

# SOCIO-ECONOMIC DEVELOPMENT STRATEGY

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## Circumpolar Region amid Socio-Spatial Transformation of a Territory (Case Study of Yamal)



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**Abstract.** The article examines the issues of socio-spatial transformation of the Northern territory associated with the development of one of the most important far-reaching oil and gas region of Russian arctic regions. The authors demonstrate the possible solutions to these issues based on interdisciplinary and sociological studies conducted by the authors and their colleagues, including mass surveys of the population of the Yamalo-Nenets Autonomous Okrug by representative sample in 2005, 2010 and 2015 and sociological diagnostics of their results in the context of different social groups of respondents (long-term residents, including representatives of native minorities, new settlers, shift personnel). These studies have helped reveal the social issues characteristic of

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the Arctic region and requirements to scientific support of possible their possible solutions. The authors provide the authorities with the information necessary for the preparation and adoption of effective managerial decisions in the theoretical, methodological and practical discourse; such information cannot be obtained otherwise, for example, using the statistics. This thesis is illustrated by the current situation of indigenous minorities of the North, other population groups, the development of Yamal social potential, qualified personnel retention and recruiting. Studying the Northern specificity of the quality of life of the Russian circumpolar oil- and gas-rich region, the living conditions and relations between various social groups of participants of future neo-industrial territory's development suggests a conclusion about the need to significantly strengthen the sociological and interdisciplinary scientific support for the proposed Arctic projects and introduce a new methodological approach to the selection of the most relevant research subjects.

**Key words:** The Arctic, territory development, circumpolar region, socio-spatial transformations, social issues, sociological studies, social groups, health of the northerners, shift method.

## 1. Introduction

The Arctic macro-region and the adjacent marine shelf occupy more than 1/3 of the Russian territory. Despite the fact that only 1% of the total population dwell in this region, it manufactures product the share of which exceeds 60% the total export revenues.

Russian authorities became interested in the Arctic starting from the 16–18th century, since then, their interest has been developing and dying out gradually on a periodic basis. A specific indicator in this situation is creation or termination of special government agencies in the North, the adoption of legal acts with underestimated social effect, which subsequently leads to the need for multiple amendments and changes.

Numerous literary sources on the Arctic, including its Russian territory, clearly underestimate the social (sociological)

issues. The issue of correlation between socio-spatial and socio-territorial identification of the Arctic (circumpolar) regions is also understudied. These aspects are often mixed or considered in isolation from each other, without taking into account their reciprocal influence, which requires the strengthening of the interdisciplinary approach.

Russian circumpolar regions, being an important part of the Russian North, are included in the world's Arctic area and constitute important subjects of international programs on sustainable development [9]. Moreover, located in both European and Asian parts, Russian circumpolar areas are most developed and densely populated. According to experts, the population of the Russian Arctic zone amounts to more than half of the total number of inhabitants of the world's Arctic zone [20].

Moreover, taking into account natural resources and logistics prospects, some experts believe that over time, a global cooperation with common features of economic behavior will have been formed around the Arctic ocean, similar to the Mediterranean zone [24 p. 15-54].

In the Russian context, the issues of the Arctic regions are reflected in a number of fundamental studies of the Russian Academy of Sciences [20; 24; 27; 29; 31].

It should be noted that the concepts “Far North”, “the Arctic”, “Subarctic zone”, “Circumpolar region”, are in fact a group of concepts with different spatial localization depending on the objectives of socio-economic research or the subject of legislative regulation, rather than a territory with clear boundaries. In order to make statistical accounting more convenient, Yamalo-Nenets Autonomous Okrug (YNAO) was assigned to the Arctic and Khanty-Mansi Autonomous Okrug (KhMAO) – to the Subarctic zone. The present study was conducted in the territory of okrugs making up a structurally complex entity of the Russian Federation – the Tyumen Oblast. More attention is paid to YNAO, through the capital of which (Salekhard) passes the Polar Arctic Circle Line, and the okrug’s territory is considered circumpolar.

The Jamal is one of the most important regions which have the most significant

prospects in both domestic and international terms. Its territory forms a part of Yamalo-Nenets Autonomous Okrug included in the Tyumen Oblast. Such a unique socio-territorial entity deserves special attention in the above mentioned identification discourse. The key objective is to identify the framework of socio-spatial transformations of the YNAO territory, to study the regional community living in the territory under study. The boundaries of social development and the territory’s “coziness” and socialization are of particular importance when studying these transformations: from initial development to the current state and indication of further prospects.

The dynamics of social transformation of Yamal Peninsula can be divided into four sprints:

1. Primary (which we know of) development which occurred as a result of movement and localized settlement to this territory of peoples, now known as the indigenous peoples of the North.

Due to the peculiarities of their main occupations – hunting, fishing, reindeer husbandry, various crafts, etc. associated with the need for permanent movements throughout a vast territory, this primary development can also be called “route-point development”.

2. “Frontier” development – starting from the 16th century, Yamal Peninsula became the landmark of the territory of

the Russian state, after that a network of military security settlements with the habitable adjacent areas emerged in this territory.

3. “Colonization” (18–20th centuries) – large-scale state development of a new territory by resettlement of metropolis population and its involvement in economic circulation of local ecosystems, the spread of material and spiritual culture of a particular ethnicity in transcultural environment.

4. “Mobilization development”, which started in the 1960s and is still in progress. It is associated with extensive development of the territory’s oil and gas resources. Its main feature is the territory’s urbanization.

Dozens of settlements were established near the deposits, including major cities; some of them, according to medical and biological zoning, emerged in the territories unsuitable for permanent residence of newcomers. The period of effective existence of such mono-settlements was attributed to the exhaustion of commercially exploitable reserves (the critical level of production costs). The problem of potentially “dead cities” has been actively discussed all these years. Meanwhile, major cities established in the Circumpolar zone (Nadym, Novy Urengoy) continue to develop, extending their “up-market” construction and attracting new settlers.

