions (56.0%), and the IV (46.8%) and the V (53.5%) groups of "dreamers". They indicated that "they cannot provide for themselves and need the help of relatives" (13.1%, 14.9%, and 7.0%, respectively), i.e., they can be classified as living below the poverty line. Among those who noted the answer: "the funds I receive are enough to buy food, pay utility bills", the largest number of respondents are in Group I — 42.9%, Group IV — 31.9%, Group V — 46.5%, these respondents have only a conditional sub-

[17] V Yakutii zashkalivaet bezrabotitsa: netrudoustroennykh sredi molodezhi — 73,8% [In Yakutia, unemployment is going through the roof: unemployed among young people — 73.8%.]. URL: https://regnum.ru/news/society/2588833.html (accessed 02 October 2021).

sistence minimum. These respondents — "sedentary", "passive" and "neutral", who are united by the absence of real migration plans — have limited financial and material resources for moving, i.e. the lack of financial and economic resources in this case, perhaps, creates deprivation and territorial mobility.

The "active" group is distinguished by a high proportion of those in need — 33.3%. But at the same time, this group has a high proportion of respondents who are well off in terms of income, along with those willing to temporarily leave — 66.7% and 70.0%, respectively. These groups of respondents thus have real resources for territorial mobility. At the same time, most of the respondents who have plans for temporary migration are satisfied with the living conditions at the present time, i.e. in Group III — 80.0%. It can be assumed that this group of respondents has a high financial and economic position that determines their migration intentions, the desire to expand the socio-spatial horizons associated with the satisfaction of their cultural and recreational needs. There are more dissatisfied with the living conditions respondents in the Group II who decided to leave — 50.0%, their migration intentions are connected with the desire to live in better conditions, they want to move to socially, economically and infrastructurally more prosperous regions.

If we turn to the respondents' assessment of the socio-economic situation in Yakutia, then the majority of respondents of all types designated it as "average" — from 33.3% (Group II) to 55.0% (Group III) and "unfavorable, below average" — from 20.0% (Group III) to 66.7% (Group II). Only 2 groups rated the socio-economic situation as "very good, prosperous" — Group I without migration plans (1.2%) and Group V with uncertain thoughts about moving (2.3%). An insignificant number of respondents in all groups, except for Group II, believe that the situation is "good" — from 4.3% (IV) to 7.1% (I). Most of all, the socio-economic situation was assessed as "difficult" by those wishing to leave for a while to another region of Russia or to another country (III) — 15.0%.

Respondents were asked to compare the situation in the region with the situation in Russia as a whole. According to the majority of respondents, standard of living, unemployment, quality of school education, quality and accessibility of higher education, crime, public safety, political stability, protest activity, corruption, activities of officials, relations between people of different nationalities, relations between locals and migrants and religious relations are the same as in Russia as a whole. With regard to medicine, quality of healthcare, prospects for young people, prices for food and necessary goods, and housing, the situation is assessed worse. Only the Republic's ecology, according to most respondents, is better than in other regions of Russia.

Here we would like to note some points. Thus, representatives of Group II with migration intentions, tend to assess the situation in the republic more negatively in several positions: unemployment, quality and accessibility of education, political stability, relations between locals and migrants (50.0% each), medicine and quality of healthcare (66.7%); these positions are considered more difficult than in Russia. People intending to move express the most formed request for

changes in the socio-economic sphere. Representatives of the Group IV, who would like to move from the region, but did nothing, have the most negative assessments of environmental issues (55.3%) and protest activity (61.7%).

According to the Ministry of Economy of the Republic of Sakha (Yakutia), due to objective factors prevailing in the foreign market in 2020 and restrictions introduced in order to prevent the spread of a new coronavirus infection (COVID-19), the decrease in the gross regional product of the republic amounted to 5% compared to 2019 (1204 billion rubles). As indicated in the report of the Ministry of Economy of the Republic of Sakha (Yakutia), the decline is associated with a reduction in industrial production due to a decrease in consumer demand in the world market for jewelry and technical diamonds, and construction volumes. There were also declines in capital investment by 45.2%, retail trade turnover by 4.6%, paid services by 23.5%, freight by 14.2% and passenger transportation by 52.7% compared to 2019. At the same time, there are positive changes, such as oil production growth of 112.5%, natural gas production growth of 2.3 times, gold production growth of 8.2%, livestock production growth of 2.4%, average wage growth of 4.5%, real wage growth of 1.3%, reduction in the total number of unemployed by 1.6%.

Respondents assess the changes that have taken place in the region over the past year, mainly as “practically nothing has changed” - from 34.5% (I — “sedentary”) to 66.7% (II — “active”), and “for the last year the situation has only worsened” — from 31.9% (IV — “passive”) to 45.0% (III — “temporary” migrants). Respondents who do not have migration intentions (14.3%) and those who plan temporary migration (15.0%) predominantly believe that “the situation began to change for the better”.

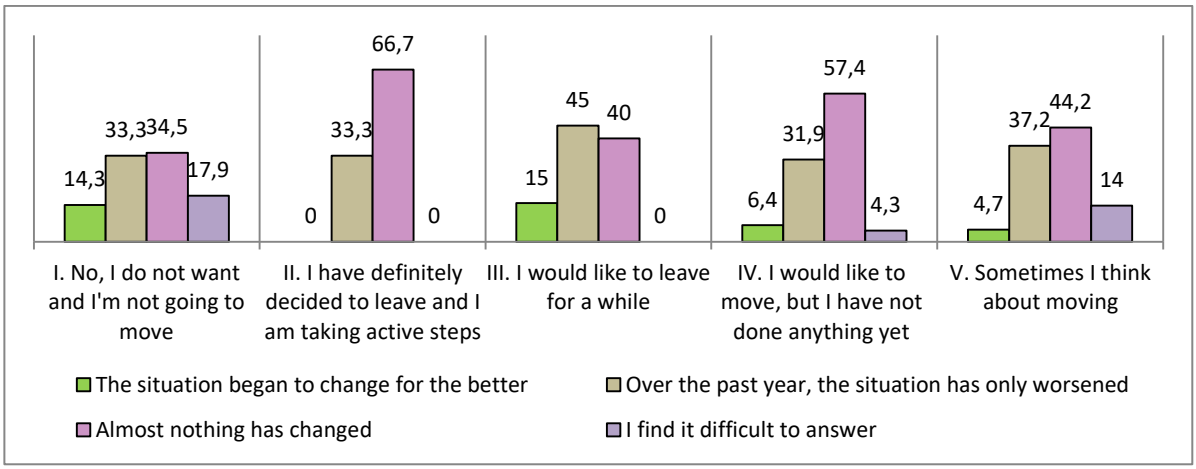

Fig. 5. Distribution of answers to the question: “How would you rate the changes that have taken place in your region over the past year: the situation in the region has begun to change for the better, has nothing changed, or has the situation only worsened?”, in %.

Among the respondents who do not have migration intentions, there is a high proportion of those who found it difficult to answer questions about the prospects for the development of the region. For example, the highest proportion — almost a quarter (23.0%) — among the “settled population” found it difficult to answer to the question “What, in your opinion, are the economic,

social and cultural prospects of the region in which you now live?" As for the assessments of economic prospects, the largest proportion of respondents expects the economic situation to worsen to a greater or lesser extent. Respondents of Group II with active migration plans are most confident in some deterioration of the situation — 50.0%. The participants of the Group III, "temporary" migrants, are the least confident — 20.0%.

The next most popular position is: "the economic situation will not change" — almost a third of the respondents agree: II ("active") — 33.3%, V ("neutral") — 30.2%, IV ("passive") — 27.7%. The most optimistic ideas about the prospects for the economic development of the region are in the Group III, with temporary migration intentions (30.0%) — 2.1% expect a significant improvement in the situation, 19.1% — a slight improvement. The most pessimistic is the Group II, "active" — 50.0%, and the respondents of Group V, who sometimes think about moving (48.8%), are the most pessimistic: 30.2% expect some deterioration in the economic situation, 18.6% — significant deterioration.

Social policy in the Republic of Sakha (Yakutia), in addition to the activities of the Ministry of Labor and Social Development of the Republic of Sakha (Yakutia), is provided by national projects such as "Demography", "Culture", "Housing and Urban Environment", "Health", "Education", etc. The respondents' assessment of the region's social prospects looks slightly better than the expected economic prospects. Thus, the largest number of respondents believes that the social situation will not change. The proportion of respondents with pessimistic expectations of the development of the social situation in the republic is very high. Respondents of groups II and III with active migration plans are most confident in some and significant deterioration of the social situation — 50.0% and 40.0%, respectively. The share of optimistic ideas about the prospects for the social development of the region is higher than the ideas about the prospects for economic development. The most optimistic expectations of social changes are among the respondents of Group III with temporary migration intentions (35.0% — some improvement) and group IV, the so-called "passive" migrants — 2.1% expect a significant improvement in the situation, 34.0% — some improvements.

As stated in the report of the Ministry of Culture and Spiritual Development of the Republic of Sakha (Yakutia), in 2020, before the introduction of restrictive measures, the main indicators of culture were constantly growing, including the main one — the number of visits to cultural organizations. According to the results of 2019 and the first quarter of 2020 (before the introduction of restrictive measures), the republic achieved the highest attendance rate for cultural organizations among the regions of the Far Eastern Federal District. The respondents highly appreciate the prospects for cultural development in the region. Most respondents expect some improvement in the situation. Here, the so-called groups of "dreamers" have the most positive expectations — the respondents of the groups IV (48.9%) and V (39.5%) expect a significant and slight improvement in the situation. The groups with migration intentions have the most negative expectations — the

respondents of Group II (50.0%) and Group III (40.0%) expect a significant and slight improvement in the situation.

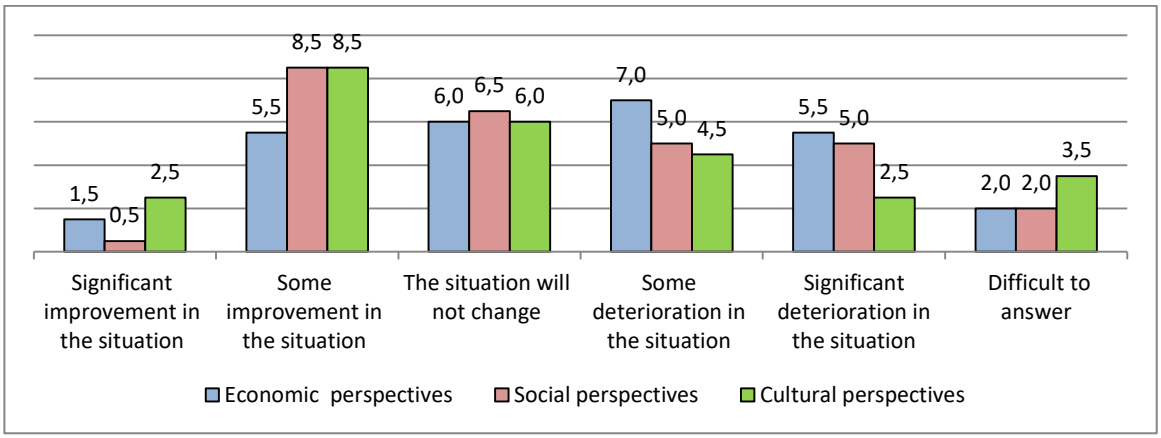

Fig. 6. Distribution of answers to the question: "What, in your opinion, are the economic, social and cultural prospects of the region where you live now?", in %.

Respondents were asked the question: “Under what conditions would you stay to live and work in your region?” Half of the respondents of all groups of potential migrants, except for Group II — “temporary” migrants, indicated that if decent wages are provided, incomes will increase. Here we would like to note that according to preliminary data from Federal State Statistics Service of the Republic of Sakha (Yakutia), in 2020, the population with cash incomes below the subsistence level is 17.4% of the total population. Despite the coronavirus pandemic, the poverty rate in Yakutia in 2020 decreased by 0.4% compared to 2019, from 17.8% to 17.4%. The cost of living for the fourth quarter of 2020 amounted to 18.368 rubles in the RS(Ya). Among the 11 subjects of the Far Eastern Federal District, the Republic of Sakha ranks fourth from the bottom in terms of the share of the population with cash incomes below the subsistence level, after the Jewish Autonomous Okrug (23.7%), the Trans-Baikal Krai (21.0%), the Republic of Buryatia (20.0%) [18].

A third of respondents of all groups who are going to move, regardless of the reality of their intentions, indicated that the condition for refusing migration intentions would be the availability of air travel to the central regions of the country. By the way, the problems of the high cost of air fares not only in the central regions of the country, but also on domestic flights in Yakutia have existed for many years. State Duma deputy from Yakutia Fedot Tumusov told Parlamentskaya Gazeta that “the Federal Antimonopoly Service should not only find out why all carriers operating flights to Yakutsk have sharply raised ticket prices, but also deal with the high cost of flights to the Far East. The problem has existed for many years for ordinary passengers, air travel from Mos-

[18] Uroven' bednosti v Respublike Sakha (Yakutiya): elektron. stat. sbornik. Yakutsk: Territorial'nyy organ Fede-ral'noy sluzhby gosudarstvennoy statistiki po Respublike Sakha (Yakutiya), 2020. L. 11874 [Poverty level in the Republic of Sakha (Yakutia): electron. stat. collection. Yakutsk: Territorial body of the Federal State Statistics Service for the Republic of Sakha (Yakutia), 2020. s. 11874].

cow to Yakutsk is one and a half to two times more expensive than to Khabarovsk or Vladivostok" [19].

"A cartel collusion between airlines is quite probable, and it's good that the Federal Antimonopoly Service has taken up this," said Kirill Yankov, chairman of the Passenger Union. "But the fact that flights to Yakutsk are more expensive than to Khabarovsk can be explained more simply: the more take-offs and landings at the airport, the cheaper the service rates are. Do not forget the difference in climatic conditions — there are no minus 50 in Khabarovsk. Of course, there is also such a factor as demand — in a wide-body aircraft, the cost of a passenger seat is somewhat less than in a narrow-body one. Of course, the totality of such factors should be taken into account by the FAS in its investigation" [20]. As the study showed, the lack of accessible transport links is a problem in the Far Eastern Federal District as a whole. Transport inaccessibility and a feeling of isolation from the main part of Russia forms the opinion among the Far East that the huge region in which they live is needed by the federal center solely in the form of a raw materials appendage. The lack of affordable regular transport links is forcing an increasing number of residents of the Far East Federal District to leave forever for the southern and western regions of Russia [19, Smirnova T.B., p. 7].

According to the respondents, the next condition for staying to live and work in Yakutia is the development of social infrastructure, leisure and recreation facilities. Here, Group III of "temporary" migrants stands out – 35.0%; for information, Group II — 16.7%, Group IV —19.1% and Group V — 18.6%. The Strategy for the Socio-Economic Development of the Republic of Sakha (Yakutia) up to 2032 with a target vision up to 2050, adopted in 2018, points to the underdeveloped social infrastructure, the ongoing migration outflow of the population since the 1990s, including skilled personnel, the low quality of life, along with underdeveloped infrastructure, especially energy and transport infrastructure, which hinder the dynamic development of the Sakha (Yakutia).

Among the priority measures designed to stop the migration outflow of the population, primarily young people, the respondents indicated the creation of jobs (on average — 61.6%), the development of industry and agriculture (44.4%), innovative sectors of the economy (43.2 %) and social sphere (43.0%) of the region. In order to attract young and skilled migrants to the region, the respondents suggest creating jobs (on average — 56.1%), improving work on the support program for compatriots (33.2%), offering social housing (28.4) and allocating quotas for students (24.4%).

