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We will be glad to see you among the authors of “Arctic and North” journal!

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Key concepts for studying the migration issues in the Circumpolar region: mobility, stratification and globalization approaches

© Gurvich, Kirill L. Student, Institute of Humanities, Social and Political Science, NArFU named after M. V. Lomonosov; Faculty of Social Science, Business School, University of Nordland, Tromsø, Phone: +47 486 89 579.
E-mail: gurvich75@gmail.com

Abstract. Migration issues are considered through the stratification and globalization approaches. Emphasizing the importance of the classic theories, the author reviews the key studies of migration, as well as the empirical projects implemented by various research centers. Theoretical statements are supported by the analysis of statistics on migration in the Circumpolar region. The article is aimed to demonstrate the heuristic possibilities of solving the urgent problems of migration in the Arctic.

Keywords: *mobility, social stratification, globalization, migration, Circumpolar region.*

Social science has not developed a common understanding of the migration phenomenon[1]. In general terms, the migration is understood as the process of moving from one place to another for a permanent or long-term residence. This approach could be traced both in Russian and foreign scientific literature[2]. Russian traditional approach is represented by T. I. Zaslavskaya [1], V.I. Perevedentsev [2], L.L. Rybakovskiy [3], V.I. Mukomel [4], G.S. Vitkovskaya [5] and others. They identified and classified the problems of migration, measured its dynamics, presented the explication of the migration phases, tried to predict the migration flows both in Russia and abroad. However, in our view, the key issues of migration still remain unstudied in Russian science. This

[1] The research was supported by the Northern (Arctic) Federal University and done for the contest of scientific and innovative student and young researchers projects on priority development areas of the university (area — social and humanitarian sphere of the European North of Russia and the Arctic).

[2] Мегаэнциклопедия Кирилла и Мефодия. Миграция. URL: http://megabook.ru /article/миграция. Oxford dictionary. What is migration? URL: http://www.oxforddictionaries.com/definition/english/migration (accessed: 24.09.2014).

article, based on foreign migration research, provides an overview of recent theoretical and methodological approaches used to study this phenomenon.

Migration is a complex phenomenon; it is studied in economics, political science, history, demography, sociology, etc. Each disciplinary area focuses on different aspects of migration. Economists study reasons for migration [6] and explain it, for example, through the income differences between urban and rural population of different social strata [7]. Political scientists study migration in international perspective, focusing on the context of migration flows and local tax systems [8], the geopolitical causes of labor migration, characteristics of the diasporas' formation [9]. Historians focus on causal processes that led to migration, in the continuum of time [10]. Demographers study the age and sex composition of migrants, how migration flows affect the demographic situation of the country/region [11]. Sociological research is aimed to describe the factors influencing intra-regional [12] and regional [13] migration dynamics. It also examines the basic adaptive problems of migrants and their solutions [14].

Migration is a controversial process. On the one hand, areas that have become the centers of migratory flows are characterized by an increase of the labour force and economically active population, changing its demographic situation. On the other hand, social tensions are growing, crime situation is getting worse and the competition in the labour market is increasing. In this regard, the immigration issue requires a comprehensive study based on recent theoretical achievements including mobility, social and geopolitical approaches. Familiarity with their heuristic potential allows studying the problems of migration from other perspectives and deepening the understanding of the analyzed phenomenon. It is to be noted, that approaches presented below overlap each other. So, the demarcation line between them is very conditional. However, this line seems to be important because it provides the opportunity to present the logic that gives those approaches a certain value of coherence and consistency.

Theoretical arguments are supported by statistical data on migration in the Circumpolar North. Migration flows there have their socio-economic, cultural and political specialty, due to the historical development of the Northern territories. The migration activity in the Arctic region is very mixed. On the one hand, it happens because of the hard climate conditions. The population is actively emigrating. On the other hand, the economic potential of the Circumpolar region is actively stimulating the flow of migrants.

Mobility approach

The concept of mobility first appeared in the works of P. A. Sorokin [15]. Social mobility was understood as the change of position of the individual in a society by him. His theoretical

construction has two major aspects: horizontal mobility (it does not involve any significant changes of status while changing positions inside the social structures) and vertical mobility (means significant change of status). Vertical social mobility is in direct correlation with the level of democratization of society. Sorokin identified several general patterns of vertical mobility. First, every society has social mobility, no matter how closed the society is; every state has a place for revolution, upheaval or sudden change of powers. Secondly, there is no society without resistance while individuals change stratums. Every upward of social mobility implies the overcoming of obstacles and circumstances. Analyzing the history of mankind, P. A. Sorokin noted that in different periods the level and rate of social mobility had been dependent on external and internal circumstances including economic and political situation in the country, the type of migration groups and etc. Every society is a hierarchical system with different flow velocity of social mobility. Migration is a movement not only in the coordinates of the physical space, but also in the coordinates of the social system. Labour migrants, students, academic workers often migrate from one region to another in order to change their social status, get better education or career perspectives and etc.

With all the significance of P. Sorokin's theoretical constructions, some aspects of migration had no consideration in his works. So, the focus of his analysis shifted towards the vertical mobility and *par excellence* he did not consider the horizontal mobility. Another disadvantage is the conceptualization of mobility in terms of social structure that made the temporal dimension of migration invisible. This was brought to the attention of modern researchers who offered their own theoretical and empirical solutions.

First of all, they refocused from the vertical to horizontal mobility and a new theoretical program emerged. The mobility approach, or, as it is often called by social scientists the "mobile turn", was linked to the study of the movement of people, ideas and material objects, and the consequences of these movements. According to Tim Cresswell, mobility paradigm involves new ways of theorizing the process of mobility under the influence of power structures, patterns of social identity and geographical features [16]. The development of the mobility approach was primarily associated with studies made at the University of Lancaster[3]. It is possible to talk about a separate scientific school aimed to study the movement of people, capital, information, and material objects that form a single socio-economic model of life at the global, national and local levels. Lancaster Centre for Mobility Research is headed by one of the most cited social scientists of our time John Urry. His major idea is to update the understanding of the concept "social" [17, p.

[3] Centre for Mobilities Research. URL: http://www.lancaster.ac.uk/fass/centres/cemore/ (accessed: 24.09.2014).

111]. Urry believes that society should not be in the focus of sociological research because it is experiencing the undergoing fundamental change and therefore puts sociology at risk. The sociologists should focus on different kinds of mobility.

John Urry's ideas were developed by Australian researchers Martin Bell and Gary Ward, who compared the temporary mobility and the permanent migration under the projects done at the University of Lancaster [18]. The temporary mobility and the permanent migration are usually studied separately. However, as the authors argued, the time constant movement and migration were the parts of the same space-time continuum of population mobility. Mobility looks like the combination of all kinds of territorial movements, including migration. Mobility is always limited in space and time. The temporary mobility is understood as a non-permanent and short-formed territorial movement, without change of residence. Compared to migratory movements, the temporary mobility has a certain number of distinctive features. First, while the migration involves moving to a new place of residence, the mobility means a regular change of the place of residence excluding the fact of non-residence[4]. In addition, the frequency of such movements and their frequency may vary greatly. The authors conducted an empirical analysis of mobility types depending on their duration and spoke about the following types: 24 hours — visits, tours, health care activities; 1-4 weeks — a business trip, long distance travel, study; and most long-term mobility — up to one year — a seasonal job or labour mobility [18, p. 4].

The approach of Australian scientists is different from P. Sorokin's one. He considers the mobility as a moving within the status-role structure of the society. M. Bell and G. Ward analyzed the mobility issue in a broader framework. They explicit mobility, as the temporary movement from one place to another, and then as the turn back. The practical significance of their approach is that such a comparison not only reveals the functional connectivity of the moving groups of people in general perspective, but also facilitates the development of analysis methods of migration. The mobility approach is applied to the analysis of statistical data on migratory movements in such countries of the Circumpolar region, as Norway, Russia and Canada.

The mobility approach is possible to be expressed in such indicators as the level of immigration and emigration, the moving direction. In Norway in 2013 the total number of immigrants was 75,800 people and 2,780 people less than in the previous year. As for emigration, Norway was left by 35,700 people. In 2013 the net migration[5] was lower than in the previous three

[4] Residency — a desire to stay in a particular region (from Lat. residens —«staying»).
[5] Pure migration—the difference between migration and emigration flows on a particular area.

years. In 2012, immigrants were represented in all Norwegian municipalities[6]. Cities and municipalities with the highest rates of immigrants are: Oslo (30.4%), Drammen (25%), Lørenskog (23%) and Skien (19.6%) [22]. According to the data, the most attractive is the capital of Norway. According to experts, Oslo has become the fastest growing city in Europe[7]. In recent years, immigration has become a larger part of the growth of the population in Norway.

Considering migration flows Canada, we noted that in 2013 the country had 619,258 immigrants, 725 people more than in the previous year. In the past five years this number has been growing steadily. Assessing the level of emigration from Canada, we noted that in comparison to the other states in 2010, the net migration rate was 7.2% per 1,000 people, It was significantly higher than in other industrialized countries such as the United States (2.9), Russia (1.8) and France (1.2)[8].

In 2010[9], the level of internal migration in Russia increased by 1.9% in comparison with the same period of the previous year. However, the overall migration growth in Russia decreased by 5,800 people (10%). It was directly related to the decrease of the number of immigrants registered by the place of residents[10]. Moscow and the Moscow area are the most attractive places for migration. They are followed by St. Petersburg and Krasnodar area. In Russia the level of emigration is higher than the level of migration. According to the Russian Federal Migration Service, the immigration rates are between 33,000 and 47,000 people a year[11]. According to the "Levada-center", 22% of residents of Russia want to emigrate[12]. Speaking of the analysis of local migration flows in the North of Russia, it should be admitted that the highest level of migration growth is observed in St. Petersburg (74.1 per 1000), the lowest rates are in the Arkhangelsk region (-10.2 per 1000) and Komi Republic (-10.8 per 1000)[13].

We have just reviewed the ways of statistic data interpretation through the prism of the mobility approach. This has allowed us to identify the common patterns of the migration process, to track the level and velocity of the social mobility linked to particular examples. The level of emigration to Norway and Canada has been growing steadily, in Russia this indicator is

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[6] The administrative system of Norway is provided by provinces and municipalities. Province or district (norv. fylke) — territorial entity, governed by the Council and the governor. Provinces are divided into communes (municipalities), governed by communal councils.

[7] Immigrants and Norwegian-born to immigrant parents, 1 January 2014. URL: http://www.ssb.no/en/innvbef (accessed: 24.09.2014).

[8] FACTBOX-Key facts about Norway URL: http://af.reuters.com/article/sudanNews/idAFL6E7IM19S20110722 (accessed: 24.09.2014).

[9] Statistics of this year were used because they are best analyzed and interpreted by the Federal State Statistics Service.

[10] Emigration URL: http://www.thecanadianencyclopedia.ca/en/article/emigration/ (accessed: 24.09.2014).

[11] ДемографияURL: http://www.gks.ru/bgd/regl/b10_01/IssWWW.exe/Stg/d04/4-0.htm (accessed: 24.09. 2014).

[12] Мечты об эмиграции URL: http://www.levada.ru/06-06-2013/mechty-ob-emigratsii (accessed: 24.09.2014).

[13] Российский статистический ежегодник. 2012: Статистический сборник / Росстат. М., 2012. С. 331

characterized by a gradual decrease. Speaking about the most attractive places for immigrants, it is important to note that in Norway, Canada Russia immigrants are searching for the opportunities to ”conquer the capital”.

Mobility has become the urgent issue for research among the contemporary social scientists. The proposed review shows that the phenomena of mobility and stratification are inextricably linked. Both phenomena are the dynamic characteristics of the society. In such a case, it is necessary to refer to the migration issues from the standpoint of social structure.

Stratification approach

Stratification approach means the division of people into groups depending on their socio-economic status. Chris Barker has defined the stratification of society as a relational system of inequalities with economic, social, political and ideological factors [19]. Stratification approach is relevant to the research done by the Copenhagen Center of Social research[14]. Its work is focused on the study of the social stratification, socio-economic mobility, social differentiation and etc. In this regard, we should also mention the Center for Social Stratification and Inequality Studies of the Tohoku University, Japan[15]. This Center is carrying out the projects aimed to study the degrees and kinds of inequality and the mechanisms that lead to disparities of the social order. Both Centers mentioned above are carrying out the research projects largely linked to the theoretical foundations established by P. A. Sorokin’s functional analysis.

Sorokin defined the social stratification as the division of the people into classes and groups in a strict hierarchy, based on unequal access to social and material goods [20, p. 23]. The author distinguished between three main forms of social stratification: economic, political and professional. Economic stratification is characterized by unequal access to economic benefits. The gap between the richest and the poorest has a cyclic dynamics, in which “economic disparity is replaced by its weakening” [20, p. 311]. Political stratification increases with the growth of population and the increasing complexity of social structure. In other words, the bigger is the population the clearer is the division into stratums. Finally, under professional stratification[16] P. A. Sorokin understood the unequal distribution of the professional prestige in a society.

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[14] Centre for Stratification Research — University of Copenhagen.URL: http://www.stratifikation.ku.dk/english/ (accessed: 24.09.2014).

[15] Center for the study of Social Stratification and Inequality URL: http://www.sal.tohoku.ac.jp/gcoe-wiki/en/wiki.cgi?page=FrontPage (accessed: 24.09.2014).

[16] Sorokin defines professional stratification as entire professional one (defined within a particular organization) in inter professional stratification (depends on the professional demands on the labor market and required level of employee’s intellect).

Social stratification and migration are two variables closely related to each other. For example, economic stratification can be a catalyst for migration. If the gap between the richest and the poorest becomes large, the resource-poor are sent to other regions in order to "search for a better life". According to another point of view, the intensity of migratory movements is determined by the concentration of the economically-active population in areas attractive for migrants. As a result, these areas face the problem of surplus labor accompanied by the reduction of the average monthly salary. In the case of political stratification, migration can reduce political tensions and the level of disagreement with the actions of the ruling elite in the region, which might be the reason for migration outflow. So, we are able to conclude that studying the migration it is necessary to take into account the stratification hierarchy of the society, because it is not only the factor of migration, but it is also its result.

Scandinavian countries, especially Norway, are the most subjected to migration today. Both external migration (migration to Norway) [21] and internal migration (e.g. from rural to urban areas) are observed there [22]. The analysis of migration in Scandinavia was made by the Center for rural studies at the University of Science and Technology in Trondheim[17]. Recently published report "Social stratification and change in the division of labor in rural areas of Norway" marked a change in the labour market of Scandinavian countries, which led to the opening of educational opportunities for actual and potential migrants[18]. In recent years there has been a decline in agriculture of Norway therefore the number of jobs in the agricultural sector has reduced. The majority of those who was born in the countryside spend a part of their lives in cities, guided by the educational and professional considerations. In addition, salaries in rural areas are significantly lower than in urban areas due to the peculiarities of the market for rural products, and the labour market specifics where a significant percentage of the workforce has a lower level of education compare to the workers in urban areas. All these factors influence people's decision to move from the countryside to the city.

However, the lack of high quality education in rural areas does not mean that the rural migrants occupy the lowest positions in the structure of the urban community. Collected data indicates the same level of adaptation among the rural migrants as among the other categories of migrants. So, they are able to occupy the same well paid job positions as the regular citizens.

As it was mentioned earlier, the stratification approach focuses on dividing the population into groups depending on their socio-economic status. Rural and urban origin of a man can be one

[17] Centre for Rural Research URL: http://www.bygdeforskning.no/en (accessed: 24.09.2014).
[18] Rural population URL: http://data.worldbank.org/indicator/SP.RUR.TOTL (accessed: 24.09.2014).

of the reasons that influence his position in the social structure. So, now it is time to turn to statics on migration flows between rural and urban areas.

In recent decades Norway, being one of the most advanced capitalist countries, is experiencing the growth of rural migrants' concentration in the more industrialized urban areas. Internal migration is quite high. The rate of migration between municipalities has increased up to 235,000 in 2013. It is the highest registered rate in the history of migration. According to World Bank's data, in 2009—2013 the population of the rural areas had decreased by 3,027 people because of the migration flows. It is serious number for such a small country as Norway. As for Russia and Canada, there is an opposite situation: the rate of rural population has increased due to migration processes up to 119,340 and 43,321 respectively[19].

Distinctive features of migration between rural and urban areas in Russia have changed in recent decades. Russia is experiencing numerous seasonal migrations from the cities to rural areas. It is especially visible in the cities with the high level of unemployment. However, we can say that the structure of distribution of population between rural and urban areas is the same in all the regions of Northwest Russia. In Murmansk oblast the share of rural population is very small — 8.3% of the total population. In other areas of the European North of Russia the share of rural population ranges from 21% to 34%[20].

In Canada the situation with the distribution of urban and rural workers is as it follows: over the past 50 years the number of urban population has increased and the number of rural population has reduced. In 1956 in urban areas had 67% of the population (33% of population lived in rural areas), but today it is 81%. Analyzing the migration flows in Canada, it is important to note the specialty of distribution of immigrants in rural and urban areas. According to statistics, in Canada 75% of immigrants prefer to live in large urban areas such as Toronto, Montreal and Vancouver and less than 3% of immigrants chose to settle down in small towns and rural areas[21].

The data shows that the immigrants prefer capital areas more than rural ones. It happens because of the set of ideas, according to which urban environment provides more opportunities for going up the social structure. Analysis of the rural-urban migration flows have enabled us to trace the mechanisms that lead to disparities in the organization of population in certain areas.

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[19] The long-term trends: The census rural population. URL: http://www.statcan.gc.ca/pub/21-006-x/2007007/6000461-eng.htm (accessed: 24.09.2014).

[20] General trends of Russian settlement systems: the context of the North-West. URL: http://www.antropotok.archipelag.ru/prostr/ch-3.htm (accessed: 24.09.2014).

[21] Canadian immigrants thriving in rural areas. URL: http://www.workpermit.com/news/2008-01-28/canada/canadian-immigrants-integrate-better-rural-areas-small-towns.htm (accessed: 24.09.2014).

We have reviewed the key features of social stratification in the context of migration. Generally speaking, social stratification can be defined as the categorization of people along the axis of socio-economic status, with such indicators as income, education, prestige, power. The dominant reason for migration is the human desire to occupy a higher economic position in a society, get a prestigious job, high wages, and opportunities to get better education or to improve skills. The major centers of migration are the large cities that can satisfy these needs.

Globalization approach

In this section, we consider migration from the globalization perspective in the context of geopolitics. Traditionally, geopolitics is aimed to examine the links between the political power and geographic space. However, according to Graham Evans, it has wider connotations [23]. So, Joseph Nye introduced the concept of "soft power" [24], understood as the form of political influence, the legitimacy of which is expressed by voluntary participation and sympathy to the acts committed by the Supreme sovereign. The "soft power" concept contrasts with the "hard power" concept, based on coercion [24, p. 90]. Provided contradiction should be linked to the concrete examples of academic analysis of the migration of students, employees of the national universities of the Russian part of the BEAR region to Scandinavian countries. Education and training is provided in accordance to the ideological attitudes of countries and Western liberal thinking in general. In addition to educational purposes, the hosting party pursues a pragmatic interest: to form the worldview of students and interns in the coordinates that define the vision for socio-political affairs of the country of study, and then to broadcast it in their home country. Moreover, migration derived from geopolitical processes occurs against a background of political disputes, socio-economic development strategies of the territories, clashes of national and transnational forces. In this regard, our attention is drawn to the activities of the Centre for the geopolitics of globalization and transnational security in Geneva[22]. The Center specializes in studies of the impact of globalization on politics, economics, society and cultural identity. The migration issues present in this focus being an explicit or hidden variable through which the globalization has shaped its outcomes.

Continuing the educational theme in the globalization perspective, it is necessary to refer to the research of Jean-Baptiste Meyer and David Kaplan. They state that the knowledge is in the focus of development in all spheres of public life [25]. Knowledge defines the dynamics of the international labor market, leads to the emergence of so-called "knowledge economy". Knowledge

[22] Geneva center for security policy. URL: http://www.gcsp.ch/Emerging-Security-Challenges/Globalization-CGGTS (accessed: 24.09.2014).

can move in physical space and network by itself or together with its carriers. In the latter case it is more appropriate to speak about “migration of knowledge” [26]. We talk about the representatives of the academic world, migrating from “academic province” to the more scientifically developed regions. Meyer and Kaplan define academic mobility as a natural phenomenon among scientists and engineers. This phenomenon has its advantages and disadvantages. The first one is the “academic nomadism” [25, p. 312], because a scientist moves from one place to another, accumulating knowledge, experience and social capital. The “brain drain” leads to asymmetric distribution of scientific capital, depriving less industrialized areas any prospect of development and blocks the realization of the interests of the country in the geopolitical arena. The authors note that in recent decade, the academic migration of highly skilled workers, scientists and engineers has increased significantly, which is the result of globalization of the academic environment and the labour market.

Researchers M. Balbo and G. Marconi from the University of Venice [27] agree with the thesis that the increase of migration is one of the manifestations of globalization. In their view, it happens due to the development of the vehicles, which made it easier to move from one region to another. As a result, globalization has become a catalyst for the wave of migration of unskilled workers from poor developing countries to developed ones. This leads to the increase of the informal sector of the economy, increase of crimes and other manifestations of delinquency.

Over the past 10—15 years migration flows transformed from a predominantly rural to urban. What is the reason? For a long time migrants occupied the vacant niche in the service sector in the cities [28], today, however, the flow of highly skilled migrant workers, scientists and students is increasing. It is important to note that migrants are not going to any city, but mainly to the one that has been already “settled” by their relatives, friends or just people from the same areas of origin. In addition, the authors also note that there is a move towards the feminization of migration: increasingly, not only men, but women migrate in search of income, fulfillment, and a better life for themselves and their children.

A special issue related to migration is adaptation of migrants. The degree of integration in the host region[23] depends on the knowledge of language, the availability of work with a proper level of income, legal status of migrants, participation in public and political life and the access to social services. When cultural and ethnic background of migrants is similar to characteristics of the host region, the adaptation is relatively painless. If the correlation between ethno-cultural parameters of the migrant and the host community is minor, the level of crime, human trafficking,

[23] Host region — region which is the “final destination point” for migration.

labour exploitation, fraud and corruption increase. According to the authors, migrants are more affected by the illegal activities such as drug trafficking, poaching, prostitution and organized crime because of social exclusion. Reliable mechanisms for migration management and well-developed legal framework could minimize the negative aspects of migration to cities.

In the framework of the globalization approach it would be relevant to discuss the statistics related to immigration and emigration in the countries of the Circumpolar region with the focus on the study of the reasons for migration. Speaking about the migration flows to Norway, it is important to note the immigrants from Poland and Lithuania. Their number is greater than the others'. In 2013, it was 10,502 and 3,093 people respectively. Moreover, these groups of immigrants amounted to about half of net migration among European citizens. They are followed by citizens of Sweden (5,271), Eritrea (2,729) and the Philippines (2,815). According to experts, in future there might be a decrease in the net migration of people from Poland, Lithuania and Somalia. Their place will be gradually taken by the residents of African countries. Last year the net migration among citizens from Romania, Syria and Eritrea increased the most. Among the Swedish citizens this indicator remains unchanged[24].

The situation in Canada is as it follows. In 2012, the number of emigrants to this country from: China (12.8%), Philippines (12.7%), India (11.2%), Pakistan (3.9%) and the U.S. (3.7%)[25]. Analyzing the migration processes in Canada, three main categories of immigrants are found:

- Economic immigrants. Seven categories of economic immigrants could be found in the Canadian legal acts. The leading group is highly skilled workers (19.8% of the total). In 2010 economic migrants were accounted for 67% of the total number of migrants.
- Immigrants "for family reasons". In Canada there is a developed state program under which the immigration of family members from other countries is organized in a simplified mechanism. This category has the second largest number — 22%.
- Refugees. People in need of protection. In 2010 their number was 9% of the total.

The main sources of immigration to Russia are the countries of CIS, Baltic States and Georgia. The majority of migrants (95%) come from 10 states: Uzbekistan, Tajikistan, Ukraine, Kyrgyzstan, etc. Along with Norway and Canada, the main reason for immigration to Russia is the career opportunities. According to specialists from the Institute for Public Administration and Law,

[24] Still high, but fall in immigration. URL: http://www.ssb.no/en/befolkning/statistikker/flytting/aar (accessed: 24.09.2014).
[25] Managing Permanent Immigration and Temporary Migration. URL: http://www.cic.gc.ca/english/resources/publications/annual-report-2013/section2.asp (accessed: 24.09.2014).

in 2013, migrant labour had ensured 7—8% of Russia's GDP[26]. Internally displaced persons and refugees could be defined as a separate category of migrants. According to data from October 1, 2013, there are 33 thousand internally displaced people permanently residing on the territory of the Russian Federation. Referring to the example of the Circumpolar region, we consider the data on the reasons for the internal migration in the Arkhangelsk region. The most common reasons for relocation is the need of education (22%), the need of work (15%) and a desire to return to the former place of residence (5%)[27].

The globalization approach allows statistic data analysis in order to identify the main reasons for migration. The example of the Circumpolar region proves the thesis that knowledge specifies the dynamics of the international labor market, leads to the emergence of the "knowledge economy". Globalization manages the dynamics of migratory movements. We can say that migration is a reflection of globalization on the local level. Migration is inevitable in a globalizing and urbanizing world. Migration flows are not amenable to strict management and forecasting, in the best case it can be adjusted. Then it can benefit not only the migrants themselves but also the host region.

Speaking of migration from the standpoint of the globalization approach it is necessary to take into account: *first*, the class composition of the moving groups (depends on adaptations in a new social environment); *secondly*, what time interval displacement is taking place (the more time it takes the greater impact it has on migrants and their external environment). With regard to the impact of migration flows, it should be noted that they, on the one hand, affect the area where the migrants come from, on the other hand, they transform the host region, where the migrants arrive. Noting the features of such an influence, it should be noted that the migrants directly and indirectly transform all spheres of public life. In the economic sphere, migration is a catalyst for the movement of capital and it is the potential labor force for the economic sector. In the cultural sphere it means the transformation of folk and mass culture, changes in language, traditions and customs. In the political sphere it leads to the mitigation of inequality between the richest and the poorest groups of the population.

Conclusion

Studying the migration through the prism of mobility, stratification and globalization approaches let us achieve the goals. We have reviewed the theoretical background focused on the migration issues. The next step for us is their use to conduct our own empirical research.

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[26] На просторах России. URL: http://demoscope.ru/weekly/2013/0563/rossia01.php#18 (accessed: 24.09.2014).
[27] Миграция населения Архангельской области в 2012 году. Статистический сборник. Архангельск, 2013.

The heuristic potential of the mobility approach is defined as the conceptualization of migration processes from the point of view of the general frequency of movement of people in or outside of a specific region. Mobility demonstrates the absence of migration barriers, which might be seen as a closed labour market, the spread of xenophobia or a poor communication infrastructure. I would like to emphasize that the mobility approach provides a research perspective not only in relation to individuals, but also knowledge of the meanings of material objects that move together with them. This opens up new horizons for addressing migration issues.

Stratification approach provides direct and underlying reasons for social structure formation. For example, rural or urban origin has an impact on the position of migrants in the social hierarchy of the host region. Migrants' resources (capitals), used to go up the social structure could become a distinct object for research.

The globalization approach allows us to study the migration with the use of geopolitical tools. A distinctive feature of this approach is its focus on a detailed examination of migration flows in the context of global processes in the modern world.

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Reviewer: Ulyanovskiy Viktor Ivanovich,
Doctor of Sociology, Professor

UDK: 327 + 332.122

The political aspects of the international cooperation in the oil and gas industry of the Barents Euro-Arctic region

© Zuevskaya, Anna P., fourth-year bachelor student, Faculty of Foreign relations, St. Petersburg State University.

E-mail: apzuevskaya@gmail.com

Abstract. The author of the article considers the cooperation in oil and gas industry in the Barents Euro-Arctic region, the main oil and gas projects in the region and the political issues of the cooperation.

Keywords: *oil and gas industry, Barents Euro-Arctic region, international cooperation*

Introduction

The share of oil and gas in the global energy consumption will remain almost constant until 2040. It was 53.6% in 2010 and it could be 51.4% by 2040[1]. The group of researchers from the Geology, geodesy and cartography Service of the United States under the study “Examination of the Circumpolar resources: assessment of undiscovered oil and gas resources North of the Arctic circle” came to the conclusion that in the future the Arctic could become the largest oil and gas province in the world (total estimated volume of undiscovered oil and gas reserves in the Arctic is about 413 billion barrels of oil equivalent (b.o.e.). This conclusion was based on the probabilistic analysis of various geological sedimentary rocks. Russia has about 70% of undiscovered gas resources of the Arctic (shelf reserves are mainly disposed in the southern part of the Kara sea and in the Eastern part of the Barents sea)[2].

In response to the recent events in the oil and gas industry in the Arctic (JSC “Gazprom” became the second company able to start the commercial development of oil and gas fields on the Russian shelf in the Arctic[3], “Rosneft” discovered a new field of ultra-light oil in the Kara sea[4]) the study of the oil and gas industry is becoming increasingly important, despite volatile oil prices: more than 100 USD a barrel, and then the fall down to less than 60 USD. Analysts agree that prices

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[1] Прогноз развития энергетики мира и России до 2040 года // Институт энергетических исследований (ИНЭИ) РАН и Аналитический центр при правительстве РФ. URL: http://www.eriras.ru/files/prognoz-2040.pdf (accessed: 10. 10.2014).

[2] Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle // Сайт USGS. URL: http://pubs.usgs.gov/fs/2008/3049/fs2008-3049.pdf (accessed: 10. 10.2014).

[3] «Газпром» начал промышленную добычу нефти в Арктике. URL: http://www.vestifinance.ru/articles/37178 (accessed: 10. 10.2014).

[4] «Роснефть» открыла новое месторождение сверхлёгкой нефти в Карском море. URL: http://russian.rt.com /article/51849#ixzz3EbRFjqmL (accessed: 10. 10.2014).

will recover, but they are unable to name the time limits required for recovery[5] . Although in 2013 the predicted decline was only down to 96 USD per barrel by 2015, and then a gradual increase up to 163 USD per barrel by 2040[6]. Political aspects are the key factor in the formation of international economic cooperation in the oil and gas industry, as long as the countries of the Barents region are the members of different political alliances and have different interests on the world political arena, which complicates the interaction between them. This determines the need of a detailed study of this problem to define the possible areas of cooperation and coordination of interests of all interested parties.

Legal analysis

The basic document for the cooperation in the Barents Euro-Arctic region is the Kirkenes Declaration of 1993, established the Council of the Barents Euro-Arctic region. The Declaration emphasized the severe environmental conditions, vast territory and low population density, low degree of cross-border cooperation of local authorities and local private business as the specific features of the region. The decision to create the Council of the Barents Euro-Arctic region was made in order to develop the cooperation. Priority areas of cooperation: economy, trade, science and technology, tourism, infrastructure, education, cultural exchange, projects aimed to provide better living standards of indigenous peoples of the North. The parties emphasized the need of inclusion of the environmental component into all the activities in the region through the establishment of the common criteria for the exploitation of natural resources and prevention of environmental pollution, especially radioactive and chemical waste. Development of economic cooperation at the level of companies, the energy efficiency of the region's economy, the agricultural industry and food production of high quality, the conversion of military enterprises on a commercial basis are declared as well[7].

Every country of the studied region has developed its own Arctic strategy. For the Russian Federation the main goal “in the sphere of socio-economic development is expanding the resource base of the Arctic zone of the Russian Federation, able to meet the Russian needs in hydrocarbon resources, water biological resources and other types of strategic raw materials”[8]. The main

[5] Аналитики предсказали крутой взлёт нефти после падения. URL: http://www.interfax.ru/business/401715 (accesssed: 04.12.2014)

[6] International Energy Outlook 2013 // U.S. Energy Information Administration. July 25, 2013. URL: http://www.eia.gov/forecasts/ ieo/ (accessed: 10. 10.2014).

[7] Декларация «Cooperation in the Barents Euro-Arctic Region» конференции министров иностранных дел; Киркенес, 11.01.1993. URL: http://www.barentsinfo.fi/beac/docs/459_doc_KirkenesDeclaration.pdf (accessed: 23.03.2014)

[8] Основы государственной политики Российской Федерации в Арктике на период до 2020 года и дальнейшую перспективу. URL: http://www.scrf.gov.ru/documents/98.html (accessed: 10.12.2014)

objective of Finland is to become a key actor in the Arctic affairs because the Arctic is close to the Finnish market where Finland must be active and successful in connection to its economic experience in the development of mineral resources in the Arctic. Also Finland is interested to become a leader in training, research and economic activity in the sphere of marine technology and transportation and to participate in developing oil and gas resources in the region. First of all, Finland is ready to offer the development in the field of environmental assessment, energy efficiency and wants to improve the processing sector[9].

Sweden is also interested in international cooperation in the region and is ready to offer expertise of the energy efficiency. Sweden is committed to the development of cooperation within the Arctic Council, the Barents structures, the EU and the Council of Ministers of Northern countries, stressing the importance of cooperation between the structures mentioned above. Economic development of the region is one of the key objectives of the Swedish strategy: Sweden aims to reduce trade barriers, to provide the sustainable use of energy resources in the region and to respect the international law on the development of deposits and cross-border cooperation[10].

Norway, as well as Sweden, has emphasized the need to respect the international law, and to develop the international cooperation. Norway declares that the development of resources, new trade routes and human resources are the key issues. Also the Norwegian Government aims to develop cooperation between research and business institutions, and stresses the importance of infrastructure development[11].

Thus, it is possible to say that the Barents Euro-Arctic region has developed its own legal framework of international economic cooperation based on international law and reflection of the peculiarities of the region. In general, the mutually beneficial and equal cooperation of the countries in the region, with a special attention to the environmental aspects of cooperation in all spheres was declared. Every country of the region has certain resources that can be useful for all of the actors, and be a reason for the mutual interest of the parties to each other. At the same time, each party considers itself as the key actor in the region. This fact may create some tension in the relationships.

Project activity

[9] Finland's Strategy for the Arctic Region 2013 // Официальный сайт Премьер-министра Финляндии. URL: http://vnk.fi/julkaisukansio/2013/j-14-arktinen-15-arktiska-16-arctic-17-saame/PDF/en.pdf (accessed: 10.12. 2014)

[10] Sweden's strategy for the Arctic region // Официальный сайт правительства Швеции. URL: http://www.government.se/content/1/c6/16/78/59/3baa039d.pdf (accessed: 08.12.2014)

[11] Norway's Arctic Policy for 2014 and beyond — a Summary // Официальный сайт правительства Норвегии. URL: http://www.regjeringen.no/en/dep/ud/documents/Reports-programmes-of-action-and-plans/Reports/2014/report_summary.html?id=774142 (accessed: 08.12.2014)

A number of international energy projects were declared under the framework of the Council of the Barents Euro-Arctic year. The working group on energy was established at the 5th session of the BEAR Council in 1998[12]. Several projects got a special attention: the project on construction of oil drilling platforms of the ice class, mentioned in the speech of N. Isakov, the representative of the Arkhangelsk region in the BEAR Council[13], and the establishment of two oil extraction companies: Russian-French-Finnish "SeverTEK" and Russian-Norwegian "Nord" mentioned in the speech of the Deputy head of the Nenets Autonomous district administration Y. Konovalov[14]. More ambitious projects had been discussed at the 6th session of BEAR Council in 1999: creation of energy efficiency centers in the Barents region and financing support facilities for the energy projects and development of information networks[15]. Analysis of the materials had shown that the projects mentioned in the documents had not been implemented or had been partially implemented. This allows concluding that BEAR cooperation is experiencing stagnation.

National projects seem to be more beneficial. In Norway is expected to produce LNG on the basis of the "Snøhvit" until 2040, "Statoil" plans to invest 21 billion NOK (EUR 2.5 billion) in production in the next 10 years[16]. The Norwegian state company "Statoil" had the intention to spend 5.72 billion USD for the development of its oil production capacity in the Arctic, by investing in the development of the "Aasta Hansteen" field, which, according to expert estimates, may contain at least 47 billion m³ of gas. Extraction will be carried out with the use of the world's largest "Spar" platform and the 480 km length pipeline will be built for the transportation of gas to the onshore station[17]. Johan Castberg project includes the development of three oil fields: "Skrugard"," Havis" and "Drivis"[18]. Norway, with its largest hydrocarbon deposits in the Barents and North seas, is the European leader in oil extraction and oil production and the world's third largest gas exporter[19].

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[12] Коммюнике 5 сессии СБЕАР / Лулео, 19—20 января 1998 // Личный архив Харлампьевой Н.К.

[13] Выступление Н. Исакова, представителя Архангельской области в Региональном Совете БЕАР, на 5 сессии СБЕАР / Лулео, 19—20 января 1998 // Личный архив Харлампьевой Н.К.

[14] Выступление заместителя главы Администрации Ненецкого Автономного округа Коновалова на 5 сессии СБЕАР / Лулео, 19—20 января 1998// Личный архив Харлампьевой Н.К.

[15] Перевод с английского Коммюнике 6 сессии СБЕАР / Буде, 4—5 марта 1999 года// Личный архив Харлампьевой Н.К.

[16] Статойл расширяет арктический СПГ-завод. 26.11.2014.URL: http://www.oilru.com/news/438458 (accessed: 31.01.2015).

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[18] Johan Castberg. URL: http://www.statoil.com/en/ouroperations/futurevolumes/projectdevelopment/Pages/Skrugard.aspx (accessed: 09.03.2014).

[19] Norway. URL: http://www.eia.gov/countries/cab.cfm?fips=NO (accessed: 13.12.2014).

Russia also has promising deposits in the Arctic. More than 200 oil and gas fields are found in the Barents, Pechora and Kara seas and there are some other fields: North-Kildin and Murmansk condensate deposits, “Shtokman” in the Barents Sea and “Rusanovskaya” in the Kara Sea[20] and etc. However, the Russian “Shtokman” project is temporary suspended, but its implementation could be started by 2017[21]. In 2012 the Norwegian company “Statoil” left the project, “Gazprom” and “Tota” became the only participants. "Gazprom" has not completely terminated the project yet, but the leaders of the company do not exclude the possibility that the “Shtokman” field will by the future generations[22]. According to experts, it would be more profitable for “Gazprom” to focus on other projects because of the “shale revolution” in the USA. “Gazprom” has the “Yuzhno-Kirinskoye” field on Sakhalin located closer to the Asia-Pacific region markets. The “Nord stream” project is successful. Two pipelines have already been put into operation and two more has been planned to be done, since the amounts of gas supply has been increased by December 2014 from 20 to 30 billion m³[23].

The company "Rosneft" intended to continue the exploration in the Pechora Sea in 2015[24]. “Exxon” was interested in “Rosneft” Arctic projects. So, a contract with “Rosneft” was signed. Its aim is to develop the oil fields in the Kara Sea. There is also the agreement with “ENI” on cooperation in the Barents Sea[25]. However, cooperation with Western partners are might be risky because of the sanctions imposed in 2014 by the US and EU. Great number of projects could be done together with foreign partners before the sanctions. Cooperation between the Norwegian company "Statoil" and Russian "Rosneft" could be the joint development of the “Castberg” field on the Norwegian continental shelf[26]. At the XVII St. Petersburg International Economic Forum “Rosneft” and “Statoil” signed an Agreement on the completion of certain milestones under the

[20] Основной объем ресурсов углеводородов на шельфе России приходится на труднодоступную акваторию Арктического шельфа / Ступакова А.В., МГУ им. Ломоносова, геологический факультет. URL: http://helion-ltd.ru/poo-ls-ar-c/(accessed: 8.03.2014).

[21] Рабочая встреча В.В. Путина с губернатором Мурманской области Мариной Ковтун 30 октября 2012 года. URL: http://news.kremlin.ru/news/16736 (accessed: 09.03.2014)

[22] От «Штокмана» остаётся завещание. Газпром откладывает разработку «Штокмана» для будущих поколений. URL: http://www.gazeta.ru/business/2013/05/31/5364169.shtml (accessed: 07.02.2015).

[23] Газпром: поставки газа по «Северному потоку» с начала года выросли в полтора раза. URL: http://itar-tass.com/ekonomika/1627665 (accessed: 14.12.2014)

[24] Роснефть в 2015 г. проведет геологоразведку в Печорском море. URL: http://ria.ru/economy/20141210/1037479863.html (accessed: 14.12.2014)

[25] «Роснефть» и «ЭксонМобил» укрепляют стратегическое сотрудничество. URL: http://www.rosneft.ru/news/pressrelease/2106201312.html. Роснефть и Eni подписали соглашение о завершении сделок по трем проектам на российском шельфе. URL: http://www.rosneft.ru/news/pressrelease/2106201314.html (accessed: 09.03. 2014)

[26] Роснефть выходит на норвежский шельф Баренцева моря по результатам 22 лицензионного раунда. URL: http://www.rosneft.ru/news/pressrelease/13062013.html (accessed: 23.03.2014)

Agreement on cooperation on the Russian shelf in the Barents and Okhotsk seas[27]. “Lukoil” had planned to participate in the licensing round for the development of the Norwegian oil fields on the shelf[28].

Despite the external similarity of Russian and Norwegian conditions, there are significant differences. Thus, the Norwegian shelf is well researched and resources of Norway are limited to fields opened in 2000s. For Russia there is a "veil of uncertainty": on the one hand, awareness of the presence of oil and gas fields on the shelf, but their amounts are not updated, while Russian companies are reluctant to operate in this region, because, according to researcher A. Moe, they are not willing to work at the offshore fields, because of the high cost of their development [1].

Finland has no direct access to the Arctic seas, but it is interested in cooperation with Russia in the development of Arctic resources. The shipbuilding industry is one of such directions of cooperation In December 2010 “United Shipbuilding Corporation” (USC) and “STX Finland” signed an agreement to establish a joint company “Arctech Helsinki Shipyard” in Helsinki for the production of ice-class vessels for the Arctic. In 2014, USC brought its share up to the 100 % by buying a 50% share of the “Arctech Helsinki Shipyard Inc” shipyard[29]. Finland has considerable experience in oil refining, which is a significant part of Finland's competitiveness in the region: the famous Finnish company "Neste Oil" deals with high quality and environmentally friendly processing of oil, and is in the top 100 of most sustainable companies in the world[30]. Also Finland is ready to provide expertise of “clean technologies” — environmentally friendly manufacturing and telecommunications [2], to participate in the future construction of the marine infrastructure along the NSR [3], however, this experience can be used both for the construction of NSR marine infrastructure and for oil and gas development on the shelf.

Sweden is active in political and economic processes of the Arctic by involvement of its companies as subcontractors into the development of the shelf. Primarily Sweden was interested in the development of ore resources and improvement of ecological situation in the region. The latter is a promising direction for the Swedish-Russian cooperation: Sweden supported the initiative of the “Barents window" aimed at eliminating environmental "hot spots" in North-West Russia [4].

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[27] Роснефть подписала 30 соглашений на Петербургском международном экономическом форуме. URL: http://www.rosneft.ru/news/today/21062013.html (accessed: 23.03.2014)

[28] ЛУКОЙЛ намерен принять участие в аукционе на участки шельфа Норвегии. URL: http://ria.ru/economy/20141211/1037710539.html (accessed: 14.12.2014)

[29] "Объединенная судостроительная корпорация" выкупила судоверфь в Хельсинки. URL: http://www.dp.ru/a/2014/12/30/Obedinennaja_sudostroite/ (accessed: 14.12.2014).