In the 1960s–1980s, special attention to the circumpolar region was caused by the necessity to advance the formation of oil and gas cluster in the North of the Tyumen Oblast. For this purpose special measures to mobilize all country’s resources were used, apart from conventional management structures, a special Department in the USSR State Planning Committee was established [19].

In the post-Soviet period (1990s – early 2000s), it was recognized that the North was too expensive, funding for this region was reduced dramatically, the infrastructure, except the areas of oil and gas production, was destroyed, the number of inhabited settlements decreased by a third, and population reduced as a result of migration outflow [27].

The “demobilization” process of the circumpolar region development ended only in the last decade in connection with the new “wave” of increased attention to the Arctic, primarily caused by geopolitical reasons. Meanwhile, new neo-industrial investment projects have been launched, the largest being the development of deposits of Yamal and Gydan peninsulas, basins of Ob and Taz bays, the Kara sea, the Bazhenov section, Achimov deposits in the Urengoy district, Uvatsky group etc. Construction of an LNG (liquefied natural gas) plant with capacity of 16.5 million tons per year on the resource base

of the South-Tambeyskoye gas field with further capacity expansion of up to 32 million tons per year on Gydan Peninsula has been launched. Work on creating a seaport and an airport in Sabetta rural settlement called “Arctic Gates” etc. [6, pp. 58–66].

Sanctions against Russia have slightly slowed these projects, but the need for their implementation is beyond doubt.

Development and settlement of the Arctic zone mainstreams the necessity of addressing a great number of extremely complex economic, social, political, engineering and other issues which require serious scientific support. Fundamental interdisciplinary and applied research the Arctic issues are required. A prominent place among them should be taken by sociological research which help identify and assess, on the one hand, all correlations and consequences of the already identified and dormant issues, on the other hand, other possible alternative ways and technology for their solutions, systematic assessment in different development scenarios of the region.

The economic development of the Arctic region for effective decision-making also requires the knowledge about the real social situation in the territory where works are about to begin or are already underway. Unfortunately, statistics are not always able to provide timely reliable information for a large

portion of the required parameters. Their measurements by using sociological tools are needed. It is also necessary to take into account the fact that oil and gas enterprises to a much greater extent than the state determine the development strategy of the Arctic region; they are not focused on humanistic and social development of this area and have very limited social responsibility. Moreover, the North has demonstrated a particular, in comparison with other regions, underdevelopment and weak influence of civil society institutions [23].

However, in recent years top Russian authorities have been demonstrating their increased interest in the Arctic. The “Strategy of the development of the Arctic zone of the Russian Federation and national security for the period up to 2020” was adopted, the State Commission for the Development of the Arctic was established. The main goal of the Russian state policy in scientific support of the Arctic development today is currently the justification of modern principles of the Arctic territory management, including the solution of defense and security issues, the reliable operation of life-support systems and production activities in the circumpolar region [25]. In order to successfully address the latter issue, the Russian Academy of Sciences has started to develop a comprehensive program of regional socio-economic development,

consistent with the peculiarities of particular territories, settlements, industrial facilities and communications for improving the quality of life of people living here.

It is assumed that in the future, the Arctic should become a place for strategic innovations, where new effective technologies, including social will be developed and conveyed to other regions [14].

## 2. Methodology and methods

The study of the Russian society transformation at the regional level involves the discourse of socio-spatial and socio-territorial aspects, as any region distinguished according to certain criteria acts not only as a socio-territorial unit tied to geographical space, but also as a socio-spatial formation [26].

In line with the methodology of P. Bourdieu, socio-spatial identity can be defined as the identification, measurement and modeling of positions and dispositions of individuals and social groups as actors (agents) – carriers of practices of certain types of activities in various social fields as structured spaces of positions [5].

This definition singles out: the object aspect – the field where social space is structured in the institutional order of fields of economy, politics, etc., the corresponding socio-economic, socio-political and other relations of the actors (agents), their actions are outlined; the

subject aspect – real positions occupied by actors in this field; the subjective aspect – the actors' views about their position, including the place- and time-bound attitude towards them.

The revealed socio-spatial identities (which can be presented as frame social models) give a certain analogous image of an individual or group actor-agent in their nationality (state), institutional marker (government, business, civil society, age, gender, ethnicity, confessional belonging, etc.) acting in a particular vector – azimuth (North, South, East, West with intermediate medians), having its reflexed position in a certain field (Center (Core) – periphery (semi-periphery), civilizational and value orientations and projection of relationships with other actors.

What is important for the actor's socio-spatial identity is the reflection on positions: “city – village” (within the position “big – small city”); “capital – province” (close to the “centre – periphery” identification, but not coincident with it) and some others which develop into a socio-territorial identity at the regional level.

Unlike socio-spatial, socio-territorial identification involves identifying and modeling the positions and dispositions of individuals and social groups as the bearers of different practices of life as the inhabitants (groups of inhabitants)

of a specific territorial unit, municipality and (or) its parts, their socio-territorial community as well as government authorities, businesses, civil society institutions represented in these territorial units, positions and dispositions of which are formed concerning the use of the territory, its natural, socio-economic and social, including human, capacity.

Unlike socio-spatial identity with a significant number of conventions concerning the positions and dispositions (about how the institutes, azimuth-vectors, place of an actor, values, etc. are verified and marked), socio-territorial identity is uniquely determined by the belonging to a community of residents of a particular settlement (city, town, small town, if necessary, another settlement unit (district, agglomeration, etc.), region (oblast, territory, etc.) and assessment of satisfaction with their lives in this area, it means that territorial localization of socio-spatial identity by place (topos) takes place. Identification characteristics of actors of territorial social fields can also contain the necessary gender, generational, age, professional-industrial, ethnic, religious and other characteristics used for determining the socio-spatial identity.