[19] Aviaperevozki v Yakutsk nuzhdayutsya v dopolnitel'nom subsidirovanii — deputat Tumusov [Air transportation to Yakutsk needs additional subsidization - deputy Tumusov]. URL: https://www.pnp.ru/economics/aviaperevozki-v-yakutsk-nuzhdayutsya-v-dopolnitelnom-subsidirovanii-deputat-tumusov.html (accessed 29 October 2021).

[20] Dorogovizna aviabiletov v Yakutsk ob"yasnyaetsya ne tol'ko kartel'nym sgovorom — ekspert [The high cost of air tickets to Yakutsk is explained not only by cartel collusion — expert]. URL: https://www.pnp.ru/economics/dorogovizna-aviabiletov-v-yakutsk-obyasnyaetsya-ne-tolko-kartelnym-sgovorom-ekspert.html (accessed 29 October 2021).

Conclusion

Thus, the territorial mobility of the population of Yakutia during the pandemic has a number of distinctive qualities and reflects a complex of socio-economic features and problems of the region. As the materials of the State Statistics for the Republic of Sakha (Yakutia) showed, in 2020, the migration loss was replaced by an increase for the first time since 1990, and the structure of migration flows changed. The peculiarities of the distribution of productive forces and human resources in the labor market maintain a fairly high potential for labor migration to the Republic of Sakha (Yakutia) from the CIS countries and far abroad in the context of a pandemic, the share of incoming migrants who indicate work among the reasons for migration continues to grow. The most attractive for labor migrants are the central zone of Yakutia due to a more developed infrastructure and a diversified economy, Western and Southern Yakutia, where there are centers of the extractive industries of the republic's economy: diamond mining and oil and gas production, coal and gold mining. The Arctic zone of the republic, the largest in area, is characterized by a negative migration balance of both urban and rural settlements that has been stable for many years, and the population decline trend continues due to migration loss.

The analysis of the survey results shows that specific features of territorial mobility, migration intentions of the population and lack of migration plans depend on socio-economic living conditions, various factors of individual social status and position, as well as mobility resources. For example, the main reason for the migration intentions of the respondents, regardless of the reality of their implementation, is the low standard of living in the region and the unfavorable climate. Potential migrants, mostly young people who are not married and have financial resources, strive for more prosperous socio-economic and climatic conditions, for regions with better infrastructure, where it is possible to get a decent job, quality education, medical services, recreation and leisure. There is a group of respondents planning a temporary change of residence — mostly people with a good social and financial status, who are driven by the desire to see the world, expand their socio-spatial, cultural horizons, and satisfy recreational needs and requests. Thus, the spatial mobility of respondents is inextricably linked with social resources and social mobility.

At the same time, the respondents predominantly give satisfactory assessments of the socio-economic situation in the republic and believe that in terms of most factors of social life in the region, the situation does not differ from Russia as a whole. When evaluating the prospects for the development of the region, the largest proportion of respondents expect the economic situation to worsen and the social and cultural situation to improve. For the majority of respondents, a decent salary, an increase in income and availability of air travel to the central regions of the country would serve as a condition for abandoning migration intentions for the majority of respondents. The specificity of the region is such that, in addition to solving issues of socio-economic living conditions, due to the remoteness from the central regions of the country and the harsh climatic con-

ditions of the territory of the republic, the spatial mobility of the population turns into one of the most important social resources of society.

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Native Languages Education as a Factor in the Formation of the Well-Being and Quality of Life of Children and Youth of the Indigenous Minorities of the North, Siberia and the Far East of the Russian Federation *

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Abstract. The quality of life is determined by approaches to its assessment, including analysis of the effectiveness of measures to improve it. Russia has accumulated empirical data on socio-economic factors of well-being and quality of life of the indigenous minorities of the North, Siberia and the Far East, however, there is a lack of knowledge about the degree of influence of educational policy in the field of preservation and development of national languages and culture on them. The purpose of the work is to assess the social situation related to the availability of education in the native language as a condition for the formation of well-being and quality of life of children and youth of the indigenous minorities of the North, Siberia and the Far East of the Russian Federation. The study included 2 parts: analysis of macro-level indicators of the quality of life of the indigenous minorities of the North, Siberia and the Far East based on data from ethnic statistics, general statistical indicators, educational statistics; a survey study in which young people of the indigenous minorities of the North, Siberia and the Far East of the Russian Federation from 8 regions of the Russian Federation participated. The study obtained reliable and representative data on the learning conditions and factors of subjective well-being of the youth of the indigenous minorities of the North, Siberia and the Far East living in different regions. The use of comparable indicators to assess the social situation in several subjects of the Russian Federation makes it possible to correctly compare the quality of life of the youth of the indigenous minorities of the North, Siberia and the Far East with their peers living in the same territories of the Russian Federation, but not belonging to these ethnic groups. The results of the study made it possible to fill in the lack of data on the potential for the preservation and development of native languages and cultures of the indigenous minorities of the North, Siberia and the Far East. Knowledge of the mechanisms of formation of attitudes and behavior of young people is important for Russian society, as it is associated with making decisions about potential risks for a special socially vulnerable and difficult-to-study part of the Russian population. The complex use of socio-psychological research and analysis of statistical data made it possible to triangulate various sources of information and identify significant factors of well-being and quality of life of the indigenous minorities of the North, Siberia and the Far East of the Russian Federation.

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Introduction

Improving the quality of life of the Indigenous Minorities of the North, Siberia and the Far East, primarily children and youth, is one of the most acute problems in the development of the northern territories of the Russian Federation, which are of great interest to politicians, sociologists, economists, teachers, psychologists, researchers, and the public.

The study of the quality of life of the indigenous peoples of the North and the Far East of the Russian Federation refers to the definition of the "public" concept, which has no unequivocal and generally accepted definition. In this paper, the authors adhere to an ethnographic definition that considers public as a historically established community of people, which is based on the unity of language, culture, territory of residence, way of life, and historical experience that distinguish them from other similar communities. The concept of "indigenous people", as a rule, refers to an ethnic group, characterized by internal unity and integrity, historical continuity, the presence of self-identification, the duration of residence in a given territory, cultural characteristics, customs and traditions, the specifics of economic activity, life and economic way of life, as well as forming a non-dominant part of society. It is noteworthy that these features make indigenous peoples especially vulnerable and deprived in the context of social development [3, Huaman E.S., p. 415-432]. Therefore, the problems of preserving and developing native languages and the unique culture of the Indigenous Minorities of the North, Siberia and the Far East of the Russian Federation as an important component of state social policy acquire special meaning and significance today. According to the Decree of the Government of the Russian Federation No. 536-r dated April 17, 2006 (as amended on December 26, 2011) "On approval of the list of indigenous peoples of the North, Siberia and the Far East of the Russian Federation", 40 peoples are assigned to the indigenous peoples, most of them residing in 25 regions of the Russian Federation [1].

The quality of life is traditionally understood as the satisfaction of all the needs and interests of citizens, the level of comfort of the natural and social environment of their life in a particu-

[1] Postanovlenie Pravitel'stva RF ot 1 oktyabrya 2015 g. № 1049 [Decree of the Government of the Russian Federation of October 1, 2015 No. 1049].

lar territory, which determine the level of their subjective well-being, as well as social, spiritual and physical health [1, Sinitsa A.L., p. 70–81; 2, Derek A., p. 995–1004].

The concept of "quality of life" for the Indigenous Minorities of the North, Siberia and the Far East, in addition to the above criteria, includes the possibility of preserving and reviving national traditions, language, writing, traditional crafts, trades, etc.

In addition to the quality of life, the position of a particular social and/or ethnic group is usually assessed by indicators of subjective well-being. It is a complex construction traditionally defined by psychological well-being (a sense of personal freedom, positive relationships with others, having a goal in life, self-acceptance, etc.); affective well-being (mood, level of calmness, activity, cheerfulness); cognitive well-being (satisfaction with life in general and its individual domains: education, career, health, financial condition, etc.); social well-being (success in studies and labor, level of deprivation, etc.).

Indicators of the quality of life and subjective well-being are determined by approaches to their assessment, which involve an analysis of the effectiveness of measures specially planned and implemented by the state to improve it, including those related to ensuring the availability of education in the native language.

The priorities of the state policy in relation the Indigenous Minorities of the North, Siberia and the Far East of the Russian Federation include [2]:

- increasing the availability and quality of educational services, primarily in the study of native language and native literature;
- promoting employment of indigenous peoples, creating conditions for traditional economic activities;
- preserving their traditional way of life, supporting cultural values, traditions, unique experience and knowledge;
- development of civil society institutions, stimulation of activity in public life through various forms of self-government.

This study was aimed at obtaining new scientific knowledge about the quality of life of children and youth of the Indigenous Minorities of the North, Siberia and the Far East of the Russian Federation based on an assessment of potential psychological, social and environmental resources for its improvement, taking into account cultural specifics, which can contribute to the sustainable development of the northern territories of Russia.

[2] Ukaz Prezidenta RF ot 5 marta 2020 g. №164 "Ob Osnovakh gosudarstvennoy politiki Rossiyskoy Fede-ratsii v Arktike na period do 2035 goda"; Rasporyazhenie Pravitel'stva RF ot 25 avgusta 2016 goda №1792-r. [Decree of the President of the Russian Federation 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"; Decree of the Government of the Russian Federation of August 25, 2016 No. 1792-r.].

Materials and methods

The study consisted of two parts:

1. *Analysis of macro-level factors of the quality of life* of the indigenous peoples of the North and the Far East of the Russian Federation on the basis of ethnic statistics, general statistical indicators, and educational statistics.

The source of monitoring information was data from Rosstat, official websites of regional executive authorities, websites of municipalities and institutions of general and additional education, culture and sports, and regional media.

2. *Cross-sectional online research using a quantitative approach to the collection and analysis of empirical data*.

The study was conducted on the territory of the following subjects of the Russian Federation: the city of St. Petersburg, Leningrad, Murmansk, Irkutsk, Tomsk oblasts, Kamchatka, Krasnoyarsk krais, the Republic of Sakha (Yakutia), Yamalo-Nenets Autonomous Okrug.

The survey consisted of teenagers and youth representatives completing an online standardized questionnaire.

The research sample included:

a) students of schools, colleges, universities with a high representation of teenagers and young people of the Indigenous Minorities of the North, Siberia and the Far East. The decision to include educational institutions in the study was made by the regional coordinators responsible for data collection in the constituent entities of the Russian Federation.

Parental consent to participate in the research was not requested because all respondents were over 14 years of age at the time of the study. Information about the study was distributed to students in the form of a link to a Google Form.

b) non-student youth 14 years and older. Data collection was carried out through non-commercial organizations and specialized associations located on the territory of the surveyed subjects of the Russian Federation.

The total sample of the study was 1343 teenagers and young people, the average age of the respondents was 22.1 years.

The study required respondents to complete consent, the questionnaire was anonymous, participation in the study was voluntary and did not carry risks for the respondents. The questionnaire allowed respondents to choose not to answer the questions if they considered them inconvenient. Respondents could refuse to participate in the study at any time without any negative consequences. Information based on the results of the survey was available exclusively to the research group and was not disclosed to anyone else.

Results

The use of consistent indicators in different regions of the Russian Federation makes it possible to correctly compare the key characteristics of the quality of life of the Indigenous Minorities of the North, Siberia and the Far East with representatives of other ethnic groups living in the same territories of the Russian Federation, emphasizing territorial and ethnic specifics. Significant empirical data have been accumulated in Russia on the factors of quality of life of the Indigenous Minorities [4, Markin V.V., Silin A.N., Voronov V.V., p. 141; 5, Kozlov A.I., Vershubskaya G.G., Kozlova M.A., p. 19–169]. At the same time, the basis for developing policies and making managerial decisions is formed, as a rule, by official statistics, rather than the results of scientific research [6, Pustogacheva O.N., p. 42]. Moreover, there is clearly not enough qualitative data characterizing the state and trends of change in the situation with the availability of education in native languages for the Indigenous Minorities of the North, Siberia and the Far East and their satisfaction with the quality of this education. They are often fragmentary and reflect only the situation in certain regions.

Departmental statistics can more or less adequately reflect the situation in those locations where indigenous peoples form the majority of the population, but in other cases, statistical data should be considered as indirect, requiring additional research, clarification and verification. In addition, the complexity of analyzing the real situation based only on statistical data is compounded by the fact that many representatives of the Indigenous Minorities lead a nomadic lifestyle, moving from one territorial-administrative region to another without any registration.

Traditionally, information describing the state of regional education systems is collected on a regular basis by the Ministry of Education of the Russian Federation and includes a variety of data, such as the number of schools, teachers, subjects, student results, etc. These statistics can be grouped by various classification criteria, in particular, by urban and rural areas, education levels, types of educational institutions, age groups, teaching languages, etc.

It should be noted that the forms of state statistical accounting and departmental statistics of education differ from each other, as a result of which the same data in a number of cases are different. Thus, there is a problem of comparability of information obtained from various sources, their reliability and trustworthiness. For example, with almost the same total number of students learning their native language and native literature, which is shown by state and departmental statistics, information about the number of those studying a particular language, as well as the list of languages, differ significantly [7, Sheregi F.E., p. 464]. Mistakes in the initial information can (and do) lead to errors in the decisions made and in the development of targeted education development programs [8, Shlapentokh V.E., p. 227].

The problem of collecting analytical information using statistical data distributed according to the territorial principle also lies in the fact that the officially established boundaries of territories do not always include (and, accordingly, take into account) settlements — places of perma-

nent residence of the indigenous peoples of the North and the Far East. Accordingly, these territories, regardless of the place of residence of representatives of indigenous peoples, are not the object of targeted programs to support this category of the population.

A number of studies have been devoted to identifying the features of the education of the Indigenous Minorities of the North, Siberia and the Far East, substantiating the need to improve its accessibility and quality.

In the context of our research, the works aimed at studying the specifics of the educational process in the regions of permanent residence of the Indigenous Minorities are of interest [9, Egorov V.N., p. 103–106; 10, Malinovskaya S.M., p. 104–111]. A number of contemporary researchers address the impact of education on the ethno-cultural development of the indigenous peoples of the North and the Far East, the socio-economic development of the regions of their residence [11, Malysheva E.V., Nabok I.L., p. 139–144; 12, Neustroev N.D., Neustroeva A.N., p. 253–259]. It is worth noting the emergence of works analyzing the problems and risks associated with the education of children of indigenous peoples [13, Pimenova N.N., p. 12–18; 14, Terekhina A.N., p. 137–153]. As noted by some authors, children of small indigenous peoples of the North demonstrate a low level of knowledge of their native languages and culture. One of the reasons for it is the lack of a comprehensive system of measures aimed at preserving the languages and culture of the indigenous peoples of the North and the Far East in the context of improving their quality of life [15, Filippova N.I., p. 100–108]. Some researchers pay attention to the influence of various agents on the choice of educational trajectories — families, schools, media, the Internet, etc. [16, Vyselko I.V., p. 476-484]. At the same time, very few studies analyze the influence of titular languages on the possibility of preserving linguistic and cultural diversity [17, Lanny R., p. 1–10; 18, Costa A., p. 1629–1644].

Analysis of search queries on the Elibrary site, which contains abstracts and full texts of monographs, textbooks, proceedings of scientific conferences, specialized books, dissertations and scientific articles from about 9300 domestic journals included in the Russian Science Citation Index (RSCI), by article titles, keywords and abstracts without limitation of the publication date gives a final selection of 4.703 unique links out of 35.297.939 ones on the site.

The representation of papers on the subject under study indicates a steady growth in research interest in the past decade on topics related to various aspects of life of the indigenous peoples of the North and the Far East (Table 1).