[30] In brief. URL: http://nesteoil.com/default.asp?path=1,41,537,2455 (accessed: 14.12.2014)

So, the most promising areas for cooperation in gas and oil industry are: cooperation between Russia and Norway, possible use of Finnish experience in oil refining and the willingness of Sweden to conduct environmental review of energy projects. In overall, the collaboration looks promising, but its progress is very slowly due to a number of factors, including sanctions against Russia.

From the point of view of establishing a model of cooperation there is an interesting article by Fadeev, RIAC expert, where the author describes two possible approaches to cooperation and recommends Russia to follow the protectionist approach (due to the current great interest of the international community in projects on the territory of Russia), i.e. attracting foreign companies to a limited extent, advises to use the experience of Norway in the development of the shelf [5].

Political factors of cooperation

BEAR official documents and national legislation of the BEAR countries declare a sustained commitment to cooperation focused on common goals that would benefit all the actors of collaboration in the region. However, de facto, cooperation is extremely limited: projects declared back in the 1990s were not implemented. The majority of existing projects on extraction of hydrocarbons on the shelf are in the early stages of implementation. The most prominent example is the "Shtokman" project: the deposit was discovered in 1988 and was suspended for an indefinite time. Certainly, there are a number of economic reasons hindering the development of cooperation: the high cost of mining of hydrocarbons on the shelf due to the heavy ice and a high risk for the ecosystem of the region, the fluctuations of demand and prices[31] for petrochemicals on the market, where the halving of oil prices had happened in 2014. However, it is impossible not to take into account a number of geopolitical factors.

For Russia, the Arctic is an important strategic region. This is visible both in the key documents, for example, "Fundamentals of state policy of the Russian Federation in the Arctic for the period till 2020 and the further prospect" and in other statements. In the message to the Federal Assembly Vladimir Putin mentioned the need for the development of the Arctic region[32]. In addition to Russian companies Arctic projects involve Western partners ("Exxon", "Mobil", "Total", "Eni") and even companies from India[33]. Currently projects are being developed slowly due to the

[31] График цен на нефть марки Brent // Официальный сайт Лондонской биржи. URL: http://www.londonstockexchange.com/exchange/prices-and-markets/ETPs/company-summary.html?fourWayKey=GB00B0CTWC01JEUSDETCS (accessed: 14.12.2014)

[32] Послание Президента Федеральному Собранию. URL: http://www.kremlin.ru/transcripts/47173/work (accessed: 14.12.2014)

[33] Путин: индийские компании войдут в нефтегазовые проекты РФ в Арктике. URL: http://ria.ru/east/20141211/1037709885.html (accessed: 14.12.2014)

lack of urgent need for offshore fields' resources and the need for careful preparation for the work with the balance between economy and ecology.

From the point of view of foreign researchers, the main obstacle is the internal political instability of Russia. The Stockholm environment Institute has released the report "Russia's Interests in oil and gas resources of the Barents Sea". The author analyzed a number of articles by Russian researchers of the oil and gas industry and outlined the declaratory character of Russian interests and its unwillingness to act [6].

Currently the Arctic is interesting to the states with the access to the Arctic sea and therefore involved in the regional processes. The interest in the Arctic was declared by China which is actively collaborating with Russia in natural gas production on the shelf with the "Rosneft" company[34]. The Minister of petroleum and energy of Norway Tord Lien invited China to take part in the development of Norwegian offshore fields. According to the Russian researcher L. Voronkov, professor of MGIMO, the interest of non-Arctic countries introduces a certain uncertainty into the relationships: if Arctic countries declare their interests in their regularly published Arctic strategies, non-Arctic states leave their partners in the darkness, they "are subjected only to their own well-known reasons" [7].

The lack of delimitation of the Arctic shelf is a pretty significant problem. Currently, the most serious problem is the claims of Canada, Denmark and Russia to Lomonosov ridge. The UN Commission on the law of the sea accepted the application of Canada[35] and Denmark[36]. Russia must submit additions to the application in the second half of 2015. Thus, according to The Arctic Journal, Danish claims include a third of the territory claimed by Russia, and reaches a 200-mile boundary of the exclusive economic zone of the Russian Federation, and the Canadian claims include the North pole, which, according to V. Kaminsky, Director of the Institute of Oceanology, belongs to Russia due to the sectoral principle of the partition of the territory[37]. According to the author, the Danish experts consider possible expansion of Russia's claims up to the boundary of the exclusive economic zone, but the Danish authorities have denied such a possibility and reminded us of our commitment to the Ilulissat Declaration on peaceful methods of resolving disputes in the Arctic [8]. The presence of these claims in the future means a hard work for the

[34] Роснефть ведет переговоры о привлечении китайских компаний в Арктику. URL: http://www.vedomosti.ru/companies/news/35680891/rosneft-vedet-peregovory-o-privlechenii-kitajskih-kompanij-v (accessed: 14. 12.2014)
[35] Submission by Canada // Официальный сайт комиссии ООН по морскому праву. URL: http://www.un.org/depts/los/clcs_new/submissions_files/submission_can_70_2013.htm (accessed: 14.12.2014)
[36] Submission by Denmark // Официальный сайт комиссии ООН по морскому праву. URL: http://www.un.org/depts/los/clcs_new/submissions_files/submission_dnk_68_2013.htm (accessed: 15.12.2014)
[37] Заявку РФ на арктический шельф подготовят к концу года. URL: http://www.rg.ru/2014/06/30/regszfo/arktika.html (accessed: 14.12.2014)

Danish, Russian and Canadian diplomats, greatly increases the tension in relations between countries that may have a negative impact on the cooperation in the Arctic.

Due to the increased tension in international relations over the conflict in Ukraine, there have been persistent reports on military activity in the Arctic: about terrifying weapons possessed by Russia[38], the radar field to protect the Arctic from missiles[39], the Joint Strategic Command[40], or about the appointment of a special Envoy of the US state Department on the Arctic, a former Admiral[41]. In October 2014, NATO said that Russian armed warplanes were spotted over the North and Baltic seas, and the Alliance had interpreted this activity as "suspicious"[42]. The Russian side stressed that the flights were done in the framework of training activities[43]. Earlier a strange object had been seen in the waters of Sweden, considered as the Russian submarine by the Europeans[44]. The Defense Ministry spokesman called the actions of Sweden "unfounded"[45] and the "Russian newspaper" called the "submarine" near the coast of Sweden an attempt to justify the planned increase of the military budget of Sweden[46].

Despite the fact that the information on military aircraft and a submarine was neutralized by the explanations of the Russian authorities, the increasing number and the frequency of such information indicates the tense atmosphere in international relations in general and in the Arctic region in particular. There were calls for increased military cooperation between the Western coastal Arctic States. Norwegian politician Thorvald Stoltenberg felt the need to strengthen military cooperation between Norway, Sweden, Denmark and Iceland [9]. NATO and Russia accused each other of increasing military presence in the Arctic[47].

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[38] 5 видов оружия, которые отбивают желание напасть на российскую Арктику. URL: http://russian.rt.com/inotv/2014-12-04/5-vidov-oruzhiya-kotorie-otbivayut (accessed: 14.12.2014)

[39] Минобороны: Вся Российская Арктика будет закрыта радиолокационным полем для защиты от ракет. URL: http://russian.rt.com/article/63115 (accessed: 14.12.2014)

[40] Минобороны создаёт стратегическое командование «Север». URL: http://www.rg.ru/2014/09/10/sever-site.html (accessed: 14.12.2014)

[41] Retired Admiral Robert Papp to Serve as U.S. Special Representative for the Arctic // Официальный сайт Госдепартамента. URL: http://www.state.gov/secretary/remarks/2014/07/229317.htm (accessed: 14.12.2014)

[42] NATO Tracks Large-Scale Russian Air Activity in Europe // Официальный сайт НАТО. URL: http://www.aco.nato.int/nato-tracks-largescale-russian-air-activity-in-europe.aspx (accessed: 14.12.2014)

[43] НАТО сообщила о пролете 13 российских военных самолетов над Балтикой. URL: http://itar-tass.com/mezhdunarodnaya-panorama/1635307 (accessed: 14.12.2014)

[44] What was lurking in Sweden's waters? URL: http://www.bbc.com/news/world-europe-29722500 (accessed: 14.12.2014)

[45] Минобороны: поиски подлодки в Швеции ведут к эскалации напряженности. URL: http://ria.ru/defense_safety/20141024/1029821669.html (дата обращения: 14.12.2014)

[46] Шведская разведка признала российскую подлодку вымыслом. URL: http://www.rg.ru/2014/10/28/podlodka-site.html (accessed: 14.12.2014)

[47] Лавров: никакой необходимости в присутствии НАТО в Арктике нет. URL: http://ria.ru/world/20141020/1029130671.html (accessed: 14.12.2014)

The greatest problem for international cooperation in the region is the sanctions against the Russian Federation. After the introduction of additional sanctions by the European Union on 12 September 2014[48], got over some oil and gas companies, the obstacles for cooperation in the of offshore fields development had appeared. The equipment for oil and gas production was hit by the EU sanctions[49]. However, one of the partners "Statoil" said it would continue to cooperate with Russia[50]. Special representative of the Russian President on international cooperation in the Arctic and The Antarctic, member of the "Rosneft" Directors Board Artur Chilingarov believes that foreign companies want to go back to Arctic projects in Russia[51]. Perhaps, it can be due to enormous losses. Norway will lose billions of krones because of sanctions; therefore, the issue of a paid higher education system is discussed in the country[52].

Russian companies also do not give up: despite the release of the American company "Exxon Mobil" from the development of the field "Pobeda", "Rosneft" will continue its work there in accordance with the schedule[53]. The Ministry of energy of the Russian Federation also sees no reason to close or to delay the projects on the Arctic shelf[54]. Moreover, the Minister Novak believes that drilling and exploration will continue[55].

Of course, in the short term perspective the impact of the sanctions is noticeable only in the loss of income of both parties, but in the long term restriction of the economic cooperation and structural problems in the European countries and in Russia. Both parties will experience the consequences associated with changing patterns of supply and demand, the need to find new markets for products, suppliers of goods and services. In the context of this study, the sanctions may lead to a lack of technology for economic development in Russia and to the resource base changes for the countries of the West. It is obvious that political differences can lead to structural economic problems. It may take many years to eliminate the consequences.

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[48] Further economic measures on Russia. URL: http://www.european-council.europa.eu/home-page/highlights/further-economic-sanctions-on-russia?lang=ru (accessed: 14.12. 2014)

[49] Евросоюз уточнил формулировки антироссийских постановлений. URL: http://www.rbcdaily.ru/economy/562949993243179 (accessed: 14.12.2014)

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[52] Норвегия потеряет миллиарды крон в нефтегазовой отрасли из-за антироссийских санкций. URL: http://rosinvest.com/novosti/1155231 (accessed: 14.12.2014)

[53] Сечин: Роснефть не намерена откладывать работы по участкам на шельфе Арктики. URL: http://www.arctic-info.ru/news/05-12-2014/secin---rosneft_--ne-namerena-otkladivat_-raboti-po-ycastkam-na-sel_fe-arktiki (accessed: 14.12.2014)

[54] Минэнерго: санкции против нефтяной отрасли России не нарушат планов по добыче на шельфе. URL: http://kommersant.ru/doc/2614266 (accessed: 14.12.2014)

[55] Минэнерго рассчитывает, что компании РФ не закроют проекты в Арктике. URL: http://ria.ru/economy/20141126/1035226823.html (accessed: 14.12.2014)

Conclusion

At last, we can draw some conclusions. First, countries of the Barents Euro-Arctic region have developed its own legal framework of cooperation based on domestic and international legal acts. Secondly, the region has a great potential for cooperation, in the oil and gas industry as well, due to the presence of some deposits on the continental shelf, the development of which requires experience in the offshore fields' development and the availability of technologies, including the environment friendly ones and the efficient use of resources. However, the cooperation is slowing down by a number of political factors, such as the lack of political will to commit the decisive action in the region, the presence of unresolved territorial dispute over the Lomonosov ridge, unclear interests of the non-Arctic states in the region, the worsening of the international situation in connection with the crisis in Ukraine and sanctions against the Russian Federation and the increase of military activity in the region.

Despite the factors that hinder the cooperation, the potential of the region is very high, especially in the long term perspective. The actors are aware of it, so cooperation in the region is not terminated, but now it is "frozen" state and will continue to be like that until the establishment of favorable conditions for its development, the reduce of tension, stabilization of the world hydrocarbons market. However, the parties should not forget about the region and should continue its gradual research and development.

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Reviewer: Kharlampeva Nadezhda Klimovna,
Candidate of Historical Sciences, Associate Professor

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Migratory processes as a factor of the territorial and settlement structure transformation in the Arkhangelsk region (1989—2010)

© Konstantinov, Alexander S. Candidate of Historical Sciences, Associate Professor, Department of State and Municipal Management, Higher School of Economics and Management, Northern (Arctic) Federal University named after M. V. Lomonosov.

Abstract. Migration processes occurred in the Arkhangelsk region in the period between 1989—2010 have not been researched well yet. The author analyzed the census. Some issues of the migratory behavior in the emerging market model are investigated. Migration processes are considered as one of the factors that influenced the changes that have occurred in the territorial settlement structure of Arkhangelsk region.

Keywords: *population censuses, migratory processes, transformation of territorial and settlement structure in the region.*

Migratory processes in the region between two population censuses 1989—2010

Between censuses in 1989 and 2010, the population of the Arkhangelsk region decreased by 370,310 people, or 23.6%. The greatest reduction occurred in the period between 1989—2002: 266,945 people, or 72.1% of the total number of human losses. In 2002—2010, compared to the previous period, the rate of population decline had decreased. That fact allows us to speak about some positive changes in the region.

However, the statement stabilization, in our opinion, is premature. This is evidenced by the census data on the state of migration processes in the Arkhangelsk region (table 1).

Table 1

Population of private households by the length of residents, sex and age groups In the Arkhangelsk region [1]

	Total amount of population,	Including living continuously from birth	not from birth
	All population. Men and women		
Cen-1989	1,569,679	736,189	833,490
Cen-2002	1,302,734	749,046	550,676
Cen-2010	1,199,369	511,868	669,754
	Urban population. Men and women		
Cen-1989	1,151,559	527,377	624,182
Cen-2002	975,832	556,364	417,536
Cen-2010	911,490	423,742	471,212
	Rural population. Men and women		
Cen-1989	418,120	208,812	209,308
Cen-2002	326,902	192,682	133,140
Cen-2010	287,879	88,126	198,542

In 1989—2010, the number of people continuously living in the place of permanent residence from birth decreased by 30.5%. At the same time, the number of migrants, i.e. people who were not born but are continuously living in the places of permanent residence, in 2002, compared to 1989, decreased by one-third. In 2010 this group increased by 14.3%, compared to 2002.

In 1989 736,189 people or 46.9% of the total population of the Arkhangelsk region lived there permanently and continuously since birth. However 833,490 people (53.1%) said that they had been living in Arkhangelsk region permanently since birth. The 2002 census recorded a slightly different ratio between these two groups of population. There was an increase in the group of people that considered Arkhangelsk region as the place of their permanent residence since birth. The increase was 12,857 people, at the same time the reduction of the number of people who considered the Arkhangelsk region as the place of their permanent residence occurred. The total amount of this group was 282,814 people. If we compare the data of population censuses 2002 and 2010, the difference between groups of the population that lived since birth is 237,178 people or 31.7%. The correlation between groups of residents, who had lived from birth, is 119,078 people. In 2010, it had decreased in comparison to 2002 or 21.6%.

In 1989, the number of migrants exceeded 97,301 (6.2%) the number of persons living in places of permanent residence since birth. In 2002, the situation was opposite: the number of

[1] ГААО. Ф.1892. Оп. 27. Д.40. Лл. 3—5,9—11,15—17,21,22,23,27,28,29,33,34,35,39,41,43. Всероссийская перепись населения 2002 года. URL: http://www.perepis2002.ru/index.html?id=13; http://www.gks.ru/free_ doc/new_ site/perepis2010/croc/perepis_itogi1612.htm (accessed: 31.10.2013)

living since birth exceeded the number of migrants to 198,370 people, or 15.2%. We can assume that in the early 1990s radical economic transformations of the Russian society had an impact on migration the mood of the people of the Northern region, who took a “wait and see” position. However, according to the 2010 census, the number of migrants, i.e. persons “born” increased by 157,886 people, or 13.1%, compared to the group of people who lived from birth in places of permanent residence. 17,747 people (1.5%) did not specify the length of residence in the place of permanent residence. Let us compare the measure of the ratio between the number of migrants (not from birth) and persons born and living in the place of permanent residence, in 1989, with the corresponding index of 2010. In 1989 it was 97,301 people or 6.2%, it is less than 60,585 people or 6.9% in 2010.

The urban population in 2010, compared to 1989, was decreased by 20.8% or 240,069 people. 73.2% of all are the people eliminated by natural reasons and migration processes in the period between the 1989 and 2002 censuses and 26.8% in 2002—2010. Let us compare the ratio between the two groups of the urban population, continuously living in the place of permanent residence in 1989 and 2010. In the group of persons “from birth” it fell down to the limit of 19.7%, while in the group of persons “not from birth” down to 24.5%. It is important to note that at the regional level this indicator decreased in the first group of the population by 30.5% and in the second — by 19.6%.

According to the results of the 1989 census, the proportion of the population that lived continuously in the place of permanent residence “from birth” was 45.8%. The population lived in these places “not from birth” was 96,805 more. In 2002 the number of persons living “from birth”, had increased in comparison to 1989, by 138,828 people, or 14.2%. In 2010, the proportion of urban population “from birth”, compared to 2002, fell by 10.5%, whereas in the group of the population “not from birth” it had increased by 8.9%.

Let us consider one more aspect. During the 2002 census of 1,932 people (0.2%) did not specify the length of residence in the place of permanent residence. In 2010 the number of such people increased up to 1.8% of the total population of the Arkhangelsk region.

According to the 1989 census, in the Arkhangelsk region there were 418,120 people belonged to the rural population, the 2010 census registered 287,879 people. The decrease was 130,241 people, or 1% to the level of 1989. The greatest decrease occurred in 1989—2002, when the countryside "lost" 91,218 people because of the natural and migration processes.

In 1989 208,812 people continuously resided in rural areas and considered them as the place of permanent residence since birth, in 2002 — 192,682 people, in 2010 — 88,126 people. It

amounted to the level of 1989, 92.3% and 42.2%, respectively. So, this group decreased by 120,686 people: 16,130 people in 1989—2002 or 13.4% and in 2002—2010 rural areas lost 104,556 people.

It is easy to notice that in the conditions of the “shock therapy” rural population “from birth” had chosen to stay in their places of permanent residence. But as soon as the economic situation stabilized, almost every second villager “from birth” had become a migrant, i.e. had left their permanent place of residence.

The second group of the rural population includes the residents who live continuously in the place of permanent residence since birth. In 1989 it consisted of 209,308 people, in 2002 — 133,140 people, in 2010 — 198,542 people. As a percentage of the 1989 level, compared to 2002 accounted for 63.6%, by 2010 it increased by 29.3 points and was close to the level of 1989 — 94.9%. As they say, the market had done its job, the intensity of migration movements in this group of the rural population had returned to normal.

The 1989 census recorded almost equal ration between groups of the rural population, continuously living in the place of permanent residence “since birth” (49.9%) and “not since birth” (50.1%). In 2002 59.0% of the rural population lived continuously since birth, 40.7% — not from birth. The difference between these groups was 18.3%. 2010 census data shows the opposite situation. 69.0% of the rural population lived in permanent place of residence “not since birth” and less than one-third (30.6%) — from birth.

In the group “*younger than the working age”* the population in 2010, compared to 1989, declined by 2.1 times, in cities and settlements of city type — by 2 times, in rural areas — by 2.3 times. The ratio between groups, continuously living in the place of permanent residence “since birth” and “not since birth” had changed in the period between the censuses of 1989 and 2010 insignificantly. In the common group of people of sexes, 83.7% of people lived in areas of their permanent residence “from birth”, in 2002 — 89.8%, in 2010 — 87.2%. The significant differences between urban and rural residents of this age were not observed.

In 1989-2010 the working-age population decreased by 24.4%, in cities — by 22.2%, in rural areas — by 32.3%. In 1989 34.9% of population lived continuously in the place of permanent residence “since birth”, in urban areas — 34.8%, in rural areas — 35.2% of the population. In 2002 there was a rise of this indicator up to 19.9%, 20.9% and 16.9%, respectively. In 2010, there was an opposite situation observed. At the regional level it fell down to 38.4%, or 3.5 points more than in 1989. In cities and urban-type settlements this indicator decreased by 10%, but exceeded the 1989 level by 8.3%. In rural areas in 2010, the proportion living “since birth” was 22.6%, or 29.5% less than in 2002 and 12.6% lower than in 1989. In general, according to the 2010 census, 60% of

working-age population resided continuously in the place of permanent residence from birth, in the cities — 55%, in rural areas — 76.9%.

The population *over working age* increased by 9.9% in 2010 compared to 1989. The growth occurred due to the urban population was 22.7%. At the same time the rural population decreased by 14.7%. According to the 1989 census, 28.6% of this group continuously resided in the place of permanent residence since birth, in the cities — 18.5%, in rural areas — almost every second. The 2002 census recorded an increase in the number of residents who had lived since birth in the place of permanent residence, in the common group (34.0%) and in cities (27.7%). As for the rural population, the rate is virtually unchanged (48.7%). In 2010, the situation in rural areas had worsened sharply. Only 14.3% of people continuously resided since birth in the place of permanent residence, which 34.4% higher than in 2002. In 2010 85.2% of the rural population of that age were migrants, in cities — 75.4%.

Migration flows in the Nenets Autonomous district

The population of the Nenets Autonomous district (NAD) was 53,912 people in 1989. By 2002 it had decreased by 24.2%. According to the 2010 census, 41,953 people lived in the NAD. It is 12,319 people or 22.9% less than in 1989. To the level of 2002 the population increased by 1.3%. The changes, occurred in the urban population structure, do not differ from data on the district. It must be noted that, the growth of the population in the urban areas is higher than the overall amount of population growth in the NAD between the censuses of 2002 and 2010 (4.7%). In the rural population structure the trend towards the reduction of the population could be clearly seen: it decreased by 22.8% in 2002 and 38.1% in 2010 by the level of 1989 (table 2).

Table 2

The population of private households in NAD by length of residence, sex and age groups (1989 census, 2002 census and 2010 census.)[2]

	Total	Including continuously living in the place of permanent residence		Total (%)	Including continuously living in the place of permanent residence		
		From birth	Not from birth		From birth	Not from birth	ratio (+-)
Urban and rural population. Men and women							
Cen-1989	53,912	22,634	31,141	100.0	42.0	57.8	-15.8
Cen-2002	40,867	22,437	17,696	100.0	54.9	43.3	11.6

[2] ГААО, ф. 1892, оп.27, д.40,лл. 3—5,18—20,33—35,48—50,63—65,78—80; Всероссийская перепись населения 2002 года. Calculations by the author (A.S. Konstantinov)

Cen-2010	41,593	18,340	23,020	100.0	44.1	55.3	-11.3
		Urban population. Men and women					
Cen-1989	34,336	12,132	22,067	100.0	35.3	64.3	-29.0
Cen-2002	25,763	12,528	12,533	100.0	48.6	48.6	0.0
Cen-2010	28,092	12,010	15,865	100.0	42.8	56.5	-13.7
		Rural population. Men and women					
Cen-1989	19,576	10,502	9,074	100.0	53.6	46.4	7.3
Cen-2002	15,104	9,909	5,163	100.0	65.6	34.2	31.4
Cen-2010	13,501	6,330	7,155	100.0	46.9	53.0	-6.1

According to the 1989 census, the population of the Nenets Autonomous District (NAD) was 31,141 people continuously resided in the place of permanent residence since birth. This meant that 57.8% of residents NAD represented the group of migrants. At the same time 42.0% or 22,634 were people who from birth had resided continuously in the place of permanent residence. The ratio between the first and second groups was 15.8 points in favor of migrants. According to the 2002 census 22,437 people (54.9%) continuously lived in the place of permanent residence since birth. Migrants were 43.3%, and it is 11.6% less than non-migrants. In 2010 the population of the NAD consisted of 55.3% of migrants, non-migrants — 44.1%. As you can see, the same situation was recorded by the 1989 census and its rate was 4.5 points higher than in 2010.

The amount of the urban population in the NAD in proportion to migrants was 64.3% in 1989, to the group “since birth” — 35.3%. In 2002 these rates were equal to 48.6%. According to the results of the 2010 census, the number of migrants was 3,855 people more than the number of people living in urban areas since birth. The difference was 13.7 points, 15.3 points below the 1989 level. In the composition of the rural population in 1989, the number of residents with a status “since birth” was 7.3% more than the number of migrants. In 2002 this rate was 31.4%. The 2010 census recorded the excess of the share of migrants by 6.1% in relation to population continuously lived in the place of permanent residence since birth.

Analysis of the census data in the Nenets Autonomous District in terms of the age groups allows identifying the following trends. In the group of the population *under working age*, every fourth was an international migrant in 1989. According to the two last censuses the proportion of migrants varied in the range of 14.7—16.8% and was below 1989 level. In the *working age* population group the difference between groups of migrants and non-migrants was 45.7% in 1989, 3.8% — in 2002 and 30.8% — in 2010. In the population *above working age* in 1989, two thirds of the population was residents of the places of permanent residence from birth, i.e. they were migrants. In 2010 this rate had risen up to the 73.2%.

In the group of population *younger than working age* its population had declined throughout the study period: in 2002 to the level of 1989 by 38.1% and in 2010 to 44.4%. In 1989—2010, the number of people of *working age* decreased by 20.8%, whereas in the group of *older working age* increased by 43.7%.

Let us refer to the census results in two main groups: continuously residing in the place of permanent residence "since birth" and "not since birth" (migrants).

In 1989—2002 the population of the NAD continuously lived in the place of permanent residence since birth had decreased (0.9%). The highest decline was observed in the group of the population *under working age* — 29.8%. The rural population decreased by 5.6%. At the same time, there was a growth of the urban population by 3.3%, of the *working age* population — 36.3%, *above working age*— 17.3%. A comparative analysis of census data 2002—2010 allows identifying the following changes. First, it is the trend of declining of the population in all the studied groups, continuously lived in the permanent places of residence since birth. The minimum reduction occurred in the group of population *under working age* (7.1%) and the highest — among the *working age population* (35.5%), as well as in the composition of the rural population (34.1%). Secondly, it is the decrease of the population *above working age* by 13 points to the level of 1989, *working age*— by 0.8%. In other groups there is a trend of declining of the population, compared to the 1989 level, the minimum was among the urban population (1,0%) and the highest — among rural (39.7%) and younger working-age (36.9%).

The amount of migrants, representing that part of the population of the NAD, which had been ordinarily resident in the place of permanent residence from birth, in the studied time period had changed. According to the 1989 census, 31,141 migrants lived in the district. In 2002, there were 17,696 migrants, or 56.8% of the total to the level of 1989. The 2010 census recorded 23,020 migrants, or 73.9% of the total in 1989. Almost the same situation was observed among workers in the structure of urban and rural population. It is easy to see the trend of growth in the number of migrants in 2002-2010. In the district, urban-type settlements, it was 17.1%, in rural area — 22.5%, working-age migrants — 16.3% and above working age — 48.3%. As for workers under working age, in 2002, there were 12,533 migrants, or 35.1% of the 1989 level and in 2010 — 36.7%.

Migration behavior in municipalities of the Arkhangelsk region

According to the 2010 census, there were 1,199,369 inhabitants of both sexes on the territory of the Arkhangelsk region, 1,181,222 people have indicated the length of residence in the place of permanent residence — 98.5% of the total population. 17,747 people or 1.5% of the people participated in the census did not indicate the duration of stay in the place of permanent

residence. In the Nenets Autonomous district (NAD), these rates were 41,593 (99.4%) and 233 people (0.6%) respectively.

Table 3

The population of private households by length of residence, sex and age group in the urban and municipal districts of Arkhangelsk region (the 2010 Census.)[3]

	Total	Indicated the length of residents in the places of permanent residence	Including people continuously living in the places of permanent residence		Didn't indicate the length of residents in the places of permanent residence
			Since birth	Not since birth	
Rural and urban population. Both sexes					
Arkhangelsk region, incl.:	**100,0**	**98.5**	**42.7**	**55.8**	**1.5**
Nenets Autonomous District	100.0	99.4	44.1	55.3	0.6
Arkhangelsk region without NAD	100.0	98.5	42.6	55.9	1.5
Municipal districts					
Arkhangelsk	100.0	97.8	54.9	42.9	2.2
Koryazhma	100.0	99.5	40.8	58.8	0.5
Kotlas	100.0	99.7	42.5	57.2	0.3
Mirniy	100.0	97.8	26.2	71.5	2.2
Naryan-Mar (NAD)	100.0	99.2	44.4	54.8	0.8
Novaya Zemlya	100.0	97.5	2.7	94.8	2.5
Novodvinsk	100.0	97.2	47.1	50.1	2.8
Severodvinsk	100.0	97.5	44.8	52.7	2.5
Municipal areas					
Velsky	100.0	98.6	32.3	66.3	1.4
Verhnetoemsky	100.0	99.3	27.9	71.4	0.7
Vilegodsky	100.0	99.9	27.3	72.6	0.1
Vinogradovsky	100.0	99.8	32.2	67.7	0.2
Kargopolsky	100.0	99.5	31.9	67.6	0.5
Konoshsky	100.0	98.5	33.9	64.6	1.5
Kotlassky	100.0	99.7	29.8	69.9	0.3
Krasnoborsky	100.0	99.7	32.0	67.7	0.3
Lensky	100.0	99.7	36.5	63.2	0.3
Leshukonsky	100.0	100.0	27.2	72.7	0.0
Mezensky	100.0	99.8	31.6	68.2	0.2
Njandomsky	100.0	99.2	40.6	58.6	0.8
Onezhsky	100.0	99.0	39.6	59.4	1.0
Pinezhsky	100.0	99.8	30.8	68.9	0.2
Plesetsky	100.0	99.7	31.8	67.9	0.3

[3] Продолжительность проживания населения Архангельской области в месте постоянного жительства. Т.10. Итоги Всероссийской переписи населения 2010 года. Статистический сборник. Архангельск: Территориальный орган Федеральной службы государственной статистики (Архангельскстат), 2013. С. 5—6. Calculations by the author.

Primorsky	100.0	98.4	34.7	63.7	1.6
Ustyansky	100.0	99.8	26.8	73.0	0.2
Kholmogorsky	100.0	99.9	32.3	67.6	0.1
Shenkursky	100.0	99.6	30.2	69.3	0.4
Zapoljarny (NAD)	100.0	99.7	43.7	55.9	0.3

The share of people continuously resided in the place of permanent residence in the Arkhangelsk region: 42.7% (“since birth”) and 55.8% (“not since birth”), in the NAD, it was 44.1% and 55.3% respectively.

In the Arkhangelsk region the composition of the *urban population* in these ratios looked as: 46.5 % — from birth and 51.5% — “not from birth”. Almost every second resident changed his place of permanent residence. In the NAD 42.8% of the urban population continuously lived in the place of permanent residence, whereas in the group “not from birth”, this rate was 56.5%, 4.8 points higher than the region overall.

Among the population of the eight urban districts only in Arkhangelsk the proportion of residents living there continuously since birth (54.9%) had been exceeded by 12 points the number of persons who lived in it from birth. In other municipalities the ratio was in favor of migrants. In Novodvinsk this advantage resulted in 3%, in Severodvinsk — 7.9%, in Naryan-Mar — 10.4%, in Kotlas — 14.7%, in Koryazhma — 18.0%, but in Mirny — 45.3%, in Novaya Zemlya — 92.1%.

In thirteen of twenty municipal areas had urban population living there. Eleven of them had the proportion of urban population, continuously lived in the place of permanent residence since birth ranged from 43.5% (Onezhsky district) to 29.8% (Ustjansky district). It is important to note that in those municipalities the decrease among the urban residents was higher than in the group of rural population. In Mezensky municipal area the ratio between these two groups was almost equal. The exception was the Lensky municipal district, where rural people who lived there from birth were 9.0% more than the population of the urban areas. In the urban areas of the rural municipal districts the proportion of residents who lived there “since birth” varied in the range of 55.4—59.8% (Onezhsky, Nyandomsky, Konoshsky, Velsky, Shenkursky areas), in the eight areas — from the amount of 61.8% (Zapoljarny, NAD) to 69.8% (Ustjansky district).

Only 30.6% of the rural population of the Arkhangelsk region indicated that they were born and continuously reside in the place of permanent residence. It is 15.9% less than the urban population. In the Nenets Autonomous District, the situation looks somewhat different. Within the District there is 46.9% of the rural population who lived there since birth. It is 4.9% more than those who lived since birth in the urban areas.

In rural municipalities the proportion of those who had lived there since birth in the composition of the urban and rural population of both sexes ranged from a high of 43.7% (Zapoljarny, NAD) to the minimum of 26.8% (Ustjansky district).

If you group all rural municipal districts according to the number of residents who live there and considers them as the place of permanent residence “not since birth”, it will look like this. The first group is the municipalities where the “not since born” population was 69.3—70%. This group includes Ustjansky (73.0%), Leshukonsky (72.7%), Vilegodskiy (72.6%) Verhnetoemsky (71.4%), Kotlas (69.9%) and Shenkursky (69.3%) areas. The second, the most numerous group, is consisted of the twelve municipal districts, where the proportion of residents who lived there “not since birth” ranged from 63.2% (Lensky district) to 68.9% (Pinezhsky district). Besides them, the Mezen (68.2%), Plesetsk (67.9%), Vinogradovsky and Krasnoborsky (67.7%), Kargopolsky and Kholmogory (67.6%), Velsky (66.3%), Konoshsky (64.6%) and Primorsky (63.7%) are included into this group. The third group consists of three municipal districts — Zapoljarny (55.9%), Nyandomsky (58.6%) and Onezhsky (59.4%).

As for the ratio among the rural population in the rural municipalities, continuously living in the place of permanent residence “since birth” and “not since birth”, they are not in favor of the first group. Among the twenty rural areas only in the Zapolyarny it was almost equal. In ten districts, the ratio ranged from 60.1% to 69.8% (Vynogradovsky, Krasnoborsky, Lensky, Mezensky, Nyandomsky, Onezhsky, Pinezhsky, Plesetsky, Primorsky and Kholmogorsky). In nine districts (Velsky, Verhnetoemsky, Vilegodsky, Kargopolsky, Konoshsky, Kotlassky, Leshukonsky, Ustjansky, Shenkursky) the range of fluctuations ranged from 71.4% to 75.0%.

Let us refer to the data analysis of a group of migrant residents in the Arkhangelsk region, who lived at the time of the 2010 census there and considered it as the place of permanent residence since birth (table 4). Proportion of residents who had changed their place of residence in 1991 and earlier was 59.6%, in 1992—2002 — 19.2%, in 2003—2010 — 21.2%. It is easy to notice that almost 60.0% of the census participants changed their place of residence during the years of Soviet power. In percentage terms the number of migrants in the first decade of this century was two percent less than in the second decade. In the Nenets Autonomous district 47.5% of population had changed their place of residence in 1991 and earlier. In the following decade the number of migrants was 23.3%. The number of living “not since birth in 2003—2010 increased up to 29.2%, i.e. by 5.9%.

Table 4

Migration behavior of population of the municipal areas of the Arkhangelsk region, whochanged the place of the permanent residence in 1991—2010.[4]

Territory	Including people who lives in the places of their permanent residence								
	Not from birth			Changes the place of permanent residence in 1992—2010			in 1991 and earlier		
	City and rural areas	City	Rural areas	City and rural areas	City	Rural areas	City and rural areas	City	Rural areas
Arkhangelsk region incl.:	100.0	100.0	100.0	40.4	38.8	44.1	59.6	61.2	55.9
NAD	100.0	100.0	100.0	52.5	55.5	45.6	47.5	44.5	54.4
City districts									
Arkhangelsk	100.0	100.0	100.0	38.2	38.3	51.1	61.4	61.8	48.9
Korjazhma	100.0	100.0	100.0	33.8	33.8	-	66.1	66.1	-
Kotlas	100.0	100.0	100.0	40.4	40.4	47.5	59.7	59.7	52.5
Mirny	100.0	100.0	100.0	60.9	60.9	-	39.1	39.1	-
Narjan-Mar	100.0	100.0	100.0	55.3	55.3	-	44.7	44.7	-
Novaja Zemlja	100.0	100.0	100.0	94.4	94.1	97.2	5.6	5.9	2.8
Novodvinsk	100.0	100.0	100.0	30.1	30.1	-	69.9	69.9	-
Severodvinsk	100.0	100.0	100.0	30.1	29.8	52.0	70.0	70.2	48.0
Municipal districts									
Velsky	100.0	100.0	100.0	46.1	44.2	47.8	53.9	55.7	52.1
Verhnetoemsky	100.0	100.0	100.0	42.4	-	42.4	57.6	-	57.6
Vilegodsky	100.0	100.0	100.0	41.7	-	41.7	58.3	-	58.3
Vinogradovsky	100.0	100.0	100.0	41.9	44.9	40.4	58.2	55.1	59.7
Kargopolsky	100.0	100.0	100.0	46.8	46.1	47.7	53.1	53.8	52.4
Konoshsky	100.0	100.0	100.0	42.8	42.5	43.0	57.2	57.4	57.1
Kotlassky	100.0	100.0	100.0	45.5	43.7	47.0	54.4	56.3	53.0
Krasnoborsky	100.0	100.0	100.0	42.3	-	42.3	57.7	-	57.7
Lensky	100.0	100.0	100.0	41.2	47.9	37.1	58.8	52.0	62.9
Leshukonsky	100.0	100.0	100.0	41.3	-	41.3	58.7	-	58.7
Mezensky	100.0	100.0	100.0	36.2	38.7	32.5	63.8	61.3	67.5
Njandomsky	100.0	100.0	100.0	43.0	44.3	39.6	57.1	55.6	60.4
Onezhsky	100.0	100.0	100.0	42.1	40.5	45.4	57.8	59.5	54.7
Pinezhsky	100.0	100.0	100.0	42.7	-	42.7	57.3	-	57.3
Plesetsky	100.0	100.0	100.0	43.2	42.2	45.2	56.9	57.7	54.8
Primorsky	100.0	100.0	100.0	50.6	-	50.6	49.4	-	49.4
Ustjansky	100.0	100.0	100.0	45.4	43.0	46.4	54.6	57.0	53.6
Kholmogorsky	100.0	100.0	100.0	38.1	-	38.1	61.9	-	61.9
Shenkursky	100.0	100.0	100.0	44.3	44.8	44.0	55.8	55.3	56.0
Zapoljarny	100.0	100.0	100.0	49.5	56.0	45.6	50.5	44.0	54.4

[4] Продолжительность проживания населения Архангельской области в месте постоянного жительства. Т.10. Итоги Всероссийской переписи населения 2010 года. Статистический сборник. Архангельск: Территориальный орган Федеральной службы государственной статистики (Архангельскстат), 2013. С. 5—6. Calculations by the author.

In urban districts the situation is ambiguous. In the municipality Novaja Zemlja there were only 5.6% of residents indicated that they had changed their place of permanent residence in 1991 and earlier, 30.2% — 1992—2002 and almost every third in 2003—2010. In Mirny among the people living there since birth 39.1% changed their place of residence in 1991 and earlier. Every third changed their place of permanent residence in 2003—2010 and slightly more than 28% in the first decade of this century. In Naryan-Mar there were 44.7% of persons who had changed their place of permanent residence in the Soviet period, 23.6% and 31.7% had done it in 1992—2002 and 2003—2010 respectively. In other urban districts, the number of residents who had changed their place of permanent residence in 1991 and earlier were ranged from 66.1—70.0% (Koryazhma, Severodvinsk, Novodvinsk) to 59.1—61.4% (Kotlas, Arkhangelsk). Every fifth inhabitant of Kotlas and Koryazhma indicated change of their residence in 1992-2002, in other cities, this indicator ranged from 13.5% (Severodvinsk) to 18.4% (Arkhangelsk). In Novodvinsk it was 17.0%. In the following decade the proportion of those were not born at the place of their permanent residence decreased in comparison to the first decade in Novodvinsk (13.1%) and in Koryazhma (14.1%). It remained unchanged in Kotlas, increased slightly within 1.4—3.1% in Arkhangelsk and Severodvinsk.

Rural municipal districts could be divided into two groups. The first group includes seven districts with rural populations (Verhnetoemsky, Vilyegodskiy, Krasnoborsky, Leshukonsky, Pinezhsky, Primorsky and Kholmogorsky). In these areas in 1991 and before 1991 49.4—61,9% of the rural population had changed the place of permanent residence. In 1992—1995, the figure remained within the boundaries of 6.3—8.4%. In 1996-2002 it ranged within 11.0—12.8%, in 2003—2010 20.3—28.7%.

The second group consists of thirteen districts. They are home to both urban and rural population. The first subgroup is seven municipal districts (Kargopolsky, Konoshsky, Kotlassky, Onezhsky, Plesetsky, Ustjansky and Velsky). In 1991 and earlier, the proportion of residents of urban settlements who had changed their residence was more than the decrease among the rural population. This tendency had been continued in 1992—1995 in three districts. In Ustjansky district, this ratio was zero. In 1996—2002 the same tendency occurred in the remaining three districts (Velsky, Konoshsky and Ustjansky). In 2003—2010 the ratio in percentage terms changed in favor of the inhabitants of rural settlements in all the seven municipal districts.

The second subgroup consists of Vynogradovsky, Lensky and Zapoljarny (NAD) areas. There is the difference between rural and urban residents, who changed the place of residence in 1991 and earlier, ranged from 4.6% to 10.9%. In subsequent years, the reverse tendency was observed

when the urban population was more actively changing their place of permanent residence than the residents of the rural settlements. The third subgroup consists of Vynogradovsky, Lensky, Mezensky, Nyandomsky, Shenkursky and Zapoljarny (NAD) areas. The ratio between rural and urban residents, who had changed the place of residence in 1991 and earlier, ranged from 0.7% to 10.9% in favor of the rural population. In Vynogradovsky, Lensky and Zapoljarny areas (in 1992—2010 years) the urban population was more actively changing their place of permanent residence than residents of the rural settlements in Nyandomsky and Mezensky districts (in 1996—2010) and in Shenkursky district (in 1996—2002).

Interregional migration in 1989—2010 [5]

In the Arkhangelsk region 136,975 people changed the place of permanent residence January 1989 — September 2002. They represented the population in private households aged 15 years and more. 86.6 % of them were the residents of the Russian Federation and 11.2% — the residents of the CIS countries, Baltic States and other countries. 2.2% did not specify the area of their new residence.

In October 2009 — October 2010 31,954 people changed their place of residence, including those who had lived on the territory of the Russian Federation — 29,560 people or 93.6%. 795 people or 2.5% were from the CIS countries, Baltic States and other countries of the world. 1,239 people (3.9%) did not specify the territory of their origin.

Comparative analysis of data statistical of the 2002 and 2010 censuses by territory of residence in Russia due to the Federal districts of the Russian Federation revealed the following tendencies. In the North-West and Far East Federal districts indicators remained unchanged, 85.0—85.2% and 1.1—1.0% respectively. In the Central Federal district there was the minimal growth from 5.1% to 7.0%, in the North Caucasus — 1%. In other Federal districts this indicator had shown the decrease.

If we consider the direction of migration of the population of the Arkhangelsk region in the North-West Federal district, we will observe more intense outflow to the Leningrad region and St. Petersburg. In Vologda region this indicator remained unchanged. It is necessary to note the slight increase of migrants in Murmansk (0.7%) and Pskov (0.5%). In other regions of the North-West Federal district the rate of migration was not changed (Novgorod region) or tended to decrease.

