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

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Economics of the Northern communities. Politology

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Arctic is not faceless. Arctic is real people, with their own history and experience

© Dzhuraev, Ildar I., Head of the Taimyr Dolgan-Nenets Municipal District. E-mail: atao@taimyr24.ru

Abstract. Ildar Dzhuraev told the Journal about his life in the Arctic, work as a top manager, his professional achievements in the management of a municipal institution and plans for 2015. He presented his assessment of the development of the North, emphasizing the uniqueness of Taimyr, where almost all mineral resources could be found. He noted that Taimyr was inhabited by really strong-willed people with high potential and ability to work, who were concerned about the problems of the Arctic and were willing to contribute to its development.

Keywords: *Ildar Dzhuraev, the Taimyr Dolgan-Nenets Municipal District, the life in the Arctic, municipal management, social infrastructure, development plans, the resources of Taimyr, the potential of the Arctic*

1. *How did you get into the Arctic (have you born here, moved here after graduation or because of work)?*

We have so many newcomers here on the Taimyr. People move because of various reasons, everybody has his own reason. Some people are in search for money, the others move because of family... My first visit of the Taimyr Peninsula was in February 1992. I came here as a Chief of the Medical Facility — doctor of the 493rd long-distance radio-navigation (station, northern chain) group (in the Arctic). I was transferred here for military service. Later, in 1997 I headed the division of the Civil Defense and Emergency Service of the Taimyr Dolgan-Nenets district (that time it was the Headquarters of the Defense Administration of the Taimyr Autonomous District). In general, we have created one of the best teams of rescue service on the Taimyr Peninsula and in the Arctic. In 2009, I was a Chief of the Russian Ministry of Emergency Situations of the Krasnoyarsk Territory and had to move to Krasnoyarsk. Now I live on the Taimyr Peninsula. And I'm so glad to be lucky to come back here. The North does not leave anyone indifferent. Maybe that's why it is so hard to go away and so hard to forget these lands. I would

say it is impossible to forget. Impressive northern nature, the white silence, thousands of kilometers of unexplored land and nomadic life... Northern tundra is really fascinating. Northern people make the Far North especially great and different. They have certain strength of will, character, inner core... No wonder why people of arts are so fond of chanting mentality and life of northerners. Of course, modern life here is not so severe and dramatic, but, nevertheless, Taimyr people are hardworking, friendly and open-minded and they are wholeheartedly adhered to their land. Thus people come here to stay just for a few years and they often stay here for all their lives.

2. *How long have you been working as a manager, a leader of the subject of the RF and a head of a municipality?*

September 8, 2013: Taimyr elections to the Regional Council of Deputies. Later, on the 13th of September deputies elected me a Chairman of the Regional Council of Deputies. According to the Chapter of the Taimyr, its Chairman has to be the Head of the Taimyr Dolgan-Nenets Municipal District of the Krasnoyarsk Territory.

It is such a great honor to be the Head of the largest municipal district of Krasnoyarsk Territory and Russia (879.9 thousand km^2). At the same time, it is such a great responsibility. When you are trusted by the whole area, it makes you take a fresh look at it. A range of tasks and goals is getting wider and new priorities reveal. After all, the life, welfare of residents and development of the area is dependent on the effectiveness of selected policies and decisions. Also I had to take part in emergency response activities for several times. For example, I was in charge of rescue operations with the threat of flooding the village of Sands Lewinsky, the accident with the ship "Nekrasov", evacuation of people from snow drifts and the accident at the Sayano-Shushenskaya hydropower plant. Maybe it may sound too loud, but I know how important it is to live up to people's expectations. I hope our team will implement all development plans and contribute to the advanced development of the area. Taimyr is unique not only because of its natural and climatic conditions, but also because of its history and rich cultural heritage.

3. *Could you tell us, please, about your experience, professional achievements as a manager of the area and municipality in the RFAZ?*

If we are talking about the achievements in the management of the region, first of all, it is necessary to clarify what we are talking about the enormous amount of work done by deputies, heads of settlements, municipal governments, business leaders and civil society organizations. Some projects were not destined to be realized without their involvement and active participation. Every solved problem has real people behind. We are working to improve the living conditions of the

population and to develop the social infrastructure of the area. So, first of all we should mention the achievements. The work we are doing concerns absolutely all spheres of life in the area.

Last year we started the construction works in the rural areas for the first time since the Soviet era. In the village Novaja a new Center of Culture was built. In the village Karaul a new kindergarten for 80 seats is being built. Raising the issue of preschool education, one cannot boast — last year, our Child Development Centre "Snow White" participated in the regional program "Development of Education in the Krasnoyarsk Territory". So, we got a chance to attract additional funding and open a nursery for 20 kids by the beginning of 2015. So, we don't have a waiting list for the places at the kindergartens for 1.5—3 years old children anymore, because all of them got a place. So, the Presidential Decree on ensuring 3—7 year old children a place at pre-school education institutions has been 100% implemented at our area by now.

It is also important to say some words about housing, which is in a sorry state. In 2014, we were ready with construction works in the villages Potapovo, Khatanga, Dudinka and Kheta. It is worth noting that the construction of housing is growing. We almost completed the construction of houses in the villages Novorybnaya and Syndassko (three houses in each village). The apartments there are going to be distributed among the representatives of indigenous people of Taimyr, who are involved in traditional way of life and economic activities. In the village Karaul a new boiler was installed and in the village Nosock people are enjoying a new modular diesel power station. In our harsh climatic conditions, this work is of great importance, because settlements are completely dependent on it.

To create a more comfortable environment for the population we are doing a lot of repairment of the social facilities. In 2014 the Office of Social Welfare in Dudinka was repaired. A set for individual reception, the entrance ramp and the elevator were installed for the convenience of visitors.

Very important issue was the repairment of the road from Dudinka to the airport. It is the only federal road in the area.

Undoubtedly, one of the main achievements of 2014 was the opening of the skating rink in Dudinka. It is the northernmost ice arena in Russia! Of course, it was a significant and long-awaited event for all of the residents, especially in our city. By the way, we invited Tatiana Totmianina and Maxim Marinin (Legends of Russian sports, champions of the Winter Olympic Games in Turin — 2006) to the opening.

Do not get tired of repeating that the Taimyr Peninsula is the largest Arctic area of the country. And, of course, we do not ignore the development of the Arctic territories. The first is to

highlight the opening of the Arctic rescue centers in Dixon and Dudinka. We are proud to say that Dudinska Arctic rescue service is one of the best in Russia, as it combines the rescue unit with the monitoring and forecasting of emergency situations. So, the information coming from the Service center is sent to the administration of the Northern Sea Route for processing. It is a special achievement for us, especially if we consider how much attention the safety of Arctic Russia and the revival of the Northern Sea Route get.

Raising the issue of the Arctic, we should not forget that the Arctic coast - is the indigenous territory. If we'll speak about the Taimyr Peninsula, we can say that at least five indigenous groups live there. They have an invaluable amount of historical and social information about life in the Far North. Our task is not only to maintain, but also to keep the uniqueness of their culture. Therefore, participation of Taimyr indigenous delegation in the cultural program of the Winter Olympic Games in Sochi — 2014 could be called our individual success in indigenous issues. It was an exceptional opportunity to present our territory and culture of indigenous peoples all over the world. Our delegation was the most numerous compare to the others from the Krasnoyarsk area. So, we were not only representing Taimyr, but all our area on the Olympics. When it comes to the culture, we should mention the Second International Arctic festival "Taimyr attraction"- 2014. It was attended by representatives from Canada, Norway, Finland, Japan, Bolivia, and various regions of Russia. We held International conference "*Arctic. Taimyr. Arctic ethnic groups. The development of cultural traditions through the interaction*" as a part of the Festival. The conference was attended by the Krasnoyarsk Territory Governor Viktor Tolokonskiy.

Also, we should admit the work of the local branch of the "Russian geographical society" (hereinafter — RGO). The RGS helped us to promote the area and its attractions not only in the Krasnoyarsk region, but also throughout Russia. So, the RGS has done one of ten episodes of the TV program "Geography lessons" on the Taimyr Peninsula The episode was devoted to the Krasnoyarsk Territory in general and especially nice that the Taimyr had not been forgotten.

The year 2014 was fruitful for us. Results are encouraging. But still we always have something to work on. Therefore, task for the future is to improve the quality of our work. We will go into details and look for more effective ways of working, as if we were masters who hone their crafts. I am glad that ordinary citizens — taymyrtsy — show interest and try to contribute to the development of their native territory. For example, twice a year I meet honorary citizens of Taimyr. It has become a tradition. We discuss the socio-economic situation in the area and speak about urgent problems over a cup of tea. That's where the debate starts and a lot of ideas and constructive proposals appear.

4. *Your plans for 2015. What should be done first?*

It seems to be a lot of work this year. The year 2015 is the 70th anniversary of the Great Victory. In September Dixon — the unofficial "capital of the Arctic" — is going to celebrate its 100 birthday. Dixon — is the only place in Siberia and Krasnoyarsk Territory where the military affairs of the Second World Was took place. In august 1942 in the Kara Sea the most northern sea battle took place — the battle between Soviet military marine forces and the German cruiser "Admiral Scheer". In December we are going to celebrate 85 years of our District. Every celebration is going to be unique.

We have spoken a lot about the construction. We have a lot of plans scheduled for 2015. We continue to work on the construction of private housing in the settlements of the District. It is necessary to complete the construction of a kindergarten for 80 kids in the village of Karaul; to start the construction of a boarding school for 250 kids in the village of Nosock and modular schools for 100 people in the villages of Ust-Avam and Khet. We need to get ready for the heating season 2015-2016 and to provide our villages will all the necessary products for winter.

Northern territories have their own characteristics: remote settlements, complex transportation schemes for delivery of cargoes, need to support and preserve the traditions of indigenous peoples of Taimyr, attract investments and the development of ethno-tourism...We are constantly working on control and efficient allocation of budget for social protection and safety... a lot of plans exists and they are significant. But I'm sure we can do it.

5. *How would you evaluate the life in the Arctic?*

Now Arctic gained a worthy consideration after years of silence. Furthermore, the state has already made concrete steps towards the development of the northern territories. I think there is nobody who does not understand the importance of Arctic natural resources for the economy of our country. We are certainly looking forward to the implementation of our plans and consider the development of Arctic territories a locomotive for many sectors of the Russian economy: the defense and security industry, shipbuilding and oil and gas industry. We hope that the Northern Sea Route will be truly loaded by traffic. We are sure that Taimyr will be in demand as the

northern outpost of Russia and it will be estimated for its true worth as a storehouse of natural resources.

After all, our territory with its amazing cultural significance and geographical location is on the first place for its strategic importance for Russia. Territory of Taimyr is Russia's only area fully located above the Arctic Circle, in the Arctic zone. On the territory of Taimyr almost all mineral resources are found due to the favorable conditions for non-ferrous and precious metals formation, which are unique on the content of valuable components. At the same time 75% of the Taimyr are still unexplored. Taimyr is one of five leading areas of Russia by the mineral storages that have global significance.

Indeed, the Arctic resources are now attracting a lot of attention from various world powers, but we must be realistic about the situation and its possibilities. I think that in the near future the Arctic hydrocarbons could hardly become an alternative power base. Complexity and costs of the shelf exploration and development, the availability of renewable energy make the development of the Arctic resources a long-term perspective. Arctic shelf is of strategic importance for Russia. In this regard, the Northern Sea Route should be considered as developed as a basis for Arctic oil and gas industry in the long term perspective. The development of hydrocarbons in the Arctic is one of the preconditions for the economic development of our country in future. So, in this regard, a well-built public policy is the priority. The government should develop and implement new technologies of deepwater drilling, find a way to reduce the environmental risks in the Arctic and conduct scientific research.

Summing up, no doubts the Arctic has a great economic and geopolitical potential. We also cannot deny the fact that we need a comprehensive approach to study and develop the northern territories. We cannot be responsible for the development of the whole Arctic, but we can update, promote and attract the attention of the general public to the problems of the Arctic. As I've said before, the Arctic is not faceless. The Arctic is real people, with their own history and experience. Interesting, really strong-willed people who have the potential and ability to work, who are concerned about the Arctic live on Taimyr. We understand that the Arctic is a key to the stability of our country. I believe the joint efforts of the Taimyr people will make a significant contribution to the development and exploration of the Arctic territories.

Reviewer: Lukin Yury Fedorovich,
doctor of historical sciences, professor

Picture1. Taimyr. Village of Tukhard. Reindeer team race.
Photo: Vitaly Ivanov

Picture 2. Conversation with a Tundra-man. Photo: Rimantas Ramoshka

Picture 3. Krasnoyarsk Territory Governor Viktor Tolokonskiy and Head of Taimyr Ildar Dzhuraev are getting acquainted with the work of Taimyr needlewomen. Photo: Rimantas Ramoshka

Picture 4. Taimyr beauty. Photo: Vitaliy Ivanov

Picture 5. Tundra-men. Photo: Vitaliy Ivanov

Picture 6. Men-winners of the reindeer team race. Reindeer herder day 2015. Village of Tukhard.
Photo: Vitaliy Ivanov

Рисунок 7. Ildar Dzhuraev expresses gratitude to the reindeer herder Georgiy Togi.
Photo: Vitaliy Ivanov

Picture 8. Taymir. Khatanga. Girkovs' Family-3415

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Socio-economic development of Northern and Arctic regions of the Far East: potential, problems and solutions[1]

© Galtseva, Natalia V. Doctor of Economics, Associate Professor, Head of the Laboratory of History and Economics of the Federal State Budget Organization of Science North-Eastern Complex Research Institute named after N.A. Shylo of Far Eastern Branch of the Russian Academy of Sciences. Magadan, Russia. E-mail: galtseva@neisri.ru

Abstract. The article is focused on the rich resource potential of the northern territories of the Republic of Sakha (Yakutia), Magadan and Chukotka Autonomous District, the development of which has been hampered by the lack of infrastructure and investments. The most acute social problem in the Northern and in the Arctic regions of the Far Eastern Federal District is a decline in living standards. The analysis has shown that a relatively high income does not really provide a high standard of living, as the purchasing power of income (relative to the subsistence level) is actually even lower than the national average. The Magadan Region and Chukotka Autonomous District are formally occupying a leading position on a common housing area in Russia. However, if we exclude the old housing, we will see that the supply of housing is actually below the national average, as well as the life expectancy at birth. The author offers a number of measures able to improve the living standards of the Northerners.