Table 1

Dynamics of the number of publications related to the Indigenous Minorities of the North, Siberia and the Far East [3]

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019

[3] Source: compiled by the authors.

The number of publications	134	163	178	232	282	328	424	471	542	533	554

An assessment of the main topics of publications showed that the most popular are ethnoculture (30%) and legal aspects of life of the indigenous peoples of the North, Siberia and the Far East (22%). Works on the problems of education account for 16% of the total number of publications, and since 2019, their growth has been observed, which suggests that the study of these issues has received a new impetus for development.

The statistics of dissertation defences on topics related to the Indigenous Minorities of the North, Siberia and the Far East are of interest. Thus, the Elibrary platform shows only 135 papers defended between 1998 and 2020, while the number of dissertation research in 2019, compared to 2005, has decreased by more than 10 times. The share of studies that touch upon the problems of education of the indigenous peoples among the defended works is only 9%.

On the same platform, there are 20 research reports on topics related to the indigenous peoples of the North, Siberia and the Far East, but most of them do not have a single citation.

Thus, as of today, there is no unified methodological, methodical and technological support for research in the field of teaching native languages and culture of the indigenous peoples, as well as a comprehensive program for studying the impact of the preservation of language and culture on the quality of life and subjective well-being. The contribution of the availability of education in the native language to the formation of educational trajectories in the specific environmental conditions of the Far North has not been assessed; the most significant factors in terms of the formation of positivist and/or negativist attitudes towards the study of native languages and culture have not been identified. As a result of this, studies of linguistic socialization, quality of life and subjective well-being of the indigenous peoples of the North and the Far East are non-systematic, the databases necessary for secondary scientific analysis are not formed, the possibility of assessing the ethnic and regional specifics of the formation of a person as a subject of social activity is lost, and the effectiveness of developing scientifically based programs for the preservation and development of native languages and culture of the indigenous peoples of the North and the Far East is reduced.

In addition, studies of the indigenous peoples often contain a serious methodological error, not taking into account their heterogeneity as a social group, among which we can distinguish: the urban population, which has almost lost its ethno-cultural identity; the population living in settlements, not engaged in traditional industries and subjected to assimilation; and the population that has retained the original pre-industrial features of the economic structure and worldview. The attitudes and behavioral strategies regarding the learning of native languages among these groups can vary considerably.

Another topical scientific agenda in recent years is the study of the “autonomous world of childhood”. On the one hand, there is a prolongation of the period of childhood in the individual

life of a person, infantilization of the younger generation, leading to its later inclusion in socio-economic processes. On the other hand, modern society requires the child to be ready for conscious choice and decision-making, personal responsibility, and the ability to act in difficult situations. This indicates the importance of studying the processes of formation of consciousness and behavior of children and youth of the Indigenous Minorities of the North, Siberia and the Far East, a significant element of which is ethnic self-identification and a pronounced need to preserve national identity.

Analyzing the situation of teaching native languages and culture of the Indigenous Minorities of the North, Siberia and the Far East, the authors draw attention to the consequences of the lack of attention of the authorities to these issues: a declining level of knowledge of national languages, in some cases creating a real threat of their complete loss; the growing shortage of personnel capable of providing education in native languages, and the lack of a comprehensive program for their reproduction; poor methodological and technical equipment of educational institutions, etc. Researchers pay attention to the lower, compared to the national average, level of education of the indigenous peoples, explaining this both by general reasons related to the lack of targeted programs to improve the quality of life of the Indigenous Minorities of the North, Siberia and the Far East, and by specific conditions reflecting ethno-cultural and regional characteristics [19, Dikansky N.S., Poshkov Yu.V., Radchenko V.V., p. 255].

A number of authors point to the weakness of statistical services in the Russian North, discrepancies in indicators, inconsistencies and direct contradictions in estimates, difficulties in processing data on small samples [8, Shlapentokh V.E., p. 114].

In order to assess the situation in the studied regions, the relevant statistical information was selected [4]. Its analysis shows, in particular, the stability of the indicator of provision of the Far North, Siberia and the Far East regions with pedagogical personnel (Fig. 1).

[4] Ekonomicheskie i sotsial'nye pokazateli rayonov Kraynego Severa i priravnennykh k nim mestnostey v 2000 — 2020 godakh [Economic and social indicators of the regions of the Far North and equivalent areas in 2000—2020]. URL: https://rosstat.gov.ru/compendium/document/13279.

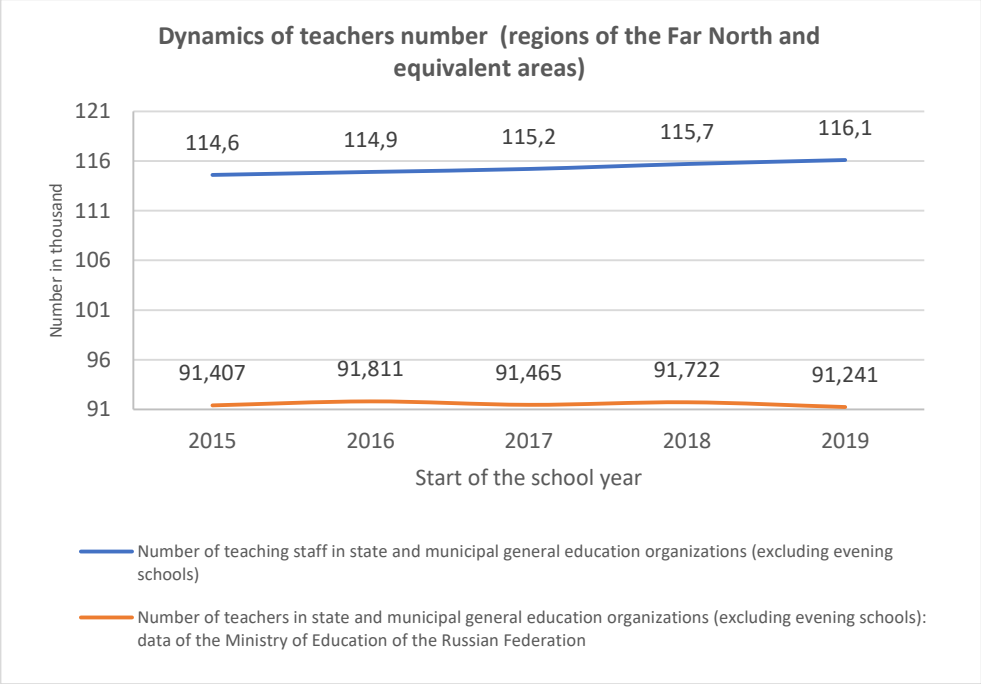

Fig. 1. Number of teaching staff, 2015–2019 [5]

As can be seen from figure 1, the number of teaching staff in general and teachers in particular in the regions of the Far North in recent years has been characterized by stability, and the problem of the shortage of teaching staff noted by many authors can be considered as solved to a certain extent. Let us note, however, that the data of state and departmental statistics, although they allow for some comparative analysis in the regional context (Figures 3 and 4), do not provide its necessary depth, while our monitoring shows significant differences on this indicator not only between the individual subjects of the Russian Federation, but also between administrative areas within one subject. The statistics do not identify teachers of native languages and culture of the Indigenous Minorities of the North, Siberia and the Far East into a separate category and do not allow us to assess the dynamics of their numbers, which is especially important for the purposes of this study. In addition, as the results of our research have shown, the problem is aggravated not only by an acute shortage of teachers of native languages and culture of the indigenous peoples in the surveyed regions, but also by a clearly emerging trend towards a decrease in the number of subject teachers who speak the languages of the indigenous peoples. It certainly does not ensure the creation in schools, where there is a large proportion of representatives of the indigenous peoples of the North and the Far East, a special language environment conducive to the preservation of their native languages and culture.

An analysis of the statistics of the number of students in the general education system (Fig. 2) in similar time periods, demonstrating similar trends in the number of teachers and students,

[5] Ibid.

leads to the conclusion that the "teacher–student" ratio is stable [20, Sheregi F.E., Rybakovsky L.L., Arefiev A.L., Savinkov V.I., p. 136].

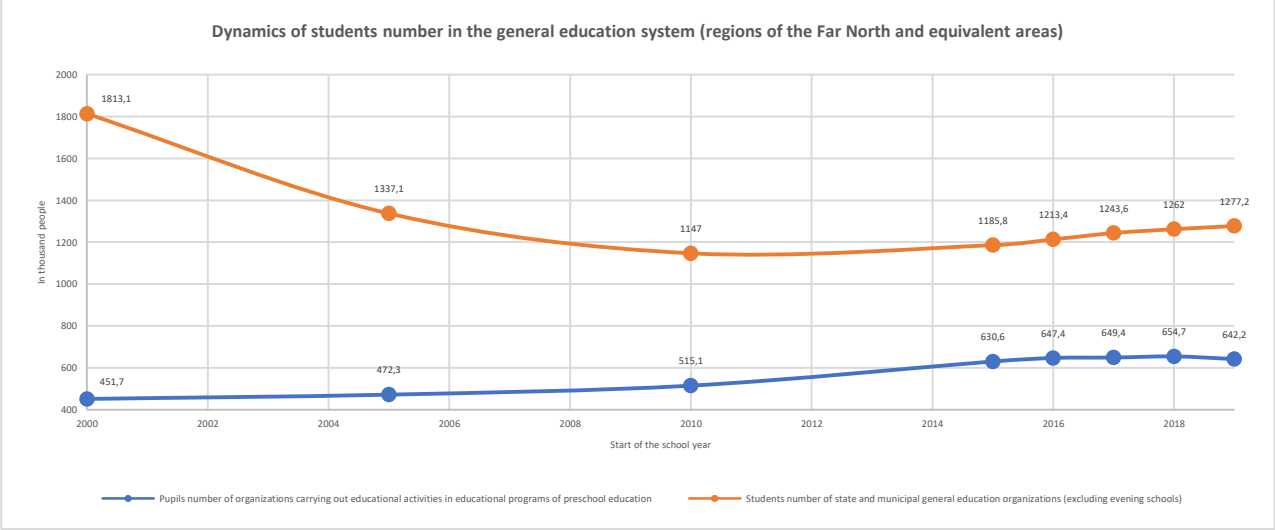

Fig. 2. Number of students, 2000–2019 [6].

However, as in the previous case (Fig. 1), it is not possible to single out students who are representatives of the indigenous peoples, as well as those studying one or another language and culture of the Indigenous Minorities of the North, Siberia and the Far East from the general dataset.

Such an opportunity arises when official statistics are supplemented (and refined) by the results of specially organized (preferably monitoring) surveys. An example of such a survey, conducted in the Republic of Sakha (Yakutia) is given in Table 2.

Table 2

Number of schools and students studying indigenous languages in the Republic of Sakha (Yakutia)

Native language studied	Number of schools					Number of students				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
Even	20	24	31	30	18	1100	1189	1183	1090	1113
Evenki	15	18	20	20	14	1125	1574	1159	1344	1101
Yukagir	6	6	4	11	5	91	129	194	165	104
Chukchi	2	3	2	5	2	56	73	119	119	52
Dolganskiy	1	1	2	2	1	118	117	131	131	122
TOTAL	41	49	56	65	37	2487	3082	2786	2849	2392

Source: compiled by the authors

Table 2 shows that the number of schools where native indigenous languages are taught, and the number of students who have the opportunity to study them, with an initial increase as a result of the implementation of the state policy of supporting the Indigenous Minorities of the North, Siberia and the Far East in recent years, have a noticeable downward trend.

In addition, as can be seen from figures 3 and 4, even the overall teacher–student ratio shows obvious disparities across regions. At the same time, these data do not allow us to describe

[6] Source: https://rosstat.gov.ru/compendium/document/13279.

the situation and draw any conclusions regarding the availability of education in the native indigenous languages, which means that either changes in statistical forms and reporting or regular monitoring and special research are needed.

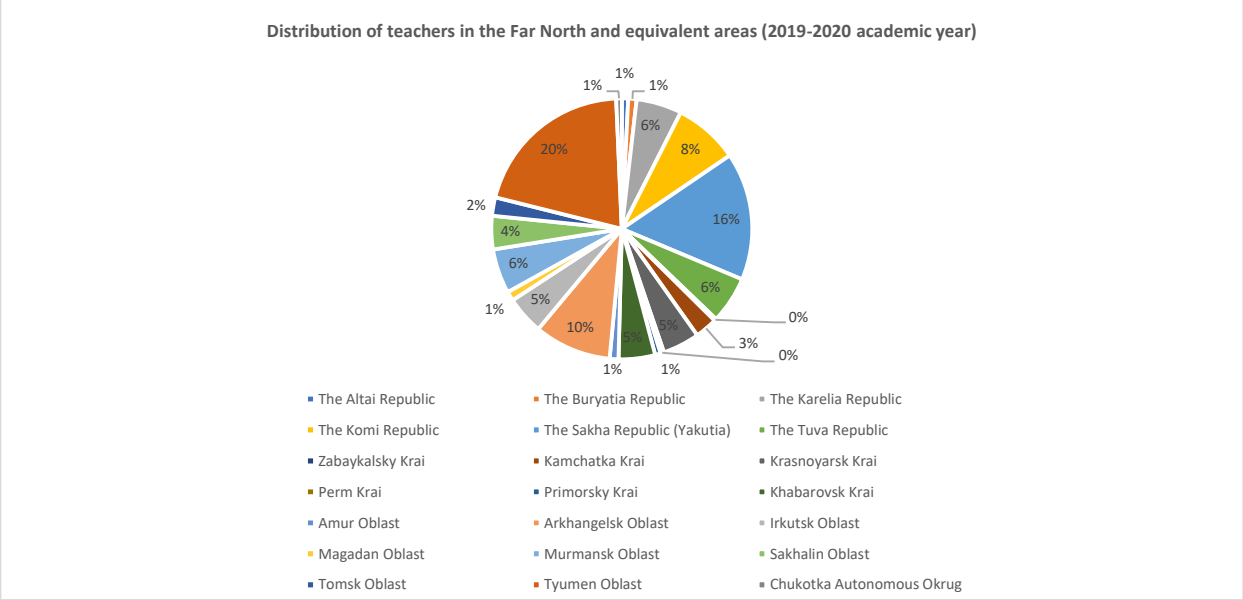

Fig. 3. Distribution of teaching staff by regions [7].

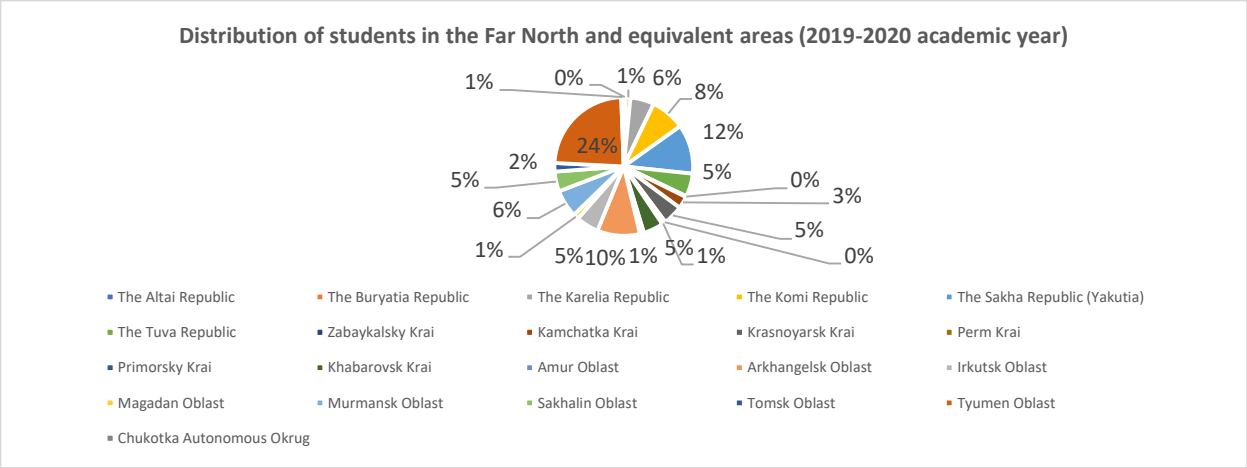

Fig. 4. Distribution of students by regions [8].