Unlike the polysemantic interpretation of the term “region” in foreign (European) literature, where it is defined as a collective image of the controlled territory (from the

Latin “regere” – to govern) as a certain homogeneous space with physiographic, cultural and linguistic affinity, as well as common economic structures and historical destiny (“The European Charter of Regionalism”), – in Russian science, political and administrative practice there is a fairly unambiguous interpretation of this concept tied to the constituent entity of the Russian Federation. In this context, the region has constitutional status with certain jurisdictions (including joint jurisdiction with the Russian Federation as a whole (article 72 of the RF Constitution) and exclusive in its territory), administrative boundaries, composition of settlements, legislative and executive authorities. The region’s features are determined by: geographical position, historical, economic, ethnic (especially in relation to the republics and the autonomous regions), socio-cultural and other factors. Thus, the region represents a separate constituent part of the Russian social space in which, in a legally outlined territory, amid climate, socio-economic, socio-cultural and other features, institutional actors of almost all major social fields and scales (global, international and local) operate and interact.

This mode of interaction serves as a transformer of socio-spatial regulation in a certain area of all social processes from global and national to state to local

(settlement) with more or less clear feedback. Therefore, the sociological study of this mode should be considered both the peculiarities of the a region's social configuration (specific conditions, factors, mechanisms of management of activity of a territorial community, institutional actors of the territory's social field), i.e., socio-spatial differentiation by territorial aspect; and the involvement of the regional mode in general societal relations (nation-wide organization), that is, socio-spatial integration, the main vector of which is the consolidation of regional and local communities, institutional actors of territorial fields in the common Russian space [26].

The authorities and the various foundations which are scientific research sponsors, receive multiple offers based on the interest of the applicants. But how does one evaluate the significance of a research project for effective socio-economic development of the Arctic region?

It is obvious that, first, it is necessary to identify a set of problems which are raised before almost every development participant, assess them from the system point of view, identify the correlation, alternative solutions and their possible consequences. Having set the problems' outline, detailed interdisciplinary study of its elements can be performed.

To perform this study, the authors used traditional sociological tools: mass survey of the Northerners, in-depth interviews of experts, content analysis of the media, including social media, focus group discussions, etc. [8].

Surveys and other studies conducted by students and teachers of Tyumen State Oil and Gas University (currently – Tyumen Industrial University) by the employees of the West Siberian branch of Institute of Sociology of the Russian Academy of Sciences was funded by a Gazprom subsidiary “Gazprom Dobycha Yamburg”, grants from the Governor of the Tyumen Oblast and the Russian Foundation for Humanities (RFH). Materials of other leading sociological centers were also involved.

Methodological tools were developed by the authors and were preserved even if small adjustments took place, which helped analyze the dynamics of changes.

The sampling design for the mass survey was based on territorial and social criteria of selection of observation units and consisted of two stages. First, selection of settlements according to their status in the development process and type of population was performed. Next, selection of respondents in accordance with the settlement's social structure took place. The selection criteria were traditional such as gender and age, as

well as criteria important for the present study: ethnicity, northern experience, work experience in shift rotation.

Analysis of the survey results was recorded by four main social groups of the Northerners: long-time residents (separately, the representatives of indigenous peoples), the settlers (who lived in the North less than 5 years); rotational workers.

The survey was also conducted in the workplace – rigs, training schools, rotational workers collecting points, helipads and villages. In the latter case, the survey participants included intellectuals of small Northern ethnic groups.

The collection of information was mostly based on the respondents' self-report questionnaires. The Northern specifics associated with production mobility, uncertain environment due to climatic conditions, etc., hindered the preliminary planning and selection of respondents. Therefore, mandatory adjustments were necessary for ensuring sample representativeness.

### **3. Results: three main outlines**

As a result of research data generalization three major outlines of social transformation in the abovementioned discourse are distinguished:

- of specifics of the quality of life and human potential of a circumpolar region;
- of peculiarities of the socio-ethnic structure and ethnic relations;

- of distinguishing features of migration processes and population “survival”.

*Outline 1. The specifics of the quality of life and human potential of a circumpolar region.*

Judging by the Human Development Index (HDI) calculated annually by the UN Development Program, YNAO is well-developed which is evidenced by the fact that it has kept one of the first places in the Russian Federation in the last two decades [11].

This region has the highest GDP and per capita income indicators. However, this is accompanied by growing property differentiation and uneven income distribution. The level of socio-economic disparity in the Arctic region is significantly higher than the national average. At the same time, more than 10% of the population have incomes below living wage. These are absolutely poor people even unable to meet their basic needs. However, there are indicators characterizing relative poverty: the inability of the poor to maintain the standard of life adopted in the territorial community and meet the needs typical for the others. These indicators were defined as the proportion of the population with per capita incomes below 60% of the median income [4]. For the Yamalo-Nenets Autonomous okrug it was 25.8 in 2014, this means that every fourth resident of this rich region is poor.

Judging by the results of mass surveys, this problem appears to be the most acute for the Northerners. According to state statistics, the standard of living in YNAO is much higher than in other regions, however, it appears that its inhabitants are concerned about the same as the rest of the Russians: poverty, unemployment, low healthcare quality, etc. (*Tab. 1*). Just like anywhere in Russia, people are concerned about price and tariff increase, other expenses and the reduction in their budget revenues. However, there is one feature of the Arctic region, distinguishing this region from the others: the Northerners earn money here and spend it mostly in other regions: in recreational areas, at home, in cities where their children study.

The mass survey of the YNAO residents in 2015 revealed the Northerners' self-assessment of their quality of life. 16.3% of respondents claimed that they have “enough money for day-to-day costs, but they cannot afford buying new clothes”,

12.1% said that “their entire salary is spent on day-to-day costs” and 7% “have not got enough money for day-to-day costs”.

The second important problem for the respondents is unemployment and the probability of losing current job.