Keywords: *Chukotka Autonomous District, the Magadan Region, the Republic of Sakha (Yakutia), resource potential, standard of living, income, the cost of living, purchasing power, housing*

Arctic area of the Far East Russia includes Chukotka Autonomous District and 5 districts of the Republic of Sakha (Yakutia)[2], the rest part of Yakutia and Magadan Region could be called subarctic areas. By the end of the first decade of the twenty-first century in the Arctic and adjacent regions of the Far East 98% of Russian diamond volume, 38% of gold and 60% of silver were produced. Accordingly, the prospects for socio-economic development of these regions are associated with the development of the resource potential of the territories (Table. 1). Resource potential of the Republic of Sakha (Yakutia) could be illustrated by the following data: the share of

[1] The article was written as a part of the project “Economic and ecological aspects of development of the Arctic areas of the Far East Russia” (Program of fundamental research RAS 44 P “Searching fundamental scientific research in favor of the RFAZ development”) and with its financial support.

[2] Указ Президента РФ от 02.05.2014 N 296 «О сухопутных территориях Арктической зоны Российской Федерации». URL: www.consultant.ru (Accessed: 20.05.2015).

its reserves of mineral resources in the world's diamond production is 35%; tin — 5%; antimony — 4.5%. Share of Yakutia energy resources in Siberia and the Far East reserves is: 47% for coal and 35% for oil and gas [3].

As follows from the data, except gold and silver, mineral resources in these regions include non-ferrous metals, iron, coal, oil, gas and other more common minerals. Many of these resources may be demanded by the countries of Northeast Asia. Therefore, long-term projects actively promoted by regional authorities are represented by small or new resource development mainly.

Table 1

Resource potential of Magadan Region and Chukotka Autonomous District [4]

Resource	Volume	Measure
Magadan Region[5]		
Gold	3 891	T
Silver	44 691	T
Zink	18 000	thsd. tones
Plumbum	5 372	thsd. tones
Copper	10 100	thsd. tones
Molybdenum	200	thsd. tones
Tin	311	thsd. tones
Iron	1 450	mln. t
Coal	8 700	mln. t
Oil (shelf)	1 856	mln. t
Gas (shelf)	1 987,7	biln. m^3
Gypsum	10,5	mln.t
Volcanic ash	410	thsd.m^3
Chukotka Autonomous District		
Gold	1 262	T
Copper (reserves)	8 300	thsd. tones
Wolfram	257	thsd. tones
Tin	916	thsd. tones
Coal	4 000	mln.t
Hydrocarbons: land/shelf	740/470	mln.t

So, in the Magadan region priority large-scale investment projects are: development of Omolon iron ore district (inferred resources — 756 mln. tons of iron); the development of brown coal deposits (Lankovskoe reserves — 137 mln. tons; Melkovodninskoe reserves — 505 mln. tons); development of coal deposits in Omsukchan area (resources — about 100 mln. tons); production of non-ferrous metals in different areas of the Magadan region — copper, tungsten, lead, zinc and

[3] Республика Саха (Якутия). URL: http://sakha.gov.ru (Accessed: 27.02.2015).
[4] Потенциал Чукотского автономного округа. URL: http://www.expoharbin.com/news.aspx?back-url=/all-news. aspx &id=604&sid=149&sponsors= (Accessed: 20.05.2015).
[5] Сумма балансовых и забалансовых запасов, прогнозных ресурсов категорий Р1 и Р2 (без поправочных коэффициентов) на 01.01.2012 по данным ФБУ «ТФГИ по ДВФО».

molybdenum[6]. Priority investment projects in the Chukotka Autonomous District: development of a coal deposit "Bukhta Ugolnaja" (total reserves are more than 4 bln. tons); development of the Baimsky ore zone, which includes the deposit Peschanka (resource potential of 27 mln. tons of copper and 1,600 tons of gold).

In the Arctic zone of the Republic of Sakha (Yakutia), we should mention the development of a unique project exploration of a rare earth metal deposit — Tomtor, which can serve as a powerful impetus for the development of the mining industry in this part of the RFAZ. These projects are able to provide northern and arctic regions of the Russian Far East with a notable economic growth.

One of the main problems is the lack of transport and energy infrastructure. The construction of roads, power lines, ports leads to a significant increase in investment and reduce the attractiveness of projects for investors. In order to improve the investment climate in these regions, Russian Government established the following preferences:

1. The Federal Law №267-FZ dated 30 September 2013 for the regions of the Far East and Sub Baikal areas, enforced on 01.01.2014: it is possible to get tax incentives for mining projects if the company invests more than 50 mln rubles and the facility is planned to be established in 3 years or 500 mln rubles of investments and the established facilities during 5 years [7].
2. Existence of the Special Economic Zone (SEZ) in Magadan is prolonged up to the year 2025. It means that participants registered in the SEZ have a right to get tax concessions and lower custom payments[8].
3. Financing of individual objects of transport and energy infrastructure is included in the government programs (for example, in the federal program "Economic and social development of the Far East and the Baikal Region until 2025").

It should be noted that the provision of public preferences is beneficial for both sides: the investor reduces investments and increases the effectiveness of the project, the state compensates the expenses (shortfall in budget revenues from uncollected taxes, government investment in the construction of infrastructure facilities) due to savings in subsidies to regional

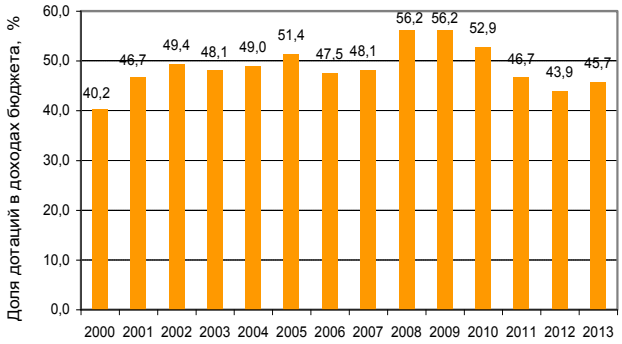
[6] Информация о планируемых и реализуемых инвестиционных проектах. Инвестиционный портал Магаданской области. URL: http://magfer.ru/informaciya-o-planiruemyx-i-realizuemyx-investicionnyx-proektax/ (Accessed: 20.05. 2015).

[7] Федеральный закон от 30 сентября 2013 г. N 267-ФЗ "О внесении изменений в части первую и вторую Налогового кодекса Российской Федерации в части стимулирования реализации региональных инвестиционных проектов на территориях Дальневосточного федерального округа и отдельных субъектов Российской Федерации". URL: http://base.garant.ru/70461610/#help (Accessed: 20.05.2015).

[8] Федеральный закон от 31 мая 1999 г. N 104-ФЗ "Об Особой экономической зоне в Магаданской области" (с изменениями и дополнениями). URL: http://base.garant.ru/12115795/ (Accessed: 20.05.2015).

budgets in connection with the increasing their own revenue base of new investment projects implementation. The budgets of the Northern and Arctic regions of the Far East are consistently subsidized: the share of subsidies in the Magadan Region and Republic of Sakha (Yakutia) is about 50%, in the Chukotka Autonomous District — about 40%. Thus, in 2000—2013 with the share of subsidies 40—56% (Fig. 1), the amount of subsidies from the federal budget to the budget of the Magadan Region was 81.1 billion rubles. [1].

Therefore it is more expedient to create the conditions for large-scale investment projects that will ensure the growth of tax revenues to the regional and federal budget, than to continue subsidizing the annual irretrievable regions.



Picture. 1. Share of donations for the budget of Magadan Region

Let us consider the efficiency benefits provided under the SEZ, as well as public infrastructure investments for all participants of the investment process: the state, the investor and the region. Calculations conducted on the example of one of the large-scale potential projects in Magadan region — the development of the iron ore deposit. Iron ore there is estimated at node 1.99 bln tons of ore and 756 mln tons of iron. Vrhne-Omolonskoe and Skarnovoe deposits are the most studied and therefore are considered as a priority for development. The objects are located in the North of the Evenk District, the most underdeveloped (Fig. 2) and less populated (2.5 thousand people) and in a highly subsidized (more than 80% of its budget) area of the Magadan Region. To implement the project it is necessary to construct large infrastructure: seaport, road or rail for transportation of goods and export (160 km) and the power transmission line (PTL) for energy enterprises involved in the project with the length of 170 km. The share of infrastructure projects cost is 66% of the total

Picture. 2. Mapping the mining areas and infrastructure required for the project in Magadan Region

investment, and a full funding makes the project unattractive (Table. 2, basic version) for investors.

Table 2

Evaluation of the project effectiveness depending on the variant of its implementation[9]

Criteria	Variants		
	basis	With SEZ facility	Without SEZ facility and without infrastructure investments
Annual amount of products: iron ore concentrate, mln tones [10]		4,2	
Time period, years		37,0	
Receipts, bln rubles		17,6	
Total investments, bln rubles	45,9	38,4	12,9
Annual net profit, bln rubles	5,9	7,4	8,1
Pay-back period including the time of construction, years	8,4	6,6	3,5
Net percent value (NPV)[11], bln rubles	17,6	34,3	56,8
Internal rate of return (IRR), %	14,5	20,0	52,1

The results of the comparative evaluation in terms of standard tax and customs duties and preferential treatment under the SEZ has shown that the preferences of the SEZ increase the economic efficiency of the project significantly (Table 2, the option with ESZ facility): investment volume is decreasing by 1.2 times; average annual net profit is increasing by 1.2 times; the payback period is reducing by 1.3 times; the Net percent value (NPV) of the project is increasing by 1.9 times and internal rate of return (IRR) will increase by 1.4 times.

Given the fact that the infrastructure necessary for the project will be used by the population of the district, and by investors of other projects, it is advisable to search for the full or partial sponsorship from the public funds. The Message of the President of the Russian Federation V.V. Putin to the Federal Assembly in 2013, states that in order to resolve the infrastructure issue on the territory of the Far Eastern regions the Fund for Development of the Far East will be actively engaged. The rationale for the allocation of financial resources of the Fund for infrastructure projects includes the following calculations that show the profitability of the state participation in the elimination of barriers for the infrastructure investment projects implementation.

[9] Calculations were based on the cost of a dollar in December 2013.
[10] Concentrate production by gravity-magnetic circuit (44.6%) and % of extraction by the use of the beneficiation method (89.78%).
[11] Discount norm — 10 %.

So, with the exception of the common infrastructure investments improves the efficiency of the projects with a regard to the basic case — without taking into account any benefits (Table. 2, a variant taking into account the benefits of the SEZ, without infrastructure): the volume of investment will be reduced by 3.6 times; average annual net profit will be increased by 1.4 times; the payback period of the investment will be reduced by 2.4 times; the net percent value (NPV) of the project will be increased by 3.2 times and the internal rate of return (IRR) will increase by 3.6 times. So, the attractiveness of the project will be increased as well and its implementation reduces risks for the investor.

At the same time the preferences granted will reduce of the state revenues: under construction by reducing the customs duties on imported equipment and materials imported with the total amount of 7.6 billion rubles. (Representing 0.06% of total revenues of the Russian Federation in 2014), and during the operational phase of the project — by reducing the federal share of individual taxes by 0.4 billion rubles each year of their size in terms of the standard tax (Table. 3). However, the project might bring additional 3.9 billion rubles to federal and regional budget (0.03% of the revenue), annually for at least 37 years.

Table 3

Losses and benefits of the state after the project implementation and account of preferences (bln rubles)

Expenses	***Variants***		
	basic	With SEZ facilities	With SEZ facilities, state investment of the infrastructure
1. Losses of the State			
Investment phase	-	7,6	33,0
Operational phase	-	0,5	0,5
2. Annual income of the state	4,4	3,9	3,9
Incl. income for the federal budget	1,8	1,2	1,2
Incl. income to the regional budget	2,5	2,7	2,7
3. Payback period, years	-	2	8

Annual taxes from iron ore project to the consolidated budget of the region will reduce the share of subsidies from 45.7% to 35.6% and with the repayment of the additional federal taxes and contributions in the form of grants — to 31.4%. Thus, the loss of revenue from the federal budget caused by benefits under the SEZ will be compensated by additional taxes to the budgets of all levels in 2 years. The state profit during all the remaining 35 years of the project is going be 136.5 billion rubles. And this is only considering taxes on mining companies. If we count the infrastructure building companies, the volume will increase significantly. State expenditures for

the provision of benefits under the SEZ and the financing of infrastructure amount to 33 billion rubles. At the stage of exploitation the state will receive fewer portions of some taxes (Table. 3). Despite this, the costs will be repaid by additional tax paid by investor to budgets of different levels in the 8th year of the iron ore extraction. The amount of taxes, received after the payback of the state's expenses at the stage of investment, the profit will amount to 113 billion rubles for the next 29 years. It is taxes from the mining companies only.