Moreover, even more obvious nature of such a ratio, but already interpreted as the ratio "a teacher of the native indigenous language — students studying the native indigenous language", is demonstrated by the obtained research data, a separate example of which is given in Table 3.

Table 3

The ratio of teachers of the native language and students studying it [9]

Name of educational institution	MSOEI "Dudinskaya secondary	MSOEI "Khatangskaya boarding school"	MSOEI "Khatangskaya secondary school	MSOEI "Khetskay secondary

[7] Source: https://rosstat.gov.ru/compendium/document/13279.
[8] Ibid.
[9] Source: compiled by the authors.

	school No. 1”		No. 1”	school”
Total number of students	485	169	409	69
of them: Dolgan	106	169	222	69
of them: students of the Dolgan language	59	158	126	58
Number of Dolgan language teachers	2	3	5	5

Thus, while recognizing many years of experience, proven mechanisms and methods, and undoubted achievements of state and departmental statistics, we believe that the use of its data exclusively for the analysis and assessment of the quality of life of the indigenous peoples has significant limitations. Most of the official statistics allow us to draw only indirect conclusions that do not ensure the relevance of decision-making and the development of long-term programs. In order to increase the objectivity of information, the use of specially organized surveys and targeted surveys in the areas where the Indigenous Minorities of the North, Siberia and the Far East are concentrated should be widely used. In addition, the methodology, methods and tools of data collection within the state (departmental) statistics also need to be updated, since the main drawback of the current situation is that the information collected on a regular basis reflects only the situation for about 70% of the actual number of the Indigenous Minorities of the North, Siberia and the Far East.

The second part of the study consisted of a survey of indigenous adolescents and youth. The distribution of respondents according to ethnicity is shown in Fig. 5.

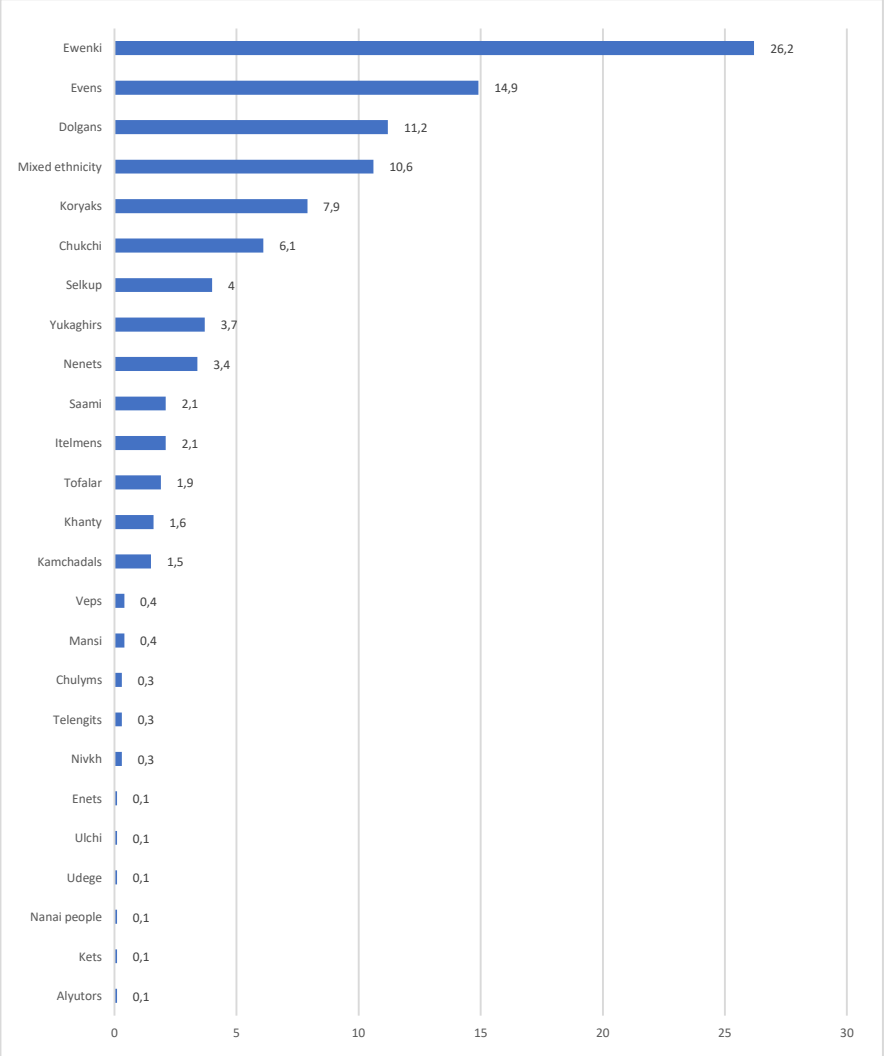

Fig. 5. Ethnicity of respondents, % [10].

According to the level of education, the respondents were distributed as follows: grade 9 or less — 5.0%, grades 10–11— 8.6%, completed secondary special/vocational education — 15.5%, incomplete higher education — 10.8%, higher education — 53.6%, academic degree — 1.8%.

The majority of respondents named a village or rural area as their place of birth (58.7%), about a quarter (27.5%) — a small town or urban-type settlement, 1.9% — nomadic housing. Only every tenth person was born in a large city or regional center ($\chi 2=13.614$, $p \leq 0.01$). Meanwhile, at the time of the survey, the youth of the indigenous peoples of the North and the Far East, compared with the youth of other ethnic groups, were statistically significantly more likely to live in big cities and regional centers (30.8% and 26.2%), in small towns and urban-type settlements (28.6% and 24.7%), less often — in rural areas (40.1% and 48.8%) ($\chi 2=44.09$, $p \leq 0.01$). No gender differences were found in the characteristics of the place of birth and the place of current residence.

[10] Source: compiled by the authors.

Language socialization

The majority of indigenous youth (74.5%) consider it necessary and important to know the language of their people, both boys and girls equally (p=n/c). However, only a minority of them (41.1%) believe that knowledge of their native language and culture will be useful to them in life, and girls demonstrate more positive attitudes compared to boys (44.2% and 34.7%, respectively). ($\chi2=8.677$, $p \leq 0.05$) (Fig. 6).

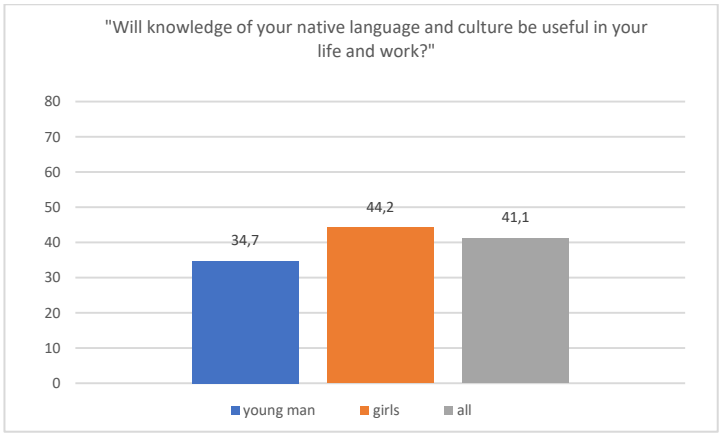

Fig. 6. Assessment of the importance of knowledge the native language and culture, % [11].

54% of respondents indicated that they like to speak their native language, 71% believe that maintaining their native language is important for them, 77% want their children/grandchildren to speak their native language, 75.3% noted that knowing their native language helps them to feel belonging to their people.

Thus, the level of respondents' motivation to learn their native language is quite high. However, they understand that their success in life is largely determined by the knowledge of the Russian language. Obviously, the general mood and language preferences are formed in the conditions of the limited field of functioning of the native language and its insufficiently significant role in professional career and social success.

Almost every fourth of their young representatives (28.2%) does not speak any language of the indigenous peoples of the North, Siberia and the Far East; only 15.5% of the respondents speak it fluently and without an accent. At the same time, girls are significantly more likely to speak their native language than boys ($\chi2=6.865$, $p \leq 0.01$). Language proficiency mainly consists of knowledge of the alphabet and reading rules (38.9%), ability to compose simple sentences (34%), reading and understanding text (25.3%), understanding spoken language (24.4%). Only every fifth respondent (21%) can support a conversation at the everyday level. Such complex types of language activity as writing an essay, communicating without difficulty on a given topic are available to a limited number of young people (about 12%). Thus, the majority of respondents experience difficulties in communication (oral and written) in the language of the indigenous peoples of the North, Siberia and the Far East (Fig. 7).

[11] Source: compiled by the authors.

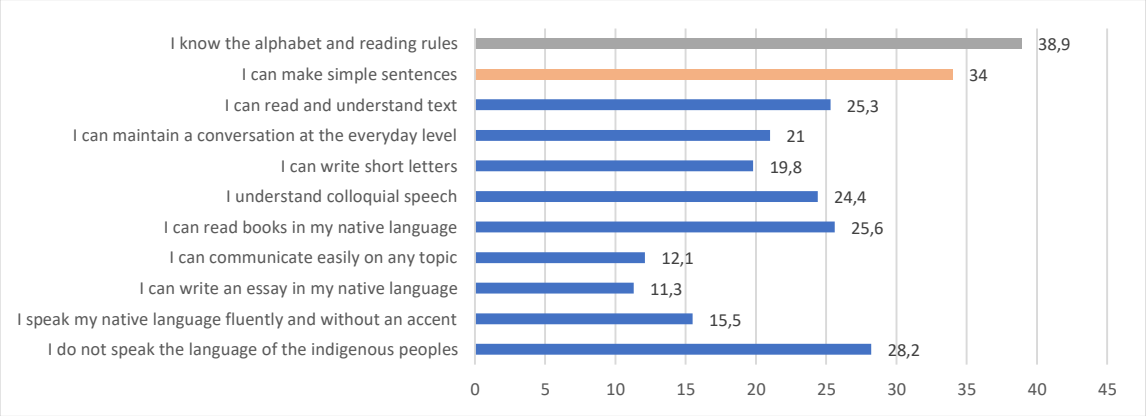

Fig. 7. Self-assessment of language skills, % [12].

It is noteworthy that the majority of representatives of the youth of the indigenous minorities (58.9%) call the language of their people their native language, every fourth (24.1%) — the Russian language, 4% — the language of another people of Russia. 10% of respondents named several languages as their native ones.

Regardless of what language young people consider their native language, they prefer to speak Russian, and in communication with friends more often (62.6%) than with family (49.8%). Only 28.2% of young people speak national language in the family, and only every seventh (14.5%) communicates with friends (Fig. 8). Boys, compared with girls, prefer to use the national language when communicating with friends (18.3% and 12.6%, respectively) ($\chi 2=10.924$, $p \leq 0.05$).

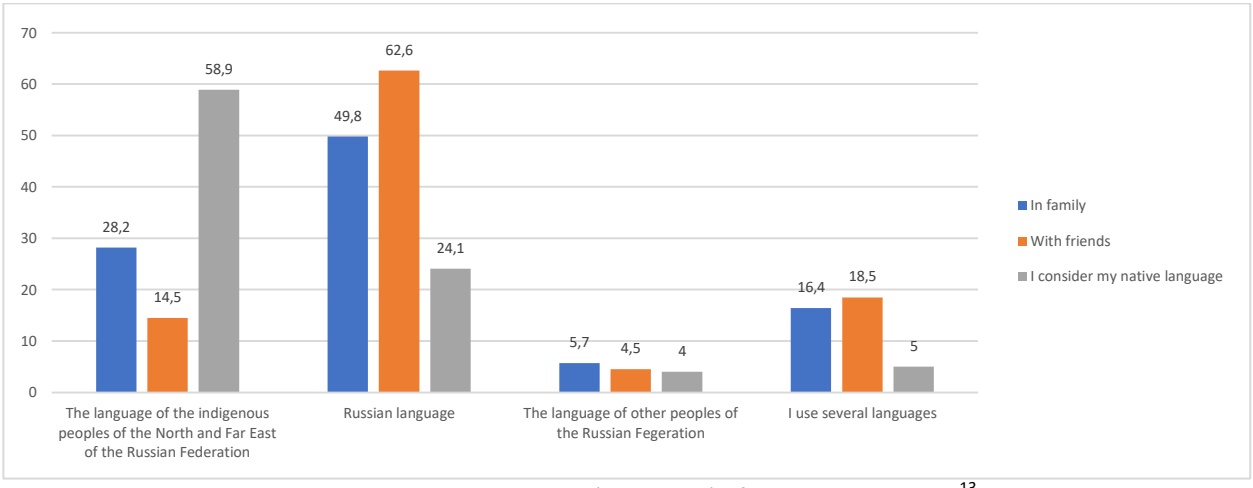

Fig. 8. Predominant language (languages) of communication, % [13].

The vast majority of the youth of the indigenous peoples of the North, Siberia and the Far East study Russian (84.6%) and a foreign language (81.7%) at school, while one of the indigenous languages is studied by only a little more than half of the representatives of these ethnic groups (56.9%) (Fig. 9).

[12] Source: compiled by the authors.
[13] Source: compiled by the authors.

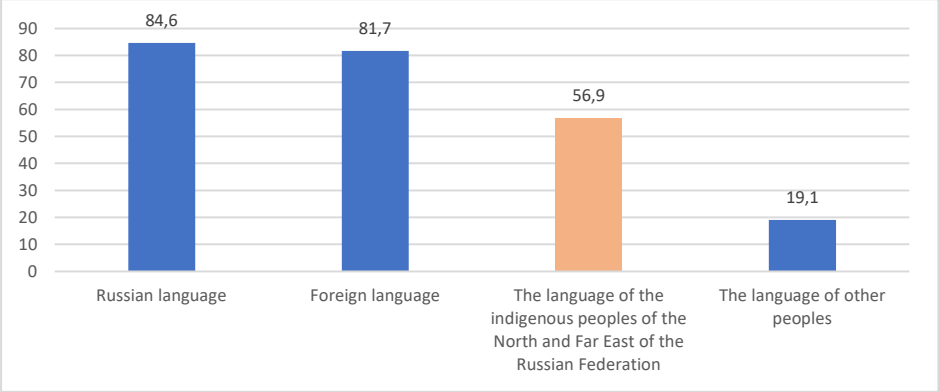

Fig. 9. Languages studied at school, % [14].

The most popular indigenous languages for studying were: Evenki (26.2%), Even (19.9%), Koryak (13.4%) and Dolgan (9.7%) languages; single cases of language study in school were: Yukaghir (3.9%), Chukchi (3.7%), Itelmen (2.9%), Selkup (1.6%), Nenets (1.0%), Tofalar and Saami (0.8% each), Veps, Ulch, Telengit, Kildin, Udehe (0.3% each). The Yakut language is the most studied among the youth of the indigenous minorities: 88.3% of the young people surveyed study it.