[5] URL: http://www.perepis2002.ru/index.html?id=19. Продолжительность проживания населения Архангельской области в месте постоянного жительства. Т.10. Итоги Всероссийской переписи населения 2010 года. Статистический сборник. Архангельск: Территориальный орган Федеральной службы государственной статистики (Архангельскстат), 2013. С.46—49. Calculations by the author.

It seems that the published official statistics on population and housing censuses in 2002 and 2010 reflect only the general directions of migration in the Arkhangelsk region. Let us pay attention to the time periods when the migration processes were registered: eleven and a half months during the 2010 census and 13 years and nine months — according to the 2002census. Therefore, the month was assumed as the basic unit for the calculations. The time period of the 2002 census was 165 months and for the 2010 census — 11.5 months.

The monthly average of the entire group of migrants according to the 2010 census was 3.3 times higher than in the 2002 census. By the place of residence in the Russian Federation the difference was 3.6 times. The intensity of migration was relevant for all Federal districts. In the Central district it increased by 5.0 times, in the North-West by 3.6 times and in Far East and North Caucasus by 3.4 times. In other districts this figure was up to the 1.5—2.7 times. Let us pay attention to the increase in the monthly average of people who did not specify territory of residence: 108 people in the 2010 census and 18 in the 2002 census. So, the increase was by 6 times.

Let us analyze the data on the North-West Federal district. According to our calculations, in 2010, compared to the results of the 2002 census, the intensity of the migration of the population of the Arkhangelsk region to the Pskov region had increased by 9.1 times, to St. Petersburg — 8.2 times, to the Leningrad region — 8 times, to the Murmansk and Vologda region 4.1 and 4.5 times respectively. The indicator in the Arkhangelsk region had grown by 3.4 times, in the Novgorod region — 3.3 times. In other territories of the North-West district changes ranged from 1.8 to 2.4 times.

According to the 2002 and 2010 censuses, since January 1989 the Nenets Autonomous district had lost 5,221 people and after October 2009 — 1,401. 4,486 people (85.9%) chose the territory of permanent residence in the Russian Federation and 1,401 people (85.8%) respectively; the CIS, the Baltic States and other countries of the world — 613 people (11.7%) and 125 (8.9 percent). 122 people (2.3%) and 74 people (5.3%) did not specify the area of their new residence.

If we analyze the statistics on the Federal districts in the Russian Federation in January 1989 and at the time of the census 2002 we will get 69.3% of migrants who lived in the Nenets Autonomous district, North-West Federal district. In 2010 this indicator decreased by 1.3 points. The second area is Volga with its result of 4.4% and 5.6%, then the Central Federal district — 4.3% and 4.6%, South Federal district — 4.4% and 2.1%, Siberian and Ural Federal districts — 1.5% in 2002 and 1.1% and 2.1% in 2010. In the Far East Federal district this figure has not changed and it is 0.6%.

In 2002, in the Nenets Autonomous district 3,619 people confirmed the fact that they had changed their permanent residence within the boundaries of the North-West Federal district. Thus 3,118 people (86.2%), who had changed their place of permanent residence, had not left the

territory of the Arkhangelsk region. Among them 2,038 people moved to NAD. So, it was 56.3% of all migrants.

According to the 2010 census, the population of the private households who had changed their place of permanent residence after October 2009, in the North-West Federal district was 953 people. Every second migrant had changed his permanent residence within the territory of the Nenets Autonomous district and 86.7% — within the Arkhangelsk region. As for the other regions of the Russian Federation in the Northwest Federal district, almost all of them, except St. Petersburg, experienced the decrease of the migration outflow from the Nenets Autonomous District.

Comparative analysis of migration of the population of private households in Nenets Autonomous district who had changes their residence in January 1989 — September 2002 shows that the was 32 migrants per month, whereas according to the 2010 census there were 122 migrants per month. It means that the intensity of the migration increased by 3.9 times. Within the boundaries of the Russian Federation and the North-West Federal district in particular the increase was by 3.8 times, in the Ural district — 5.5 times, in Volga — 4.9 times, in the South district — 4.6 times. In other districts it was lower.

Our calculations for the North-West Federal district show that the intensity of migration from the Nenets Autonomous district to St. Petersburg increased by 10.1 times, to Pskov region — by 9.6 times, to Arkhangelsk region — by 3.8 times, to Leningrad region — by 3.4 times. In the other areas of the North-West Federal district the changes were within the 1.3—3.2 times.

Interregional migration in 2002—2010: unequal exchange

Let us refer to the analysis of migration flows of the population of the Arkhangelsk region that took place on its territory and beyond its borders. The census of 2002 and 2010 provide an excellent opportunity to identify the correlation between the two groups of the population of this Northern region. The first group is the residents who were born and permanently resided on the territory of the Arkhangelsk region (“natives”). The second group includes the population that was born on the territories of other parts of the Russian Federation and foreign countries, but at the time of the census they resided on the territory of the Arkhangelsk region (“newcomers”).

According to the 2002 census, in the territory of the Arkhangelsk region lived 1,336,539 people, the 2010 census —1,227,626 people. The population of the region decreased by 108,913 people, or 8.1%.

In 2002, there were 1,336,539 people living on the territory of the Arkhangelsk region, 1 055,083 people (78.9%) had been born in this region. In 2010 the population of the Arkhangelsk

region was amounted to 1,227,626 people, including those who were born there — 995,277 people, or 81.1%. The growth of “natives” was the lowest, just 2.2%. However, between the censuses of 2002 and 2010 the population decreased by 108,913 people, including “natives” — by 59,806 people or 54.9%.

As for the population which we have attributed to the group of “newcomers”, this group had arrived from the other areas of birth, but lived on the territory of the Arkhangelsk region. In 2002 this group consisted of 281,456 people. 210,245 people were born in other regions of the Russian Federation (74.7%) and 68,755 people (24.4 per cent) were born abroad. 2,456 people or 0.9% did not indicate the territory of their birth. The 2010 census recorded a population decline among the people born on the territories of other regions of the Russian Federation and living in the Arkhangelsk region during this period. The amount was 44,390 people, or 21.1%. At the same time 4.4 time increase of the number of persons, who lived in the territory of the region, but did not indicate the territory of their birth, was registered.

If we consider the data in terms of Federal districts, the number of people born in the Central and Siberian District and resided on the territory of the Arkhangelsk region, between the censuses of 2002 and 2010 was reduced by a quarter. In the Ural, North Caucasus, Southern and Volga Federal districts this index fluctuated in the range of 17.8% to 20.0%, in the Far East and North-West Districts, it was 11.5% and 6.6% respectively.

Speaking about the subjects of the Russian Federation, we should note that only in five of them had the increased number of residents migrated to the Arkhangelsk region, but born somewhere else. Such territories are: the Jewish Autonomous area, the Chukotka Autonomous district, the Republic of Khakassia, the Nenets Autonomous district and the city of Moscow. However, it should be noted that population growth was minimal.

The study of the migration of the population of private households, whose place of birth was the Arkhangelsk region but they resided on the territory of the other subjects of the Russian Federation in the time of censuses, revealed the following tendencies. In 2002, the Arkhangelsk region was called the place of birth by 1,400,302 people, whereas in 2010 — by 1,298,059 people. Thus, the number of natives in the Arkhangelsk region decreased by 102,243 people, or 7.3%. For comparison, the Arkhangelsk region was left by the amount of people equal to the population of the Vinogradovsky, Krasnoborsky, Leshukonsky, Mezensky and Lensky rural municipal districts.

This tendency was relevant for all Federal districts. At the same time, as the analysis of migration flows of the Northern region shows, the territories most preferred by northerners were the territories of the two Federal districts —the Central and North-West ones. Thus, the share of

migrants born in the Arkhangelsk region in the North-West Federal district had increased from 84.9% in 2002 to 86.5% while the total number of migrants was reducing at 65,896 people.

In the Central Federal district the increase was 0.2% (from 6.7% to 6.9%) and the number of migrants declined in the period between censuses at 3,870 people. Despite the decline in the share of the total stock of migrants by 0.3 and 0.2 points, the most preferred places to stay remained on the territory of the Russian Federation, in the Volga and Southern Federal districts.

In the interval between the censuses of 2002 and 2010 the number of migrants born in the Arkhangelsk region and resided on the territory of Moscow and Yaroslavl regions of the Central Federal district, increased by 678 and 807 people respectively. In the North-West Federal district, the largest inflow of migrants-natives from the Arkhangelsk region was to St. Petersburg and to the Nenets Autonomous district — 1,922 and 1,386 people.

Analysis of the data of the 2002 and 2010 censuses reveals a tendency described as the "unequal exchange" of migrants-natives group of the Arkhangelsk region, living on the territory of other subjects of the Russian Federation, and a group of migrants, who were given a birth in other subjects of the Russian Federation, but living on the territory of the Arkhangelsk region.

In 2002 and 2010, the number of natives from the Arkhangelsk region, who lived in the Southern Federal district, was in excess of 2.9 times to the number of migrants born in the territory of other subjects of the Russian Federation, but lived on the territory of the Arkhangelsk region in the time of the census. These ratios were in the Central Federal district, respectively, 1.8 and 2.3 times, Ural — 1.9 and 1.8-fold, Siberian — 1.5 and 1.4 times, North Caucasus — 1.4 and 1.2 times. According to the population census 2002, in the Far East Federal district there were 13,765 people born in the Arkhangelsk region, which is three times more than the number of residents born in these regions of Russia and lived in the Arkhangelsk region. In 2010 this ratio was almost equal: 4,742 people born in the Arkhangelsk region and 4,062 people born in the Far East regions, who lived on the territory of the Arkhangelsk region. As for the Volga and North-West Federal districts, the ratio between the studied groups of migrants was unchanged.

In 2002 41,546 people lived in the Nenets Autonomous District, in 2010 —42,090 people. The population has increased by 544 people, or 1.3%. And the number of NAD residents increased from 29,258 people in 2002 to 29,828 people in 2010, or by 570 people. The share of this group of residents among the total amount of population increased from 70.4% to 70.9%.

Let us refer to the analysis of data on migrants residing on the territory of the NAD, but born in other territories of Russia. In the study period the number of people arrived from the other territories of the Russian Federation and living at the time of the census in the Nenets Autonomous

district increase by 551 people, or 1%. The proportion of the population born on the territory of foreign countries decreased from 5.9% to 5.8%. The number of persons lived in the NAD with unidentified territory of their birth, decreased from 642 people (1.5%) in 2002 to 97 people (0.2%) in 2010, or 1.3%.

In the period between the censuses of 2002 and 2010, the greatest inflow of the population to the NAD was observed from the Volga and North-West Federal districts (territories of birth). In other Federal districts (except North Caucasus), it declined in 2010 compared to the 2002.

There are representatives of the 26 subjects of the Russian Federation who live on the territory of the NAD: the Volga and Ural Federal Districts — seven subjects of the RF, from the North-West and North-Caucasian — four subjects, the Far East — three regions, the South Federal District — one subject. Among the subjects of the Russian Federation, except for the Arkhangelsk region, let us to highlight the republics of Bashkortostan, Mari El, Dagestan and St. Petersburg.

The second group of migrants is the migrants born in the territory of the NAD, but living on the territory of other subjects of the Russian Federation. There were 39,339 residents, whose place of birth was Nenets Autonomous District. In 2002 31,685 people lived in the territory of the North-West Federal District, or 80.5% of the total population. At the same time 29,258 people from 31,685, or 92.3%, indicated that their residence is NAD. 7.5% of the natives of this district called the places of the Central Federal District the place of residence. For the Volga Federal District the percentage was 4.5%, for South — 4.9%. In other Federal districts, this indicator ranged from 1.4 to 0.4%.

According to the census of 2010, among the 33,119 of residents born on the territory of the Nenets Autonomous District 32,109 people or 97.0% lived in the North-West Federal district. 92.9% of them lived on the territory of the NAD. Let us pay attention to the decrease in the number of natives of the Nenets Autonomous District, who lived on the territory of the other Federal districts. For example, in the Central Federal District, this rate was 1.5%, the rest — from 0.5% to 0.1%. Overall number of the born on the territory of the NAD between the censuses of 2002 and 2010 and resided on the territories of other subjects of the Russian Federation decreased by 6,220 people, or 15.8%.

The main consequences of the migratory processes and their impact on the territorial settlement structures of the region

In the cities of the Arkhangelsk region and Naryan-Mar, the population decreased by almost a quarter. At the same time in the composition of the urban population, continuously living

in the place of permanent residence, there was a tendency of growth of residents who were not natives and came from cities and other settlements, except Arkhangelsk.

In the period between the censuses of 1989 and 2010 the population in towns has decreased by 88,227 people. 44.4% of them became a part of the rural population, as twenty of forty villages lost their status and moved into the category of rural settlements. During this time the number of inhabitants in twenty urban areas decreased from 61,963 to 39,167 people, i.e. almost by one third. The greatest “loss” of the population occurred in the villages Amderma of Nenets Autonomous District (90.9%), Voloshka of Konoshsky district (63.2%), Ust-Shonosha of Velskydistrict (51.3%). At the same time, the population decline was insignificant in the village Ertsevo, Konoshskydistrict— by 8.7%, Uemsky (Primorsky district) and Lukovetsky (Kholmogorsky district) — by 11.8% and 13.2% respectively,

The main cause of population decline in the urban-type settlements and their transfer to the status of rural settlements is the deterioration of living conditions of the residents caused by the negative economic and social consequences of the radical economic transformations in the Russian society.

The migration of the population in the region has had negative impact on the population of the districts’ centers. The overall fell down by 31,354 people, or 12.4% during the study period. If we analyze the data on villages in the districts’ centers, we will see that the rural population decreased from 30,496 people in 1989 to 28,574 people, or 6.3%. Only two regional centers experienced the increase of population. In the village Illino-Podomskoe it increased by 11.2%. In the village Leshukonskoye the number of residents increased by 1,110 people, or 33.7%. In other administrative centers of rural areas the population decline ranged 6.9—20.3%.

Migration processes occurred in the period between the population censuses of 1989 and 2010 had a negative impact on the territorial and settlement structure in rural areas of the Arkhangelsk region. Basing on the investigated materials it is possible to ascertain the tendency of the living space “compression” of the rural areas. We used two indicators to characterize this process: the changes of the number of rural settlements in the studies time period and predictive evaluation of possible changes in the territorial and settlement structure of the rural areas of the region.

In 2010 in rural areas of the Arkhangelsk region there were 3,068 rural settlements that are 503 less (14.1%) than in 1989. In Lensky municipal district every third village was left by its inhabitants, in Kargopol and Krasnoborsk municipalities — every fifth, in Plesetsk — every fourth. In three municipal districts the “loss” was the lowest — 1.5—5.3% of the total number of the rural

settlements. In five district municipalities, this index varied in the range of 10.0%, in other — 10% or more.

Let us refer to the analysis of the data using the second indicator — predictive evaluation of possible changes in the territorial and settlement structure in the rural areas of the region (table 5). We are talking primarily about a group of the rural settlements with population of 1—10 people. According to the census of 2010, there were 1,417 settlements, 46.2% of the total.

Table 5

Predictive estimate of the settlements number in the rural areas of the Arkhangelsk region

Rural municipal districts	Total number of the rural settlements 2010 Census	Including the rural settlements with the population of 1-10 people 2010 Census	Proportion of the rural settlements with the population of 1-10 people (%)
Velsky	258	113	43.8
Verhnetoemsky	223	90	40.4
Vilegodsky	143	68	47.6
Vinogradovsky	90	25	27.8
Kargopolsky	169	84	49.7
Konoshsky	126	48	38.1
Kotlassky	216	144	66.7
Krasnoborsky	239	144	60.3
Lensky	88	47	53.4
Leshukonsky	44	10	22.7
Mezensky	41	12	29,3
Njandomsky	116	60	51.7
Onezhsky	83	25	30.1
Pinezhsky	108	21	19.4
Plesetsky	173	88	50.9
Primorsky[6]	194	78	40.2
Ustjansky	199	71	35.7
Kholmogorsky	358	194	54.2
Shenkursky	200	95	47.5
Total in districts	**3,068**	**1,417**	**46.2**

The transformational change in the territorial and settlement structure of the rural municipalities proceeds by fits and starts. It is more intensive in Leshukonsky, Mezensky, Pinezhsky, Onezhsky and Vynogradovsky district municipalities. 20.0—30.0% of settlements with a number of population of 1-10 people could be found there. At the same time in Kotlas and Krasnoborsk municipal areas, this rate was 66.7% and 60.3% respectively. In Kholmogorsky, Lensky,

[6] Including the settlements disposed on the Solovetsky islands.

Nyandomsky, Plesetsky and Kargopolsky districts almost a half of the rural settlements could be left empty in the coming decades. This list might be longer and include six other rural areas, whose share in the total number of settlements ranges from 35.7—47.6%.

Conclusion

1. The population of the Arkhangelsk region had decreased by 23.6%, the urban population — by 20.8%, rural —by 31.1% between the 1989 and the 2010 censuses. In the Nenets Autonomous District, these rates did not differ from the regional level. The greatest population decline occurred in the interval between the censuses of 1989 and 2002. The period between the year 2002 and 2010, the population decline was observed in the region as a whole and was registered for urban and rural settlements in particular. In the NAD the number of the population increased in the whole district because of the growth of the urban population, whereas in rural areas it continued to decline. In 1989—2010, there had been a decline of the population in under working age and working age groups. At the same time there was an increase of the population above the working age at the cities and settlements of city type mainly.

2. The census recorded the changes in the population structures of the Arkhangelsk region and Nenets Autonomous District. In 1989 the population living in places of permanent residence from birth, exceeded the population “not from birth”. In 2002, this ratio has changed in favor of the population “from birth”. In 2010, the situation was the same as in 1989.

3. Urban districts, except Mirniy and Novaja Zemlja, are characterized by the predominance of individuals, changed the place of residence in 1991 and earlier. In the following two decades, the percentage of residents included into this group had changed slightly in urban districts, with the exception of the Mirniy and Novaja Zemlja. In two of the twenty municipal districts the proportion of residents of urban settlements and rural settlements who had moved before 1992 was higher than in the years 1993—2010.

4. The proportion of migrants, who had changed their permanent residence on the territory of the Arkhangelsk region, was 71.4% in 2002 and 67.8% in 2010 of the total population of the private households who had changed their place of permanent residence in October 2002 and after October 2009 on the territory of residence in the Russian Federation. If we consider the North-Western Federal district, we will get 83.9% as the total number of migrants who had changes their place of permanent residence within the territory of the Arkhangelsk region in October 2002. According to the 2010 census, this rate fell down to 79.6%

The number of migrants who changed their permanent place of residence on the territory of the Nenets Autonomous district remained unchanged and was 85.6% of the total population

according to census of 2002 and 2010. This rate was changed according to the intensity of migration within the boundaries of the residence area within the North-West Federal District from 69.3% in 2002 to 68.0% in 2010.

5. Our calculations of the migratory movements of the population of private households per month, allows us to make a conclusion according to which the intensity of migratory movements in the time period after October 2009 was considerably higher than the rates recorded by the 2002 census. In general, across all territories, including foreign countries, the difference was 3.3 times, in the Russian Federation and the North-West Federal district — 3.6 times, in the Arkhangelsk region — 3.4 times. The index of the intensity of migratory movements in the Nenets Autonomous District in the time period after October 2009 exceeded the same indicator recorded by the 2002 census significantly. In total, across all territories, including foreign countries, the difference was 3.9 times, in the Russian Federation, the North-West Federal District and the Arkhangelsk region — 3.8 times.

6. Migration in the region was a factor that significantly influenced the changes occurred in the studied period between the population censuses 1989—2010 in the territorial and settlement structure of the rural areas. Projections of its transformation show the presence of the reduction of almost a half of the rural settlements with population of 1—10 residents. Thus, it is possible to speak about further living space compression in the Arkhangelsk region.

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Reviewer: Ulyanovskiy Viktor Ivanovich,
Doctor of Sociology, professor

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Russian Arctic increases with islands

© Lukin Yury F., Doctor of Historical Sciences, Professor, Honorary Worker of Higher Education of the Russian Federation, Editor-in-chief of the electronic scientific journal “Arctic and North” of NArFU.
E-mail: lukin.yury@mail.ru

Abstract. Relevance of the topic is defined by the fact that neither the Russian Empire nor the Soviet Union nor the Russian Federation have passed a law that defines the status, composition and the borders of the Russian Arctic, both on land and in the waters of the Arctic Ocean. It is necessary to find system solutions for a number of urgent problems of the Arctic management modernization: 1) monitoring of Russian islands in the Arctic Ocean, administrative, legal and environmental responsibility for the departmental use of their lands and adjacent water area; 2) adoption of the basic federal law "The Arctic zone of the Russian Federation"; 3) effective functioning of the Government Commission on the Arctic; 4) development of interregional integration institutes; 5) implementation of state program "Socio-economic development of the Russian Arctic for the period up to 2020"; 6) transition to project management, the formation of the portfolio of the Arctic projects; 7) the possibility of establishing the Bank for Reconstruction and Development in the Arctic, Arctic state commercial bank.

Keywords: *Russian Arctic, islands, the basic federal law "Arctic zone of the Russian Federation", the Arctic management, ministry, interregional integration, the state program, Arctic projects, portfolio, banks*

Introduction

New discoveries in the Arctic actualize the monitoring of the Russian islands in the Arctic Ocean, including the newly opened, a clear definition of administrative law and environmental responsibility of the departmental use of lands and adjacent waters in the federal and regional levels Today it is not only the legitimate object of control in the Russian Arctic missing, but also the subject of scientific research. Should we only manage the land? But Russia is a sea power that has naval power — thalassocracy. Land management approach in the Arctic macro-region leads to the formation of a supposedly empty space of the Russian Arctic. There are so-called “black holes”, which can be devastating in the new Cold War and the attempts to make Russia an outcast in today's multipolar world. Long time ago there still had not been realized the need to establish the basic

federal law on the subject of governance, composition, status, the boundaries of the Russian Arctic, including the waters.

Arctic management includes state and municipal management, strategic, project management of the changes in the Russian Arctic. The concepts of the “Arctic zone of the Russian Federation” and the “Russian Arctic” are used in the text of the article as identical. Scientific methods of research, (analysis, synthesis), and the methods of individual scientific disciplines (history, management, geopolitics) are used as well. Abbreviations: the Arctic zone of the Russian Federation — AZRF, the Arctic Ocean — AO, the North Sea Route — NSR, a federal law — FL, municipalities — MO, special economic zone — SEZ, oceanographic research vessel —ORV, Ministry of Foreign Affairs — MFA, Franz Josef Land —FJL, United Nations Convention on the Law of the Sea —- UNCLOS.

New Russian island in the Arctic Ocean

In the 21st century in the Arctic centuries glaciers are melting and previously known islands begin appear. Russia starts to grow with islands in the Arctic Ocean that increase the territorial waters of Russia, its special economic zone (SEZ)[1]. The crew of the transport helicopter Mi-26 in 2013 carried the loads from the Arctic port of Tiksi, Yakutia to Kotelny Island (New Siberian Islands), where an Arctic military base was created and the airfield "Temp" was restored. Along the way, the pilots noticed a small piece of land not marked on maps. The commander assistant of the Mi-26 Vitaly Mikhalchuk said that the island was called Yaya because everyone started shouting: “This is me, I found it!” In winter the island was not visible. And then it stood up as if from the depths. So the helicopter crew increased the area of Russia, even for a few hundred square meters”[2].

Picture 1.Yaya Island.

[1] Россия обрела новый остров в Северном Ледовитом океане // Арктика и Север. 2014. 9 октября. URL: http:// narfu.ru/aan/news.php?ELEMENT_ID=175918 (accessed: 11.11.2014).

[2] Герман М., Пронякин К. Остров Яя существует // Газета Гранд Экспресс. № 42. 15—22 октября 2014 г. URL: http://www.habex.ru/paper/684/12902/ (accessed: 27.10. 2014).

To confirm or refute the geographical discovery had become possible only a year later. In August 2014 the oceanographic research vessel (ORV) of the Baltic Fleet, “Admiral Vladimir” came from Kronstadt, seaworthiness of which is able to ensure a safe navigation in all seas and oceans. In January 18, 2015 after five months navigation the ship returned to Kronstadt. The expedition found out that Gulf of Krivoshein of the Novaya Zemlya archipelago was actually a strait, documented the formation of a new cape, collapse and retreat of glaciers on average of four to five kilometers inland. The other merits of the crew was the correction of maps that confirmed the discovery of the Yaya island, located in the Laptev Sea and had not previously shown on the map. In general, the expedition had found about two dozen new geographical objects[3].


Picture 2.Captain Alexandr Pyshkin

The captain of the ship was a hereditary seaman, Captain of the 1st rank reserve Alexander Vyacheslavovich Pyshkin. The ORV crew managed to land on the island of Yaya and determine its exact coordinates. The island is a small sandbank area of about 500 square meters. The island rises to a height of not more than a meter above sea. Members of the expedition on the “Admiral Vladimir” managed not only to confirm the discovery made by Khabarovsk pilots, but also to map several objects: new islands in the Novaya Zemlya area, straits and capes. The “white spots” of the Chukchi Sea were explored, the expedition measured the depth to determine the best way along the Northern Sea Route [4].

Last time such a detailed study of the Arctic in Russia was held a hundred years ago. In the midst of World War I Russia's Foreign Ministry has asked the governments of allied and friendly countries with a note about the ownership of all the lands and islands located North of the Asiatic coast of the Russian Empire discovered for centuries by the efforts of Russian sailors and merchants.

Research and geographical discoveries of Russian sailors were replenished by the success of the hydrographic expedition 1913—1915 on two icebreakers “Taimyr” and “Vaigach”, headed by a young naval officer, hydrographer, Captain of the II rank Boris Vilkitsky (1885—1961). During the expedition several new islands were discovered: Severnaya Zemlya (Nicholas II Land), Malyi Taimyr, Starokadomsky island and Zhokhov island.

[3] Судно «Адмирал Владимирский» встретил в Кронштадте главком ВМФ РФ. URL: http://www.spb.aif.ru/city/event/1426614 (accessed: 19.01.2015).

[4] Кронштадтские гидрографы подтвердили открытие хабаровских летчиков. Полярная экспедиция на судне «Адмирал Владимирский» создаёт новую карту арктических владений России. 6 октября 2014 года. URL: http://www.vostokmedia.com/n209501.html (accessed: 11.10.2014).

Picture 3. Captain B.A. Vilkitsky

The maps and sailing directions of the highest quality were made, the biological, botanical and zoological research was done and the important geographical discoveries were made.

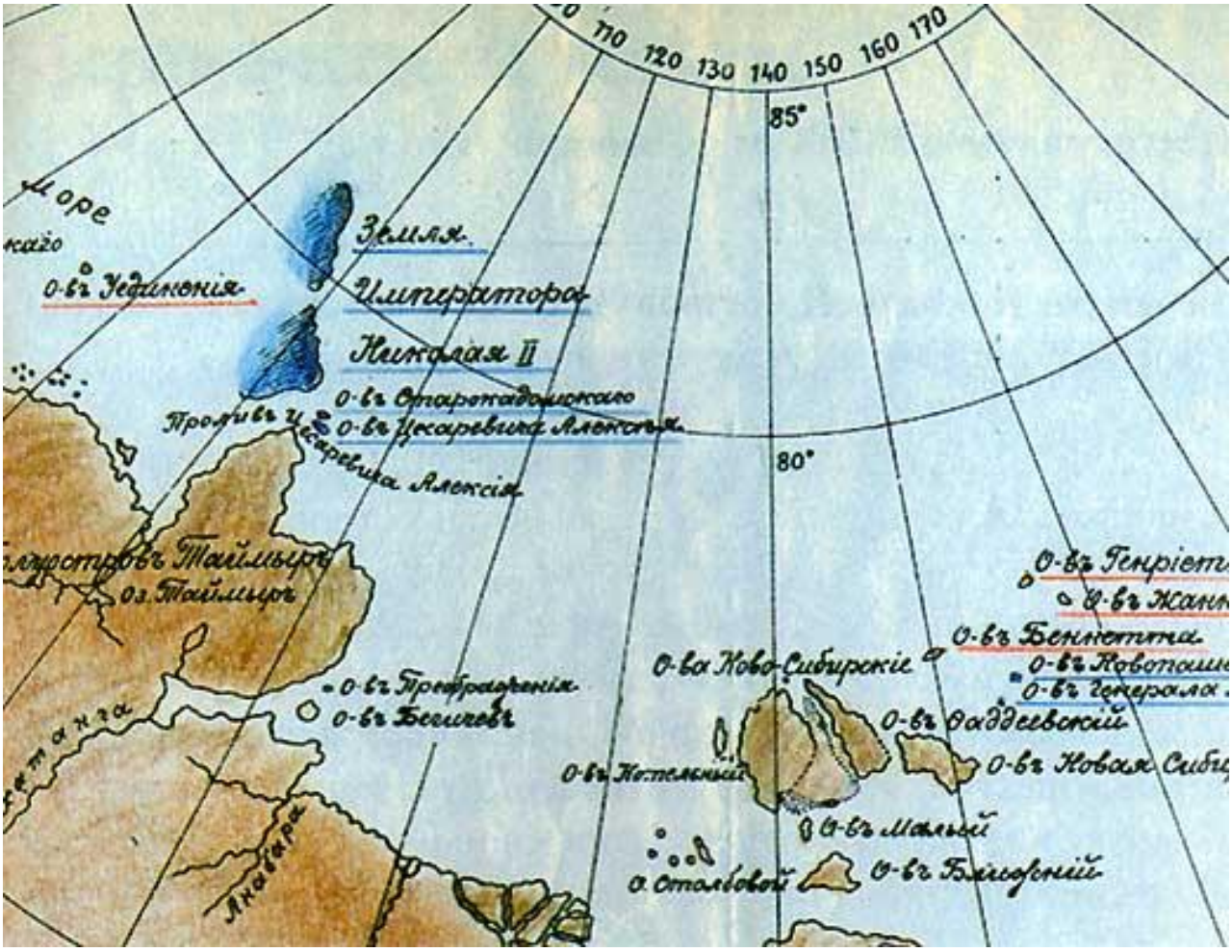
On September 16, 1915 the first through sailing the North-East way from the East to the West was completed. The members of the expedition were met in Arkhangelsk on the Cathedral pier attended by all the civil and military provincial authorities. A year after the end of the expedition the formal recognition of the discovered territory of the Russian Empire was made.

Picture 4. The rise of the Russian flag on the Nickolas II Land (Northern land).N.I. Evgenov's archive. URL: http://www.gpavet.narod.ru/Names/flag.jpg

The Russian government has informed the Government of allied and friendly nations by the note dated 20.9.1916 on the inclusion of these lands into the Russian Empire and claimed that it considered the island of Henrietta, Jeanette, Bennett, Gerald and Yedineniya together with the islands of Novosibirsk, Wrangel and the other located near the Asian coast, continued up to the north of the continental space of Siberia [5] a part of the Empire. The Russian government had not considered the inclusion of the island of Novaya Zemlya, Vaigach and other various sized islands,

[5] Правительственное сообщение. URL: http://www.emaproject.com/lib_view.html?id=pb00003412#p1|1|n (accessed: 06.02.2014).

located near the European coast of the empire, citing the fact that they had belonged to the empire wand were widely recognized by the other states for centuries. The map of the Arctic with the designation of all these territories and water areas was attached to this note.



Picture 5. URL: http://www.x-team.ru/upload/iblock/4bf/4bf8e534bdda83ff86a2b5e2210ad254.jpg

The value of the MFA notes is extremely large and significant. Russia acted as a collector of lands in the harsh Arctic Ocean. Not only the lands along the European and Asian coasts, but also all the islands in the cold ocean, where even signs of hydrocarbon resources had not yet been found, were declared a part of the Russian Empire. None of the countries in the world, and it was the First World War going on, made any objections to this act.

In the 21st century another new island appeared in an archipelago of the Franz Josef Land. The existence of the 192nd island of FJL had been known since 1985. All attempts to legitimize the new island failed for one reason or another. 28 years ago the historical and archaeological expedition on the icebreaker “Kapitan Dranitsin” went to the island of Northbrook in the South-West of the archipelago. And on the first day after the landing on the island the crew of Captain

Picture 6. Captain Rostislav Gaydovsky

Rostislav Rostislavovich Gaydovsky[6] discovered and explored previously unknown sea strait separating the island into two unconnected pieces of land. The expedition decided to give the strait the name of the discoverer — Gaydovsky Strait and the islands were called West Northbrook and East Northbrook [1]. Two decades later, in 2006, the division of the island into two parts by a strait was confirmed by Stanislav Rumyantsev —skipper of the atomic icebreaker "Yamal" that carries out regular tourist cruises to the North Pole.

In summer 2007, the Norwegian Børge Ousland together with the Swiss Thomas Ulrich followed in the steps of Fridtjof Nansen and Hjalmar Johansen from the polar region through the Franz Josef Land to Cape Flora, the island of Northbrook. They also noticed the island and sent a letter to the Russian Embassy in Norway with a statement on the opening of a new island in the archipelago. In addition, they complained that the map of the archipelago had only few names Norwegians and suggested the naming of the island after Hjalmar Johansen.

Franz Josef Land was also visited by the high-latitude expedition of the Arctic and Antarctic Research Institute, headed by Vladimir T. Sokolov. In 2012 the hydrographs produced all the necessary measurements, fixed the coastal line coordinates with the use of satellite navigation system, and made the leveling shooting [1].

Significant step towards the official recognition of a new island was made in the summer of 2013 during the expedition of the National Park "Russian Arctic" when it was possible to make the initial description of the strait, to pass along its shores to the west and east coast, to get the GPS-coordinates, to take photos and make the description of the coast and to learn the navigational features of the strait.

Availability of the strait and the existence of the 192nd island of the Franz Josef Land were again confirmed during the arctic expedition in August—September 2014 on the yacht "Apostol Andrey" (Captain — Nickolai Litau). The member of the expedition A.P. Oboimov emphasized that the strait was actually through, and the water flow evidenced for it in [2].

[6] Rostislav Gaydovsky, Deputy Head of Oil and Gas of the Arctic expedition of the Ministry of Geology of the USSR. Lives and works in Murmansk. Member of the Murmansk Sea Captains Association. Gaydovsky family, which had artists, writers, engineers, religious leaders and originates in Zaporozhskaya Sech, suddenly got the Leningrad Naval cadet. Gaydovsky was sent to Murmansk and went to sea in 1959, at the age of 27 — the youngest captain of transport vessels in the North Basin, has a rich experience of navigation in the Arctic seas.

But now the discovery of the island cannot be considered as the completed one. To complete the process it is must get the official name. The session of the Arkhangelsk Oblast Council of Deputies approved by its decision on the 26th of November 2008 № 2067 the proposal of the Federal State Institution “Russian State Museum of Arctic and Antarctic” the assignment of the name “Yuri Kuchiev” for the geographic area — the island separated from the south-western part of the Northbrook of the Franz Josef Land archipelago and sent a package of documents to the Federal Agency of Geodesy and Cartography for the preparation of their submission to the Government of the Russian Federation. It was stated that this resolution should take effect from the date of its adoption, although the decision of the regional parliament on such a question was not legitimate[7]. It is the task of the Commission on Geographical Names to coordinate the establishment, use, registration, accounting and preserving the geographical names[8]. After registration the Head of the Department of Navigation and Oceanography of the Russian Defense Ministry (SPb) specified and published nautical charts[9]. Lands registered are proceeded further by the branch of the State Organization “Federal Cadastral Chamber of the Federal Service for State Registration, Cadastre and Cartography” (FCC “Rosreestr”) in the Arkhangelsk region and Nenets Autonomous District”[10]. Why could not the current system of registration work for so long? — It is not quite clear. But this story has some ethical issues as well.

Picture 7. Maria Vladimirovna Gavrilo

In addition to the established order of registration there was a conflict situation with the new name of the island and the strait. “And I am convinced that the right to name the island and the strait should be left for their discoverers, in addition to the “triumph of justice” and certainly I should consolidate and give the priority of our country in this discovery"— says Maria Vladislavovna Gavrilo, Candidate of Biological Sciences, Deputy

[7] Постановление Архангельского обл. Собрания депутатов от 26.11.2008 № 2067 «О присвоении наименования "Юрий Кучиев" географическому объекту — острову, отделившемуся от юго-западной части острова Нортбрук архипелага Земля Франца-Иосифа». URL: http://zakon-region.ru/arhangelskaya-oblast/8123 (accessed: 07.02.2015).

[8] Положение о Комиссии по географическим названиям. URL: http://docs.cntd.ru/document/901927795 (accessed: 07.02.2015).

[9] Главное управление навигации и океанографии Министерства обороны РФ. URL: http://okeany.com/vk/gunio.htm (accessed: 07.02.2015).

[10] О филиале ФГБУ «ФКП Росреестра». URL: http://www.to29.rosreestr.ru/kadastr/about_fgu/kadastr/ (accessed: 07.02.2015).

Director for Research of the National Park “Russian Arctic”[11].

The initial decision of the expedition of Dmitry Kravchenko was to call the Islands West and East Northbrook, and the Strait — in honor of Rostislav Rostislavovich Gaydovsky, decent man, an experienced sea captain with a great navigation experience in the Arctic seas [3]. The representatives of the National park “Russian Arctic” do not exclude the possibility of further discoveries of new islands in the Franz Josef Land archipelago in relation to the global climate change.

The discovery of new islands in the Russian Arctic has not only the obvious scientific importance but geopolitical importance as well, the increase of the Arctic ownership of our country by peaceful means on the basis of the UN Convention on the Law of the Sea (1982), without expansion, the seizure of foreign lands and waters in the Arctic Ocean. Although the island Yaya, for example, it's a tiny piece of land of 500 m^2 (5 acres of land —like a small suburban area near a cottage), it pushes the limits of territorial waters (coastal marine band width of 12 nautical miles) deep into the Russian Arctic. The exclusive economic zone of the Russian Federation (the width of the EEZ may not exceed 200 nautical miles = 370.4 miles from the baselines) increases. The captain of the oceanographic research ship “Admiral Vladimir” A.V. Pyshkin showed on the map how the territory of Russia had changed due to the discoveries of the new islands in the ocean. “As a result of the fact that it was an island, the main reference line goes through the island Stolbovoi, Island Yaya, and then down there, and this is now the approximate distance — about 550 square kilometers”, — he explains[12].

Drawing conclusions from the story about the registration of new discoveries it seems to be relevant to do the monitoring of all existing islands in the Russian Arctic. Who is responsible for the control of the island, its departmental use on a permanent or temporary basis? What is the administrative and legal and environmental responsibility for the land of the island and its surrounding waters? These are not idle questions. Should there be one more general cleaning of Arctic islands after their departmental use? Must there be published a full list of all the Russian islands in the seas of the Arctic Ocean (including the White Sea) with the definition of their functionality and owner, entrusted to manage these islands by the Russian government with the regard to the certain requirements, rules and regulations. It could be approved by the law “State

[11] Gavrilo M.V. URL: http://www.rus-arc.ru/ru/Science/Staff (дата обращения: 09.11.2014). Maria Vladislavovna — member of 40 Arctic expeditions held during 30 seasons (from Svalbard, the White Sea to the Chukchi Sea and the Arctic Basin), the Antarctic and the Baltic. Author of 170 publications (scientific, popular scientific and publicist) editor of 9 scientific collections and monographs.

[12] Бабко С., Статнов Р. Судно «Адмирал Владимирский» вошло во Владивосток. 25 октября 2014. URL: http:// www.tvc.ru/news/show/id/53503 (accessed: 02.11.2014).

Register of Russian islands in the seas of the Arctic Ocean" which indicates the actual status of the Arctic islands, their departmental affiliation and specific responsibility of the land owner.

It makes sense, *firstly*, if we create municipal settlements on the islands, with at least some amount of permanent or temporary population. There are several models of organizing and managing of such administrative-territorial formations. In the municipality's urban district "Novaya Zemlya" in Arkhangelsk region includes the entire archipelago of the same name. On the 01.07.2013 there lived 2,623 people there[13]. This municipality was formed in 1997—1999 as a result of long hard work of leadership of the Arkhangelsk region (A.A. Efremov, V.I. Kalyamin) with the active support of the local community. The municipality "Rural settlement Solovetskoe", a part of the Primorsky Municipal District of the Arkhangelsk region, is located on eight islands in the White Sea and includes 11 villages. Solovki are governed in accordance to the time-innovative management model based on a strategic partnership of the Russian Orthodox Church (Solovetsky Monastery), federal agencies (Solovetsky Museum), regional authorities (Government of the Arkhangelsk region), Primorsky Municipal District and the rural settlement "Solovki" itself. The municipality "Urban settlement Dixon" is included into the Taimyr Dolgan-Nenets Municipal District of the Krasnoyarsk Territory. The northern boundary of the "Urban settlement Dixon" lies within the waters of the Arctic Ocean and covers the northern part of Eurasia — the Taimyr Peninsula, the Severnaya Zemlya archipelago, Sedov, Nordenskjold and a group of islands in Kara and Laptev Seas[14] and surrounding waters. Apparently, the experience of these municipalities, the management model could also be used in the other inhabited islands of the northern seas.

Secondly, it is important to determine the status, mission, legal and ethical responsibility for the polar explorers, meteorologists and specialized stations, temporary settlements of a shift type (offshore platforms), closed military areas and military units of the Russian Defense Ministry, frontier posts of the Border Service of the Federal Security Service of Russia and etc. It is necessary to fill the legal gaps and analyze the existing legal acts and practices. On the island Kotelny of the Siberian Islands archipelago, for example, the airfield "Temp" was restored. Meanwhile, we are talking here not only about the important tasks of the Ministry of Defense of the Russian Federation (who would mind it), but also about the administrative, legal, environmental responsibility over island territories, surrounding waters and the corresponding external control. In order not to damage the ecology it is necessary not to contaminate the Russian Arctic with abandoned equipment and barrels with the remnants of fuel, as it was done in the recent past.

[13] МО ГО «Новая Земля». URL: http://nov-zemlya.ru/in/md/short (accessed: 09.02.2014).
[14] МО «Городское поселение Диксон». URL: http://www.taimyr24.ru/MO/Dikson/ (accessed: 09.02.2014).

Even today it should not be created the unnecessary environmental “hot spots” in the Russian Arctic, and then spend a lot of budgetary resources for the general cleaning of polluted waters and island territories in the Arctic. Ecological imperative is very significant for future generations. Probably the identification and other vital functions for this kind would help the departmental Arctic island settlements, including all types of temporary settlements, offshore platforms for the exploration and production of oil and gas in the Barents, Kara, Pechora and other northern seas.

Thirdly, in the Russian Arctic there are positive conservation practices on the Islands and in adjacent waters, which are parts of national parks, protected areas, nature reserves, that let to adjust the flow of tourists to maintain the natural environment and cultural heritage. The objectives of the National Park “Russian Arctic” include, for example, the preservation of cultural, historical and natural heritage of the Western Sector of the Russian Arctic. “There is an urgent task of cleaning the territory — the legacy of the Soviet era of the development of high latitudes”[15]. Successfully operating state natural reserves are “Gydansky” and “Nenets”, "Wrangel Island", "Great Arctic" in the Krasnoyarsk region — the largest in Russia and throughout Eurasia, organized May 11, 1993 and covering the Arctic sector within the length of 1000 km from the West to the East, two seas — the Kara and Laptev[16]. Nature reserves, national parks covered almost the Russia’s entire Arctic coast of the Barents Sea, White Sea and till the Chukchi Sea. That is something our country can really be proud of. Legitimization of the Russian presence in the Arctic in all its forms allows demonstrating the global society the content of environmental policies and practices, the responsibility of the Russian state, the impressive scale of protected areas and waters of the Russian Arctic. All this is of a great geopolitical importance. The presence of natural reserves in the Arctic is a part of the national interests of Russia; it is a powerful tool of the soft power against the attacks on our country. I am convinced that politicians, diplomats, environmentalists, human rights activists, media should promote a positive image of Russia as a leading Arctic power, manifesting a constant concern for the preservation of the natural and cultural environment at our home. “The list of state nature reserves, national parks in the Russian Arctic” may be annexed to the Federal Law on the Russian Arctic.