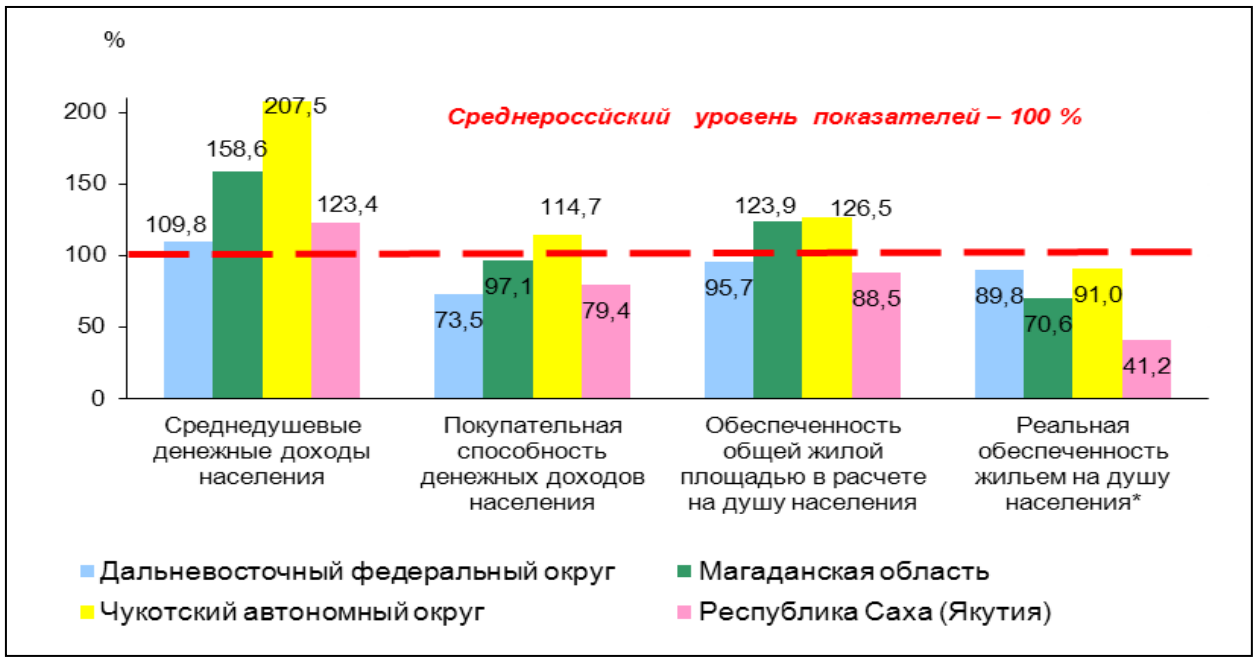
Implementation of projects with the institutional and financial support of the state will allow *the investor:* to increase the attractiveness of the project and reduce the risk of investment in the changing situation on the world market of raw materials; *for government at the federal level:* to obtain additional taxes to the federal budget, reduce the amount of subsidies to the regional budget; *at the regional level:* to reduce the dependence on subsidies; increase the population by attracting workers to large investment projects over a long period. State participation in such projects may be provided in the form of public-private partnership and the creation of state-owned enterprises on the basis of infrastructure and so forth.

Every arctic and northern region of the Far East Russia has a number of large investment resource projects, which contribute to a significant improvement of the socio-economic situation there. Greater attractiveness of the project for investors will contribute to the dynamic development of the eastern territories and it is a national priority of Russia in the XXI century.

The most pressing social problems of the northern and arctic areas of the Far East Federal District (FEFD) are a lack of infrastructure and a decline in living standards that causes the continued outflow of population.

The nominal income value per capita relative to the average level is: in the Chukotka Autonomous District — 2 times higher, in the Magadan region — 1.6 times higher, in the Republic of Sakha (Yakutia) —1,2 times higher (Pic. 3).

At the same time, the purchasing power of income (relative to the subsistence level of the region) is above the national average (by 3.4 of the subsistence minimum): in Chukotka it is by 15% only, and in the Magadan region it is below by 3%, in the Republic of Sakha (Yakutia) it is lower by almost 20%. According to our estimates, in good years, when the population willingly migrated to the Magadan Region, it was due to higher living standards, the ratio was 5 subsistence minimum (in 1990), and it is only 3.3 now.



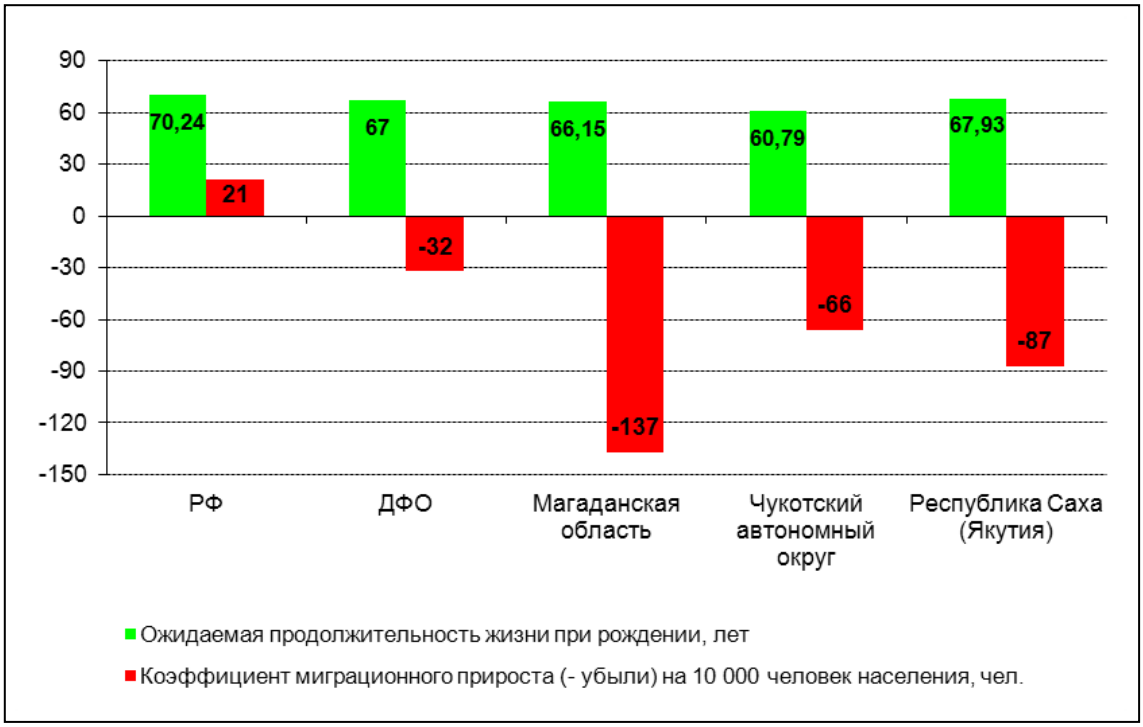
Picture 3. Indicators of living standards of the FRFD population relative to the all Russia average level, %

Another important indicator of quality of life and attractiveness of the region for living is housing. For this indicator, the real situation is also different from the one in official papers: housing provision index in the Magadan Region and the Chukotka Autonomous District higher than the average rate at 24-26% and these areas take the leading place in Russia on this indicator. But the statistics is excluding emergency and dilapidated housing. So if we count the housing provision index without these types of housing that situation will be different: the index in the Magadan Region will be below the national average of 30% and 10%, respectively (12 m^2/person and 16 m^2/person at a normal rate of 18 m^2/person) and in Yakutia — 60% (Pic. 3). In addition, these regions have accommodation in unpromising settlements, the so-called “abandoned” housing, whose area is also included in the calculation of the total housing provision index. If we exclude this category of housing as well, we’ll get the following number for the Magadan region — 7 m^2/person.

Therefore, the final figures of living standards (Pic. 4) — life expectancy at birth in the Chukotka Autonomous District is below the average level for 10 years, in the Magadan Region- for 4 years, in the Republic of Sakha (Yakutia) — for 2 years.

The reaction to the existing conditions of life is the continuing outflow of population to more hospitable areas to stay. Despite the fact that in all regions of the FEFD we’re observing the outflow of population, immigration rate there is 7.5 times lower than in the Magadan region, in

the Republic of Sakha (Yakutia) — 5.1 times lower and in the Chukotka Autonomous District — 4.5 times lower than the average for the Russian Federation.



Picture 4. Value of living standards

Conclusion

In order to ensure economic growth and to secure the growth of population in the northern and arctic areas of the Far East Russia, it seems appropriate to adopt federal laws providing the following [3]:

- ✓ mandatory “Arctic component” — special economic and institutional preferences for the Arctic regions to smooth the extreme living conditions and remoteness from suppliers and consumers;
- ✓ measures to promote higher standards of living (the average income should be 5 times more than the minimum (the 1990 level), housing index rates should be higher than the average;
- ✓ public financing of transport and energy infrastructure to support infrastructure of the Northern Sea Route (for example, the city of Tiksi and Pevek) and the development of resource projects areas.

These tasks should be among the major ones for the State Commission on the Development of the Arctic established by the Government of the Russian Federation, on the 14th of March 2015 and headed by the Deputy Prime Minister D.O. Rogozin. The Commission’s list of the main tasks contains paragraphs on: improvement of the efficiency of programs and projects

designed to contribute sustainable development of the Russian Arctic; widening of the resource base to ensure the needs of the Russian Federation in hydrocarbon resources, marine resources and other kinds of strategic raw materials; improvement of the *quality of life of people* living and working in the Arctic zone of the Russian Federation, including indigenous peoples whose traditional way of life and traditional economic activities and cultural heritage should be protected and preserved [12].

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The observer countries of the Arctic Council: a comparative analysis of human development

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Abstract. The article represents a comparative analysis of human development of the countries — observers of the Arctic Council. Similarities, distinctions and advantages are presented in their relation to the quality and dynamics of human development. The conclusion is drawn on positive tendencies of human development and prospects of a joint implementation of the most important social and economic projects in the Russian Arctic.

Keywords: *Arctic, human capital, human development index, countries-observers of the Arctic Council, education, standard of living, education, competitiveness*

Introduction

In accordance with the latest trends in the evolution of the modern economy, its main potential is its people. Investment in human capital, ability to develop new technologies and turn them into the world market demanded product are recognized by the international community as the most favorable conditions for the growth of competitiveness of economies and are the key to social security and prosperity. In order to obtain a synergistic effect in the times of the new industrial development of the Arctic zone of the Russian Federation (RFAZ) and forcing an integrated and balanced spatial development of the region, our country could combine its financial, economic and technological capabilities with the ones of the other interested parties, including twelve observer countries of the Arctic Council that form a group of AC-12: France, Germany, the Netherlands, Poland, Spain, United Kingdom, China, Italy, Japan, Korea, Singapore and India[1]. In the context of the resumption of a full-fledged economic activity in the circumpolar

[1] Двенадцать неарктических государства являются наблюдателями в Арктическом совете. URL: http://www.arctic-council.org/index.php/ru/about-us/arctic-council/observers (Accessed: 11.07.2015).

areas, it seems interesting to carry out a comparative analysis of the human capital of the AC observers and to assess their resources and potential objectively.

Human development

The main place in the structure of the Arctic farms is occupies by the following sectors: mining (extraction of diamonds, rare metals, platinum group metals, nickel and cobalt), fishing and natural gas extraction. Oil and gas extraction is on the first place almost everywhere; a significant role is played by as transport, communications, and construction work, wholesale and retail trade. Joint efforts are needed to resolve the environmental issues (climate change, human security and the environment, use of natural resources), various economic problems (extraction of hydrocarbons on the continental shelf, exploitation of the Northern Sea Route, the modernization of the energy and transport systems, including port infrastructure and the development of new shipping routes) and social problems (rescue service and improvement of the quality of life of the population). There is a great need in joint research, scientific and technical cooperation in the field of shipbuilding, engineering, information and communication, energy-saving technology and innovation, and the development of tourism.

The complexity of these sectors is caused by the high costs of transportation, lack of maritime infrastructure, extreme climate and remote resource fields and reserves. Today a need to diversify the economic structure, increase the proportion of deep processing industry, investment attractiveness and new technology arise, and this, in turn, places special demands on personnel and the quality of the “human factor”.

The UN Development Program (UNDP) made a significant contribution to the understanding and promotion of the ideas and parameters of human development. Under this Program global Human Development Reports have been published since 1990. The UNDP experts proposed an analytical tool — the Human Development Index (range from 0 to 1; the closer to one, the greater are the opportunities for realizing human potential) which is calculated on the basis of economic analysis (Gross National Income — GNI) and social indicators (life expectancy and level of education). Table 1 presents the latest data on the HDI in countries belonging to the AC-12 and its constituent components.

According to the UNDP’s studies, Human Development Index (HDI) has steadily grown over the years 1980—2013 in all the AC-12 countries. Ten out of twelve of observers from the AC are among the countries with very high HDI level. China (as well as the Russian Federation) and India are countries with high and medium HDI countries respectively.

Table 1

The Human Development Index of the observer countries and its components

Countries rated by HDI	HDI 2013 (rating from 187 countries / value)	Life expectancy[2], years, 2013	Medium / school life expectancy[3] , 2012	GNI per capita, $[4], 2013
Netherlands	**4** / 0.915	81.0	11.9 / 17.9	42397
Germany	**6** / 0.911	80.7	12.9 / 16.3	43049
Singapore	**9** / 0.901	82.3	10.2 / 15.4	72371
Great Britain	**14** / 0.892	80.5	12.3 / 16.2	35002
Korea (Rep.)	**15** / 0,891	81.5	11.8 / 17.0	30345
Japan	**17** / 0.890	83.6	11.5 / 15.3	36747
France	**20** / 0.884	81.8	11.1 / 16.0	36629
Italy	**26** / 0.872	82.4	10.1 / 16.3	32669
Spain	**27** / 0.869	82.1	9.6 / 17.1	30561
Poland	**35** / 0.834	76.4	11.8 / 15.5	21487
China	**91** / 0.719	75.3	7.5 / 12.9	11477
India	**135** / 0,586	66.4	4.4 / 11.7	5150
		Reference:		
Russia	***57 /** 0.778*	*68.0*	*11.7 / 14.0*	*22617*

Source: United Nations Development Program (UNDP) Human Development Report, 2014. Sustaining Human Progress: Reducing Vulnerabilities and Building Resilience [1, 2014].

Most of countries of this group have the GNI level higher than the level of the Russian Federation (except for India, China and Poland). This trend is also valid for life expectancy (except India) and formal learning settings. At the same time a demographic indicator as fertility rate (births per woman) in all countries of the AC-12, except for India, is less than the one required for simple reproduction of the population (it is relatively high and continues to grow only in France and the UK); the average age of the population tends to increase due to the low birth rate and high life expectancy.