Thematic interest in the field of studying native languages and cultures is primarily manifested in the topics (subjects) of the history of the native land and the history of their people (66.3% and 48%), traditional religious culture (44.3%), national cuisine (39, 7%), national traditions and folk holidays (39.3%), geography of the region (37.3%). The second most important group of subjects is national literature (21.7%), national sports (20.8%), national dances (19.7%), national culture and art, folk crafts (17.7%), traditional economic activities (15.7%), traditional costume (11.3%), folk music, songwriting (9%).

At the same time, less than a half of respondents (43.1%) confidently orient themselves in the history of their people, approximately the same number (38.7%) know it poorly. 8.5% of young people confessed that they do not know the history of their people at all, every tenth respondent found it difficult to answer.

Availability of mass media in their native language is assessed by the majority of representatives of the indigenous youth as rather low (23.8%) and extremely low (31.0%), 26.5% — as average, and only 18.7% as high.

Educational trajectories

The vast majority of respondents (87.1%) studied in general education schools, 12.9% — in gymnasiums, lyceums or schools with in-depth study of certain subjects. No specificity was found in this parameter, neither in relation to ethnicity, nor to gender. However, the youth of the Indigenous Minorities of the North, Siberia and the Far East have more experience of studying in boarding schools (16.7% and 6 % respectively, $\chi 2=34.924$, $p \leq 0.001$) than young people of other ethnic groups (we included all the respondents participating in the survey who did not identify themselves as a representative of the Indigenous Minorities of the North, Siberia and the Far East).

[14] Source: compiled by the authors.

The youth of the Indigenous Minorities of the North, Siberia and the Far East had to move to receive a school education (31.6% and 16%, $\chi2=41.293$, $p \leq 0.001$), a specialized secondary education (59% and 44.6 %, $\chi2=41.293$, $p \leq 0.05$) and higher education (83.7% and 61.1%, $\chi2=16.536$, $p \leq 0.001$) significantly more often than their peers. Thus, the higher the desired level of education, the more often the indigenous youth have to migrate to obtain it. No gender specificity was found here.

70% of respondents (25% and 45%, respectively) have plans to continue their education (enrolling in specialized secondary or higher education). At the same time, every fourth high school student has not yet decided on plans to receive further education, and 5% do not plan to continue their education. There were no statistically significant differences in this indicator in terms of ethnicity or gender.

The study recorded significant differences in the options for entering the university between the representatives of the Indigenous Minorities of the North, Siberia and the Far East and other ethnic groups: the first were significantly more likely to enter on a targeted basis (29.1% and 15.0%). There are significantly fewer representatives of the Indigenous Minorities who study on a paid basis, compared with students of other groups (12.1% and 20.4%), as well as those who entered by results of victories in the All-Russian Olympiad (4.3% and 6.2%, $\chi2=8.883$, $p \leq 0.05$).

After graduation, 37.6% of students of the Indigenous Minorities of the North, Siberia and the Far East and 31.9% of students of other ethnicity do not plan to return to their regions, while female students of the Indigenous Minorities are significantly more likely than male (39.6% and 32.5% respectively) ($\chi2=15.089$, $p \leq 0.001$).

23.7% of the youth of the Indigenous Minorities assess negatively the prospects for employment in a good job in their current place of residence.

Stigmatization in relation to ethnicity is also statistically significantly more frequent among young people of the Indigenous Minorities of the North, Siberia and the Far East ($\chi2=21.369$, $p \leq 0.001$). Insults, offence and discrimination in connection with ethnicity are reported by 30.4% of the respondents.

The significance of the influence of native language and culture study availability on subjective well-being on a 5-point scale (0 — does not influence; 5 — significantly influences) is assessed by the respondents as follows (Table 4):

Table 4

Factors affecting subjective perception of well-being and quality of life [15]

Factors	Average rating	Rank
Availability and accessibility of studying in native language	4.25266	1
Raising national consciousness	4.111702	2
Holding festivals and holidays dedicated to national culture and traditions	4.06117	3
Availability and accessibility of literature in the native language	4.037234	4
The involvement of state authorities in resolving issues of preserving the native	4.031915	5

[15] Source: compiled by the authors.

language and culture		
Availability and operation of cultural institutions (museums, theaters, libraries, etc.)	3.960106	6
Development of traditional crafts	3.952128	7
Support and development of national communities	3.87766	8

Discussion and results

A significant part of the negative consequences for the quality of life and well-being of the youth of the Indigenous Minorities of the North, Siberia and the Far East is directly related to inequality in the field of education, its low quality and limited access to it [21, Arefiev A.L., p. 342]. At the level of school education, there is an acute shortage of subject specialists and teachers of native languages. Education in boarding schools leads to heterogeneous social-psychological consequences, which are not yet fully understood, but create risks for the psychological well-being of children and parents, family relationships, alienation of children from the culture of their people and a lower level of adaptation to other living conditions.

The results of this study provide strong evidence that the issue of organizing education in native languages is significant for the Indigenous Minorities. Important tasks of methodological nature in this case are: generalization and systematization of the most effective methods, development and implementation of modern methods and technologies for teaching the “native language” subject, which would take into account both new information and digital opportunities, and the characteristics of the students: ethnicity, initial level of proficiency in their native language, age, motivation for learning.

The study has shown that, at present, both the methods of teaching native languages of the Indigenous Minorities of the North, Siberia and the Far East and teacher training are outdated and conservative, in contrast to the dynamically developing methods of learning foreign languages. Along with such factors as the status of the language, the level of national self-consciousness and the attitude towards the native culture and language in the family and the surrounding society, the school is the leading link in the system of creating conditions for the development and preservation of the languages of the indigenous peoples.

The possibility of studying the native language at school as a separate subject is not sufficiently accessible. Only a small percentage of schools provide the opportunity to study in the native languages of the peoples living in the territory.

For the majority of the youth of the Indigenous Minorities, living in small settlements, getting an education is associated with the need to migrate to an environment with a different social organization. The lack of a system of social support and assistance in their adaptation to new living conditions can lead to negative consequences: health disorders, substance abuse, antisocial behavior, low educational motivation [22, Konstantinovskiy D.L., Voznesenskaya E.D., Cherednichenko G.A., Khokhlushkina F.A., p. 113].

The assessment of the quality of life of the Indigenous Minorities, based on the analysis of statistical data, information sources, websites of regional and municipal administrations and educational institutions, as well as survey data, revealed common problems associated with the availability of education in the native language regardless the region of residence. In different regions, these problems are more or less significant, but they exist everywhere.

Along with the general problems of modern education, the education system in the regions of the Far North, Siberia and the Far East has a number of specific problems, among which are the following:

- personnel problems, related to the shortage of teachers with knowledge of native languages, literature, culture and teaching methods, highly qualified teachers (the share of teachers with the highest qualification category in the places of residence of the indigenous peoples of the North and the Far East of the Russian Federation is only 10–15% from the entire teaching staff);
- legal problems, due to the underdevelopment of the system of normative and legal protection of children, families, teachers living and working in remote and hard-to-reach areas;
- financial problems, associated with significantly greater costs of providing high quality education than would normally be incurred;
- ethno-cultural and socio-cultural problems, determined by the need to achieve a balance between the preservation of cultural and linguistic uniqueness and integration into a single educational space and global society.

The strong vulnerability of the Indigenous Minorities of the North, Siberia and the Far East, susceptibility to assimilation and difficult living conditions put them on the brink of extinction. Many ethnic groups already number only a few hundred people. However, singling out the Indigenous Minorities as a separate and, at the same time, homogeneous group, both at the level of state policy and at the level of individual initiatives, may have its own limitations and negative consequences. The youth of the Indigenous Minorities differs significantly in the degree of specificity of their way of life. In some cases, they, like their parents, lead a traditional way of life in places of residence. In others, they live in district centers and cities, do not lead a traditional way of life and are not exposed to specific risk factors.

The youth of the Indigenous Minorities of the North, Siberia and the Far East can be characterized by parameters of life satisfaction similar to those of other ethnic groups. However, they are significantly more likely to face stigmatization and discrimination due to their ethnicity, experience more problems and are less satisfied with the measures to preserve the traditions of their people and career prospects.

Another basis that determines the direction and content of analytical studies of the quality of life of the Indigenous Minorities is the understanding that it is necessary to single out general

and specific problems characteristic of certain ethnic groups. Identification of general trends, features of their manifestation in a certain region, understanding of the specifics of the factors of influence will allow a differentiated approach to data analysis, making more reasonable conclusions and optimal decisions [23, Tysi-achniouk M.S., p. 1–6].

The specific features of the youth of the Indigenous Minorities of the North, Siberia and the Far East, which distinguish them from the youth of other ethnicities, are the following:

- level of education of the youth of the Indigenous Minorities as a whole is quite high, while the subjectively perceived quality of education is low (satisfaction with the quality of education is 29.3%);
- lower perceived socioeconomic status;
- significantly higher rates of educational migration;
- difficulties in adapting to new living conditions associated with a low level of social support;
- difficulties in communicating (oral and written) in their native language and the lack of opportunity to learn the language of their people at school.

Conclusion

Data on the level of education of the relevant groups of the population can serve as an important indicator of the socio-economic development of territories, at the same time reflecting their specificity. In particular, it is obvious that the traditional types of economic activity of the Indigenous Minorities of the North, Siberia and the Far East do not require a high level of qualification, which is reflected in the characteristics of education. At the same time, the development of these regions causes a growing need for specialists with a high level of education. It is impossible to understand the situation, identify trends, and develop competent policies and approaches to address the problem without statistical data and monitoring of the educational situation and educational structure of the population.

This study allows us to propose a number of recommendations aimed at improving the quality of life and well-being of young people of the Indigenous Minorities. Some of them are not specific to this group, but are related to the need to improve living conditions in the North, Siberia and the Far East as a whole.

1) Recommendations aimed at improving the quality of life in the regions of local residence of the Indigenous Minorities of the North, Siberia and the Far East are primarily related to the development of infrastructure: improving the quality and accessibility of pre-school and school education, reducing the educational gap with graduates of educational institutions in other regions of Russia, increasing the opportunities for employment and leisure activities in places of compact residence.

2) Recommendations specific to the youth of the Indigenous Minorities of the North, Siberia and the Far East: improvement of measures aimed at preserving the national culture and the possibility of leading a traditional way of life; development of targeted programs aimed at maintaining knowledge of the native language; creation of conditions to reduce stigmatization and discrimination against representatives of the indigenous peoples of the North and the Far East both in the territories of the regions of their residence and in Russia as a whole.

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Seashore Litters Impact on Biological Resources of Arctic Seas *

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Abstract. In the present manuscript, the impact of seashore plastic litter on the Arctic aquatic environment with a primary focus on fish is discussed. Plastic pollution of seashore and aquatic ecosystem became a major environmental problem in the late 1990s, when it was considered as a major threat for aquatic ecosystem. In recent years, the microplastic (MP) pollution has raised scientific attention and awareness as severe threat for aquatic ecosystem. Since fish is a significant source of food and wealth of Arctic countries, the shrinkage of fishing rates caused by aquatic ecosystems plastic pollution can lead to a significant negative effect on the well-being of the Arctic countries' population and economy. Recent studies showed significant amount of MP in Arctic seas. The MP particles were found in more than 90% of the studied water samples from the Barents Sea. This indicates that MP has become a major threat for aquatic life in the Arctic. Despite the fact the MP may pose harmful effects to aquatic life, there is still a lack of valid information concerning this research. Moreover, standard and generally accepted protocols for MP pollution monitoring and risk assessment need to be implemented. In view of the above, the current state of the problem is described in this paper.
Keywords: *plastic pollution, microplastic, aquatic ecosystem, Arctic, marine litter, Arctic environmental problem*

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Introduction

Aquatic bioresources and specifically fish is a significant source of food for people all over the world. It shares on average about 15% of animal protein consumption for the world's popula-

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tion, whereas in poor and food-deficit countries these figures rise to a significant 25% [1]. Marine fish is also one of the major sources of vitamins, essential elements and omega-3 fatty acids which are responsible for normal functionating of the human body, which deficiencies in the diet could cause severe health problems. In some cases, introduction into the diet or increasing the consumption rate of the marine fish could fulfil the necessary amounts of nutrients consumed and significantly decrease the cases of micronutrient deficiencies among the population [1–3]. Adequate micronutrients intake is especially crucial for a population living in Arctic countries, in which harsh climatic conditions demand higher recourses from the human organism for normal functioning.

Considering the mentioned above, fish is a substantial nutritional source for both developing and wealthy countries. According to Obiero et. al. [4] the Arctic region is one of the most fish-dependent parts of the world with the dominance of fish dependence in Nordic countries and Russia.

Fish is also a significant source of income for budgets of seashore countries. Its export constitutes relatively large shares of the GDP for some Arctic countries. Northeast Atlantic is one of the most important fishing areas within the Arctic with a share of about 10% of global fish catches. The Barents Sea is the dominant fishing areas in the Northeast Atlantic region being one of the most productive seas worldwide. Three countries: Norway, Iceland and Russia share 50% of total annual seafood catches in the Northeast Atlantic region [5].

Anthropogenic pollution can significantly affect the aquatic ecosystem. This leads to a shrinkage of seafood production all over the world. However, in the Arctic, this impact is pronounced much more significant due to the harsh local conditions, limited biodiversity, and relatively short food webs, making the Arctic ecosystem strongly susceptible to anthropogenic impact [6]. Since fishery is an important source of food and wealth of Arctic countries the shrinkage of fishing rates caused by anthropogenic pollution of water and seashore territories can lead to a significant negative effect on the health and well-being of the Arctic countries' population and GDP.

The anthropogenic pollution of the seashore is a widespread global problem. Different sources of pollution, as well as different pollutants, can affect the aquatic ecosystem by various pathways. The major contaminants of seashore environment are different organic and inorganic pollutants which rich the seashore by the drain of plants and factories directly or with wastewater to the fresh- or marine water, accidental spills of pollutants, with domestic wastewaters etc. The list of these pollutants is quite large. However, much attention is focused on the most emerging ones such as pesticides and agrochemicals, wastewater bacteria, toxic and radioactive elements, oils and other emerging organic compounds such as PCB, PAH, dioxins etc. All of these pollutants can penetrate the Arctic food web which causes severe damage to the aquatic organisms starting with the bottom levels of phyto- and zooplankton and ending up with the apex predators such as Cod, polar bear and human. The accumulation and magnification of the pollutants in aquatic or-

[1] Fisheries and aquaculture – enabling a vital sector to contribute more. URL: http://www.fao.org/news/story/en/item/150839/icode/ (accessed 01 June 2021).

ganisms affect their biodiversity, numbers and reproductivity [7]. These pollutants have been studied for decades and their serious threat to the marine and freshwater environment has been well studied and proven.

Plastic pollution of seashore and aquatic ecosystem on the other hand became a major environmental problem in the late 1990s, where plastic pollution was considered as a major threat for aquatic ecosystem and more studies were conducted on the effect of plastic pollution on the marine environment and the health of marine ecosystems [8]. In recent years in plastic pollution studies, a new "branch" was formed – assessments of negative effects of so-called microplastics (MP) (plastic particles less than 5 mm in diameter) on the environment. In the present analytical report, the effect of plastic pollution on the seashore ecosystem of Arctic seas will be discussed.

Discussion

Recent studies on the concentration of plastic pollution of Arctic seashore surface waters and ecosystem

Plastic litter and MP enter the Arctic seas by several pathways. Ocean currents transfer the plastics from more industrial developed regions where plastic production, consumption and, as a result, pollution is much more widespread, to the less anthropogenically developed and populated Arctic region. Plastic pollution from the local pollution sources specifically fisheries is also one of the main causes of plastic pollution in the Arctic. Also, the atmospheric transfer has recently been found as a source of MP in the Arctic, where it is fallout from the atmosphere and accumulates both in surface water and in sediments [9].