The indicators of both registered and actual unemployment in Northern settlements slightly differ from the national average; the structure of the unemployed includes 34–37% of young people aged 18–29, women – 72–75%, people of pre-pensionable age – 10–12%. It should be taken into account that official statistics do not adequately reflect the real situation in employment in the North. This applies particularly to the indigenous population. The research suggests that if, according to statistics, aboriginal unemployment is around 6%, in fact it exceeds 60%. The fact is that most of them cannot register because they do not have the required documents.

Table 1. Social issues most significant to the YNAO population, % of the respondents (three issues could be selected)

Issue	Year of survey		
	2005	2010	2015
Poverty, increasing costs	55	53	56
Unemployment, possibility of losing job	53	49	50
Low healthcare quality	33	34	43
Lack of accommodation, possibility of improving living conditions, increasing accommodation payments	41	42	41
Vulnerability to crimes, drug addiction, corruption	29	30	28
Environmental degradation	18	19	12

It is only possible to execute them in the district center (Salekhard), but they cannot afford travelling there.

At the same time, a large proportion of the female representatives of the Northern indigenous ethnic groups registered as employed, actually get extremely low salaries since the fee of one “chum-worker” is divided between several people.

The third social issue most important for the YNAO residents is their health status and dissatisfaction with the healthcare quality.

The importance of this issue is confirmed by both medical statistics and the results of mass surveys of the northerners. Thus, causes of mortality of the working age population in YNAO are cardiovascular diseases (21.2 cases per 10 thousand people), accidents, poisoning and injuries (12.8 cases per 10 thousand people). Low-quality alcohol poisoning, drug overdose, suicide and homicide account for nearly a half of causes of

death. However, the residents’ self-assessment of their health is quite high, especially among men (*Tab. 2*).

According to recent reports, health deterioration of people coming to the North is affected by geographical and climatic, socio-psychological, environmental, human-induced and other factors and their interaction.

Thus, the combination of geomagnetic field disturbances with gravity anomalies dramatically increases the number of cardiovascular disease exacerbations, especially hypertensive emergencies, heart attacks, human errors [11].

Northern environment which affects the health of the people coming here from other regions is quite diverse and is yet underexplored. It is characterized by not only low temperatures, but also by lack of daylight which causes seasonal depressions and insomnia; high wind speed, atmospheric pressure fluctuations, water and nutrition peculiarities, etc.

Table 2. Self-reported health of YNAO residents, % of respondents

Issue	Year of survey		
	2005	2010	2015
I feel fine	38	40	38
I sometimes fall ill	39	38	38
I often fall ill	9	10	8
Chronically ill	8	8	10
Invalid	2	3	1
I do not know	4	1	5
Total	100	100	100

Moreover, shift rotation mode of employment makes all these multiple effects on the human body fractional, rather than permanent. Regular circular movements with crossing multiple time zones, change of climate and social conditions do not establish stable relations with the environment, so the mobile lifestyle of rotational workers in the “live in the South, work in the North” mode is accompanied by chronic tension of the body’s regulatory adaptation systems.

The survey of the Northerners has helped identify their level of satisfaction with medical services generally and in particular spheres. These indicators appeared to be worse than the national average identified by the sociological centers of the Russian Academy of Sciences [29].

Table 3 summarizes the answers of the questionnaire: “What does not satisfy you in the healthcare system in your settlement?” in dynamics. No obvious changes over years have been revealed.

At a rather low level of satisfaction with the existing healthcare system, government costs of healthcare are reducing along with the number of medical institutions. Thus, for the past 15 years their number in the YMAO territory has decreased by half (48 medical and 78 outpatient organizations in 2000, 23 and 36 in 2015 respectively).

The housing problem is, of course, closely connected with the human health, and seems to be prior among all social issues for the majority of the interviewees. It is considered the most important among the residents of cities such as Salekhard, Labytnangi, Muravlenko, Gubkinsky, Purovsky and Tazovsky districts who have lived in shacks for many years.

This issue is also closely connected to corruption: an increasing number of respondents note that in order to obtain accommodation, acquire legal rights to it or receive maintenance and repair housing services one has to pay bribes.

Table 3. Disadvantages of the healthcare system in the YNAO settlements, % of respondents (several causes of dissatisfaction could be selected)

Issue	Year of survey		
	2005	2010	2015
Long waiting periods for healthcare	57	50	68
Do not see the result of the proposed treatment	27	26	24
The prescribed medicines are not available at drugstores or are very expensive	25	24	33
The ambulance arrives too late	6	7	9
I am satisfied with the quality of medical care	27	23	23
I do not know	10	12	8

Since every fourth employed in the economy and social sphere is a rotational worker, and in the future this proportion may further increase, one of the ways of solving the housing problem is the creation of new mechanisms of interaction of regional and municipal authorities (southern and central regions of Russia) with places of employment (circumpolar areas). Another problem is the creation of favorable living conditions in rotation camps located near deposits. The specifics lies in the fact that along with the limited number of basic objects of social infrastructure, some of their life support functions should be expanded, for example, in the sphere of catering and consumer services, usually performed by a family.

The next issue which concerns the Northerners is vulnerability to crimes and corruption. According to statistics, the crime situation in the region has been steadily deteriorating in recent years and is particularly acute in connection with the economic crisis. The highest increase in crime in YNAO occurred in illicit drug trafficking and corruption. In the survey, 24% of the Northerners said that they know where the drug sale points are located, 11% – know the drug dealers. 19% of respondents said that they have repeatedly faced bribe extortions.

As shown by the authors' study, social issues of the Northerners are closely

connected; management decisions aimed at solving some of them have a significant influence on the others [35]. This also applies to the latter in the list of social problems highlighted by the respondents – the deterioration of the environment in the Arctic territories.