According to forecasts, in most studied countries (except Germany, Poland and Japan), in the medium term perspective the population will increase most strongly in the UK and France. In these countries, as well as in the Netherlands the larger share of state's expenses is devoted to education and health of citizens.

Table 2 presents some specific indicators of human development [5] in the AC-12 countries.

[2] Amount of years a newborn child is able to life if the current tendency and mortality rates won't change during his life.
[3] Average educational period for people at the age of 25 and older/ the years of education a child can have if the current tendency in education and age rates in educational statistics will be the same.
[4] General income, in US dollars converted with the use of the ratio of purchasing power parity divided by population.
[5] Human potential — the accumulated stock of public physical and moral health, general-cultural and professional competence, creativity and civic activity, implemented in the industrial, social, cultural and other spheres, as well as in the level and structure of needs. URL: http://voluntary.ru/dictionary/1019379/ word/chelovecheskii-potencial (Accessed: 12.07. 2015).

Table 2

Human development: demography, health and education

Country	Population, mln. Persons., In 2013 / outlook for 2030	Government spending on education / health, 2012/2011 years.,% Of GDP	Population with at least secondary education, 2012,% of individuals older than 25 years	Quality education, academic performance 15-year-olds students: GPA *	
				Mathematics	Science education
Great Britain	63.1 / 68.6	5.6 / 9.3	99.9	494	514
Germany	82.7 / 79.6	5.1 / 11.1	96.6	514	524
India	1 252.1 / 476.4 1	3.3 / 3.9	38.7	...	...
Spain	46.9 / 48.2	5.0 / 9.4	69.9	484	496
Italy	61.0 / 61.2	4.5 / 9.5	75.7	485	494
China	1 385.6 / 453.3 1	... / 5.2	65.3	613	580
Korea (Rep.)	49.3 / 52.2	5.0 / 7.2	82.9	554	538
Netherlands	16.8 / 17.3	6.0 / 12.0	89.0	523	522
Poland	38.2 / 37.4	5.2 / 6.7	82.3	518	526
Singapore	5.4 / 6.6	3.3 / 4.6	77.4	573	551
France	64.3 / 69.3	5.9 / 11.6	80.5	495	499
Japan	127.1 / 120.6	3.8 / 9.3	86.4	536	547
			Reference:		
Russia	*142.8 / 133.6*	*4.1 / 6.2*	*90.9*	*482*	*486*

* Average for OECD countries on these subjects 494 and 501.

Source: United Nations Development Program (UNDP) Human Development Report, 2014. Sustaining Human Progress: Reducing Vulnerabilities and Building Resilience [1, 2014]

At the same time, Asian economies performed better quality of education in technical subjects. In Russia in the coming years — a considerable negative population growth will be observed and the state's spending on education and health is going to be significantly lower than in other countries (excluding China and India), the quality of education[6] is not that high, according to experts of UNDP (author agrees only partly with the latter). Sustainable development requires the measures to ensure the region's economy with qualified specialists: biologists, geographers, chemists, geologists and geophysicists, mining and construction engineers, ecologists, and also teachers, doctors, IT specialists, and managers in tourism. In recent years, attention of the federal authorities of Russia to the further study of high-latitude regions of our country and their social and economic development has increased. In May of 2015 the state provided more than 205 million rubles for the Arctic expeditions and supply of the "North Pole" drifting station [2,

[6] Currently, there are no international indicators of quality in higher education. But there are some indirect indicators (number of persons admitted to higher education institutions, previously received professional education, the unemployment rate among people with education, etc.).

2015]. Higher education in the Arctic is represented by the Northern (Arctic) Federal University and the Far East and North-Eastern Federal Universities — the largest scientific, educational and innovative centers in the polar areas of Russia.

Workforce competitiveness

The development of science and technology is an important means to achieve a high level of professional competence, it has a positive impact on human health, and its introduction into education is the key to the competitiveness of the workforce. Thus, there is an increase of living standards, which serves to increase the productivity and profitability of production, income and quality of life. The statistical analysis gives reason to believe that there is a direct relationship between the level of human development and competitiveness: the more is the first, the higher place is taken by the country in the world ranking of competitiveness.

The World Economic Forum (WEF) publishes data on the *Global Competitiveness Index* (GCI) annually. It is calculated on the basis of more than 100 indicators, combined into 12 main components (each component is accounted for between 4 and 21 parameters).

Table 3 presents the ones related to the level of human development and have a crucial impact on the competitiveness of the workforce: health and primary education, higher education and training, labor market efficiency, technological level, innovative potential.

Table 3

Rating the competitiveness of the AC-12

Country / GCI index (place in the ranking of 144 countries)	Health and primary education	Higher education and prof. training	Labor market efficiency	Technological readiness	Innovation
Singapore / **2**	3	2	2	7	9
Germany / **5**	14	16	35	13	5
Japan / **6**	5	21	22	20	4
Netherlands / **8**	5	3	21	9	8
UK / **9**	21	19	5	2	12
France / **23**	18	28	61	17	19
Korea (Rep.) / **26**	27	23	86	25	17
China / **28**	46	65	37	83	32
Spain / **35**	34	29	100	27	37
Poland / **43**	39	34	79	48	42
Italy / **49**	22	47	136	38	35
India / **71**	98	93	112	121	49
		Reference:			
*Russia / **53***	*56*	*39*	*45*	*59*	*65*

Source: World Economic Forum. The Global Competitiveness Report 2014-2015. URL:http://www. wefo rum.org/reports/global-competitiveness-report-2014-2015 (Accessed: 06.05. 2015). [3, 2014—2015]

It should be noted that the calculation of the index is done taking into account the fact that: different states are at different stages of economic development; they have different circumstances contributing to increasing the competitiveness of one country; and these circumstances may not be relevant for another country.

The WEF distinguishes between three types of economy — the economy, driven by factors (India); by efficiency (China) and by innovation (France, Germany, Italy, Japan, Republic of Korea, Netherlands, Singapore, Spain, UK). Poland (and Russia) is on the intermediate stage between the 2nd and 3rd stage (determined by the GDP in US dollars per capita, respectively — less than 2 million, 9.3 million, more than 17 thousand).

Five of the twelve states are among the top ten of the most competitive countries in the world according to the WEF. Russia is much lower in the rankings, although it has risen very substantially in the rankings over the past few years (by 14 points since 2012), and is ahead of only India, which, however, shows better than our country performance in the area of development and innovation. On the parameters *"Health and primary education"* and *"Technological readiness"* our country is far behind the group of AC-12 (except for India in the first case, and India and China in the second), especially Singapore, Japan, the Netherlands and the UK. The best Russian results according to parameters shown in Table 3 are for: *"Higher education and vocational training"* — ahead of China, Italy and India and *"Labor market efficiency"* — Russia is ahead of six of the twelve countries, but it is significantly behind Singapore and the UK. Russia is the worst according to the "*Innovation"* parameter: "champions" in this area are Japan, Germany, the Netherlands and Singapore. Cooperation with the leaders in the training, transfer of technologies in the field of shipbuilding, ocean technology and marine infrastructure are important for effective work of the civil shipbuilding (drilling platforms, shelf extraction equipment, specialized ice-class vessels), which influences the capacity of the Russian presence in the Arctic and increasing the economic efficiency of oil and gas projects on the continental shelf.

Conclusion

It is well known that eight countries are permanent members of the Arctic Council: Canada, Denmark, including Greenland and the Faroe Islands, Finland, Iceland, Norway, Russia, Sweden and the United States, forming the AC-8 group. Permanent membership is gained by six international organizations representing Arctic indigenous peoples [7]. Among 12 observer-states of the Arctic Council (AC-12) nine are members of the Organization for Economic Cooperation and

[7] Государства-члены Арктического совета. URL: http://www.arctic-council.org/index.php/ru/about-us/member-states (Accessed: 11.07.2015).

Development (OECD), except for China, India and Singapore, which, however, have 2nd, 10th, and 36th place in the world in terms of their GDP, respectively, [4, 2014]. Republic of Korea, Japan and Germany are in the top ten for R&D funding — 3rd, 5th and 9th places [5, 2012].

Against the background of high socio-economic indicators of the majority of AC-12 countries there is a redistribution of the financial capacity aimed at providing a high level of human/employee development. This is important because large international professional teams that are working in the Arctic should meet new requirements: the availability of a variety of skills; willingness (motivation) for continuous training and development of new professional skills; the ability to respond to the changing situation quickly and to solve complex multi-factor problems. Accumulated human abilities and qualities, motivation, knowledge and professional competencies, formed as a result of investment in human capital, could be regarded a key element of the resource supply base of the economy and the decisive factor of creation and development of new technologies.

An analysis of human capital development in 12 observer-countries of the Arctic Council (AC-12) creates a positive outlook of the human capital development there and could give a lot of benefits for our country when implementing important socio-economic projects in the Russian part of the Arctic.

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The Northern Sea Route: the potential of expectations and the real functioning problems

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Abstract. The main objective of the article is positioning the Arctic regions as the participants of the federal Arctic strategy. The Regions are analyzed in the context of improving the efficiency of the Northern Sea Route, perceived a very important factor in their economic and social development. Author compares some aspects of the competition between the NSR and the Suez Canal, with focus on the historical and economic desires of Arkhangelsk and Murmansk to be the main gateway to the Arctic.

Keywords: *Northern Sea Route, the gateway to the Arctic, the competition, the Suez Canal, regional projects, transport infrastructure, foreign companies, management model of the NSR*

Introduction

Actualization of national and international interest in the Northern Sea Route exists due to geopolitical processes (constant tendency to divide the Arctic) and the development needs of the Arctic zone of the Russian Federation and all of Russia. External impulse was given by the appeal of the Soviet President Mikhail Gorbachev (Murmansk, 1987), who spoke about the international co-operation in the Arctic, opening of international shipping along the NSR. Exploration and economic development of large hydrocarbon deposits in the Arctic, “warmed” the commercial interests of the development of the International North Sea Route Program (INSROP, 1993), exacerbated the need for establishment of the management mechanism of the route, support the decision making on the key issues related to the NSR and dialog between different countries, ship owners and international institutions.

Now every region of the Russian Federation with a facade which rests on the Arctic ice field seeks to put itself as the subject of the “Fundamentals of Russian state policy in the Arctic up to 2020” (2008) and “Strategy of development of the Arctic zone of the Russian Federation and the

national security for the period till 2020" (2013) [1]. The ideological underlying reason of such a public declaration of intent is the eighth paragraph of the Strategy that states to think through binding measures for an integrated approach to social and economic development of the Arctic region and for international cooperation.

And, of course, centers of regional policy cannot exist without an accent on the issue of identification of the area and discussions on the role of the Northern Sea Route with its length of 5 600 km for the corresponding Arctic territory. The objective interdependence and interrelation of internal and external aspects of the NSR political and economic status leads the author's scientific analysis towards defining the degree of Russian Arctic regional centers involvement in the implementation of the development and management strategies of the NSR — a maritime route from the Kara Strait to the Providence Bay.

The subsequent isolation of the nature and forms of regional positioning on the territory within the geographical coordinates of the NSR takes into account: a) the existence of the NSR Administration and its headquarters in Moscow and the initiative to move it to Archangelsk [2], area of the NSR waters limited by the 12 miles of territorial waters and 200 miles of exclusive economic zone with the possibility of free shipping, including foreign vessels; b) potentially necessary modernization of the NSR, and all the surrounding infra-structure to ensure the maritime industry.

Consequently, it is fundamentally important to be informed about the change of socio-economic parameters of the Arctic regions for the regions themselves. Differentiation of the interval (5—60 years) for the creation and reproduction of the positive factors of economic activity [1,332] — is an important institutional condition for the perception of the NSR as a national transport communication and a key factor in the dynamic economic recovery of each of the Arctic regions. These regions of the Russian Federation are recog-nized as a strategic reserve of the country. They will be used effectively if the region acquires a rational use of technology to open the gates to the Arctic.

Theoretical allocation of circumstances impeding a realistic look at the solution of this problem is the subject of the author's attention to the complex technical and economic conditions and the nuances of political economy of the NSR in the long-term perspective.

Arkhangelsk and Murmansk — what town is the main gate to the Arctic?

Two clauses are important for the answer to this question. *First*, present and future involvement in the Arctic towns (ports) to the NSR activities is projected by prior history of their

[1] URL: http://www.government.ru/docs/22846/ (Accessed: 21.02.2011).
[2] Отвечает интересам развития Арктики // Архангельск. 2015. 16 апреля. С. 9.

economic specialization and the possibility of its continuity in market conditions. *Se-cond*, the macroeconomic role of the individual components of the Arctic route are not determined by regional and municipal officials, but it is determined by the presence of strategic investment programs (federal, regional and corporate) aimed at modernization of existing facilities to make those towns a base for the economic development of the Russian Arctic. And, naturally, we are impressed by the desire of the Arkhangelsk Region to play an important role in the development of the Arctic and cooperation with neighboring regions and international community [2]. Such a desire is based on the historical advantages of the region, supported by the presence of the Arkhangelsk sea port and existing infrastructure there.

In this context, let us have a look at the Arkhangelsk and Murmansk — two seaports with very different geographical conditions and the dynamics of historical and economic destiny. We are going to associate political expectations of regional elites on two criteria: self-identity of the regional centers and the involvement of communities in the organization of the NSR, the economic development of the Arctic. Murmansk and Arkhangelsk are reflecting their previous history and currently are declaring themselves the outposts of the Russian naval power [3].

Both towns have a right to such self-determination, as well as calling themselves “the gateway to the Arctic”. Nevertheless it is possible to feel the rise of new Arctic political stars. At the European Far North it is the Nenets Autonomous District (NAD), which is a part of Arkhangelsk Region. The NAD is seeing itself not only a supporting outpost, but the most important link in the infrastructure development of the Arctic, a key region of the country for economic activities in the Arctic. A tug of war between the regional centers of the Russian Federation in the Arctic reveals with an interesting palette of self-assessments and opportunities.