The impact on the aquatic ecosystems by plastic pollution can be roughly estimated by the analysis of plastic particles and fragments, including MPs in the surface water and sediment samples. In the research [10] authors claimed that the Arctic Ocean is “the dead-end” for floating plastic. They characterized the Northeaster Atlantic sector of the Arctic Ocean as the most pollutant by MP zone of the Arctic Ocean with the predominance of the plastic pollution of Barents and Greenland seas where 95% of all Arctic Ocean plastic is concentrated. The concentration of plastic in the European part of the Arctic in Northeast Atlantic and Arctic oceans is relatively high and found to be at the same level of magnitude as for more economically developed southern parts of the Atlantic Ocean. The research conducted in the off-shore of the Greenland Sea showed a high abundance of MP in the water samples with its presence in almost all samples treated. The mean value of MP particle in this sector of the Arctic was found to be 2.4 ± 0.8 items/m^3 [11]. In the part of the Barents Sea in south and southwest of Svalbard 0.34 ± 0.31 and 2.68 ± 2.95 items/m^3 were found in surface and subsurface water (at a 6 m depth) respectively. The MP particles were found in more than 90% of the studied samples [12]. In the Russian part of the Arctic Ocean basin in Barents, White and Kara seas the average concentration of MP in surface water was found to be 0.62 (0.19–6.42) items/m^3 [13]. The concentration of MP in these regions of Arctic Ocean is at the same levels of magnitude for MP concentration worldwide [14]. The fact that in almost all studied sam-

ples MP particles were found means that MP pollution of the region became a real environmental problem which can affect the aquatic ecosystem.

Mechanism of the negative impact of microplastic on biological resources

The negative effects of MP on aquatic organisms are described in the literature by different mechanisms. First is the straight effect of MP ingestion and physical damage of the organism or its normal functioning. In these case, the ingestion of MP leads to the blockage of the gastrointestinal or respiratory tract of aquatic organisms which lead to its death [15]. Alternative mechanisms of MP impact were also investigated. In research [16] authors found the MP-induced reduction of food intake. The study conducted on common goby fish species showed that it consumes more polyethylene microspheres used in the study as an MP than the real prey (artemia) which could lead to a decreased individual and population fitness. It also reported that the chronic MP exposure led to a significantly decreased growth and reproduction of *Hyalella Azteca* fish species [17]. All of these effects could negatively effect on the aquatic ecosystem population, which could lead to a shortage of bioresources in the Arctic Ocean.

The other mechanism of the negative impact of MP on the marine environment is the sorption of pollutants on the surface of the MP and their further release, while swallowed in the living organism. Recent studies showed the ability of MPs to accumulate persistent organic pollutants (POPs), endocrine disrupting compounds, toxic elements, antibiotics and pesticides. In this case, there is a chance of Adverse effects of both MP and pollutant which is absorbed by MP. This could cause a variety of negative effects, depending on the type of contaminant absorbed on the surface and its concentration. A number of studies on the effect of POPs by MP reported genotoxic and reproductive effects of such combined pollutant [18].

However, there is no evidence of significant exposure of the aquatic organisms to MP and its effects on population and biodiversity in the wildlife. Thus, there is an urgent need for conducting more researches in this field.

Concentration of MP found in bioresources of Arctic seas

There is still a lack of information about the amounts of plastic debris consumed or incorporated in the aquatic organisms in the Arctic region. The review manuscript, published by Collard and Ask in 2021 [19] showed, that together with limited data on the MP content in marine animals there is also a non-standardised approach to analyse microplastic in the marine environment. This non-standardised approach is reflected in significantly different methodologies for sample collection and treatment and also different thresholds of MP's dimensions which strictly affect the amount and types of microplastics possible to be determined in each study.

Within the available data on the amount of microplastic in marine fish, the concentration of MP in commercial fish species mostly Cod caught in Northern Atlantic and Arctic oceans the

frequency of microplastic identification varies significantly from 0 to 100% within the studies. The average identification frequency is around 15% [19].

Another organism that represents the pollution of the Arctic ecosystem with MP is seabirds. The most repetitive bird species is Fulmar. The most data for the analysis of seabirds on the concentration of microplastic in their organisms published in scientific journals done in Canada and Alaska. There is a lack of data for European and especially Russian Arctic seabirds. Totally within studied Fulmars for MP ingestions the frequency of MP occurrence was more than 40% [19].

Conclusions and recommendations

The lack of data both from the analysis of negative effects of MP on the aquatic ecosystem, and fragmentary studies on the concentration of MP in water and marine organisms together with non-standardised protocols of the analysis and sample treatment shows the weakness for the estimation of the anthropogenic impact on the Arctic marine ecosystem from the plastic pollution. The laboratory studies clearly showed the negative impacts on the marine animals from plastic ingestion and synergistic effects from both MP and POPs absorbed on its surface. However, no real-world studies were conducted, and no estimations have been calculated to predict the effect of MP pollution on the ecosystem. This is an urgent task, which needs to be done for the prediction of the negative effects and decreasing of these effects on the marine environment through governmental controls and taxes.

These studies can not be produced by researchers from only one scientific field and should be conducted in the collaboration of environmental scientists, oceanologists, biologists, economists, politicians etc. Based on the above-mentioned problems the recommendations could be provided for all of the parties who would or already participating in this field.

- For clear and precise calculation of the MP pollution standardized and easy to use and implement in practice protocols should be developed;
- The laboratories participating in these studies should conduct the intralaboratory control to estimate the trueness and reproducibility of the results obtained by the standardized protocol;
- The predicting of plastic debris transfer and accumulation sites need to be done through the collaboration between environmental scientists and oceanologist to find the “hot spots” of plastic pollution in the Arctic;
- The in-vitro and in-vivo studies of negative impacts of microplastic ingestion by marine biota need to be conducted to evaluate risks for health and reproduction;
- Based on the risk assessment results the economical consequences caused by microplastic pollution need to be calculated for establishing the taxes and fines related to the production, utilization and emission of macro- and microplastics;

- The programmes of environmental education for citizens and companies need to be performed;
- The citizen science environmental programs need to be supported for both environmental education and reducing the costs of professional science programs in the parts of sample collection and finding of plastic pollution hot spots.

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Learning about the Arctic and the Russian North (Experience of Distance Schools) *

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Abstract. The article describes the experience of seasonal language and culture schools organized for foreign students at the Northern (Arctic) Federal University. One of the factors that attract participants is the Arctic component in the program content, acquaintance with nature, culture, customs and modern life of the Russian North. The pandemic situation made only a distance format of such schools possible. At the same time, the task of preserving the cultural specificity realized in the activity component was solved. The authors described the main content components of the program of the School of Russian Language and Culture related to the topic of the North and the Arctic: video tours of Solovki, the Museum "Malye Korely", city tours (videos about Arkhangelsk), texts about Arctic research and travelling to the Arctic, "Northern text" of Russian literature, video lectures and master classes. It is emphasized that the images of the Arctic and the Russian North are the conceptual core of the content of remote seasonal schools. The next distance school of Russian Language and Culture is announced.
Keywords: *language school, distance learning, regional content, Arctic, Russian North*

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Seasonal schools as a traditional form of popularization and promotion of the Russian language are actively used by many leading universities in Moscow, St. Petersburg, Tomsk, Ekaterinburg, Petrozavodsk, Novosibirsk, and Vladivostok. The Arctic and the Russian North have recently attracted particular attention of foreigners who are interested in Russian culture and language. Since 2013, the Department of the Russian Language and Speech Culture of NArFU named after M.V. Lomonosov provides academic support for seasonal schools for foreigners organized by the Higher School of Social Sciences, Humanities and International Communication and the Department of International Cooperation. As a result of active work, long-term projects are being implemented: "Autumn School of the Russian Language and Culture", "Winter School of the Russian Language and Culture", "Summer School of the Russian Language and Culture".

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The activity approach, in which the aim of training is not the assimilation of the amount of knowledge, but the speech self-development in the process of activity of a foreign speaker in the objective world, is the methodological basis of all language schools [1, Dinevich I.A.; 2, Sizova T.V., Maksimovskikh A.G.; 3, Snegurova T.A.]. The main principle is immersion in the speech environment, organization of joint activities, therefore, not only the "educational", but also the cultural program of the project plays a significant role. It was impossible to draw a dividing line between these components: while travelling to interesting places in Arkhangelsk and the Arkhangelsk Oblast, taking a boat trip or cruising on the oldest passenger ship — the wheeled steamer "N.V. Gogol" — along the Northern Dvina River, attending concerts at the Pomor Conservatory (Kircha) and master classes at the School of Folk Crafts, arranging poetic duels and cooking battles, school students accumulated a unique speech experience and got acquainted with the life and customs of northerners.

However, the coronavirus situation was a factor that changed the format of the language schools. NArFU, like many universities in Russia, is switching to distance projects. For 2020–2021, a solid experience in implementing projects in the following format has been accumulated: Summer School 2020, Autumn School 2020, Winter School 2021, Summer School 2021 (headed by M.A. Martynov, A.A. Chekalin). As it turned out, the distance format has not only helped to attract foreign participants, but, on the contrary, has considerably expanded the geography of the participants: Poland, Germany, Argentina, USA, Norway, Sweden, Finland, Pakistan, Cameroon, India, Morocco, China, Nicaragua, Japan , Australia, Serbia, Croatia, Bosnia and Herzegovina, France, Tunisia, Brazil, Korea, Jordan, UK, Philippines, Haiti, Algeria, Bangladesh, Italy.

Teaching technologies and technical support for distance projects did not cause any particular difficulties, since teachers of Russian as a foreign language have competencies and experience in the field of working with information and communication technologies. The Teams platform was used for communication, and training classes were created for each group. Practical sessions and other events (opening, round table, lectures, excursions) were held there.

The main challenge was to keep the cultural specificity, which was implemented in the activity component. The Arctic and the Russian North were a cross-cutting motif of the cultural program of schools organized by NArFU. The project team decided to keep the "Arctic vector" while switching to a distant format.

In February 2022, NArFU plans to hold the fifth distance School of the Russian Language and Culture (headed by I.M. Zashikhina). Let us highlight the main content components of the program of the School of the Russian Language and Culture, representing the Russian North, and the ways of their implementation in the educational process. For the Winter School 2022, two additional general educational (general developmental) programs have been created for different categories of students: for foreign citizens and stateless people (non-Russian speakers and bilinguals) without knowledge of the Russian language and for those already studying it. The volume of the

program is 72 academic hours; the duration of training is two weeks. Each program includes the thematic block “Russian North”, as well as the possibility of including culturally marked material in other topics: “The World of Things: What Surrounds Us”, “Travels and Trips”, “Holidays and Traditions”.

The main forms of work provided by the program:

1. Excursions. The following materials were used for organizing remote excursions: virtual tours of Solovki [1], video excursion [2] and virtual tour [3] in the “Malye Korely” museum; photo and video presentations of Arkhangelsk and Oblast: brand videos “Arkhangelsk: the Arctic begins here” [4,5]; photo clip “Welcome to the Arkhangelsk Oblast” [6]; commercial “Discovering the North” [7], etc.

1.1. Solovki

Video materials from the official website ch.itmo.ru/solovky/ (a joint project of the Solovetskiy State Historical, Architectural and Natural Museum–Reserve with the St. Petersburg National Research University of Information Technologies, Mechanics and Optics (ITMO University) and St. Petersburg State University) are used not only in tasks for advanced-level groups, but also when working with elementary-level vocabulary (summer, road, fence, church, icon, etc.). The timing of the videos posted on the website (2-3 minutes) is optimal for methodological processing and use in the classroom as listening material.

1.2. The Malye Korely Wooden Architecture Museum

Three excursions are currently posted on the official website of the Museum of Wooden Architecture “Malye Korely”: in the Kargopol-Onega sector; in the Mezen sector; in the Dvina sector. The duration of each excursion is about 30 minutes, so they are included in the work program of the school as an independent field trip. The methodological development of an excursion in the lesson of Russian as a foreign language includes pre-, in- and post-excursion tasks. Pre-excursion tasks are performed in the lesson before the excursion, and include an introduction to the script (for beginners), lexical and grammatical exercises, and a motivational component. The discussion with the help of the presentation on the museum website of the elements of information to be discovered during the excursion prepares the participants for independent perception of the video

[1] Po Solovkam s ekskursovodom [On Solovki with a guide]. URL: http://solovky.ifmo.ru/mediateka/objects-video-360 (accessed 20 October 2021).
[2] Muzey derevyannogo zodchestva «Malye Korely». Videoekskursii [Museum of Wooden Architecture "Malye Korely". Video tours]. URL: https://www.korely.ru/visitors/tours/video/ (accessed 20 October 2021).
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material. In order to intensify their perception, it is proposed to do pre-text tasks. For example, to compile a visual dictionary: write down in Russian the maximum number of names of household items (for an advanced group) or objects of nature (for an elementary group) which are seen in the film. Post-excursion tasks are, as a rule, a discussion of impressions, a test of understanding of information. The attention of listeners is drawn to interesting cultural details, for example, to the fact that coffee in the Mezen villages was brewed in samovars and drunk in large quantities.

Fig. 1. Fragment of the video excursion in Malye Korely.

1.3. Arkhangelsk

The first acquaintance with the city takes place in the format of a video tour around Arkhangelsk, prepared by the NArFU media center “Arctic Bridge”, A. Chekalin and A. Vdovichenko. The tour takes place synchronously with the use of video, which is posted on the Teams platform.

Fig. 2. Anna Vdovichenko leads a video tour of Arkhangelsk.

During the practical sessions, students get acquainted with the city where the school is held. The main informational and conceptual message of the school organizers: Arkhangelsk is the capital of the Russian North, Arkhangelsk is the gateway to the Arctic. Photo, video materials, an-

imation products are used to visualize the image. Thus, the animated film “Arkhangelsk” by *Gracheva Elena* (Alexander Tatarskiy Animation Studio), located on the MultRussia resource [8], evokes an emotional response. The text is composed of simple constructions, the simple content is filled with patriotic sounds: *What a beautiful flag we have. What a golden coat of arms we have. Our capital is the beautiful city of Moscow*. The listeners will learn the following information about Arkhangelsk: *it is the capital of Pomorye, it is the land of the sea, forests, lakes*. The short two-minute film tells about traditional crafts of the Pomors, maritime trade with England at the time of Ivan the Terrible, the Solovki, about Lomonosov as the first Russian academician, his homeland — Kholomogory, about the storytellers Boris Shergin and Stepan Pisakhov.

The brand video "Arkhangelsk: the Arctic begins here" lasts five minutes. Within the framework of the school, it is used in the classroom as a listening material for the thematic lesson “Travels and journeys”. The video gives a glimpse into the museums of Arkhangelsk: The Northern Maritime Museum, the Museum of Artistic Development of the Arctic named after A.A. Borisov, the Arkhangelsk Gingerbread Museum, visit the Malye Korely Museum again, see the city of Severodvinsk, Yagry Island, the White Sea. The video is a starting point for discussing the topic of travel. Expeditions to the Arctic are discussed at an advanced level. Fragments of Arctic Floating University expedition diaries are offered for reading [9]. The texts chosen for the methodological work are those that combine the vocabulary and knowledge of the Arctic presented in other videos. For example, in the diary entry of Irina Skalina dated June 26, 2016, we find fragments: “We came up to the Bolshoy Solovetskiy Island and stood at the roadstead, and quite far away ... As it was promised the day before, it turned out to be very fresh at Solovki. Here, in fact, winds always blow quite strongly. Small breaking crests ran cheerfully across the sea”. On the one hand, the text actualizes the image of Solovki, on the other hand, it allows you to show language material that is interesting for listeners who speak Russian well (the meaning of the verb “to come up” in the professional speech of sailors, the discursive word “moreover”, impersonal sentences in the description of the weather “fresh”, “blow”, adverbs of degree “quite”, “very”). In the same text, we also encounter the name of the Arctic painter: “Marina, by the way, asked about the icon-painting workshop where the artist Alexander Borisov studied. She was told that they would find information, if not about a famous student, then at least about the workshop at that time”. The revise of information, the thematic and lexical connection of all types of speech activity is the methodological principle of teaching Russian as a foreign language.