Fourth, all of the remaining islands not included into the settlements, nature reserves, where there is no population, military, border guards, meteorologists, explorers, environmentalists, oil and other professionals fall under the jurisdiction of the responsible entities of the Russian Federation, which sector they refer to.

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[15] Национальный парк «Русская Арктика». URL: http://www.rus-arc.ru/ (accessed: 09.02.2014).
[16] Большой Арктический. URL: http://www.bigarctic.ru/coportal.su/images/news/38033.jpg (accessed: 09. 02.2014).

Management modernization of the Russian Arctic Zone

Management modernization of the Russian Arctic, especially after the establishment of the Ministry of Regions of Russia in 2014, has become the order of the day. As for the Arctic, there are several responsible government agencies at the federal level but it remains without proper supervision and management in a situation familiar to the well-known Russian proverb “too many nannies have a child with no eye”. Russia's presence in the Arctic region both on a permanent and temporary (rotational) basis corresponds to Russia's national interests. It is very significant and necessary in today's changing world, where dozens of countries have claims to Arctic resources and routes of communication. Today more than ever, in the new round of the Cold War, sanctions against Russia, attempts to make us an outcast in the world, it is necessary to create the institutional conditions for the effective management and sustainable development of the Russian Arctic, for the formation of a proper legal base to secure the Russian Arctic macro-region as a special object of public administration in the Russian Federation and for the strict enforcement of the modern legislation.

At present, exploring some subject areas of scientific knowledge, each specialist has his own definition of the concept of the Russian Arctic, its borders, sometimes interpreting it too broadly. For example, part of the Arctic continental shelf very often consists of the shelf of the Okhotsk Sea, which is part of the Russian continental shelf, but the sea itself had never entered into the waters of the Arctic Ocean. The other example is the problem of sectoral approach (1926) applied without understanding that it actually leads to Russia's refusal to ratify the UN Convention on the Law of the Sea (1997). Why, then, does our country for the second time apply for the UN Commission on the continental shelf? What are we fighting for in this case? Is it the denunciation of the international treaty obligations under UNCLOS ratified by the Russian Federation in 1997. The option of denunciation cannot be excluded, but then we should evaluate the possible risks and consequences.

The adoption of the basic federal law “Arctic zone of the Russian Federation” remains an urgent task, no matter what some officials say. Status, composition, borders, the land (territory) and water (water area) of the Russian Arctic, the changes, various projects funding, keeping the register of the Arctic islands and protected conservation areas — these and other issues may be reflected in a single legal act. I am convinced that in no case the benefits to the population of the Russian Arctic and preferences for business cannot be included in the Federal Law. This problem is solved by the adoption of other laws on the North, as the Russian Arctic is an integral part of the Far North of the Russian Federation, without any exceptions. Why do we need to duplicate legal acts?

The Presidential Decree “On the land territory of the Russian Arctic” from May 2, 2014 states that waters of the Arctic Ocean waters of the Northern Sea Route (NSR) were not included in the Russian Arctic. Thalassocracy — navy Russia's power revealed as nothing. National Russia's interests have been sacrificed to the departmental bureaucracy, they say, needs of statistics to account the Russian Arctic, which of course is important, but it is not the priority. As Igor Melamed, Director of the International Center for Regional Development", said at a meeting of the Mercury Club on October 8, 2014: "Positive point is that if there were no borders, the Arctic zone has not been the object of statistical observation. So they had to bring all sorts of expert evaluations, and they sometimes caused enormous controversy. For example, what is the number of polar bears in the Arctic zone of the Russian Federation? The scientific discussion on this topic, as it is known, ended with the Russian President order to "Rosneft" to organize a count of polar bears”[4]. I’ wondering what was the result of counting of polar bears, if the boundaries of the Russian waters of the Arctic Ocean are not defined in federal law and new islands appear and move the EEZ territorial waters. Polar bears are still rare on the continent lands.

The question of the creation of the federal governing body of the Russian Arctic is being discussed for more than one year. On April 22, 2014 at the meeting of the Security Council on the implementation of the state policy in the Arctic V.V. Putin said: “Firstly, the need to improve the quality of governance, decision-making to create a single point of accountability for the implementation of the Arctic policy. I want to emphasize, we do not need cumbersome bureaucratic body, but a flexible operational structure networks, which will help coordinate the activities of ministries and departments, regions of the Russian Federation and the business"[17]. On the 3rd of February, 2015 the President of Russia signed a decree “On creation of the Government Commission on the Arctic” and marked “for official use only”. The Commission will be headed by Deputy Prime minister D.O. Rogozin[18]. Russian president's special representative for international cooperation in the Arctic and Antarctic Artur Chilingarov will be represented there. De facto, the commission will be formed by 3 March[19], one month is given out to determine the composition of the commission and to preparations. Before that, there were some proposals for the establishment of the Ministry of the Arctic like the Ministry for the development of the East or Ministry of the North Caucasus or the Crimea or federal agency. The choice in favor of the Commission was made

[17] Заседание Совета Безопасности по вопросу реализации государственной политики в Арктике. URL: http://news.kremlin.ru/transcripts/20845 (accessed: 25.01.2015)

[18] СМИ: Путин назначил Рогозина главой комиссии по Арктике. URL: http://vz.ru/news/2015/2/6/728171.html (accessed: 09.02.2015)

[19] Комиссию по Арктике во главе с Рогозиным создадут в течение месяца. URL: http://ria.ru/arctic/20150206/1046235804.html (accessed: 09.02.2015)

because of the fact that “in the current economic conditions, the format of the Ministry simply cannot be realized; the budget simply cannot stand such a load”[20]. This motivation, if it really had the place to be, indicates only that the case of the budget we have is quite dull. For the Russian Arctic there was not found even a means to create a separate ministry. I had to return to the Soviet experience, when the State Commission of the USSR Council of Ministers on the Arctic worked. It was transformed in April 1991, the Commission of the USSR for the Arctic and Antarctic and different Polar coordinating committees, advisory bodies, with all the deep respect for their diverse activities. All these also seem to be not the best variant in this situation, when you need to manually perform operational crisis of the economic development of the Russian Arctic in geopolitical terms. The real powers and functions of the newly established government commission are to be determined; the effectiveness of its work remains unclear. D.O. Rogozin, the head of the commission, indicates that one of the main priorities in the work is the responsibility for the implementation of Arctic policy and it is becoming the solution of problems the national security, strengthening Russia's defense capability in the Arctic, which is very important.

Slowly being solved, I would even say, almost not being solved, is the problem of creating institutions of horizontal interregional integration (not from above but from below) in all spheres of vital activity of the northern societies. All entities of the Russian Arctic live by themselves is a situation of a regional integration. For example, an Association of Economic Interaction “Cities’ Alliance of the Arctic and the Far North”, established in 1992 (President — Shpektor I.L.), consists of 52 cities and regions of the Far North and equivalent areas (Russian Arctic is part of the Far North and is fully included in its structure). The necessary conditions for effective cooperation in matters of socio-economic development of cities in the Arctic and the Far North are provided by combining the material and financial resources, joint measures to stabilize the economic situation and social protection of northerners[21]. There is an experience of the Council of the White Sea, that functioned in 1997—2002 and included 4 entities of the Russian Federation, heads of municipalities on the White Sea coast, the Republic of Karelia, Arkhangelsk and Murmansk oblast and NAD[22].

The need for inter-regional cooperation is increasingly beginning to be realized and implemented in various projects and is called like "Let's be friends!" The government of the Arkhangelsk region had acted out with the initiative of creating of an “Inter-regional association of

[20] Северный завхоз. Дмитрий Рогозин возглавит комиссию по управлению Арктикой. URL: http://kommersant.ru/doc/2661252 (accessed: 09.02.2015)
[21] О Союзе. URL: http://krayniy-sever.ru (accessed: 21.11.2014).
[22] Арктика и Север. 2013. №13. С. 19—23. URL: http://narfu.ru/upload/iblock/6ba/02.pdf (accessed: 09.11.2014).

city and municipal districts of the Russian Arctic" in October 2014. It was Governor Igor Orlov who said during the V International Forum: "For the glory of the Navy and the Fatherland!" As explained by the head of the region, the proposal had received the support of the Security Council of the Russian Federation, and the corresponding agreement could be signed soon. The first members of the association are Arkhangelsk region, Nenets Autonomous District and the Komi Republic[23]. Such an initiative still remains not entirely clear to the "Cities' Alliance of the Arctic and the Far North".

During the plenary session of the III Murmansk international business week Murmansk Governor Marina Kovtun spoke to the colleagues from other regions, "We should stop to drag each blanket over itself. After all, we share nothing special. Each Arctic region of Russia makes a unique contribution to the country's national interests in the Arctic. And each region has its own competitive advantages. Diversity is our strength — in areas of the Arctic" [5]. M.V. Kovtun stressed that the Arctic regions of the country were united by their development over the decades of cooperation. Thus, according to NSR is operated by the shipping companies in Murmansk and Arkhangelsk. Regions are connected by the cooperation in the mining industry. Dockyards, design bureaus and production associations in Severodvinsk, Murmansk and Aleksandrovsk provide virtually the entire life cycle of nuclear submarines construction [5]. Everything is correct. But it is not clear who pulls the blanket over himself. The correlation between interregional integration (combining parts into a whole) in AZRF and cooperation in the economy (co-operation based on division of labor, the business combination with any common industrial purpose) are still not clear as well.

Working on the project "The Arctic Union of the regions of Russia" (AURR) in 2010 it became possible to see a priority inter-regional integration project distinguished (not located in the hierarchy, since each direction plays an important role in inter-regional cooperation) as follows:

1. Creation of a common information space of the Russian Arctic. Exchange of experiences, Arctic news. Creating a unified information network "Russian Arctic", Arctic TV, radio. Arctic encyclopedia.

2. Management of the Russian Arctic on the scientific and practical basis of modern "Arctic" Management and Law. Fundamental Law — "Arctic zone of the Russian Federation", other legal acts, including the law of the Russian Arctic, legal practice. Cross border interregional cooperation in various forms as an instrument of partnership.

[23] Города и районы Арктической зоны России объединятся в ассоциацию 24 октября 2014. URL: http:// dvinanews.ru/-vka4hw2g (accessed: 27.10.2014).

3. Ecology, saving not only the natural and cultural environment of the Russian Arctic, but also people, indigenous peoples, investment in human capital (health, recreation, education, physical education and sports).

4. Culture. International day of Arctic (Day of Cold, Snow Day), National Festival of Children's and youth creativity “Northern Lights”. Culture Days regional cultures, indigenous peoples in other regions of the Russian Arctic, exchange of exhibitions and other cultural events.

5. Arctic tourism. Interregional cooperation in the creation of common tourist brands and projects in the AZRF. National tour operator — National Park "Russian Arctic", Kenozerye, Malye Korely, Yakutia, Chukotka, nature reserves "Great Arctic", "Wrangel Island" Solovki, Vaygach, Dixon, cruises to the North Pole, along the Northern Sea Route, and others.

6. Arctic infrastructure — energy, roads, transport, communications, service. Economy, PPP (public-private partnership).Implementation of the federal and regional programs. Portfolio of the Arctic projects: business ideas, business plans and investment projects. Bank for Reconstruction and Development of the Arctic (V. B. Mitko). Arctic Public and Commercial Bank (A.V. Smetanin).

Permanent information exchange between the AZRF entities is possible with the use of modern information and communication technologies, Arctic communication network in the regions and MO — "Russian Arctic", which will contribute to the communication in business, culture and sports at regional and municipal levels. It is relevant to hold the International Day of the Arctic (Day of the cold) on the last day of February. These days were held in 2011—2012 in Arkhangelsk, Naryan-Mar, Dudinka and Severodvinsk. In 2013—2014 their conduction was limited to the webinar of the NArFU and the Presidential Library of B.N. Yeltsin. Implementation of major investment projects in the Arctic is not that real. It was shown by the Belkomur project which funding issues had been discussed in 1997, and its construction had been started in November 1998 in Karpogory — Vendiga. However, now the arranged once sleepers and rails disappeared and the search for investors continues to this day (2015).

Many questions in the current crisis are related to the problem of financing the State program of the Russian Federation "Socio-economic development of the Russian Arctic for the period till 2020". In April 22, 2014 at a meeting of the Security Council V.V. Putin stressed the need for the carefully consideration on how we would implement the measures of the specified state program and how we would provide it with necessary resource content, sufficient to meet the challenges we faced. It requests the Government to provide the full funding of the program since 2017[24].

[24] Заседание Совета Безопасности по вопросу реализации государственной политики в Арктике. URL: http://news.kremlin.ru/transcripts/20845 (accessed: 25.01.2015)

However, in 2013 the “Exploration program of the continental shelf of the Russian Federation and development of its mineral resources in the long term" was closed and SP "Arctic-2020" may just get laid off because of the crisis, sanctions, inflation and devaluation of the ruble and the fall of the oil prices. It is necessary to conduct an external audit of the implementation of Government Decision from 21 April 2014 “On approval of the state program of the Russian Federation” Socio-economic development of the Russian Arctic for the period till 2020”, the use of budget funds and decide on the future destiny of the regions and municipalities.

I propose to discuss the question of the legal grounds and the organization of the All-Russian Arctic portfolio of projects, including business ideas, ready investment projects, business plans and master plans. We are talking about the formation of the Arctic portfolio not only at the federal but also at the regional and municipal levels in the Russian Arctic. Why do we do it? It is to create a backlog of specific projects in the Arctic, to find private investors, and to study the reasonability of the budget funding. The need for implementation of the project approach in the Arctic on the federal level should be done without fuss and contribute to the socio-economic development of the Russian Arctic. Ready, open public projects are needed, firstly, for their further inclusion in the draft of the federal programs, regional programs in order to obtain financing sources on practice and not in words of support. Second, the implementation of project management approach in the Arctic is not always so necessary for the public administration because of its cost and long termed period of implementation, for example, up to 2030, with huge budgets. Also there is Damocles’ sword above the responsible executives that risks falling over them for the failure to comply in full the underfunded programs and it does no good. And the composition of the senior officials of ministries and departments of the government itself does not remain constant over time. Show me a guru who says who was in power at the federal level of government in the past 5—10 years, not to mention 15—20 years. Why then should we put the top managers of the state in a situation of “after us let the deluge be”, leaving them to make informed choices the Arctic priorities? Now it is the right time to implement the project approach in the Arctic management system.

Accepted strategy, long-term programs do not work even in business sphere. The world is so volatile and unpredictable, that it simply does not make sense to expend the energy on declarative strategic forecasts in the Arctic, which are not really true. A smooth transition from strategic management to project management in the Arctic is needed objectively. With the implementation of the project approach at the federal level in a short time there should be realized at least one priority project of the finished portfolio of the Arctic projects. Then the other project comes, taking into account the prevailing market conditions, geopolitical, socio-economic, fiscal and financial situation,

then the third... Shorter time and lower cost of the Arctic projects allow exercising in the effective control over their implementation and lets to make any changes at the right time without “losing a face” of the government, Russian president, without creating a negative image of the Russian state among the population.

It is acceptable to create the office of Arctic projects in the autonomous non-profit organization “Agency of strategic initiatives for promotion of new projects”. It is also possible to create such inter-regional offices in Arkhangelsk, Salekhard and Yakutsk. First, we need at least an elementary list all Arctic projects, and to conduct their monitoring. Then it remains to understand what and how we could modernize the system of management of the Arctic, to discuss the inclusion of existing projects in the different programs and their funding (governmental and business) and to make appropriate decisions and regulations to let them be true.

According to V.B. Mitko, the investments for projects of various sizes must be made via the overall financial structure, such as the Bank for Reconstruction and Development of the Arctic”, but without its participation in funding. This idea had been discussed for more than ten years ago at the International body of leaders of the Northern regions, but got no development “[6]. Doctor of Economics, Professor A.V. Smetanin (NArFU) offers his own version — the creation of the Arctic State Commercial Bank. I would add that in this kind of banking organizations could form the intellectual capital — the portfolio of the Arctic projects as the collections of the innovative products for the Russian Arctic.

Conclusion

In conclusion, I would say that, as a result of the approaches discussed above, the entire space of the Russian Arctic, the land, the waters, and islands will be taken legitimately under the permanent control and responsibility at the federal, departmental, regional and municipal levels of government and administration, there won’t be any “black holes” in the Arctic. Modernization of the Arctic management is expected to improve the quality of decision making and to bring socio-economic development of the Russian Arctic to a higher level. It would be appropriate to take into account the suggestions and recommendations that have been made in 2014 during the scientific conferences in Arkhangelsk, Murmansk, Salekhard, St. Petersburg and Yakutsk. I do not think anyone in Russia is systematically engaged in a similar analysis and synthesis. As a result, many perspective proposals and suggestions are left behind.

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Reviewer: Kotlyakov Vladimir Mikhailovich,
Doctor of Geographical Sciences, Professor,
Member of the Russian Academy of Science

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Modern political image of Russia in Norway (on media coverage)

© Sokolova Flera H., Doctor of Historical Sciences, Professor, Head of the Department of Regional Studies and International Relations, Institute of Social, Humanitarian and Political Science of NArFU named after M.V. Lomonosov

E-mail: flera@atnet.ru

© Koptyaeva Anna A., postgraduate of the Department of Regional Studies and International Relations, Institute of Social, Humanitarian and Political Science of NArFU named after M.V. Lomonosov. E-mail: ankouanka@mail.ru

Abstract. On the basis of a content analysis of articles published in printed periodicals of Norway during 2008—2014, the current political image of Russia reveals in the article. The analysis of the most talked aspects of political image has been done, a set of causes and factors influencing the perception of the image of Russia in Norway reveals.

Keywords: *Russia, Norway, international image of the state, political image, the image of Russia in the media*

Introduction

Image is a certain object, formed in the mind of the agent or the subject of perception. Image may emerge spontaneously, but at the same time deliberately formed by various means and methods. For a long time the image problem has been actively developed in the field of economics and business interactions. The article represents the particular research on the formation of professional (politics, teachers, doctors, etc.) and corporate image of economic image areas and regions. However, the researchers are very fragmentary in considering problems that affect the image of the nation and the state. However, a favorable perception of the country in the eyes of the world is the key to building trust in it, significantly expands the possibilities of international cooperation, promotes foreign investment and is an essential tool to protect its national interests. In modern conditions the practice of so-called humanitarian intervention is a positive image of a certain guarantee of interference in the internal affairs of the country. In turn, appealing to the international community the image of the country is the most important instrument of the “soft” power and promotes the growth of authority and influence on the world stage.

In the context of the Cold War and the closed Soviet society the image of Russia abroad was mostly negative and was artificially formed and politically engaged by the Western media. At present, these stereotypes of the country are not only preserved, but also are artificially inflated due to a separate and independent policy of V.V. Putin. However, under conditions of intense formation of a global information and communication space, expanding the network of relationships and interactions is not only on the interstate, but also inter-regional and transnational levels are significantly expanded the opportunities to build a comprehensive and integrated vision of Russia in the international space.

Significance of the study is in the context of the country due to the fact that the purposeful formation of a positive image in promising directions for Russia's foreign policy and significantly expands the possibilities of cross-border dialogue and cooperation and creates favorable conditions for the establishment and strengthening the inter-state unions, promotes the expansion of integration processes. In this light it seems to be very significant to study the perception of Russia in Norway — an important ally and rival of our country in a strategically important region of the world — the Arctic.

Russia and Norway are long-standing international partners and for decades they had close relationships not only on the interstate, but also on the inter-regional and cross-border levels. Russian-Norwegian contacts originate from the time of Veliky Novgorod. These countries were actively cooperating in the framework of the Barents Euro-Arctic area and the Arctic Council. Accordingly, the perception of Russia in Norway is largely formed on the basis of a direct experience of social interaction. However, it is important to study the problem in connection to the media coverage, which is an important tool for shaping the public opinion and often reflects the perceived attitude to the country at the government level.

Historiography of the problem is represented by a significant body of scientific literature on the theoretical aspects of the question. Today there are some successful attempts made on the conceptual understanding of the essence of the definition of “image”, attempts to identify ways and mechanisms of its formation, to explore Russia's image around the world. The general framework of the research could be divided into two categories: work, affecting the theoretical aspects the territory’s image, the international image of the state and its formation; studies devoted to the analysis of the perception of Russia as an example of specific country, and, finally, the research and development related to the image of Russia in Norway.

Analysis of the image in the general theoretical aspect can be found in the works of S. Anholt [1], I.S. Vazhenina [2], A.E. Kiryunin [3], I.Y. Kiselev [4], F. Kotler [5], A.P. Pankrukhin [6] A.V.

Popov [7], I.J. Rozhkov [8]. A.V. Popov and I.S. Vazhenina focused on the understanding the nature and structure of the image of the territory, presenting widely different approaches to the definition of the concept. Considerable interest to the topic reveled by S. Anholt, F. Kotler and A.P. Pankrukhin who developed branding and marketing approaches to the formation of the country's image. Marketing of places aims to create a positive perception of relations between subjects to certain "place". In this approach usually contains of some isolated components like the image of the country as a place of attractions, infrastructure or population. In S. Anholt's approach a great attention is paid to the reputation, with the view to create an image that almost replaces reputation. The main strategic objective of national branding is determined by the creation, updating and maintenance of the positive associations of the country. Such studies could form an idea on how to design the mechanisms and specific image areas. Dignity of I.J. Rozhkov and B. Kismereshkina's work is its manufacturability. The authors analyze a wide range of modern advertising and communication technologies applicable to the city, region and country.

Significant interest to the topic could be found in the research devoted to understanding the role and place of the State's image on the world stage, attempts to identify the current international image of Russia, the strategy of its formation and transformation [9; 10; 11; 12; 13]. These are studies of E. Galumova and L.F. Adilova which represent an analysis of the perception of Russia abroad, the causes of failures of modern image policy of the Russian Federation.

The study of theoretical and methodological origin is highly significant, as determined by the algorithm of execution of subsequent works on the example of specific regions and countries. Currently, however, the image of Russia in the context of the country represented is isolated [14]. Moreover, the authors of this article were unable to identify any significant works devoted to the image of Russia in the Nordic countries and in Norway in particular.

Without claiming to be exhaustive coverage of the issue in a limited part of the article, we attempt to identify the current political image of Russia based on the research done in Norway. The major sources of the study are periodicals issued in Norway. The authors identify and analyze the set of articles highlighting the major events in Russia, the problem of Russian-Norwegian relations, cooperation and rivalry. Among the analyzed print media are the newspapers «VG», «Dagbladet», «Aftenposten», «Saltenposten» for the period January 2008 — October 2014, read from the official websites of these periodicals (vg.no, dagbladet.no, aftenposten.no and saltenposten.no respectively). These sources allow us to characterize the individual components of political image, to reconstruct a holistic view of the current image of Russia in Norway.

The components of the political image of the country

According to the authors, the political image of the country is a set of beliefs and feelings of people that appear due to the political circumstances on a particular territory. Its main components are:

- The image of a political leader, including his appearance, style of behavior and manners, the method of political decision-making, moral qualities, etc.
- The assessment of the political and legal system, the degree of development of democracy and the foundations of civil society, political freedom and freedom of speech.
- The notion of the political culture of the people, its civil, political and electoral activity.
- Analysis of the political decisions and actions that the country is making on the international arena.

Continuous analysis of the articles in that paper shows that 177 articles are dedicated to the Russian theme, 110 of them are focused on the political aspects of the Russian reality. It is obvious that the Russian theme occupies a significant place in the Norwegian periodicals, but not a prior one. Political events in Russia resonate in Norwegian editions only when they receive a global resonance, or directly related to the interests of Norway.

A clear differentiation of the articles on their value of judgments is extremely complex, since the same event is treated differently in various publications. However, the content analysis shows that the vast majority of publications is done for informational purposes only, or consists of the attempts to look at the problem through the prism of Western countries and from the point of view of Russia. There are publications, which contain of only positive or negative characteristics.

Russia is criticized for joining the Crimea, for the so-called policy of supporting the separatists in eastern Ukraine, spy scandals and environmental pollution. Russian law against the promotion of non-traditional sexual relations among minors in 2013 was another topic for the negative evaluations of Russia. The positive articles include the discussions of V.V. Putin’s personality, who is portrayed as a strong-willed leader. Norwegian media also appreciates the Russian-Norwegian cooperation in the military and economic spheres.

Considering the place and role of the President of Russia V.V. Putin's government, the authors of articles pay great attention to the political opposition in Russia and the disconnection between the population and the Russian government. It is noted that in 2012 fines for minor offenses had increased dramatically, and the parliament passed a law that expands the range of

penalties under the Article on "treason"[1]. Dissatisfaction was caused by the new law that allows the government to block websites. Norwegian human rights organizations were asking the Norwegian authorities to put pressure on Russia, so that it would create more opportunities for the development of civil society. Among the positive aspects of the Putin regime the newspaper «VG» named the anti-smoking law in 2013, which is designed to protect the health of citizens of the state from passive smoking and the negative effects of tobacco use.

Putin stands in the Norwegian media, on the one hand, as a strong political leader with a firm will, but at the same time, as a person prone to get rid of potentially dangerous competitors. In particular, the victims of the political line of V. V. Putin represented by Mikhail Khodorkovsky, who was allegedly convicted on the formal charges of tax evasion, Boris Berezovsky, who fled to London, the group "Pussy Riot", sentenced to prison, and arrested Peter Pavlensky. It is noted that the Russian channel TV "Rain", who had the courage to speak out against the existing government, was not closed for the sole reason that it was the only independent cable television channel in Russia.

V.V. Putin is portrayed as a politician, not perceived the fair criticism of Russia and himself as President, having in his arsenal of impact on the society only certain legal or economic sanctions. This is confirmed by the following quotes:

- "Among those who will soon be released, two members of the punk band "PussyRiot", who were sentenced to two years in prison for criticizing Putin"[2].
- "Mass demonstrations were very surprising and, no doubt, is the most commonly over 10 years of Putin's power as the most powerful leader of the country"[3].
- "Vladimir Putin entered the third presidential term in Russia, to tighten its control over civil society in the country"[4].

In general statements the politics and personality of the President of Russia could be characterized as negative, although there were positive and neutral expressions. In Norwegian newspapers «VG» and «Dagbladet» V.V. Putin appears as a strong political leader with an authoritarian management style, who restored the country's economy, took the efforts to raise world prices for oil and gas. According to the authors of publications, he always keeps calm on

[1] Russisk opposisjon kan ikke knuses. URL: http://www.vg.no/nyheter/utenriks/russland/russisk-opposisjon-kan-ikke-knuses/a/10063927/ (accessed: 30.03.2014).
[2] Russisk oljemagnat benådet og løslatt.URL:http://www.vg.no/nyheter/utenriks/russland/russisk-oljemagnat-benaadet-og-loeslatt/a/10148977/ (accessed: 30.03.2014).
[3] Russisk opposisjon kan ikke knuses. URL: http://www.vg.no/nyheter/utenriks/russland/russisk-opposisjon-kan-ikke-knuses/a/10063927/ (accessed: 30.03.2014).
[4] Ibid.

public, confident defending his point of view. However, Martin Paulsen from the University of Bergen says, the paradox that V.V. Putin divorced his wife and started a relationship with another woman and as the President for more than 10 years has advocated traditional family values. “For Putin it is important to look as a strong energetic person. He has some similarities with Silvio Berlusconi ... Putin acts as a ruthless politician. He is the result of the KGB school ...”, — said M. Paulsen[5].

A considerable number of articles were devoted to the assessment of political culture and political and legal system in Russia, the degree of development of democracy and the foundations of civil society, political freedom and freedom of speech.

A series of articles described the illegal actions of Russian citizens: tax evasion, corruption and violent crimes. Mentioned US sanctions in terms of Magnitsky Act (Sergei Magnitsky Rule of Law Accountability Act) and Russian counter sanctions aimed to ban American citizens to adopt Russian children, suspecting the United States in violation of human rights and not without reason, as the other Norwegian article gives an example of violent behavior of adoptive parents towards three year old Maxim Kuzmin[6]. The article “Russisk politi anklages for voldtekt og drap” describes the Kazan police not always legal brutality against detainees[7]. As an example, the article contains of a few cases of beating and raping. It is noted that law enforcement officers were using illegal methods to get confession from any innocent people.

It is well known that the Norwegian authorities are very concerned about environmental issues. There is the growing number of publications about the actions of “Greenpeace” and Russia's policy acts towards them. In these articles it is noted that the transnational environmental organization was concerned with the security in connection with the beginning of Russian oil exploration in the Arctic. Arctic Advisor of “Greenpeace” Erlend Telnes did not exclude the possibility of an oil accident, and commissioning of offshore ice-resistant fixed Gazprom’s platform “Prirazlomnaya” calls the time bomb[8]. He considered it illegal, and noted that, apparently, “the

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[5] Kristian Haugen «USA behøves fortsatt når det blir bråk».URL: http://www.aftenposten.no/meninger/kommentatorer/haugen/USA-behoves-fortsatt-nar-det-blir-brak-7519811.html#.U0AAIT9_tS4 (accessed:30. 03.2014).

[6] Ny runde i russisk-amerikansk adopsjonsstrid.URL: http://www.vg.no/nyheter/utenriks/russland/ny-runde-i-russisk-amerikansk-adopsjonsstrid/a/10114313/ (accessed: 30.03.2014).

[7] Russisk politi anklages for voldtekt og drap.URL: http://www.vg.no/nyheter/utenriks/russland/russisk-politi-anklages-for-voldtekt-og-drap/a/10072624/ (accessed: 30.03.2014).

[8] Russisk kystvakt skjøt varselskudd mot Greenpeace-aktivister.URL: http://www.vg.no/nyheter/utenriks/miljoevern/russisk-kystvakt-skjoet-varselskudd-mot-greenpeace-aktivister/a/10135233/ (accessed: 30.03.2014).

Russian authorities are ready to go far to hide risky plans of drilling and production of oil from the public"[9].

Russia's actions caused a negative reaction from members of the "Greenpeace" and Norway, which does not allow the oil drilling in ice-covered areas. "It makes no sense to extract oil in one of the most vulnerable waters in the world. Norway condemns Russia for the fact that we do not provide full protection of the Arctic Ocean" — writes in a statement the head of the "Greenpeace" in Norway Truls Gulovsen[10].

Russian law against the promotion of non-traditional sexual relations among minors in 2013 is another topic of a heated debate in the Norwegian media. The author of the publication in the newspaper "Dagbladet" believed that a broad discussion of the bill by the Russian public had been carefully planned to divert the public opinion from the economic crisis in Russia, and V. Putin got the support of the Orthodox Church in the elections. "This is a statement about the sexual conservatism was not done by accident, part of Putin's speech was devoted to Russia's foreign policy strategy, especially in relation to the Middle East and Africa. Putin wants to build a coalition of socially conservative states, connected to each other with their hostility towards non-traditional sexual relations", — stated the article[11].

The publications indicate that in August 2013 10,000 Danish people protested against the new Russian law, which, in their opinion, violated human rights. Russian journalist Anton Krasovsky and British actor Wentworth Miller denounced the law as a whole and policies of V.V. Putin in particular. Most publications were considering this issue in conjunction with the main event last winter — the Olympics. Statements against the new law were made by such stars of the world sport, as B. Miller and B. Shellerud who said that "it is inconvenient when there are countries and people who are so intolerant and ignorant"[12]. They believe that Russia does not care about the meaning of the Olympic Charter regarding tolerance and openness. It should be noted that this issue was one of the most acute among the published articles with a negative shade.

Overall assessment of the political and legal system of Russian periodicals Norway is not high. According to the newspaper, freedom of speech and the ability of expression of Russians are limited. Among the most important examples of limiting freedoms Norwegian media considers the

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[9] Russiske soldater stormet Greenpeace-skip i Arktis.URL: http://www.vg.no/nyheter/utenriks/russland/russiske-soldater-stormet-greenpeace-skip-i-arktis/a/10135429/ (accessed: 30.03.2014).

[10] Greenpeace-aktivister jaget fra russisk oljeplattform. URL: http://www.vg.no/nyheter/utenriks/russland/greenpeace-aktivister-jaget-fra-russisk-oljeplattform/a/10060355/ (accessed: 30.03.2014).

[11] Dan Healey «Politisk regissert homohat». URL: http://www.dagbladet.no/2014/02/18/kultur/hovedkronikk/meninger /kronikk/sotsji/31878522/ (accessed: 30.03.2014).

[12] Bode Miller hard tut mot Russisk homolov. URL: http://www.vg.no/sport/alpint/ol-2014/bode-miller-hardt-ut-mot-russisk-homolov/a/10152315/ (accessed: 30.03.2014).

criticism and rejection of homosexuality, equal rights for people, that is, in their opinion, the face of the state.

Norwegian media practically does not raise the issues of political culture of the Russian people, which is most likely due to insufficient knowledge of the internal situation in Russia, its cultural identity and social consciousness.

Among the publications devoted to the analysis of political decisions and actions that Russia had taken on the international arena, the greatest response was received by espionage scandals. Among Russian spies Anna Chapman is mentioned (espionage in the United States in 2010), Heidrun and Andreas Anschlag (espionage in Germany in 2013). Some articles were on threats from the sea or the sky or about spying by the aircraft BearF along the coast of Norway (2009), or about the ship "Fedor Golovin" off the coast of Sweden (2013) and the ship "Victor Leonov" in Havana (2014). “We have not seen this behavior on the part of Russia ... since the Cold War”[13], — admits the marine inspector and Norwegian rear admiral Jan Törnqvist.

Norwegians are afraid for their own national security. So, a military analyst and a senior adviser of the Centre for International and Strategic Analysis SISA Harald Hovol writes that the Norwegian aviation constantly observes Russian aircraft along its coast. He is afraid that Russian aircraft has nuclear weapons on board. Analysts say that Russia's military budget in 2013 increased by a quarter, which means that the training operations will be spread further to the west and south along the coast of Norway[14].

Finally, the biggest part of the political articles is devoted to the actual topic of today — events in Ukraine and the joining of Crimea. The articles on these events consider the actions of Russia as a violation of international law. The totality of publications on this subject could be divided into 2 groups: the articles devoted to the analysis of the position of Ukraine and the West; publications reflecting the position of the Crimea and Russia.

The first section is represented by the largest number of articles. The second — refers to the referendum on March 16, 2014 and highlights the position of the Russian side. It is noted that Barack Obama is “deeply concerned” about the situation on the Crimean peninsula and calls on Russia to respect the sovereignty and territorial integrity of Ukraine. It is recorded that the US and the EU do not recognize the results of the referendum on the status of Crimea, despite the fact that 95.5% of the population voted for joining Russia. It is noted that due to the position of Russia

[13] Asle Hansen «Russisk fartøy spionerte på Sverige». URL: http://www. dagbladet.no/2013/09/20/nyheter/utenriks/spionasje/russland/sverige/29386197/ (accessed: 30.03.2014).

[14] Rune Thomas Ege «Norge sier nei til russisk kystvakt-samarbeid». URL: http://www.vg.no/nyheter/innenriks/forsvaret/norge-sier-nei-til-russisk-kystvakt-samarbeid/a/10059093/ (accessed 01.04.2014).

in the Crimea V.V. Putin's rating has increased dramatically inside the country. NUPI Professor Janne Haaland Matlari believes that Western sanctions against Russia would have serious consequences for the European countries themselves. As an example, she cites the French arms deal with Russia, German gas imports, Russian investments in the City of London[15].

An attempt to analyze the reasons for sanctions against Russia is in the article «Den russiske annekteringen av Krim er en realitet. Det er gjort brutalt og nådeløst "Krimpå Russisk» — «Liberal foreign policy is guided by the rules." Not without reason in the publication noted that international standards over the years have become so numerous that they come into conflict with each other. Noteworthy is the author's article that the West in these events hastily constructed front line to defend the sovereignty of Ukraine and non-interference in its internal affairs, whereas during the conflicts in Iraq, Kosovo, Libya and Syria, the West and the United States were on the other side of the table, where now Russia sits. It should be recognized that this article actually justifies Russia's actions and recognize the legitimacy of its actions. The publication notes that "Crimea was Russian for nearly 300 years until the Soviet leader Nikita Khrushchev with a stroke of a pen gave it to Ukraine in 1964[16]... Some historians believe that it was in a drunken state. Like so much else in this complicated region of the world ... "[17].

The publication notes that the Norwegian side has confined itself to two sanctions against Russia. It had suspended its participation in the negotiations on a free trade area between the European Free Trade Association and the Customs Union of Russia, Belarus and Kazakhstan, and also joined the EU decision to impose sanctions against a number of citizens of the Crimea[18]. Meanwhile, the bilateral relations between Russia and Norway should not suffer from this, says Kristian Haugen[19]. "Norway stands for fruitful cooperation with Russia. As the Arctic states and neighbors, we have common interests and important areas of cooperation, including in the field of fishery management, environmental protection, nuclear and radiation safety, as well as wide cross-border cooperation. These directions we want to keep"[20] — says Secretary of State B.G. Pedersen.

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[15] Nilas Johnsen, Ida Anna Haugen «Klart flertall for russisk Krim».URL: http://www.vg.no/nyheter/utenriks/ukraina/klart-flertall-for-russisk-krim/a/10138282/ (accessed: 01.04. 2014).

[16] In fact Crimea became a part of the USSR in 1954. — Eds. note.

[17] Den russiske annekteringen av Krim er en realitet. Det er gjort brutalt og nådeløst. URL: http://www.dagbladet.no/2014/03/01/kultur/meninger/hovedkommentar/kommentar/ukraina/32093751/ (accessed: 29.01.2015).

[18] Норвегия остановила переговоры о свободной торговле с Россией. URL: http://news.bigmir.net/ukraine/-801998- Norvegiya-ostanovila-peregovori-o-svobodnoi-torgovle-s-Rossiei- (accessed: 01.04.2014)

[19] Kristian Haugen «USA behøves fortsatt når det blir bråk». URL: http://www.aftenposten.no/meninger/kommentatorer/haugen/USA-behoves-fortsatt-nar-det-blir-brak-7519811.html#.U0AAIT9_tS4(accessed: 30.03.2014).

[20] Simen Tallaksen «Har mindre tillit til Norge». URL: http://www.klassekampen.no/article/20140813/ARTICLE/140819979 (accessed: 20.10.2014).

According to the Norwegian Government, the sanctions are the result of the actions of Russia in Ukraine. Joining them in the autumn of 2014, Norway indefinitely introduces the following measures:

1) a ban on exports of some equipment for the Russian oil and gas industry;
2) a ban on the import of goods from the Crimea and Sevastopol, as well as a ban on the provision of loans or credits for a number of institutions in these regions;
3) a ban on the import and export from Russia and to Russia in military and dual-use;
4) a ban on trade in securities and financial instruments with a maturity of over 90 days, issued by the five Russian financial institutions[21].

“Norway should support the Allied sanctions against Russia, even if the response of Moscow will mean serious consequences for local businesses," — said the Norwegian Minister of Finance Siv Jensen. “At the same time Russia is our neighbor and we have significant trade relations, so for the kingdom it is now important to overcome the period of Russian retaliatory sanctions that seem to be very unreasonable when you consider their implications"[22], — she said.

Minister of Fisheries Elizabeth Aspaker, said that her department was considering the implications for the Norwegian economy from Russia's ban on imports of Norwegian fish. The Minister said that in 2012—2013, Russia was the largest importer of Norwegian fish and seafood. In 2013, the Russian Federation has provided almost 9% of the Norwegian exports to the industry by importing fish for more than $ 1 billion. The experts, in her opinion, have similar positions that Russia's ban on imports will hit Norwegian producers of salmon and trout, as it made up 80% of fish exported to in the Russian Federation[23].

Elizabeth Aspaker also pointed that in 2013 Norway had exported to Russia about 650 tons of cheese, worth about $ 4 million. Now the Russian market is closed for the Norwegian dairy concern “Tina”, which provided the majority of these supplies. In this case, the share of fish and seafood products in 2013 was accounted for 76% of total Norwegian exports to RF. Norway exported salmon, trout, cod, mackerel and herring to Russia. E. Aspaker notes that there are some interesting exceptions to the list of prohibited goods: the exclusion of alcohol, which means that the middle class in large cities of Russia continues to drink European wines. Baby food is also not included in the ban list, because it is the product of the urban middle class[24].

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[21] Ibid.
[22] Nye EU-sanksjoner mot Russland. URL: http://www.dagbladet.no/2014/09/12/nyheter/utenriks/russland/eu/ukraina/35247688/ (accessed: 20.10.2014).
[23] Morten Stand, Trym Mogen «Russland stanser import av norske produkter». URL: http://www.dagbladet.no/2014/08/07/nyheter/varehandel/politikk/okonomisk_politikk/russland/34669460/ (accessed: 20.10.2014)
[24] Ibid.

The above-mentioned author writes that from August 7th, 2014, Russia had imposed a total ban on beef, pork, vegetables, poultry, cheese and milk from the EU, the US, Australia, Canada and Norway. Russia imposed sanctions against the EU, US, Canada, Japan, Australia, Switzerland. On October 16th, 2014 the EU candidate for membership countries — Montenegro, Iceland, Albania, Ukraine, and members of the European Economic Area Liechtenstein and Norway joined the anti-Russian sanctions, announced in Brussels on September, 12th[25]. We are talking about the sanctions that restrict the access of Russian banks and companies to the capital market of the European Union, as well as affecting the oil, aviation industry and defense complex.

Thus, political actions of Russia in the international arena are most covered topic in the Norwegian media. The most urgent problem is the events in Ukraine, joining the Crimea, Western sanctions on Russian and Moscow's response to them, which is quite justified, because they are directly affected Norway and caused significant damage to its economy. We can assume that the so-called annexation of the Crimea and interference into political processes in Eastern Ukraine may raise concerns about Norway's own national sovereignty and security, as measures to strengthen the national security of the country by a military build-up and could be interpreted as a growing threat to other countries.

Conclusion

In general, the analysis allows us to conclude that the Norwegian media is not indifferent to the internal political processes in Russia and its activities in the international arena. However, the content analysis of articles shows that printed periodicals of Norway do not provide a comprehensive and integrated understanding of the political image of Russia. They are poorly represented specificity of Russia's political development and political culture of the people. Through the prism of Western values and ideas estimated the degree of development of democratic institutions, civil society, human rights and freedoms. On the basis of high-profile resonant events provides an overview of the political and legal system, foreign policy and Russia's behavior in the international arena. Significant amount of negative articles is cautiously suspicious about the true nature of the foreign policy of Moscow's intentions, particularly in light of the Ukrainian crisis and its consequences.

However, it should be noted that the interpretation of the political image of Russia and its major components is highly controversial. Along with the negative image of Russia Norwegian media makes attempts to reflect the positive trends in Russia, reasonably submit its position in the

[25] Минфин Норвегии: Осло должен поддержать союзников по санкциям против России. URL: http://vz.ru/news/2014/8/8/699349.html (accessed: 20.10.2014)

international arena and national interests, especially in the Crimea. In this context, the political image of Russia in Norway is more balanced compared to, for example, the Baltic prints that constantly circulate the image of the enemy in the face of Russia [14].