Historically Arkhangelsk was a very important center of maritime traffic, even in the European part of Russia. It is the birthplace of the domestic shipbuilding industry and the Navy, base of the Northern Shipping Company [4] that owns 34 vessels and 18 vessels of the transport fleet. Its universal dry-cargo vessels with a tonnage of 2.500—14.000 tons transport many kinds of dry cargo, including radioactive and dangerous ones. The company retains the status of year-round carrier's to the port of Arkhangelsk, ports of Scandinavia and the Gulf of Finland and is actively using the NSR. JSC “NSC” traditionally provides marine transportation by the Arctic ice-class vessels A1 and intensified ice-class vessels for shipping in bad weather and technical conditions. For several years the NSC’s vessels have been delivering coated pipes to the “MRTS-Defender” in Baidaratsky Bay of the Kara Sea, contributing to the arrangement of the main gas pipeline “Bovanenkovo-Ukhta” (the "Yamal" project of the “Gazprom” company).

Picture 1. URL: http://www.ansc.ru/img/S_Kuznetsov.jpg

In 2011—2014, the NSC increased the transportation of goods along the Northern Sea Route. Let us remind some of the cases. It was the delivery of a bulky cargo with a weight of 407 tons — manifold for the project “Sakhalin-3” from Norway to Sakhalin by m/v “Pioneer of Moldavia”. In 2012, the m/v “Johann Mahmastal” delivered cargoes for the mining companies in the Anabar in Yakutia, and ships “Pavel Korchagin” and “Ivan Ryabov” carried the first cargo of the arctic scrap metal from the Franz Josef Land. This year the NSC ships started to carry goods to the port of Sabetta. Annually tow icebreaker “Nord” makes towing of various marine objects from Arkhangelsk to Svalbard. In 2013, the ship “Engineer Trubin” was a member of the experimental expedition Tyumen — Sabetta — China — New Port. It was a historic first voyage from the new port of Sabetta (Yamal). In 2014 volume of cabotage grew up three times of the level of 2013. For JSC “NSC” it meant the involvement in the supply chain for a large infrastructure in the Arctic established for the Ministry of Defense of Russia (ships “Johann Mahmastal” and “Ingener Veshnyakov”). For the first time in the history of the NSC helicopters were tested for unloading the ship "Ingener Trubin”.

In other words, Arkhangelsk is not losing its position and seeks to meet the challen-ges of economic development of the Arctic. It is the leitmotif of the arguments presented by the Arkhangelsk regional administration for the State Commission on the Development of the Arctic in

April 2015. Nevertheless the brand of Arkhangelsk as a "gateway to the Arctic" should not lead to a leveling of other ports along the Northern Sea Route. In Russia there are four marine shipping companies with their corporate activities in the Arctic. These activities include no less than 70 major ports and settlements, like the largest ports of Dickson, Dudin-ka, Tiksi, Pevek and Provideniya. Attempts to belittle the importance of Murmansk as a new outpost are absolutely groundless. OJSC "Murmansk sea trading port" (MSCO) has 20 berths with a total length of 3460 meters[3], with turnover of 17.13 mln tons (2013). Here, too, favorable engineering preconditions for integration into the scheme of the Arctic logistics exist. Hydrology of berths gives the Murmansk port an opportunity to accommodate vessels longer than 265 m with a draft up to 15.5 m.

It is not a secret that the relevant regional institutions generate political rhetoric on the strengthening of the strategic status of the regional centers with seaports related to the implementation of geo-economic objectives of the federal arctic policy. It is a sign of excitement among foreign investors and carriers of general cargo and other long-term commercial interest. The measures taken to widen the transport services and intensify the use of the NSR are of interest of all northern areas.

All the options of integration of the regional ports in the economic development of the Arctic, of course, are essential links for prevention of depressive mood and keeping the optimism and encouragement of business, civic engagement of business and the local population, and also preventing the cult of "dead-end" or unpromising territories. The example of the Murmansk Governor M.V. Kovtun is interesting. She presented the project "Integrated development of the Murmansk transport hub" and also tries to prove (referring to "Gazprom", "Rosneft" and "Novatek") that the prospect of the Murmansk Region is to create coastal supply bases of materials and offshore equipment, deployment of production capacities for the construction and maintenance of offshore platforms aimed at support of offshore projects in the western Arctic [4].

Russia is interested in multiplier effect of resource cooperation of the country and its regions, so it is useful to see the inter-regional competition of the Russian ports — key actors using the Arctic communications. The author proceeds from the fact that the location of each seaport (town) in the implementation of federal priorities in the Arctic are adorned not only by populist self identity but finding the best combination of local patriotism and pragmatic solutions for socio-economic development issues. Without this it is impossible to synthesize current geopolitical problems and turn them in the socio-economic success of Russia in the Arctic.

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[3] URL: http://innovation.gov.ru/sites/default/files/documents/2014/5712/1347.pdf (Accessed: 12.07. 2015).

[4] URL: http://morvesti.ru/detail.php?ID=32203. Комплексное развитие Мурманского транспортного узла. URL: http://helion-ltd.ru/mtk-development-stages/ (Accessed: 25.03.2015

Such economic and investment philosophy is relevant for the Arkhangelsk region. Its administration is lobbying the implementation of three projects — the Northern Sea Route, “Belkomur” and construction of a deep-water port in Arkhangelsk. It is done with the hope for changes in the traffic flows and increase of the value of Arkhangelsk sea port in the eco-nomic development of the Arctic [5, 220]. Realistic expectations are supported by the 3.4 km length of the birch line of the port of Ekonomiya and its capacity to receive vessels up to 190 m long with a draft up to 9.5 m and a displacement up to 30 tons. This port is the only exis-ting container terminal in the North of Russia, traditionally focused on servicing the NSR. The port of Arkhangelsk is a hub for cargoes aimed at supporting the development of hydro-carbons on Yamal.

We will not duplicate the historical and economic specifics of the Arkhangelsk and Murmansk commercial port demonstrating, according to one author, the existence of a subjective competition between them on the basis of political lobbying [6, 37]. Now, it is possible to speak about the influence of the federal budget deficit of 2—1.5% of GDP and sanctions complicating macroeconomic positions of Russia in the Arctic. The new conditions will determine federal attention to the region and its greatest strategic importance for the development of the Russian Arctic.

Regions could be more accurate (objective) when defining their mission in the implementation of the RFAZ development strategy. There is no need to create the illusion of exclusivity of a regional center or the seaport. Every town could be called "the capital of the Russian North", but this obscures the purely economic development technology of the Arctic. Conditions of optimal management — clear separation of management functions in each region, for pulling the “blanket” complicates the comparison of the investment effectiveness and profitability of economic activities in the Arctic. For example, Arkhangelsk with its well organized functional framework of general cargo can be managerial focal point of the economic development and scientific study of the Arctic, mainly within the Barents and Kara Seas. In that and other roles Arkhangelsk can be an effective player on the Arctic stage, especially if the “Belkomur” — a railway from Arkhangelsk through Karpogory to Perm will be modernized. Commissioning of this railroad will increase the transport and transit potential of the region and revenues.

Unfortunately, it often happens that the existing possibilities for optimizing the economy are not available at the right moment and therefore cannot serve a factor of successful development policy. Many years of “unclearity” of this project, which benefit had been proven a long time ago, means reducing shipping shoulder compared to Murmansk and Ust-Luga for almost one thousand and five hundred kilometers. This fact is a significant argument. It turns out that

Russia does not have enough money for sustainable economic future. On the other hand, if "Belkomur" enacted in 2012—2014 without a deep-sea port in Arkhangelsk, the commercial attractiveness of Arkhangelsk might had been reduced.

"Belkomur" means a transit of goods with an estimated volume of 35—55 mln tons (coal, potash, container, forestry products and pulp and paper) that supposed to be trans-ported by sea as well. Processing of cargos would be difficult without new specialized automated port terminals. Finally, the construction of a new port area of 180 hectares is now included in the transport strategy of the Russian Federation until 2030 and its preliminary investment is 35 bln rubles. Therefore, "Belkomur" and Arkhangelsk deep-water port able to receive vessels with deadweight of 60 000 tons, together with the development of port infrastructure and innovative technologies of processing can be regarded as factors of "switching" commercial carriers of other countries and Russian enterprises to Arkhangelsk.

Will the volume of transit grow? Positive response to anticipate pattern: the region will surely strengthen integration with the world market and be an active in using the Eurasian part of the NSR. Then it is possible to reduce the attempts to exclude Arkhangelsk from the list of strategic support centers of economic activities in the Arctic and to project depressed expectations among its residents. Such views are not based on the empty space.

The actual position of Arkhangelsk is largely determined by macroeconomic decisions on inter-regional labour division (internal federal specialization) and the economic development of the Arctic. Objectively, Murmansk has more advantageous geographic location to redirect the transit of general cargos than Arkhangelsk. Unfortunately (or perhaps fortunately), it is better to look for new technological niches that allow re-export the glory and authority of the first seaport of Russia in one of the many Arctic logistics centers, in a historically new face in the Arctic region. For example, the leading center for shipbuilding in Severodvinsk — a part of the Arkhangelsk-Severodvinsk conglomerate is an important outpost of the northern folk culture and at the same it serves the needs for preserving and strengthening the role of the commercial sea port and railway hub as a tactical base of economic transshipment in the Arctic.

In my opinion, an attractiveness and optimism of life on the shores of the White Sea is not based on brand of Arkhangelsk, but on the quality of life in the municipality. If the quality of life is high nobody will speak about "anguish, cod and board". Innovative upgrade of the local economy will contribute the identifying the territory of residence as a historically favorable, promising and stable by local people.

This is one of the origins for the transformation of the Arkhangelsk region and the reason for the planned growth of the GDP by the year 2030. The dynamics of transformation can be strengthened by Severodvinsk shipbuilding complex, if it will actively respond to the needs of civil and trawl fleet supply and meet the needs of other members of the economic development of the Arctic. Especially when choosing a constructive policy of import substi-tution for the production of equipment for maintenance of various Arctic fisheries or con-struction of oil and gas offshore platforms.

One more exclusive point of regional competition exists. A dockside specific of regions is combined with the humanitarian component. Official statements of the various scientific conferences held in Arkhangelsk contain ideas about its leadership in fundamental and applied research in the Arctic. Establishment of the Tiksi Federal Arctic Research Centre will also increase the competition between scientific and educational centers in Arkhangelsk, Murmansk and Syktyvkar for federal financial support. Sometimes there was a feeling that the volume of support would be smaller if there were mechanisms to exclude the presentation of scientific results that added nothing to knowledge about the socio-cultural development of the Arctic. It would be good to have a glossary of innovation for research reports that provide a fair presentation of scientific achievements of each grantee. Then, the theoretical trajectory of the regional studies would look more realistic.

Mainland transport infrastructure — required object of macro-political development of the Northern Sea Route

It seems to be necessary to focus on the fact that “modernization and development of the Arctic infrastructure, transport system and fishery complex of the RFAZ are a priority of the state policy of the Russian Federation in the Arctic up to 2020 and beyond [5]. However, the northern sea routes are only a part of the geo-economic problems of Russia. And they are not fundamental. In my opinion, we should not forget that the northern regions are outsiders when it comes to transport security and development. Problems of the transport and logistics units, integrating the commercial needs of road, rail, air and river transport, identified by some researchers [7], do not receive adequate attention.

Future of the comprehensive modernization of the transport and logistics network of the Arctic regions is rather unclear. That is why whole transport hub should be considered as macroeconomic imperative to optimize the conditions of the internal development of the Arctic region. The population of coastal arctic municipalities has, unfortunately, conceptual doubts about the accessibility of villages, improving the everyday communication with the mainland and positive results of modernization of the regional infrastructure.

[5] Государственная программа Российской Федерации «Социально-экономическое развития Арктической зоны Российской Федерации на период до 2020 года». Постановление Правительства РФ от 21 апреля 2014 г. N 366.

It is possible and necessary to reverse these depressive expectations. The federal government should consider the transport infrastructure of the mainland of the North (Arctic) a geopolitical factor important for the state security and a reliable bridge of cooperation with Asian countries. It is time to implement a policy of inter-regional solidarity Arctic and use the institutionalization model of management for the development of continental communications. For example, it could be done on the basis of the project of eight railway lines that form the framework of land transport [8, 268]. Components of the framework — Transpolar railroad connected with Arctic ports, Western Ural railroad — shortest way of delivery for consumers in Asia and America, as well as Indikomur — the cheapest way of communication with Europe.

The unfavorable ratio of geopolitical security issues in the Arctic and economy of the northern regions could not be changed without concerted management, supported by public and private investments. Then the Arctic transit — maritime and mainland — could be brought to the criteria of modern transport and logistics communications. It was an issue that accompanied a discussion on the scientific and practical conference “The Arctic — perspectives of sustainable development” (Yakutsk, 2014) [9, p. 148-169].

Transition to modern transport hubs in order to increase traffic by the NSC in both directions — to the west and to the east with all of its financial and economic-importance, is not a good idea and motivation. The core of the national management of the NSC should be based on the principle of most-favored-sustainable socio-economic development of the arc-tic regions of the Russian Federation. Then the increase of route operation reliability and improving the structure of export and import flows would become an indicator of the effect-tiveness of Arctic policy.

So, we need a national strategy for integrated development of the entire network of transport communications in the northern regions for 15—50 years with protected sources of investment. This is the first foundation of faith that the transport communications of the North, Siberia and the Far East will help to implement the strategy of advancing social and economic development of the Russian North. Inclusion of the Northern Sea Route in the pri-orities of the “Transport Strategy of the Russian Federation until 2030” opens the way for investments in technological renovation of the transport. The revival of the seaport of Tiksi and construction of railway to Yakutsk are the real steps to a new perspective transport corridor from Asia to Europe. The more such projects, the faster the population and business areas of the Arctic would be satisfied by the positive influence of the NSR and its role in strengthening the country's geopolitical position. First of all, NSR will be a catalyst for attracting funding of federal taxpayers, a macroeconomic sponsor of modernization of business in RFAZ municipalities.