In the group of beginners, speech training is also built around the “Arctic” topic. With visual support of reproductions of paintings by the first polar artist Alexander Borisov, answers to the

[8] Mul't-Rossiya. Arkhangel'sk [Mult-Russia. Arkhangelsk]. URL: https://vimeo.com/133544814 (accessed 20 October 2021).
[9] SAFU. Arkticheskiy plavuchiy universitet. Dnevniki ekspeditsii 2016 [NArFU. Arctic floating university. Expedition diaries 2016]. URL: https://narfu.ru/science/expeditions/floating_university/2016/dnevniki-ekspeditsii/?ELEMENT_ID=317096 (accessed 20 October 2021).

questions are given: 1) Where did the artist go? Where was the artist? (Novaya Zemlya), 2) What/whom did the artist see on Novaya Zemlya? (ice, sea, seal, polar bear).

2. Lectures

Traditionally, the program of seasonal schools includes a lecture on the culture of the Russian North. For the remote format, a lecture, provided by the Humanitarian Institute of the NArFU branch in Severodvinsk, was chosen. The lecturer is Tatyana Vasilyevna Shvetsova, Candidate of Philological Sciences, the topic of the lecture is “Linen folklore of the Russian North”. It is about towels and northern embroidery. The cabinet-museum of the Humanitarian Institute presents seven towels, which were brought from field expeditions to the Pinezhskiy district of the Arkhangelsk Oblast. Students will learn that there are different types of towels (Easter, wedding, friendship, etc.), why a towel must not be embroidered at night and why lace must not be inserted in the middle, how many times one rapport of a pattern should be repeated on a towel, why cuckoos and nightingales should not be embroidered, and a lot of interesting information about this subject of folk culture.

Fig. 3. The lecture is read by Tatyana Shvetsova.

3. Literary halls, acquaintance with the work of northern writers

The practical sessions include introduction to the phenomenon of literary art — the northern text, whose place in the system of local (urban and regional) supertexts that have developed in Russian literature was first identified by Professor E. Sh. Galimova. “Immersion into the northern context through the word — the intricate reality and fiction of Stepan Pisakhov’s fairy tales, the music of the poetry of Nikolay Rubtsov, etc. — it is a technology, a process, and a result of Russian language schools” [4, Maryanchik V.A., Shestakova T.E., p. 118]. Methodological developments for students of seasonal schools are collected in the manual “Russian North: a reading guide for foreigners studying the Russian language” [5, Maryanchik V.A., Korostenko E.N., Onegina A.S.].

4. Master classes

Students of remote schools are interested not only in art, the sights of the Russian North and its traditional culture, but also in the real life of modern people. The program includes a culi-

nary master class in a stream format, which is held not in a film studio, but in a real kitchen, not by professional chefs, but by ordinary people. A master class on baking pancakes was held at the Summer School 2021. Before the broadcast, listeners were given a list of ingredients needed to cook the dish together. Live communication of the participants and joint action allowed foreigners not only to taste truly Russian pancakes, but also to find out how they differ from their "brothers" in the world, when you need to say "the first pancake is lumpy", how to pronounce the beautiful word "slightly" in Russian, and much more.

Fig. 4. Polina Chekalina leads a master class on making pancakes.

The images of the Arctic and the Russian North are the conceptual core of the content of the Russian language and culture distance language schools, conducted by NArFU named after M.V. Lomonosov. Competency-based content of online classes correlates with the Arctic, northern topics. Undergraduates of the Department of the Russian Language and Speech Culture are actively involved in creating content and conducting classes. Online schools have become a platform for testing within the framework of the Master's programs of the course "Technologies for distance learning of Russian as a foreign language". The practice of conducting distance schools in 2020–2021 allowed to accumulate organizational and academic experience, as well as presentation training material for the successful implementation of such projects. The Winter School, announced for February 21 — March 5, 2022, will continue to maintain the "Arctic vector" of language schools for its students and acquaint foreigners with the Arctic and the Russian North.

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Traces of the Russian Language in the Arctic *

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Abstract. This article is devoted to the Arctic as the territory of an ancient developed civilization existence; the territory that gave the world the Russian language, which later spread throughout the world; the territory where archaeological and anthropological artifacts have been preserved, allowing us to speak about the primacy of the Aryan (Russian) people, and, consequently, about the primacy of the ancient language of the Aryans. The authors of the article give the examples of excavations, the names of toponyms, hydronyms, ornaments on clothes, vessels, household items, proving the life of people in the Russian North many thousands of years before the Sumerian, Persian, Indian, Egyptian, Chinese civilizations; represent the opinion of scientists from around the world; try to find "traces" of the Russian language in other languages of the world. The authors of the article made a comparative analysis and demonstrated the interconnection of several languages on the example of some words, presented information on the Russian alphabet and showed its connection to the English signs of transcription. The hypothesis about the primacy of the Russian language is based on the statements of well-known domestic and foreign linguists, dialectologists, ethnographers, historians, slavists, sanskritologists, paleontologists, paleoclimatologists, soil scientists, and other researchers and requires further study.
Keywords: *Aryans, Indo-European civilization, Arctic homeland, initial letter, primacy of the Russian language*

Introduction. The Arctic is the birthplace of the Earth's population: research by scientists

There is a vibrant interest in the Arctic that has been discussed by many researchers. In particular, the famous geographer-researcher V.N. Kalutskov argues that this region acts as one of the most important cultural and symbolic centers of the country: "It is important to develop the study of historical and cultural zones, using linguistic data in parallel with geological and geographical data relating to different historical eras" [1, p. 43], and adds that in recent decades, the massive unrelenting scientific and human interest in the Russian North has assumed the scale of a scientific pilgrimage.

The topic of the origin and spread of the Indo-European (Aryan) civilization deserves special interest. Many scientists and researchers proved the hypothesis that the Aryans lived on the territory of the modern Arctic for more than a dozen millennia, but in the 3rd–2nd centu-

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ries BC, as a result natural or other kinds of cataclysms, crossed to the territory of Iran and Hindustan and carried their rituals and customs. Representatives of different nations, including B.G. Tilak, R. Sankritiyayana, A.V. Bykov, A.G. Vinogradov, O.N. Trubachev, N.R. Gusev and many others in the late 19th – early 20th centuries were able to analyze the ethnic roots of the Slavs, putting forward the theory of the Indo-Aryan community.

Paleontologists, soil scientists, paleoclimatologists came to the conclusion that the settlement of human groups took place during the "Mikulinskiy" interglacial period, characterized by a warm climate (130 thousand – 70 thousand years ago), when the current Arctic regions were not tundra, but were mixed spruce, birch forests with the inclusion of oak and elm. From about the 44th millennium to the 24th millennium, there were very warm climatic conditions, the period of the "Mologo-Sheksna" interglacial, and later, about 20–13 thousand years ago, the stage of a sharp cooling began.

The researchers note that: "In the north-east of Europe, which includes the vast expanses of the Volga and Ural regions, outstanding monuments of the early Paleolithic period have been found in recent years, and there has already been a turning point in the direction of strengthening work on their study. It should be emphasized that from the south to the north of the Russian Plain at the time of the formation and development of the Upper Paleolithic, it was not wandering hunters-pomads, but tribes with a settled way of life, who built permanent dwellings of various types and carried out complex domestic economic activities, based on hunting and gathering. Hunting for herds of horses and reindeer required the improvement of throwing weapons and probably led already to the invention of the bow and arrow at such an early time. At the same period, spiritual culture was also developing and evolving" [2, Velichko A.A., Gerasimov I.P., p. 30].

Jean Sylvain Bailly, French philosopher and astronomer, at the end of the 18th century, in "Letters to Voltaire" agrees with the opinion of Plutarch about the land inhabited by the progenitors of the Greeks: "where in the summer month the sun is hidden behind the horizon for one hour only, and this very short night is illuminated by the twilight" [3, Bailly J.], and specified that this was the homeland of Egyptians.

William F. Warren, rector of Boston University, the successor of Bailly's views, at the end of the 19th century, published "Paradise Found, the Cradle of the Human Race at the North Pole", where he also proved the idea that the ancestral home of all people is the territory in the region of the North Pole and the Arctic. The scientist draws a conclusion about the collective memory of each people, which contains strikingly similar or coinciding images; paints a picture of the year, consisting of a single long day and a single long night, including a "heavenly mountain" that only gods or enlightened souls can climb. All living beings should aspire to this grace [4, Warren W.]. Thus, he wants to talk about spirituality, about the fact that everyone has to work in the field of his spirituality, enriching himself spiritually.

Having investigated the myths of different peoples, W. Warren made a successful attempt to prove that Sanskrit is much older than three thousand years, in contrast to modern scientists, and the history of Russia is by no means “thousand-year-old”, but has many millennia of its development. And the most interesting proof is that paradise, described in various myths and legends of the peoples of the world, is located in the Subpolar region and at the North Pole. And if one carefully consider the Mercator map of 1595, it is quite possible to find a correspondence regarding the location of Hyperborea and those main four rivers that feed the waters of the Earth.

At the beginning of the 20th century, biologist-researcher Evgenij Jelacić challenged the official versions of the cultural and historical development of the peoples who lived in the territory of the modern Arctic. His analysis of the sacred books allowed him to conclude that the ancient Aryans, by the will of the gods and in search of a new land, moved from north to south.

Bal Gangadhar Tilak (1856–1920) proved that the ancestors of all peoples, defined by scientists as Indo-Europeans, including the ancestors of the Slavs and Aryans, lived on the territory of the present Arctic, on the shelves up to the North Pole. His book “The Arctic Home in the Vedas” was published in 1903 and immediately became a sensation, but it appeared in Russia only a hundred years later. Tilak analyzed the Indian monuments of ancient literature, the horses of the universe: legends, myths, hymns of the Vedas (Rigveda, Yajurveda, Samaveda, Atharvaveda) and made an amazing conclusion that all these sources describe the northern Arctic nature, and the authors of the hymns are Brahmin priests from among the Aryans, who lived in the lands of the Arctic before the glaciation in the 12th millennium BC. The poem “Mahabharata”, which scientists also refer to the Vedas, describes the history of modern mankind twelve millennia old.

Specialists in the field of glaciology (the science of glaciers) confirm the existence of two major stages of glaciation, while specifying that the first one took place in the time interval from 60 to 25 thousand years BC, the second — 18 thousand years BC. In between, warming caused some flooding and lowering of the mainland boundaries. Tilak not only depicted the era of the “Arctic homeland” during the last interglacial period, presenting the history of modern mankind over a twelve thousand-year period, but he managed to prove that the Vedas are older than the date most researchers refer to: not the 2nd millennium BC, but at least the 8th millennium BC, and later there were evidence of 12th millennia BC.

Tilak's description of the events of that time in the Arctic seems to us a cataclysm at the North Pole, the division of people into two camps, since the gods and heroes of some began to be considered enemies for others, the movement of people towards India: some — Indo-Aryans — along the East European Valley, and others — Irano-Aryans — in Western Siberia, through Arkaim. This movement lasted for millennia, as people led a sedentary lifestyle and lived in their settlements for a long time. People called the surrounding countryside, rivers, and

lakes by their customary names of gods and heroes. It turned out that in the Mahabharata, the Yamuna is a tributary of the Gong (Volga); it is no coincidence that the tributaries of the Oka are called Yam, Yamina, Ima, Ilyev. More than two hundred sacred rivers and lakes are known and described in the country of Bharat (Russia), which have retained their names since 3150 BC to the present day (In the Mahabharata — Aksha, in the Oka basin now — Aksha; Apasa — Apaka; Asita — Asata; Vadava — Vad; Vansha — Vansha, etc.). The Aryans continued to speak their ancient language, and influenced other European languages, since other peoples such as the Angles, Saxons, Jutes arrived in this territory much later. It is necessary to refer to the opinion of scientists that during the interglacial period, the territory of Britain and Scandinavia lay under a thick layer of ice, so it is not necessary to talk about the first appeared on the territory of modern Russia. Subsequently, this group of Aryans was a German-Balto-Slavic-Indo-Iranian-Armenian-Greek community.

Tilak's ideas were followed by another representative of the Indian people, Rahul Sankrityayana, who also adhered to the “Arctic” theory. He was the first to introduce the concept of “Indoslavs”, spoke of the blood relationship of the Indians with the ancestors of the Slavs. His many years of experience in teaching Indian languages at Leningrad University allowed him to conclude that Sanskrit and the Russian language are similar, but, in his opinion, old Russian language, which has even more similarities with Sanskrit, has been preserved in the villages of the northern regions of Russia in an even more perfect form. Since there were no “traces” of Indians in the North of Russia, he argued about the originality of the Russian language in relation to Sanskrit.

Archaeological and anthropological artifacts

Currently, there are a sufficient number of artifacts bearing traces of the activity of a highly developed civilization on the territory of Russia: for example, a three-dimensional relief map of Western Siberia, made of stone, which is one hundred and twenty thousand years old, the inscriptions on it are made in Slavic-Aryan runes. Another example of the antiquity of our civilization is the Tisul discovery in the Kemerovo region in 1969 — the found body of a young woman without signs of decomposition; scientists determined her 100% identity with the modern Russian person, but could not identify the technology used to weave her clothes, as her age exceeds one hundred thousand years. Scientists know the sites of ancient settlements: Sungir near Vladimir, Sukhaya Mechetka near Volgograd, Betovo and Khotylevo in the Bryansk Oblast, Mamontova Kurya and Byzovaya on the Usa River — a tributary of the Pechora, several ancient settlements on the Indigirka River, whose archaeological and anthropological findings allow us to look at the history of development humanity in a different way.

Soviet and Russian linguist and philologist Toporov V.N. argued that the role of historians is very important in the study of the development of mankind. “It is necessary to isolate (or

reconstruct) “what was” and what is introduced by the describing the situation in each historical description. Imposing on an alien tradition what was not in it, or what was irrelevant, or what was interpreted differently in it is a common sin of historical descriptions [5, Toporov V.N.].”

Influence of borrowings, similarities and differences in languages

Scholars acknowledge that Britain was conquered by the Roman Empire at the beginning of our era, but then there must be many Latin borrowings in the English of that time. However, this is not observed. Literary written sources, written by Catholic monks in Latin, date back to the 13th–14th centuries of our era, when Latin words were borrowed into English. As for the influence of the Celtic language, scientists give a negative answer due to the small number of Celtic words in the English language. It is known that the Celts came to Europe from the Iberian Peninsula four to three thousand years ago, drove out the Aryans and populated Europe and the British Isles. Thus, we can conclude that the basis for the English language was the Russian language.