It is known that a circumpolar region, being the most fragile ecosystem on the planet, requires special methods for of preservation of the natural environment different from those used in the southern and central territories. It is also necessary to take into account all oil and gas cluster interactions with the environment, changes in the hydrosphere as a result of surface and underground water pollution with petroleum derivatives and production wastewaters, changes in the lithosphere associated with soil contamination, melting of ground ice and terrain subsidence, changes in the atmosphere – releases of toxic substances, products of gas combustion and condensate in torches, etc. [18].

Thus, environment situation, apart from affecting the health of people living here and their quality of life, largely determines the conditions of traditional economy of the aboriginal population [28]. The conducted surveys show that more than a third of respondents believe the main cause of tension between Northern ethnic groups and migrant population is the newcomers' predatory

attitude to the Northern environment, particularly their seizure and pollution of land designated for reindeer husbandry and the forced withdrawal from fishing of many Northern water bodies and rivers contaminated by petroleum derivatives and chemicals.

*Outline 2. Peculiarities of the socio-ethnic structure and ethnic relations in a circumpolar region*

A new phase of “mobilization phenomenon” especially raises the important issue of ethnic relations within a circumpolar regional community. Research conducted in 2015 in the framework of the project of the Russian Science Foundation no. 15-18-00093 “Forecast modeling of ethnic relations (on the basis of analysis of identity strategies of diasporas and compatriot groups)”, shows the general trend of mutual acculturation of major ethnic groups, long-standing population in some conflict situations with newcomers [22].

YNAO is a multinational region with predominantly Russian population. According to the 2010 census, about 9% of people belonged to the indigenous peoples of the North (the most numerous of them are Nenets and Khanty peoples). 61.7% of people indicated their nationality as “Russian”, 9.7% – “Ukrainian”, 1.3% – “Belarusian”. In total, Slavic groups account for 71.4% of the population.

Another 8% of the population consider themselves peoples of the Volga region (the Tatars, Bashkirs, Chuvash), less than 6% – peoples of the North Caucasus and Transcaucasia (the most numerous of them are the Azerbaijani, Kumyks, Nogais and Chechens), 1% – peoples of Central Asia. In comparison with data of 1989 and 2002 censuses there is a reduction in the share of the Slavic population from 79% to 74% in 2002 and to 71.4% in 2010 (mainly due to the reduction in the number of people who reported their nationality to be “Ukrainian” and “Belarusian”). The share of peoples of the Volga region remains the same. There is a 2% increase in the number of indigenous peoples of the North. There are no complete data on the peoples of Central Asia and the Caucasus living in the territory of Yamal reflected in the previous censuses available for research, however, the shares of the most numerous representatives of this group increased in about 1.5–2 times [22]. Most people are first-generation inhabitants of Yamal. During the 2010 census, only 28% of respondents had lived in the Okrug since their birth. It is important to note that the development of gas and oil territories of Yamal was originally international. Apparently, this is also the way it seems to be in the future. Although, as it has already been noted, in the process, the issues of interaction of the

indigenous population (groups of people of the North settled mainly in rural areas and inter-settlement territories (nomadic populations)) and the representatives of other ethnic groups are the subject of separate analysis.

Ethnic groups of extraterritorial origin, which form a kind of diaspora-compatriot communities in Yamal are also noteworthy. They include groups originated from other Russian regions (ethnic communities of the North Caucasus and the Volga region) or foreign countries (diaspora groups from Ukraine, Belarus, Transcaucasia, Central Asia, etc.). Of course, this “labeling” is rather conditional; moreover, it is necessary to consider that the first settlers of these now foreign countries came to Yamal which was the territory of a single Soviet state. But at present such differentiation is at least publicly justified.

Sociogeoinformational modeling, applied in the abovementioned RSF project (implemented by Intelgeotekh JSC under the guidance of S.V. Ivanov), gives a visual representation of the structure of communities of diaspora-compatriot type in the context of Yamal municipalities [22].

Sector diagrams presented in *Figure 1* illustrate the overall image of diaspora and compatriot groups in each municipal unit. The size of the diagram sector for this or that group shows what proportion

it occupies in the total population of all 10 groups selected on the abovementioned grounds.

In this outline, it is very important to analyze the correlation between the employed and the unemployed people from these communities (*Fig. 2*).

Sector diagrams illustrate the overall image of the employed representatives of diaspora and compatriot groups for each municipal unit. The size of the sector represents the percentage of the employed members of a particular diaspora or compatriot group in total employment in all 10 groups.

Accordingly, *Figure 3* illustrates the general image of the unemployed representatives of diaspora and compatriot groups for each municipal unit. The size of the sector corresponds to the proportion of the unemployed members of a particular diaspora ethnic group in the total number of the unemployed in all 10 groups.

Visual inspection of this map and its comparison with maps in *Figure 1* and *Figure 2* has revealed an almost exact match of sector diagram configurations on all maps, which demonstrates that the proportions of the employed and the unemployed representatives of diaspora and compatriot groups in the YNAO municipal units remain. The analysis of these proportions which can also be prolonged to the present time, shows the

Figure 1. Distribution of ethnic diaspora-compatriot groups in the territory of Yamal (according to the 2010 national census)