However, the role of NSR in economic and social development of Arctic regions requires optimal integration of control systems, legally separated privatization processes and the transition to a different form of ownership. Arctic ports except the port of Pevek are corporatized and transferred to the subjects of the Russian Federation and businesses. Arctic ports are still the weakest link of the Arctic route. The lack of funds makes the modernization of equipment slow. Berthing facilities in the majority of Arctic ports need repairs, reconstruction and dredging to receive modern vessels. In many ports, facilities for recycling are in critical conditions.

The transport fleet of shipping companies, except for the Arctic one, is corporatized. Icebreaking, rescue, and hydrographic fleet, port facilities, polar stations, navigation aids, hydrographic and hydrometeorological facilities and communication are federally owned. Icebreakers are in the trust up-governance of regional shipping companies — Murmansk, Far East and the North Sea Shipping Companies. It is not only winter that brings up a lot of unclear circumstances when even experienced captains are not sure about the duration of the winter icebreaking assistance [6].

Lack of nuclear icebreakers (or regulations of responding to the request) may increase the waiting time for assistance. It has already happened at the port of Sabetta. With an increase in turnover up to 20 mln tons some individual facts of icebreaker's assistance can demonstrate the optimistic view of the intensity of the NSR shipping and active participation of foreign investors in development of mineral resources of the Arctic. And at the same time is can strengthens the commitment of the partners to the Western sanctions restrictions. The years 2014—2015 have shown that political blackmail is stronger than economic profits from the use of cost-effective and safe routes. Deck of geopolitical cards is good to be audited periodically and see if there is unfair competition and unfair country partnership in the Arctic.

It is appropriate to emphasize: the services of the icebreaker fleet are the marks of competitive infrastructure potential for foreign carriers. They will continue, in my view, to be scrupulous in matters of the time of delivery, the intervals of which are in correlation with the level of development and quality of the arctic transport system functioning. The initiative to transform the Northern Sea Route in the international project "Northern Maritime Corridor" together with the infrastructure of ports in northern Europe is a Western concept of the economic use of the Arctic seas. If by the year 2030 Russia implements the inter-mi-nisterial strategy for the Arctic transport system, balanced by the use of all types of tran-sport and roads (federal, regional, local and corporate) and based on the innovative

[6] Непредсказуемые льды Арктики // Моряк Севера. 2015. 28 января. С.1.

technologies, then the transport infrastructure will be a reliable tool for attracting investments and creating a favorable business climate in the Arctic regions of Russia.

The same conclusion had the authors of the monograph, who supported us by providing five principles of effective participation of the state in economic development of modern transport and logistics systems in the Arctic [10, 53—54]. One of them is appealing to the administration of the NSR as the main state supervisor and the subject of Arctic shipping organization obliged to empower the rational use of the NSR and provide ecological safety of the environment [7].

Improvement of the efficiency of the inter-regional control of infrastructure and its modernization on the Arctic territories could be assisted by the joint efforts of the federal executive bodies, executive bodies of subjects of the Russian Federation and businesses. In this regard, the foresight is a very useful approach aimed at determining the strategic scenarios of regional development. Its productivity is represented by a synthesis of social and professional competence of specialists dealing with the strategies of optimal communication establishment. In other words, the culture of advanced management of economic interests is important here and its depth and the palette we have not yet diagnosed. Only in this case managerial platform for the effective implementation of infrastructure projects may appear. Focusing on timely adaptation to changes in the socio-economic situations eliminates the deformation of the missionary idea of harmonious economic and social development of the Arctic region. Thus the synthesis of the strategic vision and the operational intervention in the socio-economic processes warn political and market crises in Russia and its Arctic areas. This is a fundamental requirement for the coming 2—3 years of another crisis that will test the stability of the Russian Arctic.

Suez Canal — the landfill of comparing financial and economic models for the establishment of commercial exploitation of the Northern Sea Route

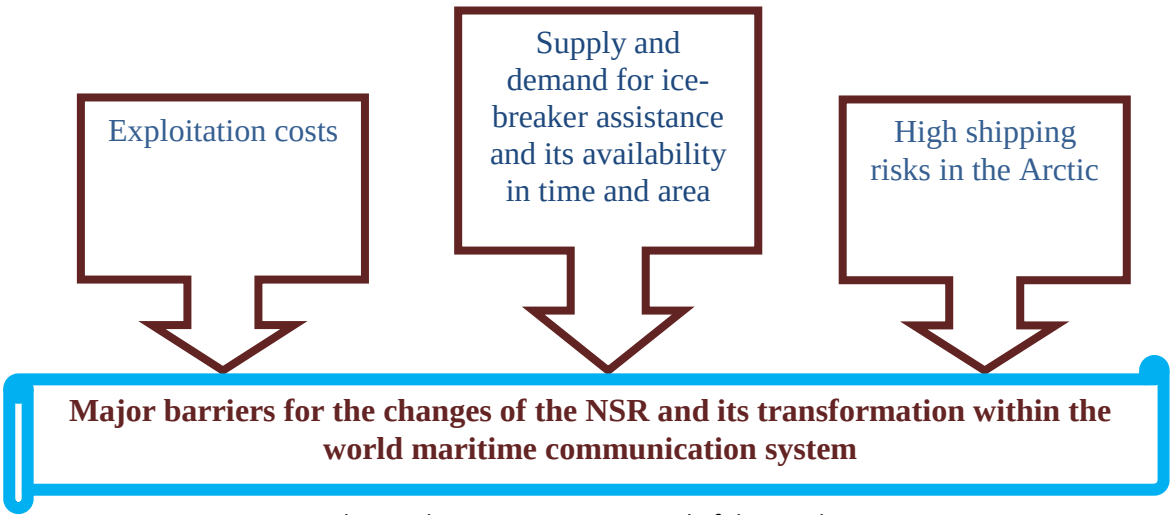
In order to establish proper commercial exploration model for the NSR we require reforms of the Russian Arctic policy when it comes to attracting foreign partners and inves-tors as the subjects of regular use and development of the northern transport corridor. We should reconsider the admiration of the NSR benefits. They are still potential not real ones. We should look closer to the objective weak points which are, unfortunately, real. It is crucial for optimal disengagement of optimistic and pessimistic (more on that below) variants of the NSR development at the important water artery of the world.

[7] Проблемы и перспективы развития Северного морского пути. URL: http://www.unionexpert.ru/index.php/zhurnal-qekspertnyj-soyuzq-osnova/zhurnal-qehkspertnihyj-soyuzq-122014g/item/666-problemy-i-pers-pektivy-smp (Accessed: 08.04.2015).

At the APEC Summit (2012, Vladivostok), the participants discussed the possibility of multi-stakeholder partnerships in the development of NSR, have confirmed the feasibility of an adequate forecasting model for a medium-term horizon of its successful competition with the Southern sea routs. There are some prerequisites for this and some brakes as well. On the one hand, a rapid growth in the volume of Euro-Asian transportation by the NSR is not excluded. However, it does not remove infrastructure constraints.

The dilemma of technological opportunities and actual potential, in my opinion, is retouched by idealized expectations of the Russian side about the place and the role of the NSR in the global network of sea transport corridors. Doubtless shortening of transportation by 30—40% compared with the transportation of goods through the Suez or Panama canals is advisable to consider with the help of the Accounting and Information Indicator. It should be understood that the shorter way is not the closest way. Its motivational role can be tran-sformed into a competitive advantage, if the other components of the federal and regional management will also be convincing arguments for foreign carriers. Time of delivery is largely determined by the port infrastructure services, assistance and security of naviga-tion. It is important to work out a formula for economic success of the transit routes. At a minimum, you need to clean up the ground for doubt of foreign ship owners about the NSR opportunities for the transit of large volumes of cargoes [11], about its prospects for private companies due to their knowledge of the current state of its ports and infrastructure.

A similar opinion is shared by the Norwegian Shipowners' Association and the com-pany “Intertanko” that used shuttle tankers for the transit of oil and gas condensate along the Northern Sea Route. While the existing shortcomings (institutional, legislative, and economic) reduce the potential advantages of the NSR, the absolutisation of its future place in the scheme of global transportation is groundless. Let us focus on the doubts about the NSR potential (Pic. 2).



Picture 2. Doubts on the competitive potential of the Northern Sea Route

First of all, we are talking about operating costs, the value of which may vary according to the representative of “Canarctic Shipping” — a division of the Canadian company “Fednav”, and be about 50 thousand dollars for one way sail. Foreign shipowners are often a priori think about the fact that the icebreaker escort is expensive, and sailing in high lati-tudes is all about the damage caused by the Arctic ice, which raises the price of insu-rance. While the daily time charter rate of sailing from Europe to China has a significant difference, while the administration does not remove the NSR concerns not to get the icebreaker at the right time and in the right place, we can say that the NSR has less competitive potential compare to the Suez Canal and it is going to be so for the next 10—15 years only. Especially if the NSR administration shows the ability to change, prepare for the introduction of discounts to tariffs if shippers have a motive to the approbation of the Arctic route. Secondly, let me remind you that since the pass-through operation along the NSR (icebreaker “Alexander Siberians”, 1932) the risks of shipping have been complicated by complex technological, financial and economic problems.

Probably, information about the bad ports’ equipment, poor awareness of the wes-tern ship owners about medium-sized ports along the Northern Sea Route, the conditions and the degree of efficiency of loading and unloading, and a list of ship repair services are too ideological “chains” in the choice of foreign companies. Such indecision is fueled by foreign analysts, inspection practices of transit ships in Russian ports and collection of border and customs payments, often seen as anomalies of international law.

Perhaps, Russian is not perfect, but, in my opinion, the investment needs of the NSR infrastructure maintenance should be fulfilled jointly by all of its users. A trend of transformation of the Northern Sea Route in the international transit routes, which in the XXI century can be the route all year round use, accelerates the renewal of institutional skipping regulations of foreign vessels. National management, probably, will assimilate civilized principles and standards of regulating the economic activity along the Northern Sea Route, the behavior of crews and service personnel.

Hopefully, the Polar Code of the International Maritime Organization (IMO) will intensify the efforts to improve the attractiveness of the Russian Arctic and its ports. Indeed, this is a factor of the improvement of quality indicators of international trade and it is interesting for Russian and foreign tramp shippers along the Northern Sea Route. The redistribution of freight traffic is important for carriers, shippers and receivers and actually financially beneficial if the north and south trade routes will be optimized.

The NSR can be used for the transportation with sustainable profitability, reliability and timeliness of service navigation. The author agrees with the position of the Union of Greek Ship owners and the company “Nordstrom & Thulin”. Only when the NSR administra-tion meet these criteria, a dilemma between two alternatives (the Northern Sea Route and the southern route) on the carriage of goods between ports in Europe, the Far East and North America arises. Only then the geographical dimension of the northern route from Hamburg to Yokohama as the shortest one would be competitive in comparison to the Suez Canal. And yet we should not idealize the Northern Sea Route with its potential volume of transit of the 8—12 mln tons per year.

Redistribution of world freight traffic — is not synonymous with its rise as an inter-national transport communication over the role of the Suez Canal. Why is that? The situation could be like that: “economically the Northern Sea Route will not be as profitable as expected by the authorities” [12], so the federal government will have to invest the estab-lishment and modernization of port infrastructure, build icebreakers, and deal with other issues to make the NSR fit to the defense strategy of the country.

Unfortunately, this is and will remain a difficult issue for management strategy. It is obvious. Cup full of risks is filled by the extreme conditions of navigation, increased demands on the environmental safety of economic activities in the Arctic. It is impossible not to take them into account. Otherwise, it is recommended not to “take up the plow”, and just “get into the body” of unproductive marketing search for potential carriers. Well, the market encourages brave people who are looking for new markets for their products. They need help to find rational logistics solutions. NSR can help them, if the service will be commen-surate with the needs of foreign carriers — European and Asian. While this balance is not found, the risk of insufficient demand on transit services in the years 2015—2030 is still rather high.

Reducing such risks entails increased financial and investment costs, which are being incorporated into commercial transit tariffs and may require state funding. Such protec-tionism for private domestic shippers is contrary to liberal trade rules. So, national strategy for active use of the NSR and international approaches may have conflict of inte-rest. Without governmental support or redistribution of tax revenues, it is difficult for the NSR to become beneficial route of transportation of minerals from the Arctic regions of Rus-sia, and to solve their internal socio-economic problems. There should be an assessment of conflict of interest of the federal center and the regions of the Russian Federation. The content of knowledge of potential conflict between them is necessary for the sustainable development of the country and its international position in the Arctic.

The development of NSR is able to give a powerful impetus to the development of the Far East and the North of the Russian Federation and also to the economy in general [8]. However, the lack of such a political recognition is obvious. We proceed from the thesis that the concept of transformation of the route in order to attract private companies from Russia and abroad — is one thing. The concept of competition between the NSR and the Suez Canal and other world's largest objects of maritime infrastructure — is another.

Financial postulate should not be seen as an appeal of Russia to reduce transport time. First of all, it is important establish a strategy of synergetic benefits for all parties — the operator of the route, the carrier, the shipper and receiver of the cargo. The globaliza-tion of world economic relations is positive when the international trade becomes a source of cost reduction, increase of commodity and income for all parties. The path to optimal loading of the NSR — is the price favor to the growth of its competitive appeal, which is not necessarily a factor of its competition with the Suez Canal. Specifically, this means that the total cost of transit by this route should be at least no more than the cost of other international sea routes. With unconditional forestall time and cost of delivery, the NSR may cause restructuring of the world export and import flows (in 20—30 years), while remaining parallel to the major routes.

Are there enough assumptions about the conditions of the success of the integration of major producers (sellers) in the world markets? No. Designing the prospects of successful communication fate of the Northern Sea Route should be a separate link of the federal macro-policy. Its components are: the inventory; regular updating of the list of possible users, including foreign companies that approved and implemented long-term plans for the regular transit of bulk cargo through the SMP. But even with the success in optimizing the prospects of transit, it is necessary to move away from the idea of the Northern Sea Route use for reducing the distance and costs of transport [13, 92].