Fragmentation and a certain political engagement of articles is relevant because of the several factors: the specificity of the media, which tend to focus on sensational events with a negative shade, poor awareness of the events taking place in Russia and a lack of understanding of cultural and national specificity of our country. We also should be aware that Norway is a member of NATO and must follow its discipline. We should not exclude the possibility of the order of government and financial circles. Partly it is the fault of the Russian media, which have only recently started to be active in the international space. Only in 2005, the channel «Russia today» started its work for the audience which currently stands at about 644 million people in more than 100 countries of the world. Russia has not taken enough measures to create a positive international image of the country. Cautious attitudes towards the country inherited from the Cold War are still influencing its image.

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Reviewer: Lukin Yury Fedorovich,
Doctor of Historical Sciences, Professor

Historical Science

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The first Soviet fishing expeditions to Spitsbergen and Iceland (1946—1952)

© Portsel, Alexander K., Candidate of Historical Sciences, Associate Professor of the Department of Philosophy, History and Sociology of Murmansk State Technical University.E-mail: portsel@inbox.ru

Abstract. The development of fishing areas in the North Atlantic by the Soviet fishing fleet in the postwar years is considered on the basis of archival documents and memoirs. The economic importance of this fishery is linked to the geopolitical interests of the USSR in the northern areas of the oceans.

Keywords: *fishing, Soviet fishing fleet, Spitsbergen, Iceland, North Atlantic, postwar years, PINRO, "Murmanryba", "Murmanseld"*

Introduction

Spitsbergen area is one of the most important areas for the world and Russian fishing. In this article, based on archival materials and memoirs it is attempted to analyze how the geopolitical changes taking place in the world after the Second World War influenced the formation of the Soviet fisheries in the North Atlantic and in Spitsbergen area.

In the early postwar years, the Norwegian authorities expected to strengthen its position in relations with Moscow with the help of the Anglo-American support. The growing military cooperation with the United States and Western European countries was a part of this support. In 1946, the Soviet Ambassador in Norway N. D. Kuznetsov in a memorandum to the People's Commissariat of the USSR said: "The Norwegians, seeking to preserve the islands for themselves, make the question of Svalbard important for all the great powers, especially Britain and the United States"[1]. In the context of the Cold War, in which the Arctic areas assigned a significant role, it was vital for the Soviet Union not to turn the archipelago into a springboard for deployment of anti-Soviet military threats. Nevertheless, the Soviet side had postponed the revision of the status of the archipelago until a more favorable time, not to let the annexationist intentions to appear. Such

[1] Советско-норвежские отношения. 1917—1955 гг.: сб. док. / Под ред. А.О. Чубарьяна, У. Ристе. М.: ЭЛИА-АРТ-О, 1997. С. 404.

accusations, according to Moscow, could become an excuse of American presence in Iceland and Greenland.

Without increasing pressure through diplomatic channels, Moscow, at the same time, took steps to demonstrate the Soviet presence in these strategically important areas of the North Atlantic. As in the early twentieth century, one of the main ways was the intensification of domestic economic activity here. The main economic activities in these areas for the USSR were fishing and coal mining on Svalbard.

In the early postwar years, the increase in fish production had been a strategic objective. Without this it was unreal to solve the food problem in the country. A significant role in increasing the fish catch was withdrawn by fishermen of the North Basin. To solve this problem, it was necessary, first of all, to ensure a reliable supply of fuel fleets. The companies providing the North Basin with coal supply were depended on Svalbard coal. In the “Key indicators of the plan for five years” (1946—1950) for the association “Murmanryba” in 1947 it was stated: "On the positive solution of the question of the coal concessions the Svalbard, Svalbard was resumed to be transported to Murmansk to supply fish enterprises, after it was interrupted by the war"[2]. But the fishing areas near the coast of the Soviet, mastered by fishermen in the prewar years, could not provide the required rate of fishing capacity. The sharp increase in catches could be done only by the expansion of fishing areas, means going on the fishing ships in the oceans. The development of the economic activity of the USSR in the North Atlantic in the early postwar years was dictated not only by the economic necessity, but also by geopolitical interests.

In 1946—1950 the volume of fish catch of the fish industry in Murmansk and Arkhangelsk regions (Tralflot, Kola, White Sea and the Czech-Pechersk trusts) grew from 1325 thousand to 4,500 thousand centners[3]. In the “Explanatory Note to the 5-year development plan of the Association “Murmanryba” for 1946—1950" it was said: "trawler fleet will not be enough for the operation of the fishing areas, which it mastered and exploited before the war. Soviet trawlers in the first 5 post-war ears will have to learn and begin to exploit a number of new fishing places outside the normal range of their activities; develop commercial space in Nadezhda Island, Spitsbergen and Medvezhiy Island, fishing banks of the North-West and West coast of Norway "[4].

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[2] Государственный архив Мурманской области (ГАМО). Ф. Р-534. Мурманский государственный рыбопромышленный трест «Мурманрыба» Главного управления рыбной промышленности (Главрыба) Народного Комиссариата пищевой промышленности СССР. Оп.8. Д.166. Л.49.

[3] ГАМО. Ф. Р-534. Оп.8. Д.166. Л.10.

[4] Ibid. Л.35.

Exploration of the fishing areas in Svalbard began before World War II. In June 1934 the archipelago was aimed at trapping expedition onboard the “Nikolai Knipovich” headed by Y.Y. Marti and the captain P.A. Polisadov. In Spitsbergen area herring was found. It was called “polar crease" After a few days in the area the boat "Vanguard" (Captain S.E.Edemsky) came to fish. After the 18-day work the crew returned to Murmansk with a catch of 25 tons of “polar crease" [1, p.29; 2, p.70; 3, p.78—79]. But in general, before the war it was limited to only commercial exploration of these areas.

After the end of the war in the Arctic exploration work in Svalbard continued. Under the leadership of the Murmansk commercial association "Murmanryba" in 1945 there were "conducted search operations on the Lofoten Islands in the west of Novaya Zemlya and the east of Spitsbergen, Edge, Nadezhda, Perseus hill and to the edge of the polar ice cap in the north" [2, p. 91]. But it was difficult. The former head of the Association “Sevryba" M.I. Kargin writes: "It was not immediately come to understand that in order to effectively address the problems associated with the daily search for raw materials," Promrazvedka "should be the research and fishing fleet, specially trained should be equipped with the most modern devices, with its own staff of researchers and specially trained crews "[4, p. 30—31]. At first, the fishing fleets worked together with the PINRO expeditions. Expeditions on ships “Rynda” and “Kashalot” confirmed the commercial stocks clusters of the “Polar crease” and proved the possibility of a successful fishing.

In 1946, the Polar Institute of Fisheries and Oceanography (PINRO) identified and justified the new fishing areas for Murmansk fishing fleet outside the Soviet sector of the Western Arctic. There were some opportunities for cod fishing Bear-Spitsbergen shallow water identified. In 1947, these studies continued by 4 loggers. They caught 170 t. of herring [2, p.96]. In 1946—1949 the world's first drift-net fishing vessels “Kashalot”, “Rynda”, "Scout 1", "Scout 2," "Harley", "Smerch" proved the possibility of a successful fishing in areas of Spitsbergen and Medvezhiy.

The work of scientists in these expeditions took place in difficult conditions. Some details could be seen from the letter of Y.Y. Marti written in 1950, during the Spitsbergen expedition, sent from the fishing area to the PINRO Director I. I. Lagunov: "I take the opportunity; the tow is going to Murmansk. Basically I want to share. The expedition is fine, but could be better. Miss a lot in training, and in the course of fishing. Without this, apparently, it is difficult. As the result, for the first time there is a satisfactory prepared good ships and captains starts to get more and more positive side, which seemed to be a problem before. The density of clusters is very high ... But with the development of new technology it is bad. ... Have not enough of sleeping and work in intolerable environment. Tightness, noise, etc ... Technique in order, but the situation with work is

terrible. I imagine working without a laboratory complex, but did not think it would be so hard. ... All of our three assistants have seasickness — it exacerbates the job." But the tone of the letter was optimistic. The emphasis is on business conclusions: "All the work in the North Atlantic is drawn to me in a very large plane. It was a big problem. The cause must be taken in earnest, almost from scratch, on the basis of oceanographic, or throw and go to do a quiet work. Now it is indisputable for me that the ships should be built only in Murmansk. Type MFT by Sapanadze or Semenov is better than the German ships. All the challenges we are facing cannot be solved without vessels. This is what you need to start from"[5].

Truly heroic work of scientists and fishermen still did not get a decent score. A number of employees of the PINRO headed Y. Y. Marti was awarded the State Prize for these studies [2, c.95]. Also, B. Mayntfel, S. Mihaylov, G. Korolkov were awarded the State Prize "for the discovery and development of new herring fishing area in the Barents Sea" [3, c.79].

But in 1946—1947 the exploration expeditions did not get any further continuation. It can be partly explained by the fact that Moscow did not want to cause additional anxiety in the Scandinavian side of their activity near their territorial waters, still hoping for a favorable development of Soviet-Norwegian contacts. But after 1947 the Storting took a cautious stance against the Soviet proposals on Spitsbergen and the situation had changed. Moscow could not help to react to the discussion held in February 1949 in Washington by the US, Canada and Western Union on the establishment of the North Atlantic Pact and its approval in March of the same year. In these conditions it was logical to show an interest in maintaining the stability of the Soviet Union in the North Atlantic. It could be demonstrated by the presence of the Soviet fishing fleet in the area of the oceans. Thus the economy is closely connected with geopolitics.

In 1948, the exploratory expedition of the Soviet fishing fleet to the shores of Iceland was organized in order to determine the capacity of the industrial production of herring. It was carried out by the forces of "Baltgosrybtrest", participated in this expedition and it had transferred several fishing vessels of the "Murmanryba"[6]. At the same time in the waters of Svalbard PINRO scientists continued the research in order to identify the opportunities for fish stocks and fishing. Based on the results of these expeditions, the Ministry of Fishing Industry of the USSR, decided to "take into account the existing experience of the North-Atlantic herring expedition, conducted in 1948, as well as the positive results of research in the area of Spitsbergen," organized in 1949 by two fishing expeditions — one to the coast of Iceland, another — to Svalbard. But, judging by some of the

[5] ГАМО. Ф. Р-878. Главное управление рыбной промышленности Мурманского бассейна («Главмурманрыбпром») Министерства рыбной промышленности РСФСР. Оп.1. Д.94. Л.210—212.
[6] ГАМО. Ф. Р-534. Оп.8. Д.215. Л.207.

documents "Murmanryba", if sending ships to Spitsbergen was included in the annual plan of association, the decision on the allocation of fishing vessels in Icelandic expedition was made after the drawing up the plan for 1949[7].

In "Basic indicators of the project on the production plan in 1949 for the association “Murmanryba” it was planned to send 4 fishing vessels to the shores of Spitsbergen (2 MFT and 2 SFT). It was planned to give them the 4,250 production plan for herring. That year the ships covered a large area, reaching 78º north and the Lofoten Islands to the west[8]. Actively conducted exploration on Svalbard was continued. But, as the events in the fishery had shown, it was not enough, especially in the Svalbard area.

Preparations for the expedition began relatively late, and they had to do a lot of work. The order on expeditions was signed on March 12, 1949. Based on archival documents, the preparation began earlier. The order of the “Minrybprom” was determined by the specific terms, indicators and measures that were necessary for the completion and insurance the success of the expedition. Organization of expeditions was taken under special control by the Ministry. In March 1949 in Moscow there was a meeting chaired by the deputy Minister of fishing industry A. Sbrodov, which discussed the “unsatisfactory progress in the preparation of the fleet" and measures to accelerate the preparation of the expedition. On March 31, 1949 there was the next meeting and a decree “On the state of preparation and carrying the North Atlantic herring expeditions in the North of Iceland and Spitsbergen in 1949”. The tone and content of the order recorded in it made it possible to judge these expeditions were extremely important. Some paragraphs of the Order were designated "top secret"[9]. The Order consisted of a set of deadlines for the implementation of all activities —on June 1 the expedition had to go from Kaliningrad to Iceland, and in two weeks — from Murmansk to Spitsbergen. Repair works and conversion of ships had to be carried out in an extraordinary manner and be fully completed by May 20. Materials allocated for these works were forbidden to use for other purposes. Here's a part of the order on ship repairing: “Chief of the “Glavrybsnab” comrade Rovensky together with the deputy chief of the “Glavsevrybprom” comrade Sheredeka *within three days* (my emphasis.— A.P.) must clarify all the issues of logistics of the Murmansk shipyard in order to complete the tasks necessary for the expedition ship repairing and report about the results to the Deputy Minister Comrade Obukhov"[10]. It should be stressed that all the vessels were to be equipped with radios and phones.

[7] Ibid. Д.244. Л.48. Л.57.
[8] Ibid. Д.230. Л.5.
[9] Ibid. Д.244. Л.48.
[10] ГАМО. Ф. Р-534. Оп.8. Д.244. Л.49.

Team making should be conducted under the personal supervision of the management the “Glavsevrybprom”. It should be done within five days and it was necessary to send the teams to receive seiners, and together with the Central Office of the Navy it was important to conduct the necessary tests of the equipment. The chief of the “Glavsevrybprom” comrade Skornjakov in accordance with the Order of the “Minrybprom” on March 12, 1949, №120 it was necessary to «complete the equipping of vessels chosen for the expedition, not later than April 15, so that by May 1, the teams would be properly documented and would have nautical books; the registration of workers, handlers and the rest had to be finished by May 1, 1949”. Lack of the qualified personnel made it almost impossible to comply with such instructions in such a short time. On the April, 1 two scientists from VNIRO were sent for three weeks to manage the construction of new gear in Kaliningrad. The same institution was instructed to provide the stuff for the completely new fishing areas and by May 1, a group of scientists continued the research in the fishing area. Deadline May 1 was repeated several times in the Order and it was not accidental. In order to improve the training of personnel it was ordered to release fishing vessels that go on an expedition on the fishing for practical work on the training of fishing crews for expeditions on technique of herring fishery from. It had to be done in period from May 1 to June 1, 1949. “Education in Kaliningrad was held under the leadership of Deputy Chief of the expedition Comrade Wagner, and in Murmansk — under the leadership of Leader of the expedition comrade Sidorenko”[11].

The Deputy Chief of “Glavsevrybprom” was asked to report to the Ministry of Fisheries on the progress of all works at least once in five days. In order to do this the leaders had to inform the Deputy Minister about the situation. Such tight control over all matters was not unusual in those years. Detail preparatory work before going out to the sea was made, but still under the control of the Ministry means that these expeditions were given not only economic, but also political significance. It was necessary not only to identify the economic presence in the waters of the potential participants of NATO, but also to do everything to make these expeditions economically beneficial. 27 vessels had to go to Iceland. The ships of Spitsbergen’s expedition were written in the report on the economic activity of the association “Murmanryba” for 1949 and it was said that it was planned to use 12 vessels, including 5MFT, 4 SFT and 3 seiners, but 4 MFT which were sent to the Icelandic expedition and were replaced by 4 motorboats “elongated whale”[12]. As a result, the expedition got the MFT “Dolphin”, SFT “Smerch”, “Weida” and “Harlov” (but “Harlov” was forced to return to Murmansk because of the leak and was not involved in the expedition),

[11] Ibid. Л.50.
[12] ГАМО. Ф. Р-534. Оп.8. Д. 230. Л.19.

motorboats “Yaz”, “Azimuth”, “Reef” and “Albatross” and “Tambov” and SFT of PINRO. In addition to the ships' crews, 13 different specialists joined the expedition to the shores of Spitsbergen (head of the expedition, his deputy and assistant for political affairs, mining engineer, chief engineer, a senior radio engineer, cryptographer, three scientists, etc.).

The structure of the Icelandic expedition included a similar specialists and two accountants, translator and radio operators with the knowledge of a foreign language — only 22 people. The ships went to Iceland, had to get a result of 25.2 thousand centners of fish, the ships went to Spitsbergen — 10.0 thousand centners[13]. But the plan of the Spitsbergen expedition was carried out by only 46.2%, or 4.62 thousand centners of herring. “Murmanryba” leaders explained this result: "the failure herring production plan for both vessels and the whole expedition had happened for the following reasons:

1. Incomplete participation of fishing vessels in the expedition.
2. The untimely departure of vessels to fish because of the delay in repairing and the preparations for the expedition.
3. Severe weather conditions in the fishery areas on Svalbard for a small fishing fleet did not allow the sufficient use of the fishing base.
4. The fishing fleet was engaged in a search operation itself on herring.
5. Premature withdrawal from fishing due to storms and lack of concentration herring[14].

However, the PINRO experts put forward another explanation of failures. In 1950, the Academic Council of the PINRO noted that this occurred because of Association “Murmanryba” leaders and the underestimating the value of herring fishery creation in the North. In 1948, the ships were not sent to the North, and in 1949, due to the poor organization and preparation of the expedition ships, the fishing was frustrated.

All this was taken into account in future. And the expedition to the shores of Iceland and Svalbard had stopped carrying out the experiments and began to enter an integral part of the plans of fishing fleets. So, in the plans for 1950 it was clearly stated that, in order to further the elimination of seasonal trawling the most of new areas: the northern and western coast of Norway, Spitsbergen, Medvezhiy Island, Nadezhda Island, Zyuydkapsky chute, the Central Hills and the North Novozemelskoe shallow water[15].

Due to the growing importance of herring fishing in the Atlantic on April 26, 1949 the Council of Ministers ordered the creation of a specialized management “Murmanseld” in the

[13] Ibid. Д.244. Л.54. Л.51, 52.
[14] ГАМО. Ф. Р-534. Оп.8. Д.230. Л.19.
[15] Ibid. Д.287. Л.4. Д.265. Л.3.

“Murmanryba". The Charter of the companies of a new management was approved on July 19 of that year. The Chapter had determined that it was created “in order to develop an active herring fishery in the Pechenga Bay, Kola Peninsula, Barents Sea, Svalbard Islands and base the herring expedition aimed to fish near Iceland, for buying, processing and marketing of herring and other fish resources of these areas, as well as for the operation of all kinds of plots to fisheries enterprises”[16].

But the organizational process had been delayed. Although an Order was published by the association “Murmanryba” on December 3, 1949 to create management and the company became officially operational only since the 1st of January 1950 [2, p.99]. The “Murmanseld” leaders explained the reasons of the delay by a large number of repairs on ships and by the fact that “the majority of organizations associated with the management of “Murmanseld” revealed the neglect toward it. All demands of the “Murmanseld” remained unsupported ... It took the intervention of the most energetic leadership association to rectify the situation”[17].

On October 29, 1949 the head of the association “Murmanryba” had a meeting with the Deputy Minister of Fishery of the USSR K.E. Babayan. The preparations for the North Atlantic expedition in 1950 were discussed there. It was planned to send 12 MFT ships with a load of 2,670 c. to the shores of Iceland and give them the fishing plan of 32 thousand centners and to send 8 MFT to Svalbard with a load of 1,000 c. and the fishing plan of 8 thousand centners. But soon the scales of the expedition were increased. By December 8, 1949 the chief engineer of the “Murmanryba” got about 25 vessels for the Icelandic expedition and 15 for Spitsbergen expedition. But on December 14th the Deputy Head of the association “Murmanryba” sent a letter to the leaders of the newly created “Murmanseld” management unit saying about 28 ships intended to be sent to Iceland, and 19 — to Shpitsbergen. All the exploration of the fishing resources during the expeditions was the responsibility of the PINRO. Four of its employees (the chief of the expedition Y.Y. Marti, hydrologist B.V. Istoshin, hydrophone A.A. Gankov, intern-hydrophone A.A. Degtyarev) went to the open sea on the flagship of the expedition —MFT “Groza”. During the first 9 months of the year 1950 the expedition examined 22 areas for commercial fishing near the Western Spitsbergen[18].

It was harder than expected to organize the North Atlantic expedition. The scale of this expedition was much wider than that of the past. The newly created “Murmanseld” unit faced a complex problem. *Firstly*, there was a problem with the schedule for the ships coming from the

[16] Ibid. Д.262. Л.66.
[17] ГАМО. Ф. Р-534. Оп.8. Д.262. Л.68.
[18] ГАМО.Ф. Р-534. Оп.8. Д.246. Л.154, 198, 201. Д.263. Л.71.

other fleets: By the January 1, it had to be 38 ships there, but, in fact, they had only 10. *Secondly*, all the arriving ships were not designed for trawling — they were a new the type of vessels where the trawl fishing had not been performed. *Thirdly*, the ships had no radio and failed to meet the requirements of the USSR Register of the ships operating in polar latitudes. In 1950 due to the fact that the needs of "Murmanseld" in supply were not taken into account and, in fact, they were unplanned, it had become difficult to organize anything due to lack of materials and equipment. They had to do a great job reequip the ships. *Fourthly*, there were problems with the personnel of the expeditions. The personnel of these vessels had no experience in trawling and were not familiar with the types of trawls, trawling equipment and new fishing areas. It had to be learnt in the course of fishing in the open sea. The leaders of the "Murmanseldi" wrote the explanatory note to the annual report highlight that that year the staff of the expedition had not been equipped with a woolen clothes (warm underwear, sweaters, scarves, mittens, knitted hats, etc.), as well as the "Murmrybsnab" did not provide them with these items. It is difficult to imagine the conditions of fishermen's work in the polar expeditions without the required amount of warm clothing. The documents have no information on how they managed to solve this problem[19].

The routine tasks precisely designated the date when all ships had to go to the sea: Icelandic expedition — on the 15th of May, 1950, Svalbard — on the 25th of May. But the timing could not be maintained, though all the work was done in time. The vessels of the Spitsbergen expedition went out to sea in small groups of 1—6 ships. During the June 1950 there were 26 fishing vessels in the open sea. The other 9 vessels had not arrived. The "Murmanseld" leaders believed that they "could not agree with the stretching out of the expedition start up to a month. It should have been taken no more than 5—8 days"[20].

During the first 9 months of 1950 the "Murmanryba's" ships got 11,700 centners of fish in the area of Spitsbergen. But it was only 0.07% of the total fish caught by the "Murmanryba". The fact that there was a small amount of floating factories had the impact on the catch. The floating factories of the expedition could not take the entire amount of the catch. As it was noted by the leaders of the "Murmanseld", "the ships of the Spitsbergen expedition lost 350 days on the delivery of herring. If there were more floating factories the amount of the catch could go up for not less than 25.0 thousand centners of herring." And even in hard circumstances, the plan had been exceeded: the catch for each MFT was averaged by 219.7% of the planned (during the Icelandic expedition — 132%). The difficulty with filling the vessels with fuel and water in the

[19] ГАМО. Ф. Р-534. Оп.8. Д.262. Л. 68—69, 73, 75.
[20] Ibid. Д.265. Л.75. Д.262. Л.76

fishing area had the impact on the expeditions. Converted into a tanker the marine vessel for fishing “Shalim”, responsible for the fueling the ships of the Spitsbergen expedition, did not meet the requirements of the Register of the USSR and had a small tonnage. There was a need in a tanker with a capacity of not less than 500 tons. A serious problem was indicated in connection with the poor quality of coal. Because of that “10.6 days were lost at sea for raising the steam”[21].

In order to remove this tension the leaders of the “Murmanryba” offered the creation of the bases to provide the trawlers with the coal and water in remote areas: on Novaya Zemlya in the Bay Belushi, on Spitsbergen in Barentsburg and in the Iokange on the Murmansk coast. These proposals didn’t meet any objections, but nothing was done to implement them. Analyzing the herring expeditions of the past, the scientists from the PINRO pointed out that the conditions of herring fishing off the coast of Spitsbergen were more difficult than that near the Iceland. In their view, that situation made it necessary to organize well supplied exploration. Otherwise the ships would be doomed to reducing of productivity and to a large number of useless drifts. In 1950, due to the quite satisfactory exploration there were 40% of empty drifts. The PINRO Academic Council paid a special attention to the need for the industry in scientific research of the area of the northern latitudes and in organization of well-equipped and seriously operated management system of the sea fleet[22].

The organization of commercial exploration faced may problems in 1950. In the Order of the Minister of Fishery of the USSR K. Rusakov it was noted that the exploration of the fish was done with the help of ships with a small radius of sailing, and their technical equipment got no proper attention. Some vessels were poorly equipped, had no sonar electro winches. In 1950 the repayment of the search seiners was done with a delay. The leaders of the trawler fleet did not take appropriate measures to provide the ships with the experienced staff. The trawlers had constant command staff turnover, which had an extremely negative impact on the results of their work. The attention was paid to the inadequate training of commanders and fishing crews for work in conditions of the North Atlantic. There were serious complaints from fishermen and scientists to: projections that were given and specialists by PINRO and VNIRO[23]. And still at large, despite all the mistakes, the organization of herring expeditions and their results in 1950 should be considered as satisfactory.

The plans for the USSR Ministry of Defense for 1951 provided the organization of the herring expeditions to the shores of Iceland and Svalbard. Preparations were conducted under a

[21] Ibid. Д.263. Л.127, 128. Д.287. Л.12. Д.263. Л.9.
[22] ГАМО. Ф. Р-534. Оп. 8. Д.265. Л.68. Д.287. Л.5.
[23] Ibid. Л.342, 343.

special control of the part of management of the fleets and by the Ministry itself. In Order to "Murmanryba" "On measures to ensure the implementation of the plan in 1951 for the association "Murmanryba" on April 7, 1951 contained the detail description of all vessels of the expedition, the plan and the measures to ensure timely access to the sea. Thus the rate of supply was scheduled for six months. Description of the equipment and other types of supply were enclosed.

On the 29th of May 1951 the USSR ministry of fisheries issued an Order №354 "On herring expeditions 1951", where "Glavsevrybprom" (comrade Kulikov), association "Murmanryba" (comrade Sapanadze), "Baltic gosrybtrest" (comrade Sidorenko), "Minrybprom" of the Karelian — Finnish SSR (comrade Melentev) and "Minrybprom" of the Lithuanian SSR (comrade Mitskyavichus) were ordered to prepare and send the herring expedition to the North Atlantic, the island of Svalbard and the North Sea[24]...The ships had to be sent to the sea on the 1st of June 1951, all the materials and supply for the ships of the expedition, according to the attached list had to be ready by this day. It was not possible to do in two days that were left before the expedition start. It is clear that the work on the preparation of ships was conducted much earlier. In the list of activities to ensure the date of the expedition start, it was stated — "during May—October" and "since the 15th of May". We are talking about activities that had been done already. All written above means that theUSSR Ministry of Fisheries order was a document that summarized the final outcome of the work on the organization of expeditions that had begun much earlier. The document reveals a strong control of these expeditions done by the Ministry.

Next month by the request of the Deputy Minister of Fisheries K.E. Babayan the information on the implementation of the Orders of the Ministry by the June 16th was provided. The detailed information was given on the implementation of each paragraph of the Order of 29th of May. In spite of the controls, the organization of expeditions was rather bad. Developing the plan for 1951 the "Glavsevrybprom" supposed to send 19 trawlers to Spitsbergen and 30—to Iceland. But then it was decided to send a much larger number of vessels. According to the Order of "Minrybprom", 85 MFT ships (including 4 exploration vessels), 2 SO seiner type ships, the floating base "Academician Pavlov" and "Onega", lighters "Nokuev", "Medvezhiy" and "Onega", tugboats "Murmanryba", "Hercules" and "Skoriy", 5 schooners and 5 more MFT vessels of "Minrybprom" of the Lithuanian SSR[25] were supposed to go to the coast of Spitsbergen. But some of them could not even go to the sea in the middle of June because of a delay with their repair. The floating base ship "Academician

[24] ГАМО. Ф. Р-534. Оп.8. Д.230. Л.83.
[25] ГАМО. Ф. Р-534. Оп.8. Д.287. Л.189. Д.281. Л.83.

Pavlov" arrived in Murmansk only on June 13th and was in need of repair. The floating base "Onega" and "Tambov" went to the sea instead.

The vessels of Svalbard and Iceland expeditions got the most modern equipment. The ships had 60 echo-sounder with recorders, 60 finders, 89 stations (TSA and PARKS-008). The equipment of the research vessels was under the special control. In the Order of the Minister of Fisheries of the USSR Rusakov on 12 February 1951 it was especially highlighted: "All search vessels are equipped with modern special equipment to explore the fish". A staffing list got the position of the deputy head of the expedition on exploration. But still it was impossible to achieve the desired targets. The head of the Association "Murmanryba" evaluated the results of the year 1951 and highlighted the "inadequate operational work of the exploratory fleet"[26].

The organizers were unable to provide the necessary number of nets: the factories could not cope with the task. Among the 23,400 required nets 6,500 were lacking (including exploration drifts). Missing nets were delivered to the area by the transport vessels in the course of the expedition. There was a lack of 56,000 barrels for the caught fish[27]. The ministry ordered to provide the expedition with them but their delivery from Astrakhan and Arkhangelsk was delayed. Among the other measures addressed to the problems identified by the Ministry was the creation of new capacity for the production of packaging in Murmansk. There was a difficult situation with the fuel, especially diesel. Despite the orders of the Ministry, the delivery was not done in time.

There were difficulties with staff. There was an Order to provide the expedition with "sailors and fishermen" by the 10th of June. But it failed. "Because of the lack of staff the provision of the expedition with the command staff was delayed. This is the reason for the delay of the expedition start"[28]. 27 graduates of the "Kaspglavrybprom" training center in Arkhangelsk could not arrive at the appointed time. The situation was difficult. It was not easy to complete the training of specialists for the herring fishery, because the remote areas of the North Atlantic differed from the conditions of the Murman coast. The lack of experts made it impossible to send an expedition with 8 gripmaster instructors as it was required. They were able to send only 3. In order to improve the level of training of the members of expeditions the Order to the "Murmanryba" it was said that it was needed to agree with the leadership training-course company to make short courses on technology of herring fishing for 50 captains and 50 gripmasters before the expedition start. It was planned to invite experienced captains and trapmaster, as well as the PINRO employees. There was also a lack of ordinary personnel. Some

[26] ГАМО. Ф. Р-534. Оп.8. Д.287. Л.332. Д.299. Л.81.
[27] Ibid. Д.281. Л.64.
[28] Ibid. Д.230. Л.65.

efforts were made to get workers from other regions of the country. “Senior officials of “Murmanseld” and “Murmanryba” were sent to organize the recruitment of sailors and people demobilized from the BMF in other regions”[29]. However, the turnover of crew remained very high. It was necessary to find a way out acting on the situation.

Most of the problems were solved on the spot. The Head of the Association “Murmanryba” P.V. Sapanadze reported to the Ministry that he had difficulties with the supply of the expedition with selected materials, but every problem was solved immediately by the means of the centralized system and local resources. Great attention was paid to the fishermen’s supplies: the necessary clothing and other items important in polar conditions. The annex to the Order of the Ministry contained a detailed list of everything the fishermen needed. Fishermen should have received a “in addition to the funds for the year 1951 the additional vessels participating in the North Atlantic herring and Spitsbergen expeditions, should had been provided with 150 coats, 1,080 sets of cotton suits, 1710 pairs of boots by the 1st of June 1951[30].

The organizers herring of the expeditions did not forget such an important matter of that time as the socialist competition. In the Order for the association “Murmanryba” on the 7th of April 1951 it was said: “To organize a socialist competition between the ship of the North-Atlantic group of Kaliningrad vessels and herring Spitsbergen expedition” of the “Murmanseld” "for the early implementation of the plan of herring fishing in 1951”. But, summarizing the work of “Murmanseld” in 1951, the head of the Association “Murmanryba” P.V. Sapanadze admitted "the absence of the prober struggle for the safety of nets and other equipment and little work on dissemination and transfer of progressive knowledge”[31].

The leaders of the “Minrybprom” required the ships returning from Iceland and Svalbard expeditions to be handled at the port in five days. The certificate directed to the Deputy Minister of Fisheries K.E. Babayan noted that there were no delays in processing of the expedition ships in the port[32]. But in general, the discrepancy between the capacity of the floating factories and fishing opportunities of the fleet affected very badly. Due to the fact that the floating factories were not able to provide timely acceptance of fish, “in a period of intense fishing many fishing vessels were removed from the fishing areas and sent to the port or lost a lot of time waiting in the queue near the floating factories”[33].

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[29] ГАМО. Ф. Р-534. Оп.8. Д.281. Л.60. Л.31.
[30] Ibid. Л.87.
[31] Ibid. Д.281. Л.35. Д.299. Л.81.
[32] Ibid. Д.230. Л.61.
[33] Ibid. Д.299. Л.80.

The catch of herring during the expeditions was determined as follows: the expedition to the North Atlantic — 107,000 c., the expedition to Spitsbergen area — 214,000 c. The average of the fish catch per fishing MFT was established for the North Atlantic expedition — 2,500 c., and the on Svalbard a) for the 51 MFT ships under the plan in 1,951 and floating factories — 2,740 c, b) for the 35 MFT new ships with second priority based in port — 2,000 c. These were so high expectations. In the previous year, the plan was 2,000 c. per ship. In 1951, the catch of herring compared to the year 1950 increased by almost 4 times[34].

Evaluating the results of the first expeditions, the head of the association “Murmanryba” P.V. Sapanadze said: "A new fishing area with great natural resources was opened; the herring fishery period was considerably extended; experience in technology and organization of the herring fishery was accumulated; new, advanced methods of work were developed; navigators, mechanics and drift masters were trained”[35].

Until 1952, the fishing in the North Atlantic done by the Soviet fishermen was seasonal: the vessels went out in May, and got back by September. In 1952 new task to organize the winter herring in Spitsbergen and Iceland was given. This meant that the fishermen had to do the all year-round fishing. Special attention was paid to the organization of commercial fishing. It was the topic of the special Order of the Head of the Association “Murmanryba” P.V Sapanadze on the 7th of January 1952 “On holding a commercial fishing to ensure winter fishing of herring in the North Atlantic” which stated: "1. Head of the “Murmanseld” Comrade. Dugladze I.I.: let the PINRO use the MFT-M-1 ship “Korablestroitel”, for prospective commercial fishing for the entire period of work in 1952. ... 4. PINRO Scientist sent to the MFT-M-1 ship “Korablestroitel”, should be provided with free meals, clothes on a par with the crew. ... 6. The expedition start for the MFT-M-1 ship “Korablestroitel” is set for January 8, 1952”[36].

According to the Order of the “Minrybprom”, 95 MFT ships (4 of them were for exploration of the fishing areas), as well as 13 support vessels (including 9 floating factories) and 5 seiners for the development of herring by purse seines had to be sent to the Spitsbergen area. 81 ship, including 4 search MFT ships and 3 floating base were sent to the Iceland. The floating factory “In Memory of Lenin”, directed to Spitsbergen, was equipped with runways, helicopter landing pad for aerial surveys of herring in the open sea. Two groups of researchers from VNIRO and PINRO were sent to carry out research work at two MFT ships specially designated for that. In previous years, during the fishery in the North Atlantic area fishing vessels often lost time due to the poor quality

[34] Ibid. Д.281. Л.84. Д.263. Л.128. Д.299. Л.80.
[35] Ibid. Л.79.
[36] ГАМО. Ф. Р-534. Оп.8. Д.586. Л.31.

of weather forecasts. In this regard, in 1952, two operational groups (3 persons) of professionals from the Main Department of Hydrometeorology under the USSR Council of Ministers were sent on to the sea expeditions on the floating factories “In Memory of Lenin” and “Tungus” to serve herring expeditions. At the same time the command of the expedition was required to provide the “normal conditions for their work”[37]. But in general the preparation for expeditions to Spitsbergen and to the shores of Iceland was unsatisfactory. It was noted in a special Order of the Ministry of Fisheries of the USSR on May 26, 1952: “As a result of not enough clear guidance and control over the preparation of the herring expeditions by “Glavsevrybprom” and departments of the Ministry, the preparation of the expedition to the North Atlantic goes poorly, which could lead to untimely start of fishing”[38].

In the course of the past herring expeditions in the 1949—1951 there were serious violations of the fish processing technology, which led to a decrease in product quality. Usually it happened due to reasons beyond the control of the fishermen. In general, these reasons were related to poor-quality packaging and a lack of the necessary components for salting fish (so, for example, the sea water was used instead of fresh for the preparation of brine, which is filled with fish in barrels). Therefore, in 1952 the Order of the Minister of Fisheries of the USSR D. Pavlova consists of a rigid requirement of a sharp improvement in processing technology of the Atlantic herring and improving the quality of products[39]. Given the experience of previous years, this year's fishing vessels left only in groups. In addition, each group was given a flagship and instructions on jointly sailing. This practice had helped to improve the work of fishermen. In previous years, a discrepancy between the possibilities of producing and capacity of the fishing fleet had revealed. In 1952 the expeditions were given significantly more floating factories than the previous ones. But because of the severe storms floating factories could not take fish from vessels in the open ocean and had to return from to the port with an underload. In connection with this, a part of the trawlers was forced to stop fishing and go to the port to pass fish. Like in previous years, there were complaints about the commercial fishing. The herring fishing vessels could not be good enough to provide the fishing fleet with the resource base, to consider of experience of the previous expeditions and, in some cases, they were just holding about a group of fishing vessels damaging the exploration work[40]. In 1952 it was decided to improve the work of the fishermen and

[37] Ibid. Л.234, 239.
[38] Ibid. Д.286. Л.233.
[39] Ibid. Л.237.
[40] Ibid. Д.299. Л.83.

all fishing MFT ships had become self-financing. The amount of herring caught during the expeditions in 1952 was 418,241 c[41].

Conclusion

Summarizing the results of the herring expeditions of this period, the leaders of the "Glavmurmanrybprom" noted that sailors of the herring expeditions were mastering herring fishery at great depths up to 120 meters with the drift nets and thus proved the possibility of economic expediency and a full year-round herring fishery in the North Atlantic[42].

Positive evaluation was given to the herring fishery in the North-East Atlantic in a few publications devoted to the study of this period in the history of domestic fisheries. V.K. Zilanov wrote: "In 1950s—1970s of the Medvezhiy—Spitsbergen area got a great importance for the domestic fisheries as a fishing area for, first of all, bottom fish — cod, perch, halibut, catfish, capelin and shrimp. This region is the leading one for the home fishery because of the cooling of the eastern part of the Barents Sea" [3, c.79].

According to M.I. Kargin, that fishing area had become extremely important because in mid-1960s "herring fishing in the North-East Atlantic went to a close under the influence of unregulated international fisheries" [4, c.66].

Of course, fishing in the North Atlantic, and especially in the area of Spitsbergen had a great economic importance for our country. Herring expeditions largely contributed to solving the food difficulties of the postwar years. The problems involved and the difficulties occurred but largely they had the organizational background and had been associated with quality control, insufficient use of more advanced technology for commercial fishing, fish processing quality. Deficiencies in supplies and equipment, lack of necessary resources constantly affected the timing of implementation of tasks.

Development of domestic fisheries in the area was also a great geopolitical value. This is confirmed by the increased attention paid to the fishery from the side of the leaders of the fishing industry. Active work of Soviet fishermen in the North Atlantic, and in particular off the coast of Spitsbergen and Iceland, provided the Soviet presence in strategically important areas of the world's oceans considered by NATO as its area of responsibility. The activities of fishing vessels showed an interest of the USSR in maintaining the stability of these areas in terms of the Cold War.

[41] Ф. Р-878. Оп.1. Д.17. Л.9.
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Reviewer: Sokolova Flera Harisovna,
Doctor of Historical Sciences, Professor

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The First World War as a form of European containment of Russia: a view from Arkhangelsk

© Shubin, Sergey I, Doctor of Historical Sciences, Professor of the Department of Regional Studies and International Relations of Northern (Arctic) Federal University named after M.V. Lomonosov. E-mail: serg1946@atknet.ru

© Rogachev, Ivan V., Candidate of Historical Sciences, Senior Teacher of the Department of Regional Studies and International Relations of Northern (Arctic) Federal University named after M.V. Lomonosov. E-mail: ioan1@atnet.ru

© Opryshko, Andrey I., 3rd year student of the Department of Regional Studies and International Relations of Northern (Arctic) Federal University named after M.V. Lomonosov. E-mail: andreyopryshko@mail.ru

Abstract. The article considers the factors of the successful development of the Russian Empire at the beginning of the 20th century and favorable forecasts on the prospects of increasing its capacity on the Eurasian continent. The successful development in a peaceful environment did not satisfy geopolitical opponents of Russia, especially the United Kingdom, which sought the variants of weakening the Russian empire by pulling it to military conflicts. Using the logic of the previous historical events and the current geopolitical situation, the authors hypothesize the First World War as a form of European containment of the development of Russia. There was a version expressed that the help of the Allies was coming mainly through Arkhangelsk. “It cannot be so,— the authors write, — that the invaders did not have the information about inability of arranging the delivery of goods because of the poor condition of the transport infrastructure in the region during that time”. Was it so or not, was it a conscious reason for the subsequent operation for using Arkhangelsk as a staging ground and a way of bribery of the local population and the authorities? To a certain extent this was confirmed by the message, sent by the chief of the British mission in Russia, General Poole, to London in January 1918 and analyzed in the present article.

Keywords: *Russia, Great Britain, France, Germany, the Union, opposition, geopolitics, national interests, the struggle for influence in the European North*.

History, as we know, does not go in a circle, but a spiral of its favorite route. 100th anniversary of the First World War confirms this axiom as well as possible. History does not change on the front of the stage of world as geopolitical puppeteers (with the face of the Anglo-Saxons), guides (represented by the Teutons) and their victims —the Slavs. Only the state-puppets change, acting as instigators of conflict (in 1914 it was Austria-Hungary, and in 2014 — Ukraine).

In this regard, we believe that one more axiom deserves an interest — a geopolitical axiom, that the situation in Russia has always been complicated, "... as soon as it becomes stronger." It had drawn the attention of the President of the Russian Federation V.V. Putin at a meeting with students of the Northern (Arctic) Federal University named after M.V. Lomonosov on June 9, 2014[1].

Picture 1. V.V. Putin and the NARFU students

This idea was clarified by V.V. Putin in his Address to the Federal Assembly of the Russian Federation on December the 4th, 2014: "This is not just a nervous reaction of the United States or its allies to our position to the events, the coup d'état in the Ukraine and even to the so-called "Crimean spring". I am sure that if all these things didn't existed — I want to stress this, dear colleagues, especially for you, for politicians, for those who are sitting in the room —if all these things didn't existed, they would come up with some other excuse in order to restrain the growing opportunities of Russia, affect it, and even better — to take an advantage of it. The containment

[1] Менгазетдинова А. Президент России обсудил со студентами САФУ развитие арктических территорий // Правда Севера. 2014. 11 июня

policy was not invented yesterday. It has been carried out against our country for many, many years — always, we can say for decades, if not centuries. In short, whenever someone thinks that Russia has become too strong, independent, these tools are used immediately”[2].

A hundred years ago an interesting judgment about our country confirming it had been left by famous French economic commentator Edmond Teri in the book “Russia in 1914. Economic Review”. It was noted that"... the increase of the state power was created by three economic factors: growth of the indigenous population, an increase in industrial and agricultural products, financial resources that the state can invest in public education and national defense," he analyzed the situation in Russia. Its population grew by 40 million, reaching 175 million people (3rd largest in the world after China (365) and India (316)), and by 1948 it was to grow to 350 million, that would be more than the five largest European countries. The growth of industry in 1904—1913 was 88%, coal production increased by 79%, iron and steel — by 53%, grain production increased by 22.5%, potatoes by 32%, sugar beet by 42%. In 1922 it was planned to introduce a compulsory free primary education system. “Needless to say, — Teri wrote,— that none of the European states did not reach such rates. And if things go the same way between the years 1912 and 1950, as they did between 1900—1912, by the middle of this century, Russia will dominate over Europe both politically and economically and financially” [1]. There were German forecasts, which concluded the same as the French: "In ten years Russia would be impossible to catch up”[3].