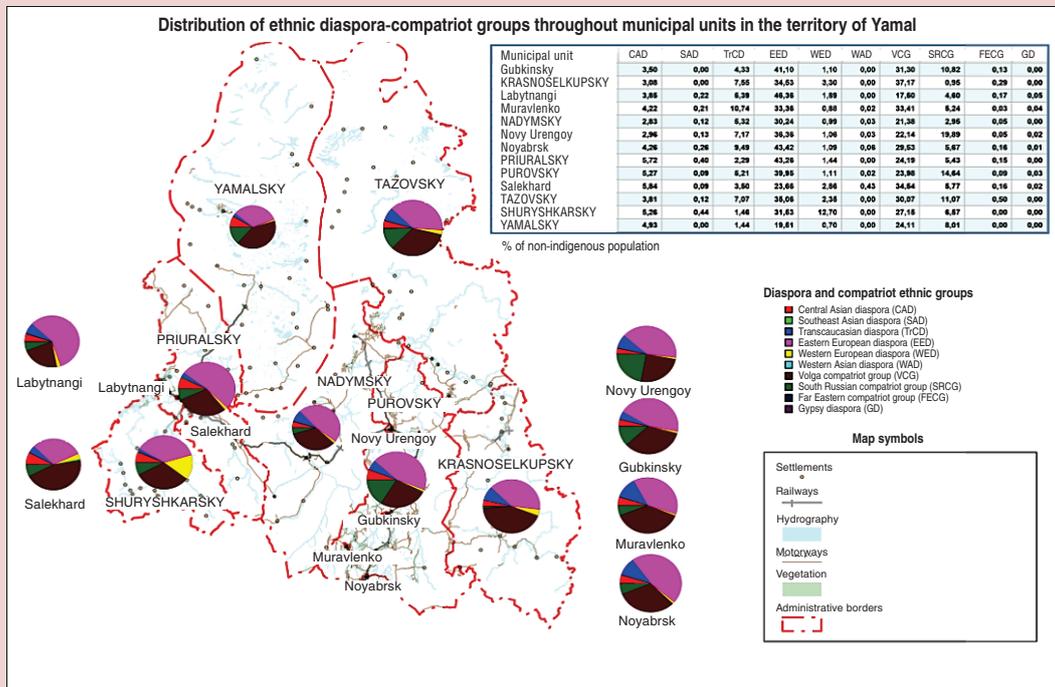


Figure 2. Distribution of ethnic groups according to the indicator of employment in YNAO municipal units (according to the 2010 national census)

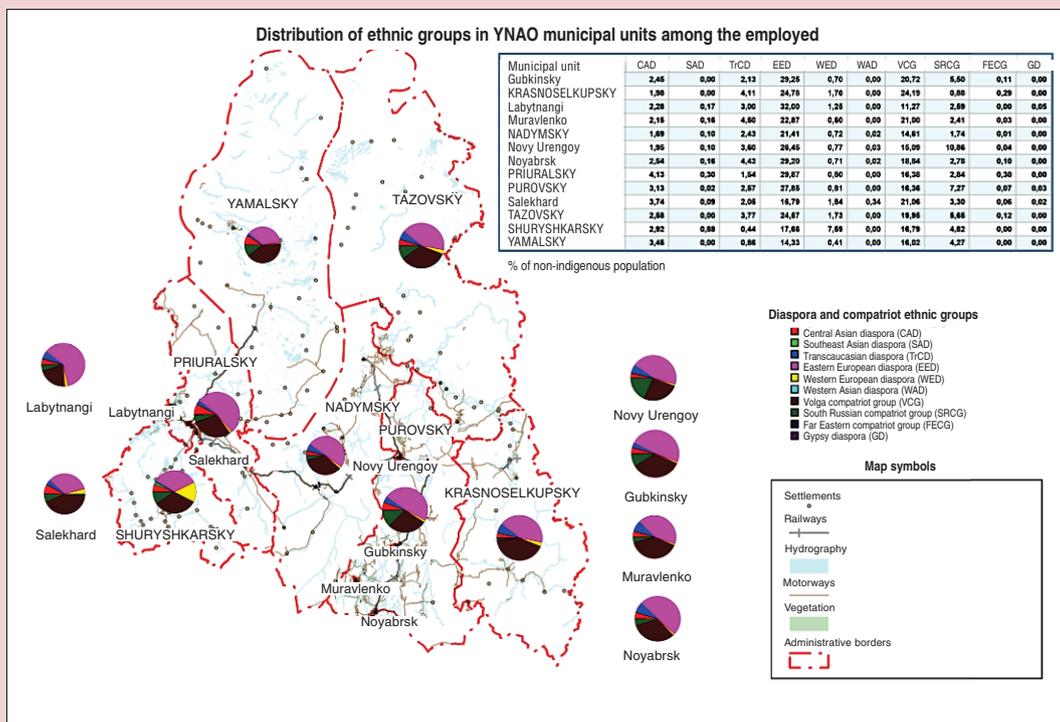
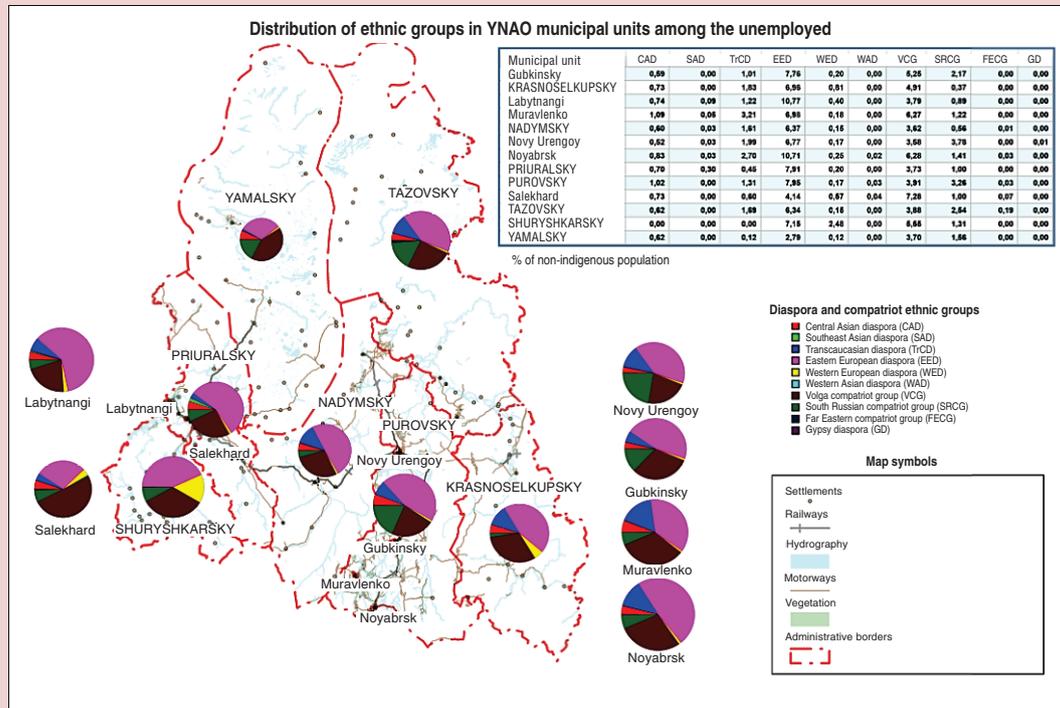