The NSR as the national communication route of Russia in the Arctic, as a single eco-nomic entity, does not exist. The dominant politico-psychological perception of the NSR and its components does not let it to happen. This is probably the underlying reason for the unclear jurisdiction over its management and supervision of its use. In one case, lawyers are confident that Russia has rights to control the passage of ships along the Northern Sea Route because of the UN Convention on the Law of the Sea, established in 1982. On the other hand, the US does not agree with Russia's exclusive jurisdiction over the Northern Sea Route. On 12th of January 2009 the USA presidential directive on national security indicated its policy in the Arctic. With regard to the topic

[8] URL: http://voprosik.net/perspektivy-severnogo-morskogo-puti/ (Accessed: 15.08.2014).

of this section, the USA states that the highest national priority is the freedom of trans-Arctic flights, freedom of navigation in the Arctic, including the Northern Sea Route, which runs along the territory of Russia. Con-sequently, the work to clarify domestic legislation on regulation of foreign shipping along the national routes and port areas must be a priority of the Russian Arctic Policy.

Transit route may be the country's territorial waters and exclusive economic zone of Russia. In difficult ice conditions foreign carriers prefer to the use the maritime space of exclusive economic zone of the Russian Federation, so initially it is necessary to negotiate and agree on the rules and regulations on the regime of the Arctic International Eurasian corridor along the territory of Russia. It is not easy to do especially in a phase of strong international pressure on Russia because of the events in Ukraine.

The presence of such an agreement will be the main geopolitical advantage for Russia and the most important institutional norm ensuring Russian right to establish rules of using the NSR for foreign carriers. When Russia agrees to these rules with the Arctic states, the regime of the International Arctic corridor will consolidate national political legitimacy. It will reflect the collective power of global community over the Arctic circumpolar commu-nications, the jurisdiction of Russia and its supervision to ensure the safety of navigation and setting up regulations for foreign ships. This will eliminate the concerns of non-Arctic states on access to the route possible due to instability of the NSR governance and even if the cold cycles of western geopolitics in relation to Russia will repeat. Then indeed the role of the Arctic part of the national transport system will remain significant. In any case, it is about the part of NSR, which is directed to Europe, because in the future exports from Russia will go to the countries of the European Union.

Conclusion

Presentation of the study outlined some key problems of the state program of development of the Arctic and the models involved in the establishment of the Northern Sea Route for need of the socio-economic development of regions. The facts lead to the concept of the Arctic regional space as a complex in need of management and well coordinated integration of federal and regional authorities and corporate institutions.

Three more generalizations are appropriate. Connection of continental Arctic regions to the routes of communication — the NSR locates the theory study and practice of using the NSR capabilities to meet the challenges of intra-regional development. Most of the subjects of the Arctic management acts inside the functioning of transport and communi-cational network. So, it is scrupulously towards the financial cost of its use. Finally, this net-work has not yet been a

unified infrastructure system, harmonizing the market of buyers and sellers, the interests of the Arctic population and clusters.

We, of course, support the global market competition as a tool to optimize the structure of the world's transport communications. However, we do not see it at this stage of history and we will not see it next 15—30 years when it comes to the competition between the Northern Sea Route and the Suez (and especially Panama) Canal. The profita-bility of the NSR must be a result of business operation of domestic macroeconomists and federal (regional) authorities in order to fulfill the needs of intra-regional and inter-regional division of labor, support of national and local markets of the arctic regions.

This aspect of the effective development of the North attracted considerable traffic flows and investment, and contributed to the search of opportunities to establish the att-ractive regime of the NSR. When the economic climate is favorable for domestic residents, then foreign companies will carry their cargoes via the Northern seas. Rising of volumes of transported goods will index the NSR international status not to damage the Suez Canal.

The growth of global GDP will give enough work for both routes. Each route has its own objective limits (the Suez Canal does not pass ships with a draft of more than 20.1 m., the NSR saves 500 thousand Euros per ship and up to 15 days on the way) [14, 460]. So their pros and cons will differentiate the traffic not by the laws of the global competition but by the principle of geographical specialization.

This does not cancel the *political competition* for the Arctic regions of the dominant influence in the Arctic cluster economy. Only the underlying reason, according to the researcher, is different. At stake is the credibility of regional leaders, their ability to inspire the people of the Arctic regions by the brand of a special role in the Russian Arctic strategy. Of course, for public policy there is quite pragmatic purpose: to get maximum financial resources from the state and corporations. Without it, the regional governments cannot overcome the depressing story of survival and to dispel stereotypes circulating among the population about a dead-end and unpromising situation in their towns. Only large-scale projects and ideas can inspire.

National approach to the Arctic route, presented by the author, was not acciden-tal. Bearing in mind the geo-political excesses, possible hard geo-economic, military and strategic maneuvers of the leading countries of the circumpolar world, it is necessary, at once and for all, to learn the principle of the geopolitical position of Russia in the Arc-tic. Motivation to strengthen international and regional legal basis, in particular, through the Arctic Council and the Barents/Euro-Arctic Council must continuously verify the sincerity of our partners in the Arctic and

aim to ensure the inviolability of the Russian interests in the Arctic as the eternal criterion of its military strategic confidence in its security.

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Government, business and the population in the Northern regions of Russia: problems and prospects of cooperation

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Abstract. Political strategy of the North and Arctic Russia determines the prospects of the interaction between government, business and the public, creating conditions for a long-term development of the northern territories of the country. Today, the quality of accounting and promoting the interests are extremely important and determine the need to assess and improve the mechanisms of articulation and aggregation of the interests of government, business and the population in the North of Russia.

Keywords: *North of Russia, government, business, civil society, political management, strategic development, the balance of interests*

Introduction

The relevance of the study: the success of the implementation of political development strategy of the North and the Arctic regions of Russia depends on the quality of the mechanisms of a balanced consideration of the interests of key actors (government, business and the public) in the process of preparing and implementing of long-term programs aimed at establishment and use of innovative potential of the territories.

Modern social and economic crisis in the country increases the imbalance of interests of key actors in the North of Russia; it leads to the intensification of contradictions and problems of strategic development of the northern territories. Today it is important to improve decision making processes and implementation of political decisions on the strategic development of the northern territories of the country through the establishment of the conditions and promotion of the interests of government, business and the public.

Method of research — analysis of key problems and prospects of interaction between the main actors in the North of Russia on the basis of methods of analysis, synthesis, comparison and classification.

Problems and prospects of cooperation between the authorities, business and the population in Northern Russia

Qualitative development of the northern territories of Russia involves the formation of control mechanisms, built on the basis of the balanced account and promotion of the parties, interested in the successful future development of the northern regions. The main actors are the state, population, business (Pic. 1) [1].

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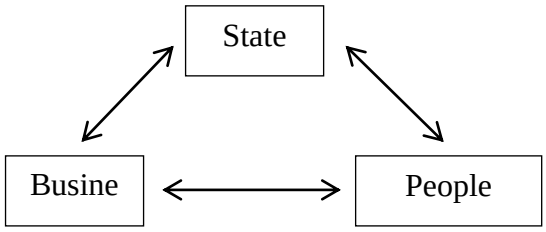

Picture 1. The model of balanced interaction of the main actors in the Russian North

An important feature of the formation of modern management mechanisms in countries and regions is the transitional nature of the political system, changing under the influence of various external[1] and internal factors. External factors (political, economic, social, and cultural) largely determine internal contradictions and the need for innovative changes in the socio-political system of relations, stimulating it to modernize in order to reduce the development of the contradictions that arise.

It seems to be important to indicate some of the key issues of interaction between government, business and the population in the North of Russia: increased interests disunity among the key actors in the context of social and economic instability; the continuing weakness of the civil society institutions; the need to develop mechanisms of democratic governance; growing economic problems of small and medium-sized business; the need to modernize the mechanisms of articulation and aggregation of interests; the need to enhance synergies and the degree of mutual interests and taking into account the problems related to the decisions on the strategic development of the territories; need for enhancing the mutual responsibilities of the parties in strategic projects of the northern regions.

[1] For example, sanctions against Russia 2014—2015 influenced the choice of partners

The transition (from authoritarian to liberal-democratic governance models) political system determines the continued sluggishness of Russians' political culture of. For example, in the mass consciousness of citizens the affective sphere still dominates over rational one, and a certain degree of catastrophism is observed, as a reaction to the financial and economic crisis and the sanctions of the West and NATO against Russia. In society there is a low level of basic consensus and tolerance and permanent fragmentation and extreme heterogeneity are observed [2]. In conditions of the gradual development of liberal-democratic values these negative aspects of political culture have an inhibiting effect on the development of institutions of civil society and their preservation is a threat to the development of democratic governance in the country, including the northern regions. Along with this, it should be noted the increasing threat today is desocialization of personality [3] in the context of social and economic instable society, which is particularly dangerous for the remote areas of the country.

Describing the current state of Russian society, the researchers note the following [4]: the growth of governmental sentiments and strengthening the executive power; political opposition is inertia; strengthening the effectiveness of legal mechanisms and law enforcement agencies; attempt to use legal means to limit the power of the oligarchs (separating business from governance); intensification of foreign policy aimed at restoring the country's active influence on global processes; existing threat of terrorism and radicalism; and possibility of unpopular social reforms due to the weakness of civil society (the monetization of benefits, etc.).

The main threat to the development of democracy in the North of Russia is an excessive strengthening of conservative tendencies in regional governance system and the reduction of innovation component in the strategic development programs with the participation of busi-ness. All this in connection with the socio-economic instability can lead to greater imbalance in the social and political relations. Possible imbalance may also be caused by a high level of social and political inertia and alienation of Russian society. Even now, when the approval of the authorities is growing (from 10.7% in 2002 to 22.7% in 2008), the population itself assesses the development of civil society as low (4.48 points out of 10). In particular, the estimation of civil society in Russia is following (maximum score — 10): human rights organizations — 2.91 points; the rule of law — 3.02 points; democracy and freedom — 4.62 points; openness and access to information — 4.83 points; the possibility of free acquisition of property — 4.89; freedom of speech — 5.37; political and ideological diversity represented by political parties — 5.7 [5].

Significant threat to the development of democracy and balanced mechanisms of cooperation at the regional level is possible increase in the spread of radical ideas and concepts [6, 7, 8], poverty [9]

and the marginalization of the population [10, 11, 12], reduce in effectiveness of democratic management institutions and values of civil society [13] accompanied by the process of political decision making and the spread of negative samples of political behavior that prevent the development of the liberal-democratic values and practices of mana-gement. Negative meaning of specified threats increases under relatively low level of economic welfare in the majority of Russian regions [14].

In order to counter those threats it is important to suppress the spread of undemocratic tendencies and radical ideas, to create conditions for the greater importance of the individual values, and institutions of civil society in the regional political process, enhance the objectivity of the evaluation indicators and ways of socio-economic development of the northern regions to prevent threats and to reduce the overall dynamics of poverty and marginalization.

In order to improve the quality of aggregations of people's interests in the arctic and subarctic regions of Russia, it is important to stimulate the development of civil society [15, 16]. Support for civil society is significant in today's socio-economic instability, leading to the impoverishment of the population. In these circumstances, the importance of democratic institutions in the system of regional government is high, especially when the population dec-lines, leading to a leveling of the values of pluralism, freedom of the individual and individualism. Today, therefore, it is also important to create certain conditions to improve the situation: the development of civil society; the spread of liberal democratic values (including the culture of democracy and pluralism), the humanization of the management system and the development of democratic mechanisms and management practices in the region [17].

The main issues of civil society and its institutions in the north of Russia are: increased identification of citizens' future with the future of the state and a particular territory; faith in the ability to influence the development of social and political conditions of the region and the availability of open political channels to promote the interests of citizens; objective vision of favorable prospects of social and economic life in the country and the region; desire of the population to participate actively in the preparation and adoption of programs to improve the quality of life and socio-economic development of the northern regions of the country. In order to strengthen civil society institutions today we need to create conditions for the development of the civil initiative and small businesses in the regions of North and Arctic Russia [18].

A serious threat to the successful strategic development of the North and Arctic Russia today is the possibility of increasing divergence of interests of authorities, public and business. The imbalance between the interests of key actors can lead, in our opinion, the following negative consequences:

1. The discrepancy between the interests of government and business: unfavorable conditions for economic development of the northern territories, reduced innovation activities of business and reduction of promising ideas of economic development in the region, reducing of the regional profits and economic opportunities for regional authorities (including the possibility to encourage experts and make them living in the northern regions), reduction long-term strategic potential of economic development of the North and Arctic Russia and decline in investments in the regional economy and infrastructure.
2. Violation of the state and people's interests: the decline in the quality of life and low participation of the state in creation of favorable conditions in northern regions, increasing discontent of the population and the level of social apathy, decomposition of democratic values and practice management, the stagnation of the liberal democratic culture, luck of interest in development programs, reduction of social guarantees.
3. Difference between the interests of business and population: business lacks orientation for potential labor resources in the region, long-term problems of socio-economic development of the northern regions of the country, lack of understanding of the socio-economic problems of the population and the lack of long-term plans of involvement of the local population in the region's economy, reducing the corporate social responsibility and consumer attitude to the northern areas by businesses community.

These negative factors will undoubtedly mutually influence each other, determining the degree of socio-economic and political empowerment of the northern territories. Preventing these negative factors today directs the authorities towards the system approach and search for balanced solutions for the problems and contradictions of the strategic development of the arctic and subarctic areas of the country, taking into account the balance of interests of government, business and the public.

The negative socio-economic processes and difficult climatic conditions lead to the desire of the population to move to more advanced and favorable regions. Today the population outflow is observed in the northern territories [19], along with the complex demographic situation in the country [20].

Low interest of the population in living in the North entails the loss of the main factor nece ssary for territorial development — population, which should be active participant in the activities of regional authority's independent development programs.

In terms of complicated foreign policy, sanctions and reduce of the oil and gas cost a decline in investments for development programs in the North and Arctic Russia has been a significant [21, 22]; it

is leading to slower implementation of programs and projects [2]. It actually made the state a main sponsor of their development. Therefore, the issue of quality of territorial development programs and management practices [23] gets more and more important because of the efficiency of state control over mechanisms that determine the future of the Arctic and subarctic areas and the country as in general. An important task for the regional government today is to find the financial resources for the implementation of announced strategic goals of territorial development. For example, the analysis of the legal and regulatory plan of the RF Ministry on Development of the Far East for 2015 shows that the key issues are: to proved the areas with the bigger share of taxes, search for funding, establishment of priority development territory and land issues [3].