This, most likely, was a key reason for retracting the Russian Empire into the World War II. Using the spiral logic of history, one can confirm this global cause of the World War I. by the confessions of theorists and practitioners of the modern Western geopolitics. So, one of its authorities Henry Kissinger writes in his famous book “Diplomacy”: “Russia was the otherworldly force for the rest of the world: mysterious expansionist vision, which one should be afraid of or to restrain it by including into alliances or confrontation” [2, c. 126].

Zbigniew Brzezinski frankly admits: "The defeat of the Soviet Union was the result of 40 years of efforts made during the presidency of Harry Truman, Dwight Eisenhower, John F. Kennedy, Lyndon Johnson, Richard Nixon, Gerald Ford, Jimmy Carter, Ronald Reagan and George H.W. Bush" [3, p. 20—21] and predicts: "The new world order will be built against Russia, and Russia on the ruins of the expense of Russia!"[4]. The fact that the main Russophobe was awarded the highest

[2] Послание Президента Федеральному Собранию. URL: http://www.kremlin.ru/news/47173 (accessed: 07.12. 2014).

[3] Могло ли быть по-другому. URL.: http://clubs.ya.ru/4611686018427428008/replies.xml?item_no=1685 (accessed: 13.06.2014)

[4] Против России, на руинах России и за счёт России! URL.: http://poiskpravdy.wordpress.com/2010/ 02/09/nmpr/ (accessed: 12.06.2014)

order of Ukraine — the Order of Yaroslav the Wise on the occasion of his 80th anniversary again confirms not only the logic, but also the way the current events are going on.

The desire of the West to weaken the Russian Empire was perfectly understood by its best representatives a hundred years ago. In beginning of the 20th century P.A. Stolypin did not want the war in Russia: "While I am in power,— he said in 1909,— I will do everything possible to prevent the war in Russia until the entire program that gives it the internal recovery will be implemented. We cannot be compared with the outside world"[5]. By the way, the cause of fatal attempt to kill him on the 1st of September 1911 in Kiev City Theater still remains disclosed. After all, the murderer of Stolypin Dmitry Bogrov was both a revolutionary socialist and the tsarist secret police agent. Quite possibly, he performed someone's will. Anyway, in 1916 in the murder of Rasputin, who tried to make Nicholas II to agree on a separate peace treaty with Germany, traces of a British intelligence officer O. Reiner were found by historians. However, the British connection is found in the murder of Paul I, who was going to have an alliance with France in 1801, after a failed attempt to kill Napoleon in the Rue Saint-Nicaise. Then, as you know, when Napoleon learnt about the murder of the king, he said: "They got me in St. Petersburg"[6]. He knew what forces were behind the murder of the Russian emperor.

In the beginning of the 20th century it had become a serious threat to the Anglo-Saxons represented by aggressive Germany. Russia needed the UK to help in the future war against the Germans, but Russia as an ally was too strong. In order to weaken it, England was pushing Japan into war with Russia, providing logistical support to the country of the rising sun. The fact that the objectives of the UK in the war were in ousting Russia from the Pacific coast was described by one of the founders of Russian geopolitical school Aleksey Vandam (Edrikhin) [4, p. 90—102]at the beginning of the past century. During the Russian-Japanese War of 1904—1905 Anglo-Saxons had been undermining the stability of the Russian state and helping the revolutionaries.

A well-known revolutionary socialist B. Savinkov wrote: "A member of the Finnish party of active resistance Konni Zilliacus reported that he received a donation from American millionaires at a rate of one million francs for the Russian revolution, and the Americans put the condition that the money should be used on the arming of the people and were distributed among all the revolutionary parties [5, p. 41].

So in 1917 the Entente allies, unwilling to share the promising results of victory over the Triple Alliance with Russia, began to support antimonarchist powers to create a chaos of the class

[5] Столыпинская аграрная реформа. URL: http://freepapers.ru/6/stolypinskaya-agrarnaya-reforma/116274751453.list1.html (accessed: 12.06.2014)
[6] Самый преданный недруг России. URL: http://svpressa.ru/politic/article/81545/?rss=1 (accessed 12.06. 2014).

struggle and even then, a hundred years ago, to build a world order “on the ruins of Russia and at the expense of Russia”. The Intervention in 1918—1920 was a perfect illustration of these intentions that had not changed by today.

Events in the European North during the First World War were also suggestive about the sincerity of the Allies. It is no secret that the Archangel has always been and it still is a port that provides the access to the open seas for Russia, but also the possibility of its entering by the other naval powers. No accident that even our ancestors had to endure the onslaught of severe Vikings, protect the Russian North, relying on the wooden fortress, and Peter I began with the construction of a stone fortress at the mouth of the Novodvinsk in the Northern Dvina River near Arkhangelsk to strengthen the state. Later there were unsuccessful attempts of the British and the French to gain a foothold in the White Sea during the Crimean War.

The interventionist’s plans to consolidate the European North are more or less known today. It remains an open question whether, and at what stage of the World War I there plans were formed. Few seem to know that Arkhangelsk and other White Sea port of Arkhangelsk province during the World War I, received more goods than during the Great Patriotic War [6, p. 110]. It may not be that the invaders, organizing their delivery, had no information on inland transport infrastructure of the region and the country as a whole and the absence of possibility to deliver goods to the inland areas. Then the other question arises: was it a conscious reason for the formation of subsequent operations on goods’ preservation and use the Arkhangelsk as a base and bribing the local population and the authorities? Anyway, such situation had occurred in Murmansk, in our opinion.

December 23, 1917 in Paris the secret Anglo-French Convention on the “spheres of influence” in the European part of Russia and in the “areas of perspective operations of allied forces” was signed. Economic interests of the allied countries had been put forward in this agreement. English zone of interest consisted of the Caucasus, the Don, Kuban and North Russia [7, p. 43] due to the natural wealth and strategic position of the European North. These intentions, writes V.I. Goldin, were embodied in a letter of the chief of the British mission in Russia, general F.C. Pool to London in January 1918: “Among the plans that I have heard, most of all I like the one in which it is proposed to create the Northern federation with the center in Arkhangelsk ... And entrenched in Arkhangelsk, we could get a lucrative timber and railway concessions, not to mention the value of the control over two northern ports” [8, p. 8]. In relation to the northern region of Russia, important in terms of geo-strategy of intervention they made a plan to create a buffer state that had been mentioned by F.C. Pool in January 1918. It was even invented a

grandiose name of the puppet state — Russkaya Severookeanskaya Respublika (Russian Northern Ocean Republic) (RSR). At the same time the Entente made detailed plan for the development of RSR. *Firstly*, it was supposed to control the export of goods of the specified republic, as well as to control the Russian settlements on Svalbard. *Secondly*, it was planned to give the port Kildin to Allies after a peace treaty with the Central Powers. *Thirdly*, former Allies intended to set the summer route connection with the Siberian Republic, another Russian buffer state in the Far East of Russia. *Fourthly*, the RSR had to maintain and widen the direct connection with the United States, Britain and France to provide itself with all the necessary goods. The US financial and industrial companies were supposed to be engaged into restoration of trade and economic opportunities of the RSR[7].

Conclusion

In February 1914 Petr Nikolaevich Durnovo, former Minister of Internal Affairs of Russia and a member of the State Council, issued a prophetic memorandum to the tsar. In this document, P.N. Durnovo emphasized that the main burden of the war, no doubt, would fall on Russia, as England was hardly capable to take part in a wide continental war. And France with its poor human resources would likely stick to a purely defensive tactics in view of the huge losses that a future war would bring in the present state of the military equipment. So, the battering ram, puncturing the very thickness of the German defense would be Russia[8]. All of these victims, according to P.N. Durnovo, would be in vain, because Russia would not be able to secure permanent territorial gains, fighting on the side of Great Britain — its traditional geopolitical opponent. But the most important argument of P.N. Durnovo against the war was the belief that it would inevitably lead to a social revolution.

These conclusions are something that has not lost its relevance, especially with a regard to the possible consequences of the troubled times in periods of crisis. It seems that today our geopolitical opponents are hatching the idea of destruction of Russian statehood. However, in the words of VV Putin — it is meaningless to talk to Russia from a position of strength in the current situation as well as to hope for social unrest similar to the beginning of the 20th century.

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Reviewer: Sokolova Flera Harisovna,
Doctor of Historical Sciences, Professor

Ecology

UDK 519.233.5

The Arctic ice: monitoring and adaptation measures

© Zelenina, Larisa I., Candidate of Technical Sciences, Associate Professor, Department of Mathematics and Highly Productive Calculations, Institute of Mathematics, Information and Space Technologies, NArFU named after M.V. Lomonosov.
E-mail: l.zelenina@narfu

© Antipin, Alexey L., postgraduate student, Institute of Mathematics, Information and Space Technologies, NArFU named after M.V. Lomonosov. E-mail: carterin@yandex.ru

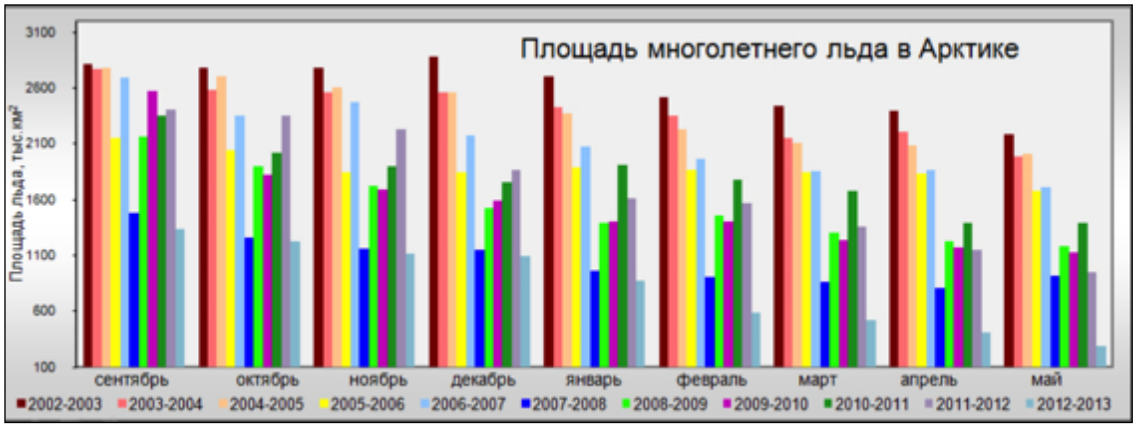
Abstract. Ice condition monitoring in the Arctic seas allows evaluating the impact of changes by analyzing the two opposite points of view — Arctic ice is melting and ice is included into the “cold cycle”. Histogram of the area with the Arctic paleocrystic ice (2002—2013), and statistical analyze of the collected data allowed to construct a polynomial trend that defines a sufficient degree of probability and predicted values of the minimum area of the Arctic sea ice. The best model was selected — the method of harmonic balance and the interval forecasts of the ice cover of the Arctic seas for 2015 and 2016 were composed. Risk consideration under the climate change is very important for mining industries, maritime navigation and infrastructure in the Russian Arctic, in order to minimize losses arising from possible threats.

Keywords: Arctic, sea ice, trend model, forecast of the ice cover, into account risks, threats, minimization of losses

The ice of the Arctic basin

The Russian Arctic has considerable mineral resources and developed transport infrastructure. However, the impact of drifting ice of the Arctic seas on oil platforms and other facilities and vehicles creates serious risks. Therefore it is important to understand what will happen with an area of ice in the coming years. This issue, is considered through two opposite pints of view — the Arctic ice is melting or the ice is included in the “cold cycle” [1, p.422].

The first opinion: the Arctic is melting. There are significant variations in the Arctic climate. So, there are frequent changes in the ice cover of the seas as well. Long-term changes in air temperature, ice cover of the seas and other indicators are characterized by cyclical fluctuations of different duration: 60, 20, and 10 years or less. It happens due to the linear trend of warming [2]. According to observations, the air temperature in the Arctic has increased almost twice faster than the average temperature of the Earth over the past century. A significant reduction in the area of glaciations in the last 30 years (15—20%) confirms the satellite observations of Arctic ice. Satellite data show that the area of ice in the Arctic reduces at an average of 2.7% per decade. The dynamics of summer ice is particularly noticeable. Over the last decade the area of sea ice reduced by 7.4% by every September [2]. The average thickness of sea ice in the Arctic basin is decreasing due to the reduction of the area occupied by old ice mainly and, to a lesser extent, by reducing of the ice thickness.



Picture 1. Histogram of the old ice Arctic areas (2002—2013)

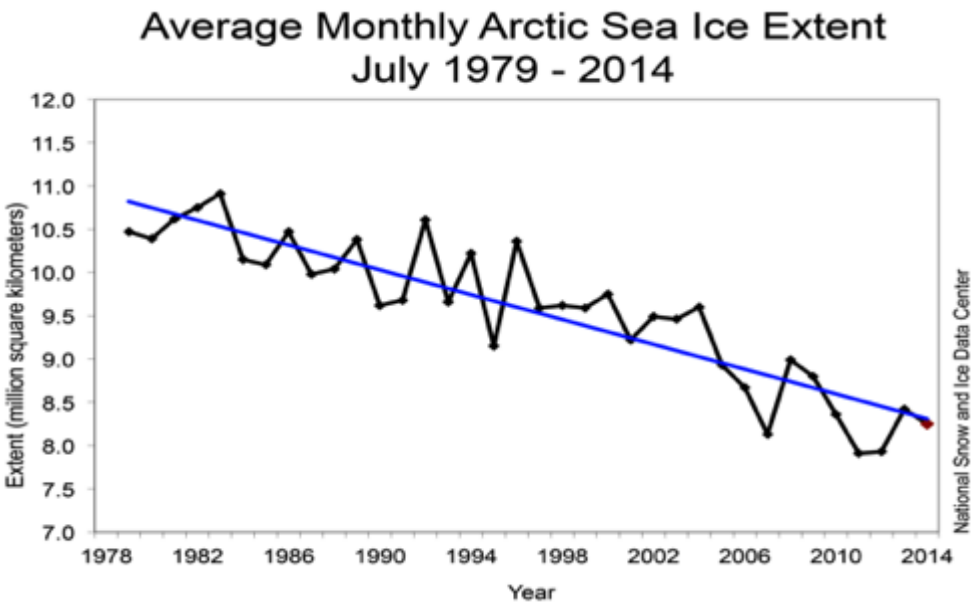
The melting of Arctic sea ice leads to increased warming in the region due to the so-called positive feedback: an increase in the rate of reduction of the ice cover leads to a decrease in surface reflectivity (dark ocean absorbs heat better than white ice) and, consequently, an increase in solar radiation.

The most important indicator of ice conditions is iciness, means the area of ice covering the waters of the sea or the field, regardless of cohesion. It is defined as a percentage or square kilometers. Calculation of the ice cover and the area of ice masses have been determining every ten days, since 1940. The iciness data are located on the site of the American organization NSIDC (National Snow & Ice Data Center)[1]. The purpose of this organization is to widen the knowledge of the areas of our planet covered with ice. They have an extensive national data base of snow and ice. In addition, every month the NSIDC analyzes the ice of the Arctic seas and the iciness, so necessary for their research.

[1] NSIDC (National Snow & Ice Data Center). URL: http://nsidc.org/ (accessed: 07.10.2014)

In order to predict the ice cover of the Arctic seas it is possible to use adaptive methods - one of the modern trends of statistical analysis and forecasting of time series. The model is the forecasting tool within the adaptive method. The initial estimation of the parameters of this model is based on the data of the original time series. And on the basis of new data, obtained at each step, the updating of parameters over time, as well as their adaptation to the new, ever-changing conditions of the phenomenon takes place. In other words, the model continually "absorbs" new information and then adapts it. Adaptive methods are intended for short-term forecasting. All of the above does not imply that the adaptive methods and models are able to replace any other models easily. These methods are suitable for processing series with moderate changes over time and are quite inaccurate when it comes to predicting a large number of steps forward. However, it should be noted that adaptive methods have recently been developed. The main types of adaptive models are the model of Brown, Holt-Winters' model, Brown's model with adaptive parameters of adaptation, Holt-Winters' multiplicative model, Theil-Wage additive model and the method of evolution [3, p. 86; 4, p. 3—11].

Statistical data on iciness published by National Snow & Ice Data Center (NSIDC) was used to construct the models discussed above (the unit of measurement — millions of square kilometers). At the same time, the hottest month in the Arctic — July (Average Monthly Arctic Sea Ice Extent July) in the period from 1979 to 2014, the sea ice extent in millions of square kilometers were considered. Statistics processing, namely regression analysis package, allowed the construction of the polynomial trend that defines the reasonable degree of probability that the predicted values of the minimum area of Arctic ice. For example, by 2016, if the trend continues, the area of perennial Arctic sea ice will be reduced to a minimum.



Picture1.Dynamics of iciness in the Arctic seas (July 1979—2014)

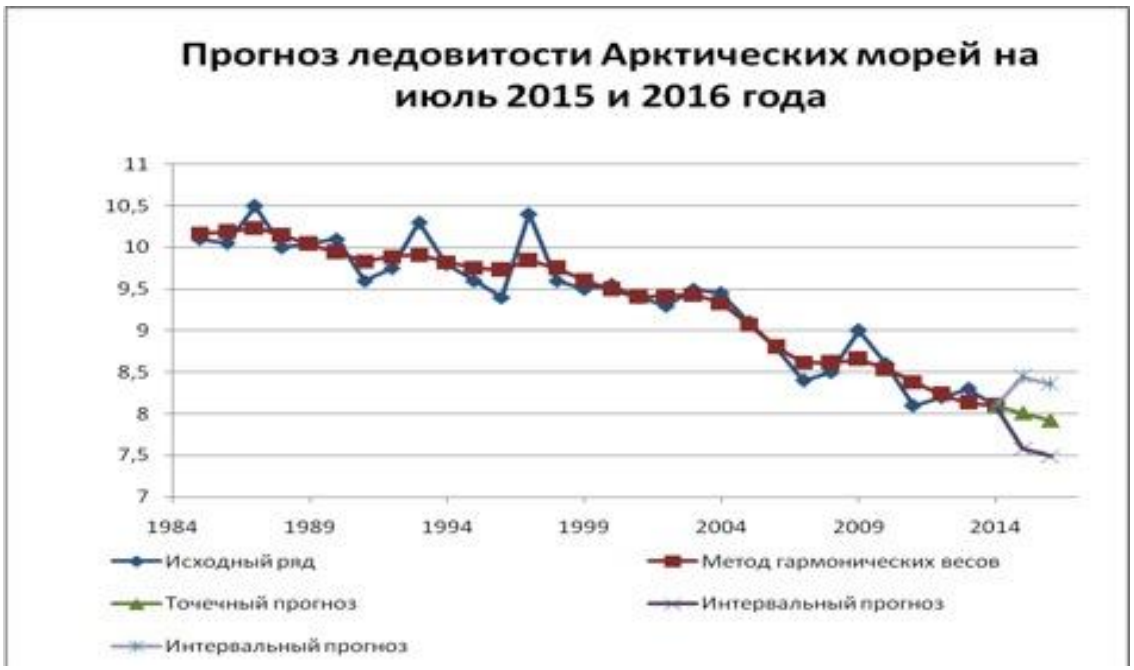
The analysis of the Picture 2 confirms the trend towards a smaller area of ice (every ten years a decrease of approximately 7.4% of the total area). Various models of time series based on the adaptive models and the adequacy check were constructed and the best one was selected in order to calculate the predictive value of indicator ice decrease indicator in subsequent periods. (table 1).

Table 1

Adequacy of the models

Functions	Adequacy								Validity		
	R/S criteria		t-test		DW-criteria		Peak-criteria		S_y	$\bar{E}$, %	R^2
Brown's model	4.93461	-	0.05328278	+	2.65776	+	17	+	0.4897	3.78	0.54
Holt-Winters' model	4.27876	+	0.00454967	+	2.22423	+	16	+	0.4844	3.87	0.55
ARIMA	4.90628	-	0.57909999	+	2.66480	+	18	+	0.3833	2.98	0.72
Brown's model with adaptive parameters of adaptation	4.79030	+	0.00330935	+	2.04428	+	15	+	0.3880	2.91	0.71
Holt-Winters' multiplicative model	4.00420	+	0.04966785	+	2.57611	+	19	+	0.3832	3.30	0.72
Theil-Wage additive model	4.55116	+	8.21911E-05	+	2.24242	+	17	+	0.5434	4.38	0.44
Method of evolution	3.89896	+	0.22838161	+	2.0132	+	18	+	0.2632	2.31	0.87
Harmonic scales method	**4.4143**	**+**	**0.02378**	**+**	**2.5714**	**+**	**16**	**+**	**0.2042**	**1.58**	**0.92**

The best among constructed models — the harmonic scales method —was used to calculate point and interval forecast of the iciness of the Arctic seas in 2015—2016.



Picture 2. Forecast of the iciness of the Arctic seas in 2015—2016.

According to this forecast, it is seen that as soon as the ice area in July will continue to decline by about 90,000 km^2, and that the "warm" period, which began in 1985, continues[2]. Melting of glaciers contributes to the expansion of economic activity to the Arctic and effective use of the Northern Sea Route. However, it is important to remember that the adaptive models provide only a short-term forecast of 1—2 years, in addition, there is another scientific opinion on the future of the Arctic: a cold snap.

Second Opinion: a cold snap. Researchers often define new cycles, which describe all the climatic phenomena of the Arctic: cold snap early in the beginning of the 20th century, warming in 1920s—1940s, fall of temperatures in 1960s—1980s and the warming since 1985. There is an alternation of cold and warm phases in the cycle. According to this scheme, we should expect a cold cycle.

Using physical and statistic approach based on the identified cyclical fluctuations, the experts of the State Scientific Center of the Russian Federation "Arctic and Antarctic Research Institute" Roshydromet (St. Petersburg) developed the phon climate forecast for the 21st century average annual air temperature in the Arctic zone of 70-85° North and average area of distribution of ice in the Arctic in the western seas (Greenland, Barents and Kara) and eastern seas (Laptev, East Siberian and Chukchi). The forecast was based on the assessment of the average characteristics of the 20th century 60-year cycle of variations of ice cover, as well as on an assessment of the magnitude of the trend in the second half of the 20th century for each of the regions [5, p. 420]. Currently, the most likely considered the amplitude of 200-year cycle. According to the updated forecast made by the AARI director I.E. Frolov and his colleagues, it is expected to get a decrease of temperature before 2030—2040 and an increase in the ice cover instead of increasing temperature and decreasing ice cover of the Arctic until the complete disappearance of the seasonal ice in the Arctic Ocean. In the future, the cyclical fluctuations typical for the XX century are expected to continue together with the gradual increase in the ice cover by the end of the 21st century [5, c. 421]. Expected changes in the ice cover of the Arctic seas will certainly affect the ice conditions of navigation on the Northern Sea Route and other economic activities in the Arctic. It is necessary to modernize the large vessels, including tankers, to increase the capacity of the ship power plants, to strengthen the hulls of ships, as well as to increase the number of icebreakers and icebreaking fleet capacity [5, p. 426—427].

[2] Королева Ю. Всемирный потоп ждёт своего часа. URL: http://www.pravda.ru/science/ planet/ environment/ 12-03-2014/1198657-klimat-0/ (accessed: 07.11.2014).

The scientists of the Pulkov Observatory report that the Arctic will become cold: the solar activity is declining, and the average annual temperatures are reducing. They believe that after some time the "Little Ice Age" may start (the previous one was at the end of the17th century), and affect the Northern hemisphere: stop the warm currents and cause the water desalination in the northern seas [6].

The researcher from the Japanese national agency for marine research — Mototaka Nakamura —also concluded that the planet was not waiting for global warming, but rather, a cold snap. He demonstrated the data on changes in the global climate since 1957 and until now, and then studied the temperature of the Greenland Sea surface during the same period of time. Comparing this information, he concluded that the 70-year cycle of warming coming to an end and soon cold cycle way start. M. Nakamura offers to track changes that occur in areas of warm and cold currents of the Atlantic Ocean and the temperature fluctuations of the Greenland Sea, which is a good indicator of changes [7].

The risks under the climate changes

Considering the risks of climate change is very important in the fields of mining, maritime infrastructure in the Russian Arctic, in order to minimize losses arising from possible threats [8,9].

Table 2

Minimization of losses taking into account the risks of the climate change in certain sectors of the economy

Sector of the economy	Possible risks	Minimization of losses
Mining industry	1. Increase in the number of accidents with the equipment of the offshore structures on the Arctic shelf due to sudden changes in temperature and increased severe weather events.	1. Revision of the building regulations for offshore structures in the shelf zone, taking into account the observed and projected changes in climate parameters.
	2. Increasing the height of wind waves, the appearance of icebergs' fragments of near the Arctic islands pose a threat to mining structures and vehicles.	2. Creation of special service control of the ice in the waters of the Arctic Ocean. The account of the dynamics of wave height, ice activity at designing oil platforms and other means of transportation.
	3. Violation of traffic, including the shipping industry, because of the increased frequency and intensity of abnormal weather phenomena.	3. Improvement of the current prognostic systems of the marine activities and the dynamics of the hydrometeorological characteristics. The establishment of effective local

		systems of hydrometeorological support.
Marine shipping	4. The possibility of difficult ice conditions in the Northern Sea Route.	4. Operation of ice-class vessels, the construction of new icebreakers.
	5. Reduction of opportunities and the period for delivery of goods to the remote areas using the winter road tracks, laid on the frozen riverbeds, due to changes in the timing and processes of freezing and opening of rivers and reservoirs.	5. Improving the quality of monitoring and prediction of the climate change, weather conditions in the rivers and reservoirs of the North. Improving the information delivery system on weather and climate to the consumers.
Infrastruc-ture	6. The appearance of the risks of use of the transport system, utilities, buildings because of the of ground motions in areas of permafrost.	6. Development and implementation of new technical standards, regulations, innovative technologies in the construction of infrastructure facilities, taking into account the changes in climatic conditions.
	7. The high degree of danger to Geocryological engineering at pipe-lines, etc.	7. Assessment of the geocryological risk for the infrastructure of the region
	8. Violation of the infrastructure of coastal areas due to the natural disturbances, increased storm activity, coastal erosion and sea level rise.	8.In the case of a high degree of threat it is necessary to make the reconstruction or transfer of the infrastructure from the dangerous zones.

Conclusion

Climate change will undoubtedly affect all spheres of people's life in the Arctic zone of the Russian Federation and cause the problems of environmental conservation. The majority of the projects for mining industry are based on the projections of warming. In the case of the cold snap the work all the extractive industries in the Arctic macro-region should be changed with the priority of the environmental economy. There would be a need of a significant investment for the efficient use of the Northern Sea Route as a national transport route of Russia, to upgrade the vehicles and for construction of modern powerful icebreakers.

There is a necessity of a constant attention to the construction and operation of Arctic infrastructure, including social services, housing and utilities, creating comfortable living conditions for people in the Arctic where the majority of the population lives in the northern towns. Special support measures are required for the indigenous peoples who are facing the climate change in their daily life as well.

This article has not discussed the whole spectrum of threats and risks arising from the climate change. It is necessary to continue monitoring and system studies to prevent and minimize potential losses of different sectors of the economy, social sphere and environmental conservation, not only in conditions of the melting sea ice, but also in terms of possible cold snap.

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Reviewer: Sinitskaya Natalya Yakovlevna,
Doctor of Economics, Professor

UDK 330.15 + 504.03

The tasks of the assessment of environmental damage in the Arctic

© Medvedeva, Olga E., Doctor of Economics, professor of the Department of Economic Policy and Economic Measurements, State University of Management.
E-mail: medvedeva_o@list.ru

Abstract. Development of oil and gas fields of the Arctic zone carries risks of destroying ecosystems and causing significant environmental damage. It is therefore particularly important to take preventive conservation measures in the early stages of exploration of the Arctic. The basis of such measures and tools is the valuation of environmental damage that could reduce the risk of environmental degradation in the Arctic zone. In order to provide the ability of the restoration work, it is necessary to create financial assets or other tools to begin rehabilitation work immediately in case of emergency and to eliminate the consequences of the damage caused after the completion of the work.

Keywords: *the environmental damage, valuation, «past» damage, «project» damage*

Timeliness of the problem

As practice shows, the development of oil and gas fields of the Arctic zone carries the risk of destroying of ecosystems and causing significant environmental damage, the elimination of which is problematic due to the fragile Arctic ecosystem and its poor ability to heal and clean itself. The accident on an oil platform in the Gulf of Mexico has estimated at approximately tens of billions of US dollars ($ 17.6 billion— $ 90 billion). $ 17.6 billion are possible fines and compensations; $ 90 billion — losses of the BP[1]. The damage of such an accident in the Arctic zone can significantly exceed these amounts.

Therefore it is particularly important to take preventive measures in the early stages of the Arctic exploration. It is also necessary to create financial funds, and other tools to begin rehabilitation work in case of emergency and to eliminate the consequences of the damage caused. The basis of such measures and tools is the valuation of the environmental damage. Solving such problems could reduce the risk of environmental degradation in the Arctic zone.

[1] Суд в США счёл BP основным виновником утечки нефти в Мексиканском заливе. URL: http://www.interfax.ru/business/395102 (accessed: 11.12.2014)

However, despite the apparent simplicity of the problem, and good at first glance, methodological support[2], there are a number of problems such as methodological and organizational ones. These issues include the following questions:

1. Why should we assess the loss?
2. What loss should we assess and what does the loss mean?
3. Who is the victim and who should receive compensation?
4. How should we assess the loss value in terms of money?

The term ecological loss and its assessment

Before answering these questions, we should define the concept of "ecological loss". It is widespread in the scientific and educational literature. This concept is often equated with the concept of "environmental damage", which, in our opinion, it is not legitimate from an economic point of view, since the concept of "ecological loss" is much broader and takes into account all the negative consequences for society. In my opinion, under the "ecological loss" should be understood all the negative consequences caused by environmental pollution, loss and depletion of natural resources, destruction of ecosystems and their individual components (including the atmosphere, air, water objects, soil, flora and fauna) and creates a real threat to life and human health, welfare, property and the economy of the country and its individual regions. These effects may include deterioration of human health and premature death, extinction of plants and animals, loss of natural ecosystems, reduced productivity of farmland, the death of fish in reservoirs, reducing the cost of property, loss of jobs, recreation, the loss of its traditional sphere of activity and primordial living environment, loss of historical and cultural landscape, the cost of rehabilitation and compensation measures for personal and public budgets, and others.

Economic assessment of the ecological loss means the evaluation of those negative effects in terms of money, designed either for specific subjects of legal and economic relations, or for a specific community of people, the economy of the country or region. Such assessments can be conducted at different levels of coverage of the negative effects — local, regional and global levels.

In the legal field in recent years the concept of ecological loss is replaced by the concept of the environmental damage or its individual components[3]. Thus, the law on the protection of the environment considers the environmental damage as a "negative changes in the environment caused by pollution and leading to the degradation of natural ecosystems and the depletion of

[2] The list of current methods could be found in the O.Y. Gribkov's article.
[3] It should be mentioned that the term "environmental damage" is still used in judicial decisions.

natural resources"[4]. That is, saying damage we mean some physical damage, destruction or deterioration of the natural environment and its individual components with no connection to the cost or monetary assessment of the damage. At the same time in other articles of this law (77 and 78) there is a mention of determination of the damage to the environment in the value form. It is proposed to determine the scale of the damage in two ways: either "based on the actual costs of restoration of the environment, taking into account the losses incurred, including loss of profits" or "in accordance with the rates and methods of calculating the amount of harm done to the environment, approved by the executive authorities engaged with the governance in the field of environmental protection"[5]. Such an interpretation of the amount of environmental damage claims the role of a methodology for assessing the environmental damage, as it contains a formula of assessment in monetary terms. However, this formula is not correct and leads to a deadlock in studies to assess environmental damage, as it allows to evaluate only a small part of the loss, resulting from such harm and makes it impossible to take into account all the real social and economic losses, including harm to human health and life and loss of native living environment that is particularly relevant for the population of the Arctic territories of the country.

The rule, entered to the Law on Environmental Protection, regarding compensation for damage to health and property of citizens being the result of violations of the law in the field of environmental protection, is broken — such cases are single because of the complexity of the proof of causality between the harm to the health and violation of environmental laws, and on the other hand, the rule is aimed at specific cases and does fit the macroeconomic assessment.

In this article the author will stick to the expanded interpretation of the concept of the ecological loss, as it allows it to apply modern economic tools and conduct macroeconomic assessments.

What for to assess the loss

The answer to the first question — why should we assess the loss — involves the creation of such instruments for environmental protection, such as:

a) Insurance of environmental risks;

b) The establishment of collateral and compensation funds, which could be used to pay the work on liquidation of the consequences of damage after their completion;

c) Compensation for the current damage and recovery.

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[4] Федеральный закон «Об охране окружающей среды» от 10.01.2002 N 7-ФЗ // Консультант Плюс. URL: http://www.consultant.ru/popular/okrsred/70_1.html#p42 (accessed: 29.11.2014).

[5] Ibid.

List of applied problems of management and producing the environmental instruments required for valuations could be continued. Its main feature is the non-fiscal nature of the payments and orientation to the elimination and prevention of the environmental damage.

The calculation of insurance premiums for oil and gas companies could serve the example of the valuation of environmental damage.

It is necessary to perform a series of preliminary procedures to compete such a calculation:

1. Determine the possibility of the insured event.
2. Determine the amount of losses of the company in case of the environmental damage for each event insured.
3. Create a database on the valuation of the damage and the cost of liquidation of the damage caused by the most common cases.

The amount of the insurance premium could be calculated by the formula:

Net rate = ecological damage * (the number of cases of environmental damage for the period / number of contracts concluded during the period) + insurance extra charge

Example of calculation of the insurance premium by the proposed formula:

- ✓ Oil pollution — 3 ha
- ✓ The cost of recultivation 1 ha — 5 million rub. * 3 = 15 million rub.
- ✓ Tainted soil volume —- 5,000 m^3
- ✓ Cost of 1 m^3 of soil — 800 rub.
- ✓ The cost of tainted soil = 5,000 m^3 * 800 rub. = 4 mln. rub.

- ✓ Total loss: 19 mln. rub.
- ✓ The number of cases of environmental damage for a certain period — 2
- ✓ The number of contracts concluded during the same period — 1000
- ✓ The possibility of the insured event 2/1000 = 0.002

Net rate = 19 mln. rub. * 0.002 = 38,000 rub.

What loss we should assess and what the loss means

The answer to the second question — what loss we should assess and what the loss means— is connected with the picking out 3 categories of environmental loss: past, present and future.

The present or current environmental damage— is damage caused by violation of environmental norms in the process of economic activity, or damage caused by the emergency. Damage to the environment at the current causing loss is usually expressed in air pollution,

pollution of water, soil pollution, including oil spills and penetration of greenhouse gases into the atmosphere, destroying or damaging the soil, animals and vegetation, as well as animal habitats, including hunting grounds, reindeer pastures, reduction or loss of soil fertility, pasture degradation, loss of historical, cultural and valuable landscapes, biodiversity loss, loss of ecological functions and environmental services of ecosystems. Assessing the current environmental damage in terms of value should be more than just an accounting these types of harm and should include losses from increased morbidity and mortality, as well as economic losses and social losses arising from the injury. We can assume that these are the statement mentioned in articles of the Law on Environmental Protection. Thus, according to Article 77 of the Law, 10.01.2002 N7-FZ, environmental damage is compensated, taking into account the losses incurred, including loss of profits, and in accordance with the Article 78- the size of the damage to the environment is carried out taking into account the loss incurred, including loss of benefits. However, the Law does not clarify what should be considered as incurred losses and loss of profits because of the environmental damage, who is the victim and whom and in what form the loss should be compensated. All this makes the issue of assessing and managing the environmental loss quite confusing in legal and economic terms.

Past environmental loss or, as we call it, gained loss is caused by the environmental damage of past activities of people and businesses. From an economic point of view, the past damage has no difference from the present, so as to evaluate it uses the same methods, mainly based on the calculation of the cost of the negative effects and restoration of the environment. Its difference from the real damage is primarily in the legal aspect, as the perpetrators of the damage for various reasons cannot be installed and load the cost of its removal falls mainly on the shoulders of the state. Although, there may be other mechanisms to solve this problem, for example, the equal distribution of the cost between the federal government, regional authorities and future investors. This model has been used in Germany for the rehabilitation of damaged areas and areas polluted by industrial activity after joining the GDR.

Thus, from the perspective of the economic evaluation, the differences between the past and the current environmental damage there is little, they can be combined into a single category since all the damage “lying on the ground” (or at the bottom).

Future harm. This category of damage may be called *project damage*, since it is calculated and evaluated at the design stage, or if it is evaluated at all due to the gaps in national legislation. So, it happens extremely rare. Sometimes these assessments are carried out when applying for loans in foreign banks, requiring compulsory reflection in the project documentation of social and

environmental risks and their reduction for sustainable development at the expense of environmental protection measures and measures of social orientation. Previously our country had a mandatory procedure of compensation of losses of the fishing industry in the form of allocation of investor funds for the construction of hatcheries and preventive conservation measures.

Future or project loss should be calculated at the design stage and to be included into the documentation to assess its impact on the environment. Now, such estimates are not binding and they are not provided by the current legislation and for that reason are not held. Although their conduct could provide an economic tool aimed at the future of environmental loss compensation from permissible economic activity in the initial stage of project implementation and thereby help to minimize the expected social and environmental losses of investors in order to reduce the costs of the project. Compensation for future environmental loss could also create a financial basis for the specialized funds aimed to ensure the elimination of the negative consequences on the next stages of project's implementation.

Quite close to the concept of the future or project loss is the concept of averted loss, which refers to score (in the form of money) of possible negative effects of environmental pollution avoided after planned or carried out environmental activities. Usually averted loss is calculated as the difference between the damage, without taking into account certain measures for its prevention or reduction, and taking into account the damage of these activities. Averted loss is determined to assess the cost-effectiveness of environmental measures laid down in the draft, or to assess the environmental performance of public authorities. For these purposes, the "Temporary method of determining the averted environmental damage"was developed and approved in 1999 by the Russian State Committee[6].

Prior to its abolition in 2008, the constituent elements of the project could be regarded[7] as compromising the so-called loss of agricultural production and forestry, which was calculated according to certain rules and rates and was compensated to investors, carrying out a new business project. After 2008, only losses of the land owners, including ascribed to agricultural land and forest lands were assessed and compensated instead of the losses of agricultural production and forestry.

The term project loss can be attributed to calculation of compensation to the local population for various kinds of losses and damages from future pollution, loss of native habitat and destruction of the traditional way of life in the areas of oil and gas production, minerals extraction,

[6] Временная методика определения предотвращённого экологического ущерба. URL: http://www.znaytovar.ru/gost/2/Vremennaya_metodika_opredeleni.html (accessed: 28.11.2014).

[7] But they were not recognized officially and were referred to the category of the national economy.

hydropower, as well the other large-scale commercial works.

At present, the compensation is defined only for the indigenous peoples of the North, Siberia and the Russian Far East, and then it is done partially and not fully. At the federal level, the issue is not resolved as a whole and leads to serious social conflicts. An example is the protests in the Voronezh region against the development of nickel deposits on Hopr, the movement against the raising of the Cheboksary Reservoir level in the Nizhny Novgorod region and others.

The settlement of this issue on the basis of sound calculation of the ecological loss, as well as all the costs and benefits of the parties involved in this process could reduce social tensions arising in these regions and ensure the balance between the interests of local communities, business and government.

Who is damaged and who should get the compensation

The answer to the third question — who is damaged and who should get the compensation — has no answer in the Russian legislation. Its decision could be carried out in two ways — through various mechanisms of compensation for the whole of society through the inclusion of externality costs into the financial flows of private firms (the elimination of market failures), and through the mechanism of elimination and prevention of particular cases of harm to the environment by specific individuals and firms. Russian environmental legislation, made in the 1990s, was focused on compensation for environmental damage to the whole society through the calculation of the loss of the national economy. Compensation mechanism was implemented through the creation of environmental funds maintained by the means of environmental fees, fines, and restitution. Than these funds were allocated for environmental protection and rehabilitation, and organizations carried out such activities were not supposed to pay the ecological charges. Thereby, the goal of reducing the environmental damage was achieved.

The environmental legislation provided the distribution between environmental budgets at various levels of the budget system of the Russian Federation in the ratio: 60% — for local environmental activities (city, district); 30% — for environmental measures of republican, territorial and regional importance; 10% — for the environmental activities of federal significance.

Since January 2001, the federal and regional environmental funds were liquidated in accordance with the new Budget Code (enacted in 2000), all funds received for compensation for environmental damage became consolidated in the budgets of various levels and not connected with the cost for environmental protection. Thus the fundamental principle of this kind of payments was eliminated —namely their non-fiscal origin and direct use for the environmental and rehabilitation measures.

At present, the order of transfer of funds in respect of environmental damage is regulated by federal laws on the budget and is to be established each year. In 2014, funds for compensation of damage caused to the environment were included into the budgets of urban districts, municipal districts, as well as the budgets of federal cities (Moscow and St. Petersburg). In the West, this mechanism is also pretty good and showed itself in some countries such as the US, where in the 1970s it was created by the so-called Superfund accumulating funds for the restoration and remediation work and was effectively used for the purpose of minimizing the environmental damage.

Transfer of funds for compensating the environmental damage to the local and regional budgets is legitimized by the State and it recognizes the social significance of this mechanism. But it does not remove the fiscal nature of payments, so it connects them with the expenditure of environmental protection measures indirectly.

Currently, the environmental legislation gives the priority to the mechanism of monetary valuation of individual cases of harm to the environment by its collection only from the individual violators of environmental legislation (the issue of compensation of the future and past damage is not regulated). Thereby, it narrows the possibility of using the economic instruments to protect the environment and restore its quality.

Amounts of the environmental damage compensations are mainly collected through the courts on the basis of calculations carried out by an approved public authorities (federal and regional) and with the use of fees — cost norms of the damage extent. General rules for assessment of the damage and the procedure for compensation are set by Articles 77 and 78 of the Federal Law on Environmental Protection.

How to assess the loss in monetary terms

The answer to the fourth question— how to assess the damage in monetary terms—is attached to the issue of development of a standardized accounting methodology. Now there are 2 main approaches to the evaluation of the environmental damage:

a) for the costs of elimination of damages, including compensation for damages to third parties;
b) non-market estimates of people's willingness to pay for the natural benefits received the name of ecosystem services.
c) In international practice, the assessment of environmental damage bythe cost prevails because the results of valuation are recognized by the courts and are considered to be

sufficiently conclusive. Discussions are conducted mainly on the volume of recovery and environmental quality to be restored (the European principle of “how clean must be clean”).

Methods of non-market assessments of ecosystem services in recent years, received the most extensive development. They are now the “mainstream” in this field of activity, but are not applied for legal practice because of the large conventions estimates due to the use of so-called surrogate modeling markets. At the same time, the estimates obtained by these methods are successful and are widely used to support the decisions related to the development of territories and the implementation of the infrastructure projects carried out at the expense of budget financing. In the latter case, they are mandatory and are included into official guidelines for evaluating the effectiveness of such projects [2,3,4,5,6].