Figure 3. Distribution of ethnic groups according to the indicator of unemployment in YNAO municipal units (according to the 2010 national census)



need for identifying the characteristics of both the employees and the unemployed representatives of diaspora-compatriot groups from the standpoint of human capacity, as well as the region’s budgetary burden.

As for interethnic relations connected with diaspora-compatriot groups, along with the overall positive assessments, these relations have certain negative moments. Thus, viewpoint analysis of participants of 18 focus groups conducted in 2013 in the cities of Muravlenko and Gubkinsky with the representatives of ethno-confessional groups concerning the issues of inter-ethnic and inter-

religious cooperation sponsored by the Department of Internal Policy of Yamal-Nenets Autonomous Okrug, has given an opportunity to identify the basic content of the expressed discontent:

1) balance disruption, changing of the familiar environment (often the word “domination” refers to numerical superiority, change in urban environment, contagion of another culture, imbalance in the relations (while “they” impose, “we” do not resist));

2) contact of fundamentally different cultures, traditional and modernized, which leads to misunderstanding and conflicts;

3) defiance, lack of respect, arrogance, aggression, formation of cohesive groups of the North Caucasian youth, oppression of local young people;

4) infringement on goods belonging to the local population (jobs, accommodation, social infrastructure – kindergartens, health clinics), lack of meaningful contribution to the city's economy, lack of skills and desire to work, low estimates of competencies [22].

Basically, from the point of view of the inhabitants, the problem lies in the inconvenience of everyday communication, the sense of “occupation” of public space and loss of predictability. The statements on this subject are concentrated on young men, people from the Caucasus of the last migration flows. Their demeanor in public places causes discomfort, leads to a kind of breakdown of public consensus; in recreational areas for young people the atmosphere of competition and conflict is created. Attempts to position themselves in the public space (for example, lezginka dance in a square, loud celebrations with rallies, etc.) create the impression of a challenge. The noticeability of this category affects the perception of the whole ethnic group.

Using the materials of the focus groups including the representatives of the peoples of the North Caucasus, the authors conclude that young people of the last migration flows are socialized under

different conditions, they are bearers of social experience and behavior patterns different from the older generation who had lived for many years in the region with predominantly Russian population. The older generation and community representatives integrated into local society also distance themselves from migrants of the last migration flows, considering them as the problem of their ethnic communities; note their inability to control their behavior and emphasize that their actions have nothing in common with traditional culture [22].

*Outline 3. Distinguishing features of migration processes and population “survival” in a circumpolar region*

The territory of Yamal, being fairly prosperous in socio-economic terms with highly developed social infrastructure is quite attractive for migrants despite the subarctic and Arctic climate (during 2012–2014, Yamal was annually visited by more than 44 000 migrants, 45–52 000 people immigrated [9], it means that about 8–10% of the YNAO population changed).

During 2010–2014, migration per 1000 people, including intra-regional migration (within the Tyumen Oblast), is 1.5–2 times higher in Yamal than in KhMAO or in the southern areas of the Tyumen Oblast. However, intensive migration inflow is accompanied by an equally or even more intensive migration

outflow. As a result, net migration exchange during these years is generally negative, although small in absolute terms (about 5–8 000 people). There is also a positive and rather significant net population exchange with the CIS member states, primarily with Ukraine and Uzbekistan. As for Yamal net migration exchange with the Russian regions, it is more active with the regions of Western Siberia and the Urals (southern areas of the Tyumen Oblast), Republic of Bashkortostan, the Sverdlovsk and Omsk Oblasts, Northern Caucasus (Republic of Dagestan, Chechen and Kabardino-Balkar republics).

In studies of Yamal sociologists have identified the main circumstances necessitating people to change their place of residence. According to their data, the majority of people who migrated to this okrug were counting on getting a job (43–68% in particular years of the period under review); personal and family reasons are also focused on (22–42%).

It seems interesting that the immigrants pointed out the same reasons (10–46% wanted to get a job, 32–56% – has personal or family reasons). Only 0.1–0.2% pointed out environmental problems as the reason for immigration, 0.5–1.2% – unfavorable climatic conditions [22].