It should be noted that the French linguist A. Meie, at the beginning of the 20th century, defined the Slavic languages as the oldest: “Most of the Slavic dialects retain an unusually archaic look”, and Sanskrit “represents Indo-European phonetics and morphology”. In his book “Common Slavonic”, he tried to prove that the Old Slavic language was one of the most ancient in the common Indo-European family [6, Meie A.]. The scientist was sure that the Slavic languages were a continuation of a single dialect, which is “one of the dialects of the common Indo-European language”, and clearly shows the connection of languages in his comparative analysis. Consider a few examples of Meie: Russian language: bratya (brothers); Old Church Slavonic: bratya; Sanskrit: bhratri/bhratar (brother); Bulgarian: bratja; Macedonian: brak'a; Serbian: braja; Slovenian: bratja Czech: bratri. Russian language: vdova (widow); Sanskrit: vidhava; Old Prussian: widdewu; Gothic: widuwo; Latin: vidua; modern English: widow. Russian language: den' (day); Sanskrit: dina; Bulgarian, Macedonian: den; Polish: dzien Czech: den Serbian: dan; Slovenian: dan [7, Meie A., p. 92–100].

The famous Slavic scholar A.I. Sobolevskiy, who made a number of discoveries in the field of Slavic studies, etymology, dialectology, paleography in the late 19th–early 20th centuries, who presented his point of view on historical and cultural events, also assumed that the vast expanses of European Russia, up to the northern regions, are dominated by names, which are based on the Indo-European language, which he called “Scythian” [8, Sobolevskiy A.I.].

The well-known Soviet and Russian Indologist, historian, ethnographer, Sanskritologist, translator of the Indian epic, author of 150 books about India, Natalya Romanovna Guseva, consolidated the evidence of the Arctic theory of the ancestors of mankind, created a dictionary of Russian-Sanskrit convergences. Comparing toponyms, hydronyms, ornaments on clothes,

vessels of the northern Russian and Indian peoples, she provides irrefutable evidence of the mental and spiritual influence of the Aryans on the Indo-Europeans. Vivid examples include the custom of the Indians to write marriage contracts on birch bark. Although everyone knows that birch is a symbol of Russia, but in India, birch is very rare, and even it grows only high in the mountains. In India, the cult attitude to the North Star — Dhruva — is still preserved. The newlyweds traditionally perform the ritual of worshiping Dhruva. The scientist pays special attention to the description of the swastika as a symbol of goodness, happiness, protecting from evil. In her opinion, when comparing the Russian language and Sanskrit, one can find a millennial tradition of giving new definitions to members of related unions: “your” — “tva”; “my” — “sva”, and hence svakha (matchmaker), svatya (matchmaker), svat (matchmaker), svekr (father-in-law), svekrov (mother-in-law), svoyak (brother-in-law), svoyachenitsa (sister-in-law), which have a similar sound in Sanskrit.

In the Indo-European languages, some ancient kinship terms close to Sanskrit have been preserved, the connection of languages is clearly visible: matri (Sanskrit), mater' (Russian), mother (English), Mutter (German); sunu — syn — son — Sohn; bratri — brat — brother — Bruder. Words from everyday speech are also similar: kapala (Sanskrit) — kepka (Russian) — cap (English); sneha — sneg — snow; tri — tri — three; nagna — nagoy — naked; bhu — byt’ — be; ad — est'/poedat' — eat/ate. The translations of the Rigveda also confirm the description of natural northern phenomena, which speaks of some long days of darkness, and then of the days of the never-setting sun (of course, we are talking about polar night and polar day); indicates the sparkle of Mount Meru (a description of the northern lights at the North Pole) and white nights. Natalya Romanovna, as well as the Russian academician B.A. Rybakov, urged to “dive into the archaic”, to look for the origins of modernity there, to study ancient artifacts, as they keep the truth, unlike modern constantly changing postulates.

Opinions of scientists about the primacy of the Russian language

An outstanding Russian ethnologist, professor, art critic, the most famous Russian specialist in the history and culture of the Russian North, Svetlana Vasilyevna Zharnikova (1945–2015) spoke about the primacy of the Russian language, she was able to prove that many words of the Old Russian language are found in the sacred language — Sanskrit [9, Zharnikova S.V.].

The scientist has investigated national ornaments of northern Russ and inhabitants of Iran, Tibet, India and has confirmed their general basis. Her scientific card indexes, stored in the Vologda Museum-Reserve and other museums, contain non-traditional materials from a wide variety of historical disciplines. S.V. Zharnikova, continuing the research of Guseva N.R., argued that many names of toponyms, hydronyms are not of Finno-Ugric origin, but are related to names in Sanskrit and are easily translated from Sanskrit. The researcher easily explains the names of settlements, rivers, lakes of the northern territories of our country, using, among oth-

er things, information from collections describing the settlements of the Vologda province, created by officers of the General Staff of Imperial Russia in the middle of the 19th century. Svetlana Vasilyevna, like other research scientists, proves that the Finno-Ugric interpretation of the toponyms and hydronyms, accepted in our country up to today, has no basis, the translation of the names of the rivers, lakes, places from the Finno-Ugric languages does not mean anything, and on the contrary, the Arya-Slavonic names, mentioned in the Rigveda and Avesta, are very easily translated and explained. One example is the name of the river Pinega. The Finno-Ugric interpretation gives the translation “small”. The rhetorical question is whether it is possible to call the river 800 km long and reaching 2 km in flooding, a small river? But the translation from Sanskrit means “red-brown”, and, indeed, the river flows in red-brown sands. In her book “Ancient Secrets of the Russian North”, Svetlana Zharnikova conducted a comparative analysis of the old names of Russian rivers in the Arkhangelsk and Vologda oblasts and their correspondences in Sanskrit. Let us look at a few examples: riv. Sumera in the Arkhangelsk Oblast — in Sanskrit: sumeru, Sumeru — the mythical mountain of the gods, sumeru-ja — the river generated by this mountain; riv. Kubala in the Velskiy district — in Sanskrit: kubala — forest; riv. Kama — a tributary of the Volga — Sans.: Kam — water, happiness; riv. Lala in the Ustyug region — Sans.: lal — to be free; riv. Sara in Beloozerskiy district — Sans.: sara — water; riv. Sarga — sarga — stream. This is not a complete list of amazing correspondences.

Besides, if the Finno-Ugric peoples influenced the development of our ancestors so much, then why do we not observe common features, similarities in architecture, house construction, rituals, folk art, diet, ornamental codes of the Finno-Ugric peoples and Russians? The ornamental-sign system of the northern Russian peoples, living, among other things, on the Kola Peninsula, in Eastern Europe, where they migrated, is very similar to Indian ornaments, but has little in common with the Finno-Ugric ones, apparently due to the fact that native speakers of the Russian language began to communicate with the speakers of the Finno-Ugric languages much later — not earlier than the first millennium BC.

Another example: the traditional Indian chronology starts the calculation of the worst time, Kaliyuga, from the battle in 3102 BC at Kurukshet (Kursk field). This event is described in the epic Mahabharata. But at that time, people who spoke Sanskrit and other languages were not yet present in the Indian subcontinent. They came there much later. The question arises: where did they fight five thousand years ago? The answer is found in Tilak, who describes the life of the ancestors of the Indo-Iranians near the Arctic Circle, showing how the Milky (White) Sea froze, blistavits (northern lights) sparkled above it, and constellations circled around the Polar Star, snow melted in spring, and the summer sun was not setting.

After the discovery of the northern culture of Hyperborea and the clarification of the dating of the Voronezh Kostenki culture by several tens of millennia, the researcher Zharnikova, with her statements back in 1988, which Professor Chudinov V.A., who supports this point of

view, called unheard scientific hooliganism, forced modern scientists to look at civilization in Russia in a different way. Svetlana Vasilyevna describes the life of the Aryans in great detail: huge houses with several hearths, gable roofs, grain pits; proves the fact that the Aryans collected wild cereals and grew rye, wheat, oats, barley, flax, peas, and also processed cereals — silicon and quartz slabs were found, on which grain was ground; she gives examples of the same ornaments used in embroidery in Northern Russia and India. The vocabulary of the population in the villages of the Arkhangelsk and Vologda oblasts is similar to the sacred language of the priests of ancient India: “gayat”, clean, work well, in Saskrit “gaya” — house, household; “karta” — a woven pattern on a rug, “karta” — spin, cut off. A separate topic is the connection of ritual songs, mythological legends in the North of Russia, European countries and India.

Russian-Indian hydronyms from the time of Hyperborea are especially surprising with their consonance. The root “ind”, dedicated to the supreme god in Indian mythology, can be found in a huge number of names of rivers, lakes, settlements: in the neighboring Sverdlovsk Oblast, there is Lake Bolshaya Indra; in the Yamalo-Nenets Autonomous Okrug — riv. Indigirka; Inda, Indik — in the Kirov Oblast; lake Indeevo — in the Pskov Oblast, lake Indychiy — in the Voronezh Oblast. No less popular is the root “nar”, meaning the ancient Aryan deity who rules over the water element: riv. Nara and the city of Narofominsk in the Moscow Oblast; riv. Narva in the Baltics; riv. Narew — a tributary of the Vistula; lake Naroch in Belarus; riv. Naryn in Kyrgyzstan; the city of Narvik in Norway; Naryn in the Ob; Naryan-Mar on Pechera; Norilsk.

In Mahabharata, Rigveda, Avesta, the inhabitants of Bharata are called “rasa”, “raseyane”, “rusa”. In Sanskrit, Rusa means “bright”. All these examples confirm the close relationship between the Russian language and Sanskrit.

Unfortunately, Russian people, our contemporaries, do not always correctly understand the meaning of various names, and the answers can be found in the ancient Indian language. A striking example is the Kupala holiday. For many people, Kupala is associated with bathing, in fact, V. Dal gives this word the definition of “kupa”, “bonfire”, and a bathing suit is a fire in the field. In the Belarusian language, “kupali” is a sheaf of straw tied at the top of a Kupala fire, which is associated with fire, not water. In India, in the same way, the days of the solstice are marked by rituals of kindling fire, “kup” in Sanskrit means “shine”.

Our contemporary Boris Novitskiy is very convincing in his proofs of the proto—Russian roots in the English language. In his book “When Britain Didn't Know English”, published in 2019, there are a huge number of examples that confirm the ideas of the above authors. In Russian, lyuli means to lull; in Sanskrit — lolati (move back and forth); in Middle Dutch, lollen (to babble); in Middle Swedish, lulla (sing a lullaby); in German — lullen (to rock to sleep); in modern English — lull (lull, lull), lullaby (lullaby); in Old English — lullen (calm down, lull). It becomes obvious that the mothers of our ancestors could not borrow this word from the English. Let us take another example: the Russian word “vyakat'”, meaning “talk”, “mumble”; Sanskrit

— vakti (to speak); Persian — vac (to speak); Latin — vocare (call), vox (voice, language); Old Prussian — wackis (shout); in Old English: at least twenty words passed into English from the root “vyak”, voice, vocabulary, vocal, vocative, advocate, and others. The Russian word “beremenet'” became the basis for the English “bear”, in Sanskrit — bharati, in Old English — beran. “Dremat'” is very similar to the English “dream”; “goni, gnat', idti” — “go”; “tolkovat'” — “talk”. And who would have thought that the Russian “Az esm” is “I am” in modern English [10, Novitskiy B.B.].

When getting acquainted with the Russian initial letter, specialists dealing with the English language have a reasonable question about the reasons for the similarity of some initial letters and transcription marks. Currently, various scholars are arguing about the primacy of a particular language. The most common conclusion is that it is impossible to indicate the primacy of any language. Along with the most ancient languages, such as Hebrew, Persian, Sumerian, Akkadian, Greek, Chinese, Tamil, the author would like to pay special attention to Sanskrit, which, according to many researchers, originated from the Russian language.

This article presents a hypothesis that the modern Russian language was the progenitor of many languages, in particular, the English language. We believe that we have already given most of the evidence on this topic, let us try to figure it out with a few more examples.

A generally accepted fact in the field of history is that writing appeared in the ancient Russian state in the 11th century on the basis of the Byzantine writing system, and Cyril and Methodius are called the authors of the Old Slavonic alphabet. Is it really so?

Undoubtedly, the modern Russian language is a truncated version of the initial letter, which was reduced in volume for more than a thousand years, starting with Cyril and Methodius, and ending with the reform of Russian spelling in 1918: Cyril and Methodius removed five letters, Yaroslav the Wise removed one more, Peter I — nine more letters, Nicholas II also took part in the reduction, A.V. Lunacharskiy — removed four letters, adding two — й, ё, while destroying the images (for example, B-gods — many gods, divine, superior, another example is the decoding of the name Andrey: A — god; N — known to our ancestors; D — develops; P — energy; E — five elements of life; Y — true, — speech became non-decoded), introduced phonemes, while the alphabet became alphabetic. As a result, thirty-three initial letter icons remained out of forty-nine. One version of the reduction of the initial letter is the desire to increase the speed of transferred information.

The information about the ancient Slavic alphabet is widely spread, e.g. on TV channel Slavic World where presenter Andrey Ivashko talks about the ancient treasure of Slavic people and compares it to the organism. Each letter carries an image that affects the spiritual development of a person. Let us consider what the initial letters mean, which a number of experts call unnecessary, and therefore discarded.

The image of Fita encapsulates the ability to merge with the natural world into a single whole. The image of Izha represents the knowledge of temporal elements and the ability to work with time. Acquaintance with these initial letters allowed us to conclude that they have "passed" into the transcription of the English language; not for nothing there are 44 sounds for 26 letters in English. Perhaps the British borrowed other Russian initial letters, for example: s (dz — zelo), z (z — zemlya), i (и; й), h (ge, ha — gerv), k (k — kako), n (n — nash), o (long o), t (te), u (y), w (om, ot), v (y, u, yu, i, v, n — izhitsa).

The effect of immersion in the initial letter can be the realization that time is losing its usual course. A person, who knows how to decode the alphabet, perceives the nature as a living organism, it is easier for him to understand people around him. Russian fairy tales have come down to us, albeit distorted to some extent, describing the worldview, the universe, carrying sacredness, educating spirituality. Fairy tales hid the reality of the world, the attitude to publishing fairy tales was so serious that there was a need for special permission from the monarch. The Russian fairy tale "Kolobok" is one of the examples. Since childhood, we have been accustomed to believing that this tale is about a cunning fox, that one should not be gullible. In fact, this fairy tale taught children to understand the world around them, this is a story about what happens to the moon: the full moon, then each animal "takes a bite" a little — the moon gradually turned into a thin month. Thus, fairy tales were not a way of entertainment, but a way of developing a child, his spiritual world.

Conclusion

In conclusion, it is necessary to conclude that the world of Paleolithic man was much more complex and spiritually richer than we imagined it; this is also evidenced by the highly developed processing of mammoth tusks and the manufacture of spears, jewelry in Sungiri burials, musical instruments and figurines Mezin and much more. The exceptional development and perfection of the forms of ornaments, sculpture, reliefs dating back to this time convince us that their roots should be sought in the more ancient Mousterian era, in that period of the Mikulinskiy interglacial (130–70 thousand years ago). We consider it very important to continue research in the field of the Arctic itself, the Arctic theory and its impact on humanity. There is hope that scientists will continue their research, and we will learn a lot of amazing information about the development of our culture, history, traditions, and way of life.

The well-known researcher of the Russian North A. Zhuravskiy wrote in 1911: "Russia, less than any other nation, can know itself without the help of ignorance of its roots, its past, and, without knowing itself, it is impossible to know others, without correcting itself, it is impossible to correct others. Let us study the experiences of the gray-haired past. This is by no means only "interesting" or "curious", but vital, necessary" [11, Zhuravsky A.V., p. 14]. Any civilization is improved from century to century. Unfortunately, it can just as quickly destroy itself if

it does not remember its history, its achievements. The restoration of the historical memory of peoples, the study of the facts that laid the foundation for our civilization, the dissemination of information — this is what should become a new national idea that unites the peoples of Russia.

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