In our country the third way of calculating damages was introduced. It is convenient, as easy to use and does not make to analyze. The majority of recognized techniques are used in the country and said to cover almost in all cases of damage, are built on the tax principle. But this is a fail method, as it is not possible to get the objective measures comparable with market realities emerging in the country. Its economic essence is to multiply the “tau” to “meow”, and what happens, let's call the damage. The “meow” is different multiplying factors set out by experts and the “tau” is the fees.

You can make an exception for certain procedures of the Ministry of Emergency Situations to assess the damage in emergency situations and methods of assessing damages to marine bio resources. There are separate departmental documents regulating the procedure of calculating the damage to the environment of a particular industry. But they suffer from the same defect.

The same principle of “normative” estimates carried out by the cost parameters designed by the State is used in the valuation technique for prevented damagethat is widely used to evaluate the cost-effectiveness of environmental protection measures stipulated in the investment projects. As the result we get “lying” numbers. They are incomparable with anything and cannot be used in real-world financial instruments.

In the country, despite a large number of documents regulating assess of damage (more than 25), there are no common methodological principles and standards for assessing environmental damage, recognized by the State. This circumstance is the most important gap in the assessment of environmental damage that leads to the fact that the newly created documents and instruments developed contain incompatible methodological approaches. The criteria of truth are not available for their results. The consequence of this is to obtain the cost indicators that do not reflect the amount of the damage.

Another serious problem arising from the current situation is the inability to challenge economically unreasonable rates and methods of calculating damages in courts. An example of such documents are the “Method of calculating the amount of damage caused to the soil as an object of the environmental protection” and the “Methods of calculating the amount of damage caused to water objects due to violations of water legislation”. The assessment of environmental damage is based on these documents and is the multiplication of a certain sum of money assigned by the state, called the tax on the natural rate, which measures the damage, and the number of raising factors.

This approach is fundamentally contrary to generally accepted international practice, but, as mentioned above, is very convenient, because it allows collecting any amount of money in favor of the budget, and the amount itself is calculated in accordance with the procedure usually confirmed by the courts. In this case, the amounts are not connected with the real cost of activities addressed to prevent the environmental damage. All this contributes neither to the objectives of economic development nor to environmental objectives.

At the same time at the federal level, there is an approach that outlines the principle of assessing ecological loss (called the environmental damage) in accordance with best international practice. Article 78 of the Federal Law “On Environmental Protection”, 10.01.2002 №7-FZ states that “determining the amount of environmental damage caused by the violation of legislation in the field of environmental protection is carried out on the basis of actual costs of restoration of the environment, taking into account the losses incurred, including the loss of profits, as well as in accordance with the reclamation projects and other recovery operations, in their absence — in accordance with the rates and methods of calculating the amount of environmental harm, approved by the executive power in charge of public administration in the field of the environment”.

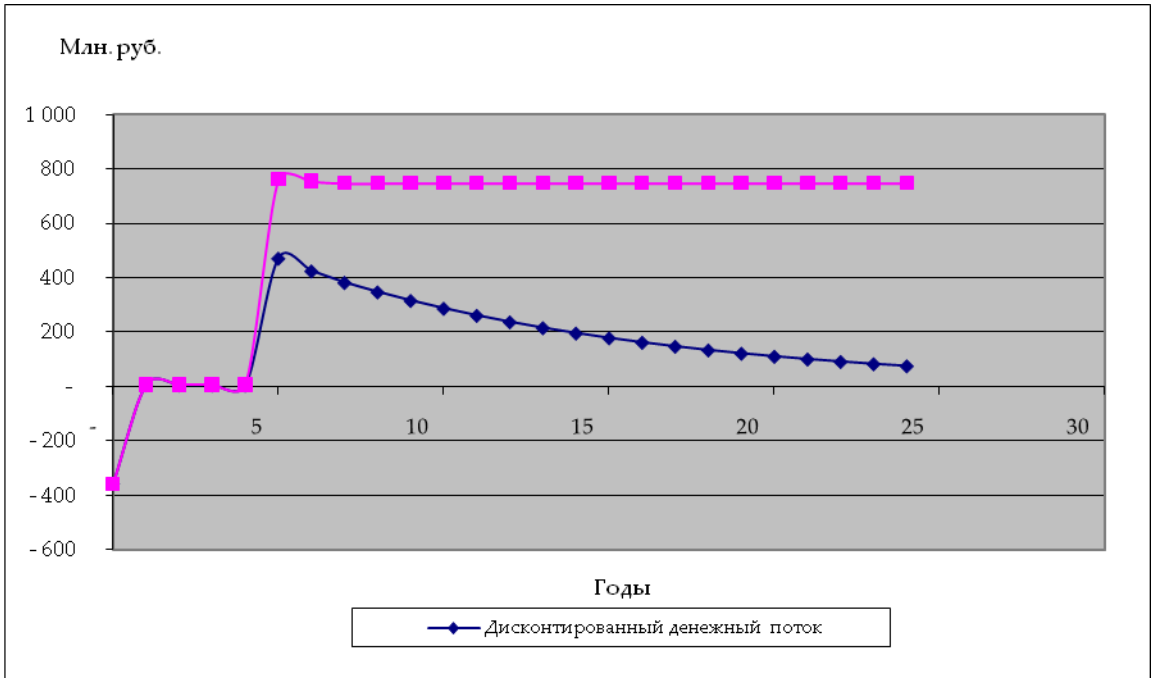
So, the Law requires assessing the environmental damage caused by the cost of its removal and restoration of environment. But these standards are not met, and the ministries accepted methods that ignore the Federal Law. For example, such a document was adopted in 2010 “Methods of calculating the amount of harm caused to soil as an environmental object of protection”, which established only “tax” approach and was not intended to declare the legal assessment of environmental damage at the cost of its removal.

Why is it so important to get right amounts of the loss?

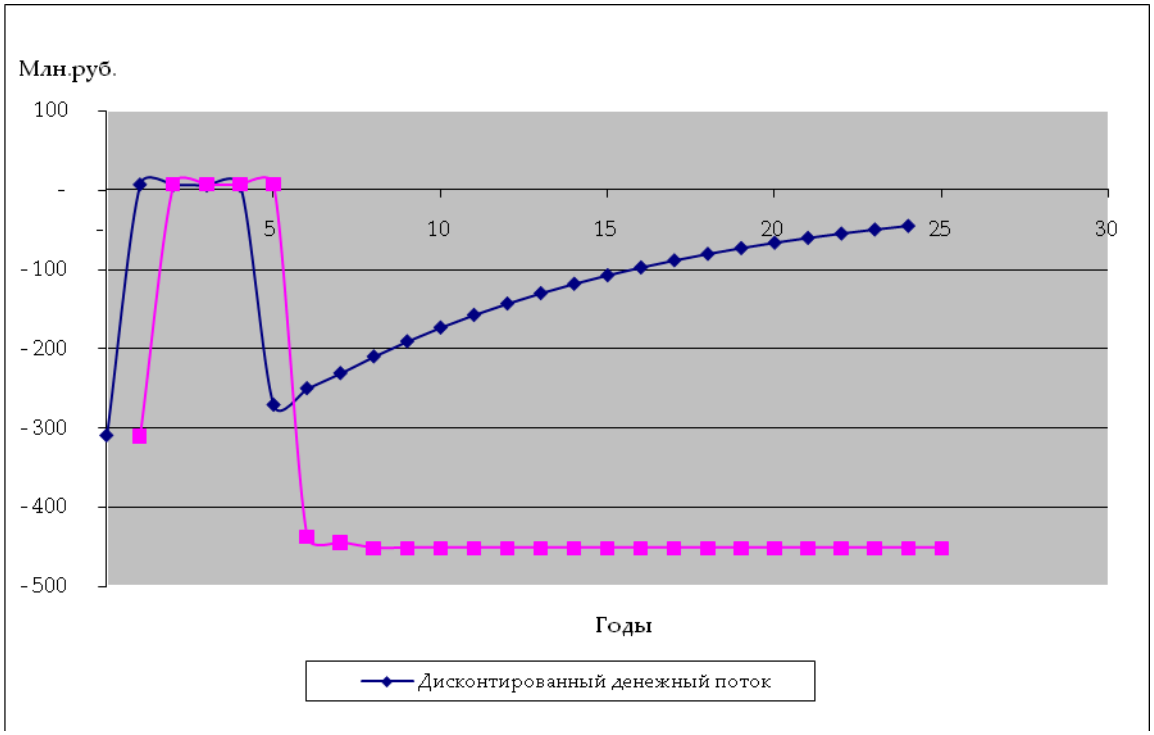
Apart from the fact that the valuation of environmental loss is the basis of instruments aimed to prevent the environmental damage and improve the situation after it, the insurance of

environmental risks, the creation of a compensation fund for the elimination of the damage caused and other objective amounts are needed to determine the feasibility of all major investment projects and justification of the fair distribution of financial flows among all interested parties.

An example of inclusion of the ecological loss cost estimates into the project analysis is shown in the pictures 1 and 2.



Picture 1.The difference between the social benefits and the ecological damage caused by the implementation of the projects on the regional level



Picture 2. The difference between the social benefits and the ecological damage caused by the implementation of the projects on the local level

Conclusion: What should we do to improve the situation?

1. Abandon the “tax” principle and develop the cost principle.
2. Develop non-market methods of the assessment of the loss with a regard to the loss of health, loss of ecosystems, traditional living environment and etc.
3. Develop and adopt a single standard for the valuation of the ecological loss by analogy with the International Valuation Standards (IVS), Federal Valuation Standards (FSO) and International Financial Reporting Standards (IFRS).
4. Include the calculation of the future loss into the project documentation.
5. Carry out the “cost-benefit” analysis when selecting the projects for governmental funding and to include this analyze into the draft, as is done in the United States and the EU.
6. Use the existing experience —SOPS’ (Council for Studying Productive Forces, СОПС) activities in the Arctic— and create a database for the costs of removal of ecological damage and other losses.

Public hearing will not help to save the Arctic ecology without this. A list of major federal documents defining the procedure for assessment of environmental damage and ecological loss is below.

Table 1

Federal legal documents on economic issues of the ecological losses

№	Name of the document	Adopted and ratified by	Registration at the Ministry of Justice	Status of the document
1	«Temporary typical methods of determining the cost-effectiveness of the environmental protection measures and assess the economic damage to the national economy caused by pollution».	Approved by Decree of the USSR State Planning Committee, the USSR State Construction Committee, the Presidium of the USSR Academy of Sciences on October 21, 1983 № 254/284/134.	No	Used for the research
2	«Method for determining the size of the damage caused by soil and land degradation».	Approved by the Ministry of Natural Resources of the Russian Federation on the 11.07.1994 and by the State Committee of Russia in 1994, Russian Ministry of Agriculture in 1994.	No	Unidentified status
3	«The procedure for determining the size of the damage caused by land chemical pollution».	Approved by the Ministry of Natural Resources of the Russian on 18.11.1993 and	No	Removed

		the state land Committee Russia in 1993, the Russian Ministry of Agriculture in 1993		
4	«Method of calculating the amount of damage caused to wildlife and listed in the Red Book of the Russian Federation, as well as other objects of the animal world, not related to hunting and fishing, and their habitats».	Order of the Ministry of Natural Resources of the Russian Federation, 28.04.2008 № 107	Registered on the 29.05.2008. № 11775	In force
5	«Method of calculating the amount of damage caused to water bodies due to violations of water legislation».	Order of the Ministry of Natural Resources of the Russian Federation,13. 04. 2009 № 87.	Registered on the25.05.2009. № 13989	In force
6	Fees for the calculation of compensation for damage caused by legal entities and individuals by illegal hunting, gathering, preparation or destruction of flora to the species of plants and fungi, listed in the Red Book of the Russian Federation, as well as destruction, depletion and destruction of their habitat.	Order of the Ministry of Natural Resources of the Russian Federation, 04. 05.1994 № 126	Registered on the 06.06.1994. № 592	In force
7	Rates for calculating the amount of damage caused to forest plantations or ascribed to forest plantations trees, shrubs and vines due to violation of the forest legislation, which are allowed for logging			
8	Rates for calculating the amount of damage caused to trees and shrubs, timber harvesting of which is not allowed	Russian Federation Governmental Resolution, May 8, 2007 № 273 «On the calculation of the amount of damage caused to forests due to violations of forest law».		In force
9	Method of calculating the amount of damage caused to forests, including forest plantations, or ascribed to forest plantations trees, shrubs and vines due to violations of forest law			
10	Rates for calculating the amount of damage caused to forest due to violation of the forest legislation, except for the damage caused to forest plantations or non-forest plantations ascribed to trees, shrubs and vines			
11	Fees for the calculation of compensation for damage caused by legal entities and individuals or	Order of the Russian Ministry of Agriculture,25.05.1999, №399	Registered on the24.06.1	In force

	destruction of illegal hunting of wildlife, ascribed to hunting		999. № 1812	
12	Fees for the calculation of compensation for damage caused by citizens, legal entities and individuals and stateless persons, illegal fishing, or the extraction of aquatic biological resources in inland fisheries waters, internal waters, territorial sea, continental shelf, exclusive economic zones of the Russian Federation, and fish species produced in the rivers of Russia, beyond the exclusive economic zone of the Russian Federation to the outer limits of the economic and fishing zones of foreign countries			
13	Fees for the calculation of compensation for damage caused by citizens, legal and stateless persons, by illegal fishing, or the extraction of aquatic biological resources listed in the Red Book of the Russian Federation, inland fisheries waters, internal waters, territorial sea, the continental shelf, in the exclusive economic zone of the Russian Federation	Russian Federation Governmental Resolution, 26.09. 2000, № 724		In force
14	«The procedure for determining the amount of damages that may be caused to life and health of individuals, property of individuals and legal entities in the accident of the hydraulic constructions»	Order of the Russian Ministry of Emergency Situations, 18.05 2002 № 243; Order of the Russian Ministry of Energy, № 150; order of the Ministry of Natural Resources, № 270; order of the Russian Ministry of Transport, № 68, Order № 89 of the Federal Mining and Industrial Inspectorate of Russia	Registered on 03.06.2002. № 3493	In force
15	«Methods for determining the amount of harm that may be caused to life and health of individuals, property of individuals and legal entities in the accident of the hydraulic constructions»	Order of the Ministry of Emergency Situations of Russia, Russian Gosgortechnadzor 15.08. 2003 № 482 / № 175a agreed with the Ministry of Economic Development of Russia. Letter dated: 14 March 2003 № MC-234/23	No	In force

16	«Temporary method of determining the averted environmental damage »	Approved by the State Committee of Ecology 09.03.1999	No	In force
17	«Methods of calculating damage for fisheries by the discharge of fishery ponds of sewage and other waste».	Approved by the Ministry of Fisheries of the USSR, 16.08.1967, № 30-1-11. Agreed with the Ministry of Finance of the USSR and the Ministry of Land Reclamation and Water Resources of the USSR	No	In force. Unidentified status
18	«Methods of calculating damage for fisheries caused by an infringement of fisheries and protection of fish stocks». Not applicable in the territory of the Russian Federation as regards the calculation of damages from work intakes(Order of the Roskomrybolovstva of the Russian Federation, 07.04.1995 № 53)	Approved by the Ministry of Fisheries of the USSR,07.12.74 №30-2-02 and the Ministry of Finance 15/07/74	No	In force. Unidentified status
19	«Temporary method of estimating the damage caused to fish stocks by the construction, reconstruction and expansion of enterprises, buildings and other facilities and carrying out different types of work in the fishery waters»	Approved by the Ministry of Fisheries of the USSR, 18.12 1989; the State Committee of the USSR, 20.10.1989; the Ministry of Finance of the USSR, 21.12 1989.	No	In force. Unidentified status
20	«Method of calculating the amount of damage caused by pollution of groundwater».	Order of the State Committee of Ecology of the Russian Federation, 11.02.1998, № 81	No	In force. Unidentified status.
21	«Method of calculating the amount of damage caused to the soil as anobject of environmental protection».	Order of the Ministry of Natural Resources of the Russian Federation,08.07. 2010, № 238	Registered on the7.09.2010. №18364	In force

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Reviewer: Toskunina Vera Eduardovna,
Doctor of Economics

Reviews

Arctic: the prospects for sustainable development

© Kondratyeva, Valentina I., Candidate of Economics, Head of State Autonomous Institution "Center for Strategic Studies of Sakha (Yakutia)", Yakutsk

© Lukin Yury F., Doctor of Historical Science, professor, editor-in-chief of "Arctic and North" journal, Arkhangelsk

Abstract. Review of the international scientific conference held on the 26th—29th of November2014 in Yakutsk, Sakha Republic (Yakutia)

Keywords: *Russian Arctic, the Republic of Sakha (Yakutia), sustainable development, the model, a new view*

The International scientific conference "The Arctic: the prospects for sustainable development" was held on the 26th—29th of November 2014 in Yakutsk within the framework of the Year of the Arctic announced in the Republic of Sakha (Yakutia). The relevance of such a forum was caused by the need to overcome the negative demographic, economic and environmental trends and by the search for perspectives of sustainable development of the Arctic territories. The Article summarized the results of research, practical experience of the Arctic territories, and proposals aimed to improve the state policy of the Russian Federation on its social and economic development.

The conference was organized by the Government of the Republic of Sakha (Yakutia), international non-governmental organization "The Northern Forum" and by the State Autonomous Institution "Center for Strategic Studies of the Republic of Sakha (Yakutia)". The conference was held under the auspices of the Council of Federation of the Federal Assembly of the Russian Federation with the participation of its representatives.

In the speech at the plenary session the head of Yakutia Egor Borisov noted that the territory of Yakutia was more than 3 million square kilometers, 40% of the territory was above the Arctic Circle. Yakutia is situated on the permafrost, in extreme climatic conditions. In addition, 13 of the 35 districts of the Republic are inherent in a particularly high resource consumption and dependence on the northern delivery, have low population density (an area of 1.7 million square kilometers and only 70,000 people) and uncomfortable living conditions. Even in the most difficult

years for Russia, the authorities of the Republic of Sakha (Yakutia), constantly focused their attention on the problems of people living in the Arctic.

Picture 1.The head of the Republic Egor Borisov
URL: http://science.ykt.ru/uploads/posts/thumbs/1417160572_dsc_0116.jpg

The year 2014 was called the Year of the Arctic in Yakutia. The Republic is actively involved into solving its major problems: improving the quality of life of the population and the development of life-support systems: transport, energy, housing and communal infrastructure, information and communication. Construction of social and engineering facilities and modernization of housing are continued. The Federal Arctic Research Center was established in Tiksi aimed at development and application of new technologies and materials adapted to the climatic conditions of the Arctic. The railway line to Yakutsk is done, the development of navigation and the revival of the seaport Tiksi allows the creation of long-term transport corridor from Asia to Europe.

A special executive body — the State Committee for the Arctic was established to consolidate the efforts of the executive authorities and civil society for the development of the Arctic in the Republic of Sakha (Yakutia). Also the Institute of the Commissioner for Indigenous

Peoples Rights is introduced in Yakutia and got positive feedback from the international expert community[1].

Picture 2. URL: http://sakhaarcticconf.ru/wp-content/uploads/2014/12/IMG_2965.jpg

President of the Inter-regional public organization “Association of polar explorers”, Special Representative of the President of the Russian Federation for International Cooperation in the Arctic and Antarctic A.N. Chilingarov drew the public attention to the fact that the national security, the preservation of the Northern Sea Route, the optimization of exploration and development of offshore fields, environmental issues, the integrated study of the Arctic - were extremely important issue with no effective solutions. The problem of interaction between the federal and regional levels of government reminds unsolved as well. Arctic strategy legislation and the federal law “On the Arctic zone of the Russian Federation” are not ready. The rights of indigenous peoples of the North have some unsolved issues and a federal agency for the Arctic and Antarctic is still not working. Practical problem of every northern regions were discussed at the conference.

The head of the Republic Egor Borisov awarded Artur Chilingarov the State Prize of the Republic of Sakha (Yakutia) named after M.K. Ammosov in public governance in 2014.

[1] Выступление Главы Республики Саха (Якутия) Е.А. Борисова на пленарном заседании Международной научно-практической конференции «Арктика: перспективы устойчивого развития» (г. Якутск, 27 ноября 2014 года). URL: http://www.egorborisov.ru/publications/5/3724-vystuplenija.html (дата обращения: 28.01.2015)

At the plenary session the first President of the Republic of Sakha (Yakutia), the deputy of the State Duma of the Russian Federation M.E. Nikolaev, director of the Center of the economy of the North and the Arctic Council for Study of Productive Forces A.N. Pilyasov, Deputy Chairman of the UN Expert Committee on Indigenous Issues A. Tsykarev, the governor of Lapland Mika Riipi, co-chairman of the Arctic Energy Summit Nils Andreassen (Institute of the North, USA), representatives of the Murmansk region, the Government of Moscow and South Korea were represented.

The total number of participants — more than 400 people from 9 countries (Sweden, Italy, South Korea, Norway, Finland, Slovakia, USA, France, Japan) and 14 regions of Russia (Moscow, St. Petersburg, Krasnoyarsk, Magadan, Tyumen, Voronezh, Novosibirsk, Tomsk, Khabarovsk, Vladivostok, Rybinsk, Perm, Republic of Karelia, Orenburg) reflected the special interest of the Russian and international community toward the issued discussed at the conference. It has become a significant event for the scientific community, higher education, enterprises and other organizations of Yakutia.

The conference was held as 10 round table discussions on key issues of development of the Russian Arctic:

1. “Comprehensive study of the territorial development: historical experience and modern approaches ”held together with the North-Eastern Federal University named after M. K. Ammosov within the scientific conference “Adaptation of human society and the Arctic regions to climate change and globalization”.
2. “Human potential and quality of life in the Arctic”.
3. “Ecology and development of mineral resources”.
4. “Transport mobility, experience in the organizing and delivery routes in the Arctic”.
5. "The Arctic: Technology Energy and Utilities".
6. “The introduction of information and communication technologies in the Arctic”.
7. “Innovation in Arctic building industry”
8. “Conservation of traditional ways of life and traditional economic activities of the peoples of the Arctic”.
9. “Arctic tourism”.
10. “Arctic model of sustainable development: a new perspective”.

The round table discussions were moderated by a Deputy Chairman of the Federation Council on the federal structure, regional policy, local government and Northern Affairs A.K. Akimov; DG of JSC “National Center for Life” V.N. Bobkov; professor of the University of Aix-

Marseille (France) Sébastien Gadal; Advisor of the Director of the National Park “Russian Arctic” V.S. Kuznetsov; Senior Researcher, Institute for Economic Research, Far Eastern Branch of the Russian Academy of Sciences S.N. Leonov and others. At the final meeting of each round table discussion the moderators pointed out the main proposals and recommendations of the round table discussions included into the draft of the Resolution.

Picture 3. URL: http://sakhaarcticconf.ru/wp-content/uploads/2014/12/IMG_5348.JPG

Within the framework of the Conference, a specialized company “Yakutskaya Yarmarka” and Chamber of Commerce and Industry of the Republic of of Sakha (Yakutia) held an exhibition“Technologies of the Arctic”. The opening of the exhibition was attended by the Permanent Representative of the RS(Ya) under the President of RFA.A. Struchkov, Minister for federative relations and External Relations of the RS(Ya) V.N. Vasiliev, the governor of Lapland Mika Riipi, chief of department on Marketing of the Bureau for Convention and Visitors of the Kangwon province of South Korea Xing Jong Mi, the President of of Commerce-industrial Chamber of RS(Ya), people's deputy of the State Assembly (Il Tumen) of the RS(Ya) V.M. Chlenov. The exhibition represented the areas vital for the Arctic: construction and building materials, energy and housing-and-municipal economy, transport and transport communications, the mining industry and geological servey, agriculture, traditional crafts, communications and telecommunications, ecology and human health in the conditions of a cold climate. There were 57

participants from the Republicof Sakha (Yakutia), as well as from the Republic of of Korea (province Kangwon), Kemerovo and Kazan. Scientific developments were presented by the Institute of Oil and Gas, the Institute of physico-technical problems named after V.P. Larionov, Research Institute of Applied Ecology of the North, North-Eastern Federal University named after M.K. Ammosov. Arctic State Institute of art and culture, College of Technology and Design, bodies of local self-government have demonstrated the culture and creativity of the peoples of the North. Participants of the exhibition were such a well-known Yakut brands, as a factory of basalt materials "Sahabazalt", FAPK "Yakutia", GK "Skif", Fishing Company "Fish of the Arctic","Chokurdakhsky" fish plant, jewelry companies "SahaDesign" and "Kierge". Some important contracts on deliveries of equipment were digned. Participants and visitors expressed the wish to hold the exhibition annually.

The final Resolution has become the most important document that contains about 70 specific proposals on wide range of issues in the the field of state Policy of the Russian Federation in the Arctic, development of international relations and civil initiatives (published on the website of "Arctic and North" journal in the "Arctic encyclopedia"):

- To hasten the adoption of the Federal Law "On the Arctic zone of of the Russian Federation" and to underline the importance of the strategic planning of socio-economic development of the Arctic macroregion of theRussian Federation, consider it as a priority by distinguishing between the concepts "the Arctic" and "the North" and "the Far North". To develop models of sustainable socio-economic development of regions in the Arctic zone of the Russian Federation.
- To decide on creation of at the federal level of a special coordinating body on state policy in the Arctic, including the issues of small-numbered indigenous peoples of the North. To recognize the sphere of economic activity of ethnoses of the North of the Arctic zone of of the Russian Federation as the special ethno-economic activities and a special object of of the state policy and management.
- To create the flexible system of of financial mechanisms of development of the Arctic territories, including a tax stimulating system and customs of tools for infrastructural investment projects and new business projectsin the Arctic (the exemption from paying the property tax, import customs duties and VAT) and for the newly created small business in the AZRF (exemption paying income taxes during the first three years, property tax, land tax, VAT and enter a bet in the amount of 1% available at special tax regimes).

- Support the legislative initiative of the Republic of of Sakha (Yakutia) on the amendments to the Federal Law “On the Fundamentals of health protection of citizens in the Russian Federation” in the part about the primary medical care at the 24-hour hospitalin areas of the Far North and the establishment of the special state program of free medical care with the regard to the density and dispersal of the settlements.
- To ensure the transport accessibility and transport infrastructure for the development of tourism in the Arctic zone of the Russian Federation, interregional cooperation between the Arctic territories in the creation the unified tourist brands and projects.
- To adopt the Law of the Russian Federation “On renewable energy sources” to introduce the renewable energy sources. To provide measures on the State promotion of generation objects constructions, using renewable sources of energy.

The Arctic zone of the Yakutiaconsists 13 municipal formations with the same climatic conditions, low population density, high resource intence and dependence on the delivery of goods. Because of the uncomfortable environmental conditions, Yakutia insists on entering of all 13 districts in the Arctic zone the Russian Federation (Decree of the President of Russia from 02.05.2014 № 296:only 5 areas of Yakutia, directly adjacent to the Arctic Ocean, are considered as the Russian Arctic territories). Editors of the “Arctic and North” journal support such an approach.

The Resolution contains some proposals on social issues (education, health, sport, social protection, culture of the small-numbered peoples of the North); on development of transport, energy, communal, information-communication infrastructure (financial support of the air transport, the acquisition of aircrafts and river vessels, creation of multifunctional space system “Arktika”), on delivery of goods, necessary for the population in the Arctic.

Preservation of traditional economy and traditional lifestyles should contribute to recommendations in the sphere of agriculture, envorinmentalmanagement and ecology; development of national sports; adoption of the Federal Laws “On reindeer husbandry” and“About the state support of the small-numbered indigenous peoples of the North, Siberia and the Far East of the Russian Federation”; the development of the federal target program on support of the small-numbered indigenous peoples of the North; complex estimation of ecological, economic and social impact of the state strategies and programs for the development of the North, Siberia and the Far East, the the areas adjacent to these territories of the sea shelf and indigenous lands;mandatory ethnological expertise of the places of indigenouspeople’s residence and economic activity. It was suggested to join the efforts of the northern territories to create the Interregional Book Catalog of the indigenous people’s of the North, Siberia and the Far East and to

fill the Electronic Library and other summary resources at the web page of the small-numbered peoples of the North “Knigakan”.

More detailed information on the conference (press releases on round table discussions, abstracts, list of participants, photo and video materials and the Resolution) could be found at the web page: http://sakhaarcticconf.ru/

Round table discussions’ materials International conference “Arctic: propones of the sustainable development”

Moderates of the round table discussion ***“Complex study of the development of territories: historical background and contemporary approaches”*** were: the Permanent Representative of the Republic of Sakha (Yakutia) under the President of the Russian Federation A.A. Struchkov; Doctor of Technical Sciences., corr. of the Russian Academy of Sciences, Chairman of the Presidium of the Yakut Scientific Center of the Russian Academy of Sciences, Director of the Institute of Physical and Technical Problems of the North SB RAS M.P. Lebedev; Candidate of Geographical Sciences, Vice-Rector of the North-Eastern Federal University named after M.K. Ammosov M.Y. Prisiazhny.

The round table discussion was attended by the President of the “Snowchange” organization (Finland); Arctic explorer Tero Mustonen; Professor of the Hokkaido University (Japan) Tatsuzava Shiro; Deputy Minister of Natural Resources and Environment of the Magadan P.E. Tikhmenev; Doctor of Science, DG of JSC “Fundamentproject” (Moscow) F.M. Rivkin; Candidate of Geographical Sciences,Senior research fellow of the department of environmental management, Faculty of Geography, Moscow State University named after M.V. Lomonosov E.L. Vorobievskaya; representatives of local governments of the Arctic and northern regions, research organizations, educational institutions, executive authorities, graduate students and university students.

There was discussion of modern methods of research with the regard to the great historical experience. Participation of the best representatives of the scientific and expert community and the application of advanced scientific technology are the foundation for a brand new development in the Northern and Arctic regions. Permanent Representative of the Republic of Sakha (Yakutia) under the President of the Russian Federation A.A. Struchkov noted that the North-East region and the Pacific coast of Russia have had the greatest interest for the local research community. In the XVIII century the first and the second Kamchatka expedition were carried out. In the XIX century outstanding research of the North and East Siberia was carried out by the member of the St. Petersburg Academy of Sciences A.F. Middendorf. The initiative of the chairman of the SNK YASSR M.K. Ammosov lead to the research expedition of the Russian Academy of Sciences — the 1stYakut Academic expedition aimed to study the productive forces of Yakutia in 1925—1930. The purpose

of the expedition was to study the nature of the North and the people — its economic and social situation. The head of the Republic of Sakha (Yakutia) E.A. Borisov initiated the 2nd Complex Scientific Expedition in April. The proposal was supported by Russian President Vladimir Putin and today it has developed the guidelines for the expedition.

Picture 4.URL: http://sakhaarcticconf.ru/wp-content/uploads/2014/12/IMG_4784.JPG

Chairman of the Presidium of the RAS YSC M.P. Lebedev presented the draft of the "Concept of integrated research of the Russian Academy of Sciences to study the economic and human potential of the Republic of Sakha (Yakutia) for 2015—2020". DG of "Fundamentproject"(Moscow), Doctor of geological and mineralogical sciences F.M. Rivkin presented a specialized geo-information cartographic model of engineering and geologists conditions as a basis for spatial planning and environmental management in hard northern environment. Specialized geo- information system is actually a tool for scientific support of the projects. It allows the anticipatory assessment of the conditions, methods and cost of the project and is useful for taking timely decisions aimed to improve the regulatory framework of research, design and building. The results of the environmental studies of the central part of the Kola Peninsula, a map of natural and cultural heritage, the dynamics of economic activity of the study area were analyzed in the report of the k.g.n. E.L. Vorobyevskaya.

In general, the speakers noted that the characteristic feature of the modern world and its economic development was the transition of the leading countries to a new stage of an innovative society meant building an economy based on the generation, dissemination and use of scientific knowledge mainly. Today's global challenges highlight the importance of the advanced development of certain scientific research areas and technological development (“clean” energy, genomic medicine, new technologies in agriculture and a number of other areas)and some ofthem do not have a good start in our country.

The round table discussion ***“Human potential and the quality of life in the Arctic”*** was devoted to a new paradigm of social policy aimed at sustainable socio-economic development of the Arctic, creating favorable conditions for demographic and social reproduction of the population in the North. In recent years there had been a number of positive trends: an increase in fertility and life expectancy, wage growth and poverty reduction. However, it is impossible to stop the migration outflow and to attract highly qualified personnel without the development of social infrastructure, the use of government support measures and the system of additional benefits and preferences for the population of the North.

The moderators of the meeting were: Doctor of Economical Sciences, member of the Federation Council of the Federal Assembly of the Russian Federation, Deputy Chairman of the Federation Council Committee on the Federal Structure, Regional Policy, Local Government and Northern Affairs A.K. Akimov; Deputy Prime Minister of the Republic of Sakha (Yakutia) A.P. Dyachkovsky; Doctor of Economical Sciences, Professor, DG of JSC “National Center for Life Level” V.N. Bobkov.

Opening the round table discussion, moderator A.K. Akimov outlined the range of fundamental problems: “Arctic zone of our country was fast developed area. In the areas there are working gold mines, seaport in Tiksi and Komsomol construction sites. Our region was attractive for the strong young people, there were families, and children were born. But due to the wrong policies everything was destroyed in a very short time. Therefore, I believe that today the first thing you need to solve is the problem of support of the people in order to deal with issue of development of the Arctic. To address issues related to the development of the Arctic, it is necessary to develop a regulatory framework. And therefore it is necessary to hear the views of scientists, experts and public to reach a consensus on mechanisms for the implementation of laws and policies”. The Minister of Labour and Social Development of the Republic of Sakha (Yakutia) A.N. Druzhinin underlined the issue of the migration outflow of the most active population of

working age, the reduction reproduction of the population, high level of poverty and the disparity of social infrastructure to modern requirements.

Some other speeches were on the demographic potential and reproduction of the Arctic population, quality of life, behavior strategies of the youth of the North Yakutia, the revival of traditions, problems of training the highly qualified personnel in Yakutia, pensions for persons employed in the traditional industries of the North, housing and communal living conditions in the Arctic and comfort of living in the Arctic villages of Yakutia. The report of S.A. Sukneva, Doctor of Economical Sciences, deputy director of the Institute of Regional Economy of the North NEFU named after M.K. Ammosov, was devoted to the demographic potential and reproduction of the population of the Arctic zone of Yakutia. The author stressed the importance of structural features and ethnic identity of the population of the Arctic formed due to a significant influx of migrants, as well as the high birth rate as a result of the persistence of traditional models of demographic behavior of indigenous peoples living in these territories.

Similar to the Republic of Sakha (Yakutia) problem of prservation of human resources exist today in the Magadan region. According to Natalia Galtseva, Doctor of Economical Sciences, associate professor and a member of the Research Institute named after N.A. Shilo, the Magadan region has the largest percentage loss of population throughout the Far Eastern Federal District caused by the low ratio of per capita income compared to the other Russian territories and problems with housing.

The round table discussion ”***Ecology and the development of the mineral resource base”*** was devoted to development of the natural resources in the Arctic, maintaining the region as a global environmental resources base of the planet. Yakutia is the most convenient starting point for the development of the Arctic. Prospective oil and gas areas of the northern slope of the Anabar Shield, unique niobium rare metal deposit “Tomtor”, large deposits of diamonds and coal form the Olenek Anabarsky mining cluster. It is also possible create the Lower Yansky cluster basedon the gold mining deposit “Kyuchus”, gold and rare metal of the Kular district, tin deposits and the Chokurdahskoy shelf deposits and the Zyryansky coal basin. In this case, in terms of industrial development, especially oil and gas extraction, Arctic is one of the most complex regions in the world. The ability to eliminate the consequences of emergency situations is complicated by the polar night, numerous storms with high waves, dense fog, ice and possible collisions with icebergs.

The moderators of the round table discussions were: Deputy Chairman of the State Assembly (Il Tumen) of the Republic of Sakha (Yakutia) A.A. Dobryantsev; Minister of Nature

Protection of the Republic of Sakha (Yakutia) S.M. Afanasiev; Doctor of geological sciences, professor, Director of the Institute of Geology of diamonds and precious metals of the SB RAS V.Y. Fridovsky.

The first part of the round table discussion was devoted to the development of mineral resource base of the northern and arctic regions of the Far North-East of Russia, including geology and petroleum potential prospects of the Arctic Yakutia, the mineral resource potential of the "Tomtor" deposits, diamond deposits in the Arctic, the resources of the mammoth fauna. New technologies and processing of minerals, adapted to Arctic conditions and prospects of the development of offshore subsea technology for tin placers in the Russian Arctic got a great interest and attention. N.A. Goryachev, director of the North-East Interdisciplinary Research Institute named after N.A. Shilo, Doctor of Economical Sciences, corr. of the Russian Academy of Sciences and Doctor of Economical Sciences N.V. Galtseva assessed the potential and prospects of the mineral resource base development in the northern and arctic regions of the Far North-East of Russia. They also spoke about the importance of providing benefits for SEZ in case of state financial support.

In the second part of the round table discussion introduces a wide range of issues related to environmental protection and rational use of natural resources in the Arctic. The tripartite agreement on cooperation between the Ministry of Nature Protection, the Ministry of entrepreneurship and the development of tourism of the Republic of Sakha (Yakutia) and the National Park "Russian Arctic" was signed there.

The round table discussion ***"Transport mobility, experience in organization and delivery schemes of cargoes in the Arctic"*** At the round table "Transport mobility, experience in organization and scheme of delivery of cargoes in the Arctic," discussed the development of transport infrastructure of the Arctic territories. On the one hand, the cross-polar air bridge passes through the Arctic (the shortest route between North America and Asia) and the Northern Sea Route too— the shortest sea route between East Asia and Europe. It is assumed that the melting of ice in the Arctic Ocean will turn it into an important all year-round transport route. On the other hand, a high degree of isolation from major industrial centers because of the undeveloped and seasonal transportation does not allow the development of medium and small business in the Arctic. Support of the remote settlements is carried out under difficult circumstances and requires significant public funds. Unfortunately, the practice of delivery poses a threat to national economic security in the Arctic because of the lack of fixed links to the national road network. Because of the

high proportion of transport costs in the total cost of the products sold in the Arctic, it is necessary to restore central northern delivery of goods and governmental support.

The moderators of the round table discussion were: Minister of Transport and Roads of the Republic of Sakha (Yakutia) S.V. Vinokurov and Candidate of Economical Sciences, Director of the Financial and Economic Institute of the North-Eastern Federal University named after M.K. Ammosov A.A. Kugaevsky.

Picture 5. URL: http://sakhaarcticconf.ru/wp-content/uploads/2014/12/IMG_8066.jpg

The report of A.A. Kugaevsky is devoted to the delivery of cargoes in the context of the transport network modernization in the Republic of Sakha (Yakutia).

Vice President of NP “Northern Sea Route” V.V. Mikhailichenko presented the information on the Arctic shuttle-transport for carrying containers along the Northern Sea Route in 2014. The report “The revival of aviation — the key to successful development and livelihoods of the Arctic regions of Russia” was presented by V.I. Skoropupov — Assistant of the Special Representative of the President of the Russian Federation for International Cooperation in the Arctic and Antarctic A.N. Chilingarov. The measures to ensure the transport infrastructure in the Arctic (for example, the state enterprise “Roads of the Arctic”) were discussed by the 1st Deputy Minister of Transport and Roads of the Republic of Sakha (Yakutia) M.R. Nikiforova. DG of JSC “Polar Airlines” A.E. Tarasov presented a paper on “Aircraft service for the Arctic areas: ways and problems”. The scheme of delivery of cargoes in the Arctic regions of the country was analyzed by the Chairman of

the State Committee on the Safety of life of the population of the Republic of Sakha (Yakutia) Y.N. Zaitsev and DG of "Yakutoptorg" R.I. Fedorov.

The round table discussion ***"Arctic: power technologies and utilities"*** focused on innovation in energy and housing and communal services. At present, energy conservation and energy efficiency is an indispensable element of successful economic development, providing lower costs while reducing negative impacts on the environment. The country has already begun to use renewable energy sources -wind and solar power plants. Along with this, there is an important experience in using innovative equipment and technology at Russian enterprises and in development of alternative and renewable energy in the world.

The moderators of the round table discussion were: Deputy Minister of Housing, Public Utilities and Energy of the Republic of Sakha (Yakutia) N.N. Duraev and Candidate of Technical Sciences, senior lecturer in aircraft engines from the Rybinsk State Aviation Technical University

Picture 6.URL: http://www.nlib.sakha.ru/news.php?news=4413

named after P.A. Solovyov, a leading engineer-designer of "New Energy" (Rybinsk, Yaroslavl Oblast) I.N. Novikov.

A report on the issue of delivery of fuel to heat generators in arctic conditions was made by V.S. Ignatiev, researcher at the Department of Power Engineering Problems of the Institute of Physical and technical problems of the North. The Head of the Department of Energy and Energy saving of the Ministry of Housing and Public Utilities and Energy of the Republic of Sakha (Yakutia) V.P. Emelyanov came out with the report on the problems of diesel energy in the Republic of Sakha (Yakutia). Technology utilities in Alaska (wind and diesel units) were presented by the director of the Institute of the North (USA, Alaska), Co-chair of the Arctic Energy Summit Nils Andreassen.

The problems of waste, converting solid household and industrial waste into gas, diesel and electricity with the use of bioenergy BHKW-facility were told by Candidate of Technical Sciences, Technical Director of the "Grimi s.r.o." (Slovakia) M.F. Logunov. Moderator I.N. Novikov presented a report on destruction of biological and medical waste. The Technical Director of the "Progress-energy" (Yaroslavl) G.L. Rassokhin continued this theme and came out with a report on waste disposal via fast pyrolysis reactor.

DG of the "Center of energy saving and new technologies of the Republic of Sakha (Yakutia)" S.S. Popov and Head of Administration MO "Deputatsky" S.G. Bondarenko presented the experience of Deputatsky village of the Ust-Yansky District in energy saving in the framework of an energy service contract for the housing stock.

The round table discussion ***"Introduction of information and communication technologies in the Arctic"*** noted that the territorial remoteness of the northern area, the lack of efficient infrastructure and communication facilities exacerbate the need in information and communication technologies (ICT) and their integration into a single information space for Arctic residents. The moderators of the round table discussion were: the Minister of Communications and Information Technologies of Sakha (Yakutia) A.I. Borisov and Professor at the University of Aix-Marseille (France) Sébastien Gadal.

Modern medical laboratory at the size of a suitcase had been shown by the Deputy DG of "Mikord" (Kazan) V.B. Tikhomirov. Qualification of paramedics in the rural areas does not allow a diagnosis on a number of complex diseases. With the help of a mobile complex all the information about a particular patient's disease could be transmitted to the physician on a single medical information card.

Experts in the field of education were presented a distance education technologies and reports on the preservation of the cultural heritage of indigenous peoples.

Professor from the University of Aix-Marseille Sébastien Gadal described the role of remote monitoring systems in the Arctic, possible to be used to observe different weather processes in the Arctic. Telecom operators have reported on their activities and prospects of development in the Arctic regions of the country. The report of the engineer of the "Radio Engineering Corporation "Vega"(Moscow) A.A. Nikolaev introduced a technological solution — a mathematical model of a passive Wi-Fi repeater range for CAD package CST Microwave Studio 2014 and calculations for a prototype with basic parameters. The representative of the inter-regional branch of the "Far East" OJSC of the "Rostelecom" N.Y. Masich spoke about the plans of his company in the Far East.

Development and implementation of a new generation of building materials and techniques based on innovative technologies were discussed at the round table meeting "***Innovations in Arctic***

***building"*.** The moderators of the round table discussion were: the Minister of Architecture and Building of the Republic of Sakha (Yakutia) V.A. Kuzakova, Doctor of Technical Sciences, Director of Engineering and Technical Institute of the North-Eastern Federal University named after M.K. Ammosov T.A. Kornilov.