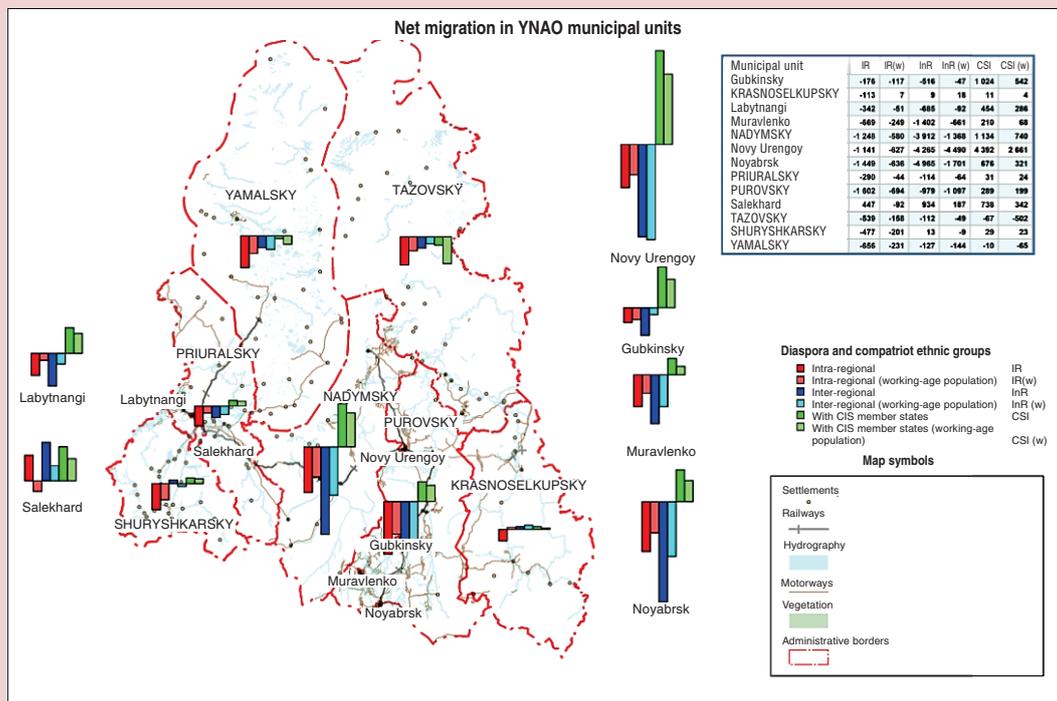
Thus, migration flows are a significant factor in socio-spatial transformations of Yamal territory.

The diagrams of a sociogeoinformational map (*Fig. 4*) derive the values of the total annual growth of the total population in the municipal units from 2012 to 2014, due to intraregional (red color) and interregional (blue color) migration, as well as migration with the CIS member states (green color). The migration growth of the working-age population is shaded light.

Data from the figure show that in all municipal units (except Salekhard) are marked by a more or less the migration outflow to other areas of the region and other RF constituent entities. At the same time everywhere, except Northern territories of Yamal, there is an increasing number of migrants, primarily of working age, from the CIS countries. The largest absolute values of migration are observed in Novy Urengoy, the lowest – in Krasnoselkupsky District [22].

The annual monitoring survey conducted by the Arctic Research Center with the support of the government of YNAO (route survey, three-stage stratified sampling limited by sex and age quota, N=3140), made a ranking of the most pressing issues concerning the district's population related to revenues and expenditures, housing and communal services, labor market and urban development, which also included the issue of migration to the region by residents from other regions. This issue

Figure 4. Net migration in YNAO municipal units in 2012–2014 (according to migration statistics)



is particularly emphasized in urban municipal units. It is ranked highest in Novy Urengoy – the largest and most prosperous city in YNAO most often mentioned among young people [22].

Materials of another study of Yamal sociologists conducted among the okrug’s urban population indicate high “survival” of Yamal residents in circumpolar areas despite severe climatic conditions [15].

Summarizing the data, the authors conclude that the majority of Yamal urban population associate their life primarily with professional activities which gives an opportunity of obtaining material benefits and securing their future when moving to a more favorable climatic region.

There is also another conclusion about the need for further social infrastructure development and ensuring high quality of life for a long period of employment in the Far North which implies the optimization of conditions for rotational employment and life of workers.

These outlines of social transformation emphasize the importance of conditions, level and quality of life of Yamal indigenous peoples and their relations with the new groups of the okrug’s neo-industrial development.

**4. Discussion**

The empirical information obtained during the authors’ and other researchers’ studies [3; 15; 28; 30; etc.] and its analysis

require, in the authors' view, significant attention to the scientific support of the Arctic region development process, to the living conditions in the Far North. First and foremost, it is important to conduct fundamental interdisciplinary research of the quality of life of development participants and Northern ethnic groups living here, of health and consequences for the offspring of people coming here for permanent residence or having rotational employment, to the security of life and preservation of fragile Northern ecosystems.

The authors believe that prior attention should be given to physiological, biomedical and environmental aspects of health preservation of people coming to the Arctic from other regions. The research block should include the justification of the most acceptable work-rest schedule (WRS) for rotational workers. The choice of the optimal WRS for specific conditions requires the combination of study and consideration of not only biomedical, but also economic, legal, psychological and social factors, which is a rather complicated methodological issue necessitating the development of appropriate complex tools [2].

Another important subject of interdisciplinary study is the social situation related to the life of small Northern ethnic groups. This issue is

not sufficiently considered. Only several ethnological studies are now known in the world [32].

There is an obvious need for serious fundamental research of the quality of life of the Arctic aboriginal residents by sociologists, legal experts, economists, anthropologists, biologists etc.

Scientific support for sustainable development of the Arctic territories requires timely identification and decomposition of problems and possible mechanisms of their solution in different scenarios of changes in external environment. It is necessary to draw attention to these issues of not only scientific community, but also of civic society, authorities of the Northern countries and businesses interested in the development of the Arctic regions.

## 5. Conclusion

The presented results of long-term sociological research in the territory of the Arctic oil and gas region of Russia have helped identify the most important social issues important to people living here. In fact, they are the same as for the population of other regions: poverty, unemployment, dissatisfaction with housing and medical care, vulnerability to crime and deterioration of environment. However, the specific content and possible solutions to these problems in the Far North have important specific

characteristics which must be considered during the preparation and adoption of both strategic and current management decisions.

The outbreak of new large-scale development of Yamal, shelf of the Northern seas and other circumpolar territories requires serious scientific support, interdisciplinary and multidisciplinary research of already identified and latent social problems based on systematic methodology. The authors encourage greater attention to scientific training and identification of social impacts of decisions related to the Arctic region, which are nowadays made

by the authorities and the management teams of oil and gas companies without sufficient research and studies.

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