Picture 7. URL: http://sakhaarcticconf.ru/wp-content/uploads/2014/12/IMG_5112.JPG

The main report "Global environmental change and sustainability of the cryolithozone and reaction of the engineering structures" was made by the Doctor of Geological-mineralogical Sciences, Head of the Department of Geocryology at the Geological Faculty of the Moscow State University named after M.V. Lomonosov A.V. Brushko. He suggested assessing the consequences of the possible scenarios of global warming on the basis of existing ideas about the temperature of perennial frozen strata using any of to quantify the degradation of the permafrost zone.

World's first engineering-geological map of the Republic of Sakha (Yakutia) was introduces by the Institute of Permafrost named after M.I. Melnikov, SB RAS headed by Doctor of Geological-mineralogical Sciences V.B. Spektor. The map could be applied as the means of the information support for the planning, implementation and operation of large engineering structures in the country.

Prospects for production of the foam glass — ceramics "turmogran" from the local raw zeolite were presented in the report of A.D. Orlov, Candidate of Technical Sciences., Deputy Chief of the department of house-building innovative technologies CNIISK named after V.A. Kucherenko. The foam glass — ceramics "turmogran" produced in Yakutia meets the key requirements for

building in the North and Yakutia in particular — the thermal and mechanical properties at the level of foam glass at a minimum cost and the local resource base.

Report of the DG of the Centre for European Construction Technology (St. Petersburg) S.A. Startseva focused on renovation of the facade panel buildings with the use of innovative technologies at low temperatures. The reports of the participants presented the results of research on innovation in construction in the Arctic: effective ways of building a foundation and foundation structures, suggestions for structural and technological solutions of houses, volume-spatial solutions for dwellings and settlements.

Participants of the round table discussion ***"Preservation of traditional lifestyles and economics of the peoples of the North"*** focused on the preservation of culture, traditional way of life of indigenous peoples of the Arctic as it is a unique example of human adaptation to the climatic conditions of the Far North. Today, there is a greater interest in further development and use of resources in the Arctic, and the invasion of nature reserves, which are home for the peoples of Arctic and territory of traditional nature. In this regard it is vital for indigenous peoples to have their rights reflected in the legal support of industrial development. Worldview of indigenous peoples must be taken into account when deciding the socio-economic development of the areas where they live. Meanwhile, in December 2013, the territory of traditional nature deprived of the status of protected areas. The territory of indigenous people is no longer a subject to the restrictions in the turnover of land legislation. There is a need to adopt certain legal acts on the territories of indigenous peoples at the federal level, as well as to establish sanctions for violation of rules and regulations.

The moderators of the round table discussion were: Deputy Prime Minister of the Republic of Sakha (Yakutia) P.N. Alekseev and Chairman of the Standing Committee of the National Assembly (Il Tumen) of the Republic of Sakha (Yakutia) on indigenous peoples and Arctic affairs E.H. Golomareva.

The meeting was attended by Russian and foreign scientists from Moscow, Yakutsk, Norway and by leaders of public associations of indigenous peoples, including the Association of Indigenous Peoples of the Republic of Sakha (Yakutia), the Association "World Reindeer Herders' Council of Elders of Indigenous Peoples North", the Council of Elders of the Yukaghir people, Evenki Association of Sakha (Yakutia), the Union of Sakha (Yakutia), the Association of the Chukchi of Sakha (Yakutia), the Association Dolgan Sakha (Yakutia), the Association Yukagirs Sakha (Yakutia).

During the discussion of the prospects for preservation and development of traditional economics of indigenous peoples, the participants highlighted the need to improve the legal

framework in the field of traditional land use and an increase in research projects focused on ethno-cultural, ecological and economic aspects of resource use in the Arctic.

The round table discussion ***"Arctic tourism"*** brought together the participants interested in the development of tourism. Russian Arctic due to its unique geographical location, the availability of a wide variety of flora and fauna has considerable recreational potential for tourism development. This is a beautiful wilderness, the presence of more than two hundred of protected areas. Here there is more than 70% of the world finds of mammoth soft tissue. The moderators of the round table discussion were: Minister for Enterprise and Tourism Development of the Republic of Sakha (Yakutia), E.I. Kormilitsyna and Advisor of the Director of the National Park "Russian Arctic" V.S. Kuznetsov.

The meeting was attended by Head Lapland province Mika Riipi, Lecturer from School of Technology and Business, Dalarna University Albina Pashkevich and professor of the Umeå University Olof Shërnstrem. Among the participants it was possible to see: First Deputy Prime Minister of the Republic of Sakha (Yakutia), P.A. Marinychev, President of the Academy of Sciences of the Republic of Sakha (Yakutia) I.I. Kolodeznikov, representatives of local authorities, tourism and business of Sakha (Yakutia), representatives of scientific organizations, educational institutions, university students and a group of schoolchildren.

The concept of Arctic tourism Republic of Sakha (Yakutia) for the period up to 2025 was introduced by Candidate of Economical Sciences, Director of the "Center for Strategic Studies of the Republic of Sakha (Yakutia)" V.I. Kondrateva. In a report on the development of tourism in the national park "Russian Arctic" Candidate of Economical Sciences, Advisor of the Director of NP "Russian Arctic" V.S. Kuznetsova informed about the development of tourism in the reserve of federal importance "Franz Josef Land", an active work they make to attract tourists and the organization of virtual tours through the national park.

Active discussion and great interest among the participants of the round table discussion was caused by the issues of sustainable tourism development as a basis for specialization of the Arctic regions (Mika Riipi's speech), world trends of tourism development (A.F. Khorosheva's presentation), as well as the swim across the Bering Strait (K.N. Bolsheva's speach). Archeological heritage of Yakutia, and its contribution to the archaeological (scientific) tourism was discussed by Doctor of Historical Sciences, Director of the Center of Arctic archeology and paleoecology of human AS RS (I) S.A. Fedoseyeva.

Picture 8. URL: http://sakhaarcticconf.ru/wp-content/uploads/2014/12/IMG_5129.JPG

The need for a sustainable socio-economic development for the production in the harsh climatic conditions and the current quality of life was discussed at the round table meeting ***"Arctic model of sustainable development: a new perspective"***. However, it should be adapted to arctic conditions and system of socio-economic planning and development of businesses in the Arctic. New innovative approaches require the organization of public administration on the Arctic territories, investments, formation of the legal regulators and legal frameworks to secure the Arctic region as a special object of government.

The moderators of the round table discussion were: Deputy Chairman of the State Assembly (Il Tumen) V.N. Gubarev; Doctor of Economical Sciences, Professor, Senior Researcher, Institute for Economic Research, Far Eastern Branch of the Russian Academy of Sciences S.N. Leonov; Deputy Minister of Economy of Sakha (Yakutia) E.A. Chekin. Keynote was addresses by S.N. Leonov in the report "Problems and prospects of development in the Arctic Russian Far East" and E.G. Egorov, Doctor of Economical Sciences, professor, academician of the Sakha Republic (Yakutia), Chief researcher at the Institute of Regional Economy of the North NEFU named after M.K. Ammosov in the speech "Comparative analysis of models of Arctic economies of the world". S.N. Leonov highlighted the incompleteness zoning of the Arctic Russia, the aggravation of institutional regulatory

issues of development and the formation of a rational system of settlement of the Arctic in his report.

Picture 9. URL: http://sakhaarcticconf.ru/wp-content/uploads/2014/12/P1090686.JPG

Discussion of the problems of sustainable development was attended by Sébastien Gadal, PhD, professor at the University of Aix-Marseille (France); Thor Gertsen, Associate Professor University of the Arctic Norway (Alta, Norway); representatives of scientific organizations from St. Petersburg, Murmansk University, Yakutsk Scientific Center, Russian Academy of Sciences, North-Eastern Federal University named after M.K. Ammosov, the Ministry of Economy of Sakha (Yakutia), the media and university students. The participants of the of the round table meeting were especially interested in the report made by the research staff of the St. Petersburg State Polytechnic University Doctor of Economical Sciences N.I. Didenko and Doctor of Economical Sciences D.F. Skripnyuk — "Modeling of Sustainable Development of the Arctic zone of the Russian Federation: ADL-model", and the report of the lecturer from the NEFU named after M.K. Ammosov, Candidate of Economical Sciences. I.N. Nikulkina — "Improving the mechanisms of the state fiscal policy implementation in the Arctic zone of the Russian Federation"

More information about the round table discussions could be found in the column "Results of the Conference": http://sakhaarcticconf.ru/itogi-konferencii/

Development of the Arctic — a new milestone in the development of national science and innovation

© Zaykov, Konstantin S. Candidate of Historical Sciences, Doctoral candidate, Director of the Arctic Centre for Strategic Studies of NArFU named after M.V. Lomonosov, Arkhangelsk

Abstract. Review of materials of the conference held on December 3—6, 2014 in Salekhard

Keywords: science, innovation, human resources, the interaction, interdisciplinary platform, the scientific infrastructure.

On the 3rd—6th of December 2014 the Scientific Conference "Development of the Arctic — a new milestone in the development of national science and innovation" was held in Salekhard (YaNAD). It was attended by over 100 leading scientists from Russia, whose research interests lie in the field of high latitudes studies. Among them: Deputy Director of the Institute of Oil and Gas Problems RAS, corr. of the RAS V.I. Epiphany; Chairman of the Presidium of the Tyumen Scientific Center of the Siberian Branch of the Russian Academy of Sciences, Academician V.P. Melnikov; Director, Center for Economics of the North and the Arctic Council for Study of Productive Forces, Doctor of Geographical Sciences A.N. Pilyasov; Professor of the Russian Academy of National Economy and Public Administration under the President of the Russian Federation, Doctor of Economics, V.I. Smorchkova and etc. Northern (Arctic) Federal University named after M.V. Lomonosov was represented by Director of the Arctic Centre for Strategic Studies, K.S. Zaykov and the expert of the Center— V.P. Zhuravel.

The conference was devoted to the current problems of the managerial staff for the modern integrated development of the Arctic territories; risks of a crisis natural phenomena in areas with the industrial objects in the Arctic, including the emergence of so-called "Yamal funnel"; issues of food and environmental security, preservation of cultural and historical heritage of indigenous peoples; prospects of research cooperation between scientific and educational institutions of Russia in the Arctic on the basis of the Scientific Center for the Study of the Arctic in Yamal-Nenets Autonomous District.

Director of the Center of the Economy of the North and the Arctic Council for Study of Productive Forces Alexander Pilyasov allocated the Autonomous Region as an increasingly important area for scientific debates, noting that Russia has not so much *interdisciplinary areas*, where highly qualified scientists could communicate. In recent years Yamal has become a place where experts meet regularly to discuss various complex problems of the Circumpolar region.

Director of the Earth Cryosphere Institute, Siberian Branch of Russian Academy of Sciences Dmitry Drozdov said that in many sectors of the Russian science there was not possible to obtain new materials and information for research and on the Yamal Peninsula, they had found support and had been welcomed with their scientific ideas and offered a comprehensive assistance in exchanging the results of scientific research.

Picture 1.Conference meeting in Salekhard, December 2014

The conference emphasized the importance of training of highly qualified personnel able to be effective in organizational-administrative professional work in the regions of the North and the Arctic. So much was said about the need to define the food and environmental security in the Arctic as one of the priorities of research.

In addition, it was proposed to continue the work actively to identify, to study, to preserve and to promote the historical and cultural heritage of the indigenous people of Yamal. This would keep the traditional culture and management of indigenous peoples a factor of sustainable development of the Russian Arctic.

Staff of the Arctic Centre for Strategic Studies, NArFU named after M.V. Lomonosov got acquainted with the work of the Scientific Center for the Study of the Arctic and the Department of Science and Education of the Yamal-Nenets Autonomous District, discussed the prospects of scientific and educational cooperation. During the meeting with the Director of the Scientific Center for the Study of Arctic Vladimir Pushkarev, Director of the Arctic Centre for Strategic Studies

Konstantin Zaykov got a special gift he carried back home and gave to the library of the NArFU named after M.V. Lomonosov — scientific literature on the study of demographic processes and the indigenous population of Western Siberia. Speaking at the conference, K.S. Zaykov proposed the establishment of a national Russian scientific and educational portal, which could be an effective platform for accumulation and coordination of research and educational activities in the Russian Arctic.

The Final Resolution of the Conference contains the proposals for the establishment of the Russian Center for Arctic exploration platform aimed at interaction between scientists from the Arctic regions of Russia and the Polar Regions, creating a network of partner organizations. It was suggested to continue working on the establishment of the scientific infrastructure, in particular, and to create a network of research stations, seismic stations and research polygons in Yamal. The establishment of Salekhard as a scientific center in the Arctic zone of the Russian Federation was discussed as well. It was proposed to continue to work on identification, research, preservation and promotion of historical and cultural heritage of the indigenous people of Yamal. This will keep the traditional culture and management of indigenous peoples a factor of sustainable development of the Russian Arctic.

Materials and photos used in the article are published at: http://sever-press.ru

Arctic: present and future

© Lukin Yury F., Doctor of Historical Science, Professor, Editor-in-chief of "Arctic and North" journal.

Abstract. Review of the IV International Forum held on December 10—11, 2014 in St. Petersburg

Keywords: Russian Arctic, state policy, sustainable development, Polar Commission, infrastructure, transport, environment, safety, science, human resources

On the 10th—11th of December 2014 St. Petersburg hosted the IV International Forum "The Arctic: Present and Future" under the auspices of the Inter-regional public organization "Association of polar explorers". Forum was opened by Artur Chilingarov, President of NGO "Association of polar explorers", Special Representative of the President of the Russian Federation for International Cooperation in the Arctic and Antarctic.

Two plenary meetings of the forum on the 10th December 2014 discussed: "State policy aimed at sustainable development of the Arctic zone of the Russian Federation" and "The role of public institutions in the state policy implementation in the Russian Arctic". A number of working sessions on the resources, transport and transit potential of the Russian Arctic were held.

On the second day of the Forum the plenary meeting on the 11th of December was devoted to discussion of the theme: "Socio-economic development of regions of the Russian Arctic". Also there was a session on the role and capabilities of regional commissions on the polar socio-economic development of the Arctic territories and the development of supporting infrastructure in the Russian Arctic. Three round tables discussions were focused on the issues of economic activity, life and environmental safety and human resources in the Russian Arctic.

Forum participants were numerous representatives of the authorities of the federal and regional levels: the Council of Federation and the State Duma of the Federal Assembly of the Russian Federation, federal departments and agencies, governors of the regions included in the Russian Arctic. Participants heard the speeches of S.E. Donskoy — the Minister of Natural Resources and Environment; G.S. Poltavchenko — the Governor of St. Petersburg; A.V. Tsybulski — the Deputy Minister of Economic Development of the Russian Federation; A.V. Olersky — the Deputy Minister of Transport of the Russian Federation; A.V. Frolov — the Head of the Federal Service for Hydrometeorology and Environmental Monitoring; Y.A. Kostin—the Deputy Head of the Federal Agency of Maritime and River Transport; O.O. Klim — the Deputy Head of the Federal Air Transport Agency; A.N. Olszewski — the Head of the FGKU "Administration of the Northern Sea

Route"; S.G. Antonov — the Deputy DG for Corporate Development of the "Rosmorport"; K.A. Stepanian — the Deputy DG for maritime transport of the "Sovfraht"; V.V. Stepov — the Vice President of the JSC "Russian Railways"; M.N. Khailov — the Deputy Head of the Federal Space Agency; A.A. Boers — the Chairman of the Board of Directors of the IC "Belkomur" and other top managers.

The Forum had become one of the most representative events due to the composition of its participants — federal and regional authorities and management, industrial, shipbuilding, transport and etc. Completing an annual program dedicated to the development of the Arctic region in Russia, the Forum "The Arctic: Present and Future "was the culminating event, combining all solutions done during the year and consolidating the efforts of government, business and the public. In my opinion, to a large extent it was done due to the authority of the polar leader A.N. Chilingarov. The Forum participants heard a lot of meaningful reports and presentations by heads of federal departments and agencies.

Were decisions of the Forum the same adequate as the composition of top managers? - It remains, as they say, behind the scenes. The Forum decisions remain unknown for the public. It was declared that the "final Resolution with suggestions and recommendations would be the starting point for work of the organizations involved in the development and implementation of various projects in the Arctic, in 2015. The document would also be sent to the authorities to improve legislation and state regulation in the field of sustainable development in the Arctic". In a statement intended to introduce the concept of social product of the forum — the public resolution. I would like to get acquainted with it and analyze it.

The forum was an exhibition where technologies and developments in the field of exploration and mining operations, development of the transport complex, navigation support, construction, research activities, shipbuilding and shipping were introduced.

One of the features of the December Petersburg Forum was the presentation of the mechanisms of interaction between government, business and the public done by the "Association of polar explorers" (ASPOL): a) Public Commission on issues relevant to the development of the Arctic zone of the Russian Federation; b) Polar Commission as part of the authorities in the Russian regions. On the first day of the Forum strategic sessions of public commissions of the Association of Polar Explorers, created in 1991, were held and focused on three areas: environment, science and technology, science and higher education, social projects. As the result some starting points on

how to get the ASPOL's job done more efficiently were outlined previously in A.N. Chilingarov's address to Congress of the ASPOL[1].

A lot of interesting reports on all areas of life in the Arctic sounded at the Forum in St. Petersburg. It is impossible to cover all considerations, specific proposals from the rich treasury of the information that was put forth, remained in the speaker's presentations and still waiting to be explored. A.V. Kotov and A.N. Pilyasov, for example, spoke on the strategic management of the Russian Arctic, made proposals on the center of responsibility and the model Arctic Federal District.

В России новый центр ответственности за выработку федеральной политики может стать:

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1) либо самостоятельным Министерством в структуре Правительства РФ;

2) либо Министерством, - учитывая важное оборонное и стратегическое значение Арктики, напрямую подчиненным Президенту РФ (как Министерство обороны, МЧС России);

3) либо агентством в структуре Минэкономразвития России. Работая под эгидой Минэкономразвития России, агентство могло было бы объединить и координировать усилия всех сегодня разрозненных ученых советов, комиссий, административных структур, занимающихся северной и арктической проблематикой.

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Критерий	Модель 1 (жесткий вариант)	Модель 2 (промежуточный)	Модель 3 (мягкий вариант)
Цель	Встраивание российской Арктики в существующую систему федеральных округов	Явно укрепить экономические связи Арктической зоны Российской Федерации	Неявно укрепить связи в Арктической зоне Российской Федерации через информационные потоки
Доминирующие институты	Федеральные	Региональные	Местные/региональные
Иерархия/отношения участников	Централизованный характер, однонаправленное воздействие на объект	Многосубъектный одноуровневый характер	Наборы отношений гражданского, экономического и другого характера многих видов
Возможности международного сотрудничества	Определенность работы и форматов сотрудничества, заданных федеральным центром. Сила мнения федерального центра, подкрепленная бюджетными	Обособленность участников, легкий вход и выход из проектов; существует проблема взаимоувязки интересов всех акторов	Большие массивы информации, открывающие многообразие путей сотрудничества

Pictures 1,2. © Kotov A.V. and Pilyasov A.N.

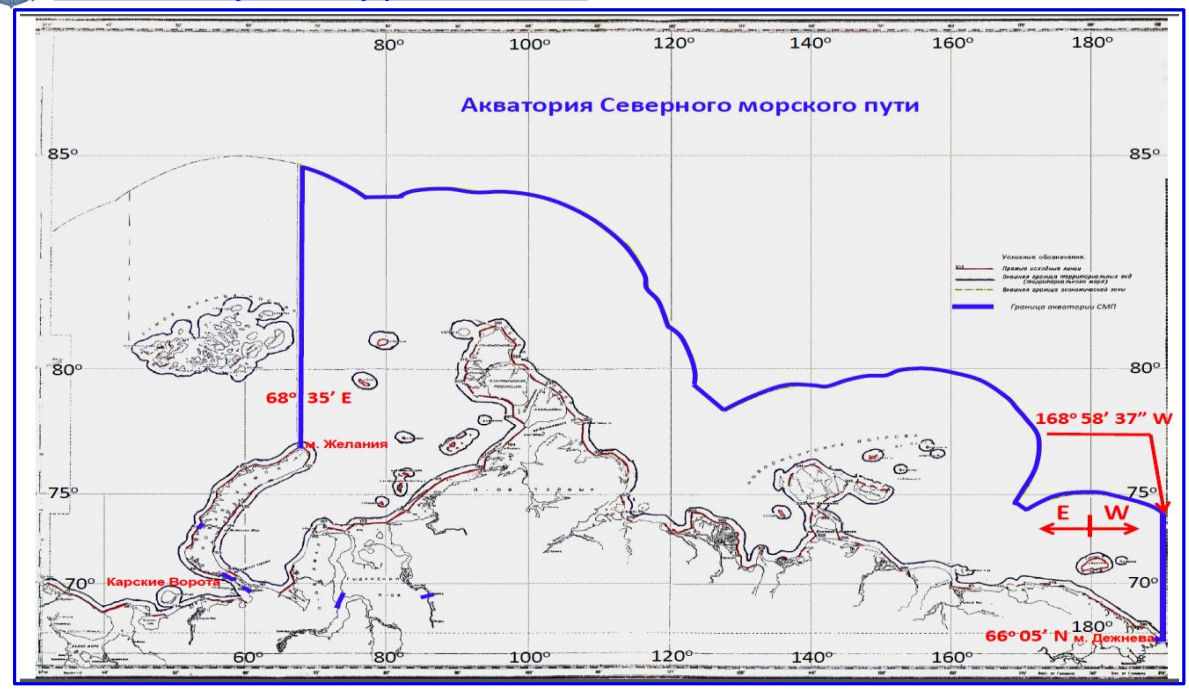
[1] Обращение А.Н. Чилингарова. URL: http://www.ec-arctic.ru/media/pic_full/0/563.jpg (accessed: 28.01.2015)

Picture 3. Arctic zone of the Russian Federation in 2014 r./© Tsybulsky A.V.

This picture shows a map of the Russian Arctic.

The map of the Northern Sea Route and statistics presented by the Head of the FGKU “Administration of the Northern Sea Route” A. Olshevskiy would be interesting for those professionals who deal with the problems of the Northern Sea Route (Pictures 4,5).

ФГКУ «Администрация Севморпути»



Picture 4. Map of the Northern Sea Route/© A.N. Olshevskiy

ФГКУ «Администрация Севморпути»

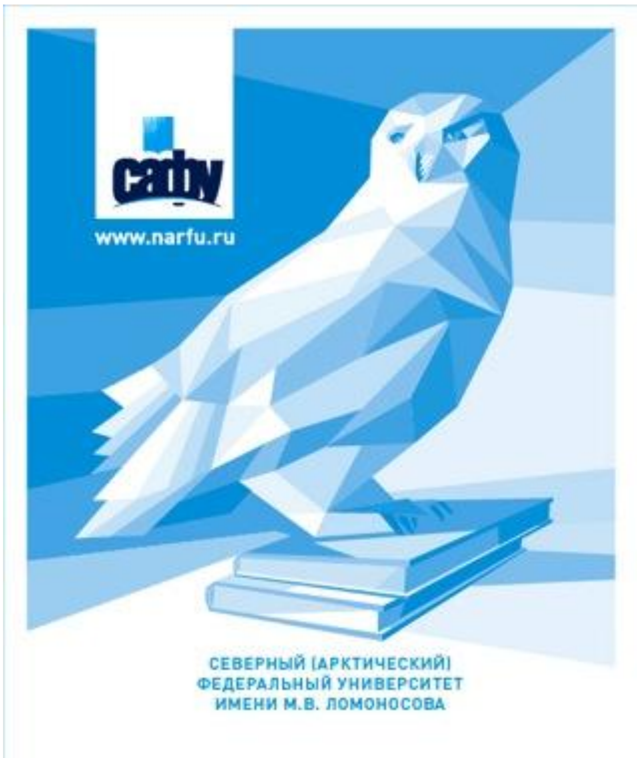
Объемы перевозки грузов по Севморпути по состоянию на 01 декабря 2013 и 2014 года (тысяч тонн)

	На 01.12.2013	На 01.12.2014	увеличение/ уменьшение
порты СМП	2 602	3 512	+910 (35 %)
транзит	1 176	274	-902 (77 %)
Всего	**3 778**	**3 786**	**+8 (0,2 %)**

7

Picture 3. Volume of cargoes carried along the NSR in 2013 and 2014 /© A.N. Olshevskiy

Symbols of NArFU named after M.V. Lomonosov



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Authors

1. Antipin, Alexey L. postgraduate student, Institute of Mathematics, Information and Space Technologies of Northern (Arctic) Federal University named after M.V. Lomonosov
2. Gurvich, Kirill L. student of the Institute of Social, Political and Humanitarian studies, NArFU named after M. V. Lomonosov, student of the faculty of Social Sciences of the university of Nordland, participant of courses in Tromsø University Business School, Norway
3. Zaykov, Konstantin S. Candidate of Historical Sciences, Director of the Arctic Centre for Strategic Studies of Northern (Arctic) Federal University named after M.V. Lomonosov
4. Zelenina, Larisa I. Candidate of technical Sciences, Associate Professor at the Department of Mathematics and Highly Productive Calculations of the Institute of Mathematics, Information and Space Technologies of Northern (Arctic) Federal University named after M.V. Lomonosov
5. Zuevskaya, Anna P. Fourth-year bachelor of the Faculty of International Relations of Saint-Petersburg State University, Saint Petersburg
6. Kondratyeva, Valentine I. Head of Center for Strategic Studies of Sakha (Yakutia), Yakutsk
7. Konstantinov, Alexander S. Candidate of Historical Sciences, Associate Professor of the Department of state and municipal management Higher School of Economics and Management of Northern (Arctic) federal university after M.V. Lomonosov
8. Koptyaeva, Anna A. Undergraduate of the Department of Regional Studies and International Relations, Institute of Social, Humanitarian and Political Science of Northern (Arctic) federal university after M.V. Lomonosov
9. Lukin, Yury F. Doctor of Historical Sciences, Professor, Honorary Worker of Higher Education of the Russian Federation, editor in chief of electronic scientific journal "Arctic and North" of Northern (Arctic) Federal University named after M.V. Lomonosov
10. Medvedeva, Olga E. Professor of the Department of economic policy and economic measurements of the State University of Management, Moscow
11. Opryshko, Andrey I. student of the third course of Department of Regional Studies and International Relations of Northern (Arctic) Federal University named after M.V. Lomonosov
12. Portsel, Alexander K. Candidate of Historical Sciences, Associate Professor of the Department of Philosophy, History and Sociology of Murmansk State Technical University, Murmansk
13. Rogachev, Ivan V. Candidate of Historical Sciences, Senior Teacher of Department of Regional Studies and International Relations of Northern (Arctic) Federal University named after M.V. Lomonosov
14. Sokolova, Flera H. Doctor of Historical Sciences, Professor, Head of the Department of Regional Studies and International Relations, Institute of Social, Humanitarian and Political Science of Northern (Arctic) Federal University named after M.V. Lomonosov
15. Shubin, Sergey I. Doctor of Historical Sciences, Professor of the Department of Regional Studies and International Relations, Institute of Social, Humanitarian and Political Science of Northern (Arctic) Federal University named after M.V. Lomonosov

ABSTRACTS. KEYWORDS
Аннотации. Ключевые слова

Социологические науки. Политология. Экономические науки
Social Science. Political Science. Economics

Гурвич К.Л. Концептуальные ресурсы для изучения миграционной проблематики в циркумполярном регионе: мобильная, стратификационная и глобализационная оптика

Gurvich, Kirill L. Conceptual resources for studying migration issues in the Circumpolar region: mobility, stratification and globalization optics

Аннотация. Миграционная проблематика рассматривается с позиций мобильного, стратификационного и глобализационного подходов. Подчёркивая значение классических теорий в их развитии, делается обзор концептуальных работ, касающихся migration studies, а также эмпирических проектов, реализуемых конкретными исследовательскими центрами. Теоретические выкладки подкрепляются анализом статистических данных основных показателей миграции в циркумполярном регионе. Цель работы — продемонстрировать эвристические возможности, которые имеют рассматриваемые теоретические оптики для решения актуальных проблем миграции в Арктике.

Ключевые слова: *мобильность, социальная стратификация, глобализация, миграция*

Abstract. Migration issues are considered from mobile, stratification and globalization approaches. Emphasizing the importance of the classical theories in their development, the article reviews the conceptual works related to migration studies, as well as empirical projects implemented by specific research centers. Theoretical statements are supported by the analysis of the main indicators of statistical data migration in the circumpolar region. The main purpose of this article is to demonstrate the heuristic possibilities which considered theoretical optics have for solving urgent problems of migration in the Arctic.

Keywords: *mobility, social stratification, globalization, migration, circumpolar region*

Зуевская А.П. Политические аспекты международного сотрудничества в нефтегазовой отрасли в Баренцевом Евро-Арктическом регионе

Zuevskaya, Anna P. The political aspects of the international cooperation in the oil and gas industry of the Barents Euro-Arctic region

Аннотация. В статье рассматриваются основы сотрудничества в нефтегазовой отрасли стран Баренцева Евро-Арктического региона, основные нефтегазовые проекты в регионе, политические аспекты сотрудничества

Ключевые слова: *нефтегазовая отрасль, Баренцев Евро-Арктический регион, международное сотрудничество*

Abstract. The author of the article considers the cooperation basics of oil and gas industry in the Barents Euro-Arctic region, the main oil and gas projects in the region and the political issues of the cooperation

Keywords: *oil and gas industry, Barents Euro-Arctic region, international cooperation*

Константинов А.С. Миграционные процессы как фактор трансформации территориально-поселенческой структуры в Архангельской области (1989—2010 гг.)

Konstantinov, Alexander S. Migratory processes as a factor of transformation of territorial and settlement structure in the Arkhangelsk region (1989—2010)

Аннотация. Миграционные процессы, происходившие в Архангельской области в период между переписями 1989—2010 годов, исследованы еще недостаточно. На основе анализа материалов переписей населения исследуются некоторые вопросы миграционного поведения населения в условиях формирования рыночной модели организации его жизнедеятельности. Миграционные процессы рассматриваются в качестве одного из факторов, который оказывал влияние на изменения, происходившие в территориально-поселенческой структуре Архангельской области.

Ключевые слова: *переписи населения, миграционные процессы, трансформация территориальной и структуры расселения в регионе*

Abstract. Migration processes which occurred in the Arkhangelsk region in the period between 1989-2010 censuses are not researched well yet. On the basis of analysis of census, some issues of the migratory behavior of the population in the emerging market model of life organization are investigated. Migration processes are considered as one of the factors that influenced the changes that have occurred in the territorial settlement structure of Arkhangelsk region.

Keywords: *population censuses, migratory processes, transformation of territorial and settlement structure in the region*

Лукин Ю.Ф. Российская Арктика прирастает островами

Lukin, Yury F. Russian Arctic increases with islands-

Аннотация. Ни в Российской империи, ни в СССР, ни в Российской Федерации так и не был принят базовый закон, предметно определяющий содержание арктического менеджмента, статус, состав и границы Российской Арктики как на суше, так и в акватории СЛО. Сегодня важно найти системные решения по ряду актуальных проблем модернизации арктического менеджмента: 1) мониторинга всех российских островов в Северном Ледовитом океане, административно-правовой и экологической ответственности за ведомственное использование их земель и прилегающей акватории; 2) принятия базового федерального закона «Арктическая зона Российской Федерации»; 3) создания федерального органа управления АЗРФ: министерство, агентство; 4) развития институтов межрегиональной интеграции; 5) реализации госпрограммы «Социально-экономическое развитие АЗРФ на период до 2020 года»; 6) перехода к проектному менеджменту, формирование портфеля арктических проектов; 7) возможности создания Банка реконструкции и развития Арктики, Арктического государственно-

Abstract. Relevance of the topic is defined by the fact that neither the Russian Empire nor the Soviet Union nor the Russian Federation have passed a law that defines the status, composition and the borders of the Russian Arctic, both on land and in the waters of the Arctic Ocean. It is necessary to find system solutions for a number of urgent problems of the Arctic management modernization: 1) monitoring of Russian islands in the Arctic Ocean, administrative, legal and environmental responsibility for the departmental use of their lands and adjacent water area; 2) adoption of the basic federal law "The Arctic zone of the Russian Federation"; 3) effective functioning of the Government Commission on the Arctic; 4) development of interregional integration institutes; 5) implementation of state program "Socio-economic development of the Russian Arctic for the period up to 2020"; 6) transition to project management, the formation of the portfolio Arctic projects; 7) the possibility of establishing the Bank for Reconstruction and Development in the Arctic, Arctic state commercial bank.

коммерческого банка.

Ключевые слова: *Российская Арктика, острова, базовый федеральный закон «Арктическая зона Российской Федерации», арктический менеджмент, министерство, межрегиональная интеграция, госпрограмма, арктические проекты, портфель, банки*

Keywords: *Russian Arctic, islands, the basic federal law "Arctic zone of the Russian Federation", the Arctic management, ministry, interregional integration, the state program, Arctic projects, portfolio, banks*

Соколова Ф.Х., Коптяева А.А. Современный политический имидж России в Норвегии (на материалах СМИ)

Sokolova, Flera H., Koptyaeva, Anna A. Modern political image of Russia in Norway (on media coverage)

Аннотация. На основе проведённого контент-анализа статей, опубликованных в печатных периодических изданиях Норвегии за 2008—2014 годы, раскрывается текущий политический имидж России. Проведён анализ наиболее обсуждаемых аспектов политического имиджа, выявляется совокупность причин и факторов, влияющих на восприятие образа России в Норвегии.

Abstract. On the basis of a content analysis of articles published in printed periodicals of Norway during 2008—2014, the current political image of Russia reveals in the article. The analysis of the most talked aspects of political image has been done, a set of causes and factors influencing the perception of the image of Russia in Norway reveals.

Ключевые слова: *Россия, Норвегия, международный имидж государства, политический имидж, образ России в СМИ*

Keywords: *Russia, Norway, international image of the state, political image, the image of Russia in the media*

Исторические науки. Historical Science

Порцель А.К. Первые советские рыбопромысловые экспедиции к Шпицбергену и Исландии (1946—1952 гг.)

Portsel, **Alexander K.** The first Soviet fishing expeditions to Spitsbergen and Iceland (1946—1952)

Аннотация. На основании архивных документов и мемуаров рассмотрен процесс освоения рыбопромысловых районов Северной Атлантики советским рыболовным флотом в послевоенные годы. Экономическое значение этого промысла увязывается с геополитическими интересами СССР в северных районах Мирового океана.

Abstract. The development of fishing areas in the North Atlantic by the Soviet fishing fleet in the postwar years is considered on the basis of archival documents and memoirs. The economic importance of this fishery is linked to the geopolitical interests of the USSR in the northern areas of the oceans.

Ключевые слова*: рыболовство, советский рыбопромысловый флот, Шпицберген, Исландия, Северная Атлантика, послевоенные годы, ПИНРО, «Мурманрыба», «Мурмансельдь»*

Keywords: *fishing, Soviet fishing fleet, Spitsbergen, Iceland, North Atlantic, postwar years, PINRO, “Murmanryba”, “Murmanseld”*

Шубин С. И., Рогачев И. В., **Опрышко А.И.** Первая мировая война как форма европейского сдерживания развития России: взгляд из Архангельска

Shubin, Sergey I., Rogachev, Ivan V., Opryshko, Andrey I. The First World War as a form of European containment of Russia: a view from Arkhangelsk

Аннотация. В статье рассматриваются экономические, социальные факторы успешного развития Российской империи в начале XX века и достаточно благоприятные европейские прогнозы на перспективы возрастания её потенциала на Евразийском континенте. Эти прогнозы, по мнению А.П. Столыпина, могли быть реализованы только при условии успешного проведения реформ в мирных условиях. Такое развитие ситуации не устраивало геополитических оппонентов России и, прежде всего, Великобританию, которая искала варианты ослабления Российской империи путем втягивания последней в военные конфликты. Используя логику предшествующих войне 1914—1918 гг. исторических событий и современную геополитическую ситуацию, авторы высказывают гипотезу о Первой мировой войне как форме европейского сдерживания развития России. Интересная версия высказывается и в отношении помощи союзников, поступающей в основном через Архангельск. «Не может быть, — пишут авторы, — чтобы интервенты, организуя завоз грузов, не располагали информацией о том, что вглубь страны при тогдашней транспортной инфраструктуре региона и страны в целом их доставить не удастся». Возникает естественный вопрос: а не было ли это сознательным формированием повода для последующей операции по его сохранности и использования в качестве плацдарма и подкупа местного населения и власти? Это в определённой мере подтверждает и текст послания в Лондон в январе 1918 года начальника британской миссии снабжения в России генерала Ф.К. Пуля, которое приводится в статье.

Ключевые слова: *Россия, Великобритания, Франция, Германия, союз, противостояние, геополитика, национальные интересы, борьба за влияние на Европейском Севере.*

Abstract. The article considers the factors of successful development of the Russian Empire at the beginning of the 20th century and favorable forecasts on the prospects of increasing its capacity on the Eurasian continent. The successful development in a peaceful environment did not satisfy geopolitical opponents of Russia, especially the United Kingdom, which sought the variants of weakening the Russian empire by pulling it in military conflicts. Using the logic of the previous historical events and the current geopolitical situation, the authors hypothesize the First World War as a form of European containment of the development of Russia. There was expressed aversion about the help of the Allies, coming mainly through Arkhangelsk. “It cannot be so,— the authors write, — that the invaders did not have the information about inability of arranging the delivery of goods because of the poor condition of transport infrastructure in the region during that time”. Was it or not a conscious formation of the reason for the subsequent operation for its preservation and using as a staging ground and as a way of bribery of the local population and the authorities? To a certain extent this is confirmed by the message which was sent by the chief of the British mission in the supply of Russia, General Poole, to London in January 1918, which is given in the article.

Keywords: *Russia, Great Britain, France, Germany, the Union, opposition, geopolitics, national interests, the struggle for influence in the European North*.

Экология. Ecology

Зеленина Л. И., Антипин А.Л. Льды Арктики: мониторинг и меры адаптации
Zelenina, Larisa I., Antipin, Alexey L . Arctic ice: monitoring and adaptation actions

Аннотация. Мониторинг ледовых условий арктических морей позволяет провести оценку последствий их изменения, анализируя два противоположных мнения — льды Арктики тают и льды входят в «холодный цикл». Гистограмма площади многолетних арктических льдов (2002—2013 гг.), статистическая обработка данных позволила нам построить полиномиальный тренд, опреде-ляющий с достаточной степенью вероятности прогнозные значения минимальной площади арктических льдов. Была отобрана лучшая модель — метод гармонических весов и составлены точечный и интервальный прогнозы ледовитости Арктических морей на 2015 и 2016 гг. Учет рисков при изменениях климата крайне важен в отраслях добычи полезных ископаемых, морского судоходства, инфраструктуры в Российской Арктике, чтобы минимизировать возникающие потери от возможных угроз.

Ключевые слова: *Арктика, морские льды, трендовая модель, прогноз ледовитости, учет рисков, угрозы, минимизация потерь*

Abstract. Monitoring ice conditions in the Arctic seas allows an assessment of the impact of their changes by analyzing the two opposing views — Arctic ice is melting and ice are included in the "cold cycle". Histogram area of perennial Arctic sea ice (2002—2013), Statistical processing of data allowed to construct a polynomial trend that defines a sufficient degree of probability forecast values minimum area of Arctic sea ice. Was selected the best model — the method of harmonic balance and composed of point and interval forecasts of ice cover of the Arctic seas for 2015 and 2016. Risk consideration under climate change is very important in industries mining, of Maritime Navigation and infrastructure in the Russian Arctic, in order to minimize losses arising from possible threats.

Keywords: Arctic, sea ice, trend model, forecast of the ice cover, into account risks, threats, minimization of losses

Медведева О.Е. Задачи оценки экологического ущерба в арктической зоне
Medvedeva, Olga E. The problems to the assessment of environmental damage in the Arctic

Аннотация. Разработка нефтегазовых месторождений Арктической зоны несёт риски разрушения экосистем и причинения значительного экологического ущерба. Поэтому особенно важно принять превентивные природоохранные меры на ранних стадиях освоения Арктики. В основе подобных мер и инструментов лежит стоимостная оценка экологического ущерба, что могло бы снизить риск деградации природной среды в Арктической зоне. В обеспечение возможности выполнения восстановительных работ необходимо соз-дать финансовые фонды, иные инструменты, позволяющие безотлагательно начинать восстановительные работы в случае аварии и устранять последствия причинённого вреда

Abstract. Development of oil and gas fields of the Arctic zone carries risks of destroying ecosystems and causing significant environmental damage. It is therefore particularly important to take preventive conservation measures in the early stages of exploration of the Arctic. The basis of such measures and tools is the valuation of environmental damage that could reduce the risk of environmental degradation in the Arctic zone. In order to provide the ability of the restoration work, it is necessary to create financial assets or other tools to begin rehabilitation work immediately in case of emergency and to eliminate the consequences of the damage caused after the completion of the work.

после завершения работ.

Ключевые слова: *экологический ущерб, стоимостная оценка, «прошлый» ущерб, «проектный» ущерб*

Keywords: *the environmental damage, valuation, «past» damage, «project» damage*

Обзоры. Reviews

Кондратьева В.А., Лукин Ю.Ф. Арктика: перспективы устойчивого развития

Kondratieva, Valentine A., Lukin, Yury F. Arctic: the prospects for sustainable development

Аннотация. Обзор материалов Международной научно-практической конференции 26—29 ноября 2014 года в г. Якутске Республики Саха (Якутии)

Abstract. Review of the international scientific-practical conference on November 26—29 2014 in Yakutsk, Sakha Republic (Yakutia)

Ключевые слова: *Российская Арктика, Республика Саха (Якутия), устойчивое развитие, модель, новый взгляд*

Keywords: *Russian Arctic, the Republic of Sakha (Yakutia),sustainable development, the model, a new view*

Зайков К.С. Освоение Арктики — новый виток в развитии отечественной науки и инноваций

Zaykov, Konstantin S. Development of the Arctic — a new milestone in the development of national science and innovation

Аннотация. Обзор материалов научной конференции 3—6 декабря 2014 года в г. Салехарде

Abstract. Review of materials of the conference held on December 3—6, 2014 in Salekhard

Ключевые слова: наука, инновации, кадры, взаимодействие, междисциплинарная площадка, научная инфраструктура

Keywords: science, innovation, human resources, the interaction, interdisciplinary platform, the scientific infrastructure

Лукин Ю.Ф. Арктика: настоящее и будущее

Lukin, Yury F. Arctic: present and future

Аннотация. Обзор материалов IV международного форума 10—11 декабря 2014 года в Санкт-Петербурге

Abstract. Review of the IV International Forum on December 10—11, 2014 in St. Petersburg

Ключевые слова: Российская Арктика, государство, политика, устойчивое развитие, полярные комиссии, инфраструктура, транспорт, экология, безопасность, наука, кадры

Keywords: Russian Arctic, state policy, sustainable development, Polar Commission, infrastructure, transport, environment, safety, science, human resources

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Editor E. A. Shepelev. E-mail: evgeny.north@yandex.ru

Art editor (in English) E.S. Kotlova. E-mail: ekaterina.kotlova@yahoo.com

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Address of the editorial office: 8, Novgorodsky Avenue, Arkhangelsk, Russia, 163002

E-mail address of the editorial office: arcticandnorth@yandex.ru

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