Today there is a reorientation in the search for strategic partners and investors for the development of the Arctic [24] from the western to the eastern countries (for eg., China). It has rather painful impact on the socio-economic system of the northern regions, and in case of negative economic trends [25], it could influence the level of subsidized regions. And it is a serious threat to the strategic development of the country. Today, it is necessary to develop mechanisms for the temporary support of socio-economic development of the northern territories and a decent standard of living using the direct involvement of the federal financial institutions.

Major role in shaping the mechanisms for quality policy strategy of the northern territories of Russia is played by the State [26] that has a sufficient amount of power to influence internal and external factors of the territory and population. It should be emphasized that the socio-economic and political development of the northern territories is based on the political power [27] of the center and the regions; it depends on the quality of methods of strategic up-governance and balanced distribution of powers and responsibilities of actors. Existing strategic importance of the Arctic and subarctic areas of the country creates conditions for restructuring them into an integrated “area of advanced development”.

Important functions of the federal and regional authorities are: to support and maintain the programs that give new socio-economic impulses for northern regions of the country; to identify and resolve the conflict [28] of the interests between the

[2] Стратегия социально-экономического развития Дальнего Востока и Байкальского региона на период до 2025 года. URL: http://www.dfo.gov.ru/index.php?id=80 (Accessed: 17.04.2015).

[3] URL: http://minvostokrazvitia.ru/upload/iblock/ff6/%D0%9F%D0%BB%D0%B0%D0%BD%20%D0%9D%D0%9F%D0%90.pdf (Accessed: 27.03.2015).

authorities, population and business related to strategic development of the North and Arctic Russia.

It should be noted that today the idea of the development of the northern territories through the establishment of "urban shift camps" is under threat and needs new approaches to the development of these areas.

Today, a great attention should be paid to the life of the local population, which has become a key aspect of strategic development. However, the establishment of favorable conditions of the population today is neglected [29]. This is largely due to incomplete elaboration of the issue of people's participation in the process of strategic development of the northern areas [4].

Thus, we should point out the need to develop, a strategy, objective scientific *model* of balanced development and strategic development of the North and Arctic regions of Russia, taking into account the ability of territories to adapt to the changing environment, while maintaining a stable dynamics of the northern territories.

Strengthening the divergence of interests of authorities, public and businesses [30], in terms of socio-economic instability, can lead to a decrease in the quality of strategic development of the northern areas. So, today it is necessary to take measures to increase the efficiency of regional management system [31]. In the North of Russia, it is important to develop and implement specific programs to:

a) develop the civil society;

b) enhance the democratic culture of the population;

c) increase the positive activity and believe in the future development of the northern territories;

d) reduce social apathy of the population [32].

Modernization of articulation and aggregation mechanisms of interests in the North Russia can be based on:

I. An effective discussion platform within the executive and legislative authorities of the northern regions, involving government, business and public, and a balanced consideration of their interests in the regional development strategy.

II. Improvement of importance of regional research institutions in the formation of mechanisms for analyzing the interests of regional actors.

[4] Стратегия развития Арктической зоны Российской Федерации и обеспечения национальной безопасности на период до 2020 года. URL: http://base.consultant.ru/cons/cgi/online.cgi?req=doc;base=LAW ;n=142561. Стратегия социально-экономического развития Дальнего Востока и Байкальского региона на период до 2025 года. URL: http://www.dfo.gov.ru/ index.php?id=80 (Accessed: 17.04.2015).

III. Creation of quality assessment mechanisms and promotion of the governmental, business and the public interests to develop effective programs of territorial development.

An important aspect of an effective regional development system is support of balanced relations between the government, business and public. Therefore, the processes of development of the northern territories should be determined by the nature of the system and focused on improving mutual assistance and responsibility of the key actors. In this regard, today we need to focus on the methodological postulates of the arctic and subarctic areas of the country on the basis of responsible regional social and economic policy that involves a long-term mutually beneficial goals and responsible relationships based on trust, support and cooperation.

Due to the importance of the economic component, northern development today involves attracting the support for favorable taxation for business and social security. This is especially important for independent businessmen and small enterprises [33], whose contribution to the development of specific areas is great. But they are not always able to compete with the larger companies.

The system of taxation and social benefits should be in favor of dynamic development and wider activities of business in the arctic and subarctic regions of the country due to importance of business for creating a stable framework and infrastructure for the development of the Arctic.

Thus, the success of socio-economic development of the northern regions is largely dependent on a combination of balanced interests, political concepts and strategic development programs of the northern territories. Strategic development programs are determined by dichotomy of the pulse development processes and are aimed both at preventing negative trends and opening the way for innovative development prospects.

Accordingly, the steps to promote an integrated area of advanced development may be listed in the first case:

a. identifying a negative process;
b. develop specific programs to overcome it;
c. implementation of the program that prevents the development of crisis tendencies.

In the second case, the following steps are possible:

a. identification of innovative potential of the Arctic and subarctic areas;
b. the development of a specific innovation development program of the areas;
c. implementation of the program to give a new impetus to the strategic development of the northern territories of the country.

Successful strategic development [34] of arctic and subarctic areas in Russia is impossible without high-quality accounting mechanisms and promotion of the interests of key regional actors. It is, therefore, necessary to improve the system of support of the main actors and their attempts to develop democratic mechanisms of regional management and political communi-cation; to create a responsible attitude, which should facilitate the integration of governmental, business and the public efforts to create favorable conditions for "territory of priority development". Strategic programs based on quality accounting and balanced interests are needed to minimize the risks of inefficient financing of individual socio-economic development projects. This is important, because in terms of inefficient investments, stable strategic perspectives for self-development of the areas won't be established. On the contrary, such projects will give the northern regions dependency on investors and form a consumer approach to their development. From this point of view, the territory will be considered a temporary resource base, the use of which can only be successful in the short term perspective. That situation becomes a threat for stable of strategic development of the areas.

Today it is necessary to focus on the development of the northern regions, mechanisms to establish mutual responsible relations between the key actors and improvement of living standards of the population and its activity; search for modern efficient mechanisms and ways of strategic development through liberal-democratic practices of the regional administration; an attractive economic environment for business and improvement of socio-economic conditions for the population.

Conclusion

In conclusion, it must be noted that a significant threat to the successful development of the North and Arctic Russia today, in terms of socio-economic crisis, is a high degree of dissociation of governmental, business and the public interests. This tendency can strengthen the socio-economic problems in the country.

The management system in the North of Russia should be aimed at preventing the negative social and economic processes and the formation of innovative prospects for the development of territories. This requires the presence of a strategic management system highly structured and balanced with its political and administrative mechanisms.

Today, the need for modernization of the management system is increasing [35], the strategic development of the North and Arctic regions of Russia on the basis of the high-quality accounting and balanced implementation of the governmental, business and the public interests in the planning and implementation of strategic socio-economic development programs.

The result of the study, according to the authors, is in the fact that it is possible to formulate some constructive proposals, aimed at the development of the northern territories:

a) the need to create a balanced accounting of the governmental, business and the population interests in the North of Russia, based on mutual responsibility approach;
b) overcoming the "consumer" approach to the development of the Arctic and subarctic areas of the country;
c) the need for temporary state investment in specific strategic development programs to balance the development of the northern territories;
d) creating attractive conditions for business in Northern regions of the country in order to establish "integrated priority development territory";
e) support of development of the civil society on federal and regional levels by preserving the liberal democratic values and their use for management practices in the region, based on enhancing the role of identification based on humanism and individualism;
f) in the context of social and economic instability, modernization of mechanisms of the balanced accounting and implementation of governmental, business and public interests within the social and economic development programs of the Arctic and North of Russia.

Modernization of the strategic management and development of the northern territories should take into account the modern all-Russian and specific regional threats and tendencies in the political and administrative and socio-economic development.

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Strategy of sustainable development for the forestry complex as a subsystem of the regional economy

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Abstract. Using the method of the SWOT-analysis, the article reveals the conceptual problems of the forest industry in the region, inertial and innovative strategic scenarios, two phases of the program activities of the timber industry: 2015—2020 and 2021—2030 years. The method of management, interaction between government and business. Developed the project of the regional cluster timber industry and of model its creation. It is noted that the cluster "PomorInnovaLes" created in the Arkhangelsk Region (2014), allows you to solve a number of practical problems. Interaction of the state, regions, municipalities and businesses will attract investment, and the development of infrastructure and social issues.

Keywords: *timber industry, region, strategy, scenarios, program of development, cluster, "PomorInnovaLes", investments*

Introduction

The relevance of this topic is related to the fact that after a proper selection and successful implementation of the forestry strategy, the regional socio-economic system is effectively developing and changing. The development strategy of the timber industry is becoming a part of the regional policy, contributing to the socio-economic development of the region, preserving the environment that determines the purpose and objectives of this study.

The algorithm of development and implementation of the region's timber industry development strategy could be conceptualized as follows: 1) Identification of strategic alternatives. 2) Choosing a strategy, basic directions of the forestry development. 3) A program of forestry development as tool for the implementation of the strategy. 4) Identification of tasks and their comparison with the problems of development. 5) Measures to implement the tasks: a) Evaluation of resources: raw materials, personnel and investments; b) Creation and development of regional forest

industry cluster. 6) Development of a timber cluster model in the region. 7) Evaluation of the results of activities, monitoring and correction.

The effective implementation of the national forest industry development strategy is the introduction of the best international practices: 1) the strategic objectives at the federal, regional and local levels; each level has a certain authority in the field of forest management, supervision and control of private forest users and state forests (the USA); 2) encouraging the owners to change the forest management in order to balance private and public interests; the use of state mechanisms for economic compensation of costs (Finland); 3) adoption of the document, aimed at the implementation of individual plans, covering all levels — national, regional and local, different forms of ownership of land and forests ("Forest Planning", UK); 4) management, conservation and sustainable development of forests and continuous development of forest-based industries (Sweden). Solving this kind of problems, it is important to take into account the huge number of factors that have a direct impact on the forest industry development.

Analysis of strategic alternatives for the development of the regional forest industry

In order to define strategic development alternatives of the Arkhangelsk regional forestry, SWOT-analysis is used.

SWOT-analysis of the forest industry and its activities in the Arkhangelsk region

S — strengths	**O — opportunities**
1) The convenient geographical location of the region, the functioning of transport infrastructure (rail, sea and river ports) for the export of products. 2) The presence of forest resources to increase the volume of wood harvesting and processing. 3) The capacity for wood processing, production of major forest products, including exports. 4) Sufficient amounts of manpower. 5) The presence of educational institutions that train professionals (NArFU). 6) Availability of scientific, technical and industrial capital, banking institutions.	1) Keeping the high role of the forest in the livelihood of the people; potentially capacious market for forest products in Russia and abroad. 2) The increase in demand for secondary resources (biofuels, pellets). 3) Development and implementation of modern technologies of specialized production and marketing of forestry products. 4) Improving the skills of workers in accordance with the international standards. 5) Regional integration with companies in other industries, research institutes, NArFU and creation of a regional timber industry cluster. 6) Creation of an effective set of deep processing of wood to meet external demand.
W — weaknesses	**T — threats**
1) Remote areas for forest development, poor development of transport and infrastructure for harvesting and transportation of wood. 2) Irrational use of forest resources and their inefficient recovery affects the ecological, climatic component of the region; the presence of large amounts of dead	1) The volatility of world prices for forestry products, pulp and paper. 2) Reduction in exports and domestic consumption by reducing production and falling prices; job cuts. 3) Non-compliance of production quality standards; decrease in quality of wood in remote areas, in case

dry plants.
3) Decrease of production funds; a high level of energy consumption and slow modernization.
4) The lack of reliable sources of investment in primary production forestry and the attractiveness of the region.
5) Poorly functioning system of standardization and certification of products and production processes.
6) Low level of management, marketing and logistics, slow process of integration of forestry enterprises, including the one based on the cluster approach.
7) Inefficient state tax and financial policies in the forestry sector; instability of the federal legislation.

of its non-use.
4) The deficit of investment in terms of financial and economic crisis; the lack of readiness of banking institutions to lend to small and medium-sized businesses; difficulties in attracting foreign capital for the development of hard-to-forest areas.
5) Slow down the implementation of new production technologies, modernization of equipment for export-oriented and certified products.
6) Improvement of federal legislation on the use of hard and dead plants to produce biofuels; need to ensure the needs of the population in wood, housing, as well as the tax cut for small and medium-sized businesses.

Effective use of development opportunities and minimizing risks involves overcoming the crisis in the industry, not only by cutting, but also creating jobs in order to improve product quality and control over its distribution system. It should be noted that specific natural factors affecting the activity of forestry, such as: degradation of natural resources, changing climatic conditions, resulting in a change of coniferous trees for deciduous trees and increasing the risk of forest fires in the dry forests.

Any area holds a special place in the geopolitical and national space, representing the territories with developing economic entities and economic links, or vice versa, requiring a state support through the creation of “points of growth” for industrial production. As a rule, each region has its leading industry, which is the economic base of its development.

Currently, as a result of the decrease of the resource base and increased tax rates associated with the use of resources, many regions of the North and their leading industries have undergone a crisis. The Arkhangelsk region is not an exception. It is situated on the territory with the powerful timber industry and there is a number of problems related to the depreciation of equipment and reduced production volumes. There is a need to create an economic mechanism that reflects the entire spectrum of cooperation between the parties of the forest industry of Russia interested in the rational use and reproduction of forests: foresters, environmentalists, loggers, lumbermen, exporters and consumers.

It is appropriate to examine two scenarios of strategic development of the Arkhangelsk region forestry: inertial and innovation. Both scenarios are based on the analysis of opportunities and threats of the timber industry, the study of modern legislation in terms of the existing shortcomings in the legal regulation of the forest industry of the Russian Federation.

The inertial scenario presents the preservation of the prevailing trends in the development of the regional forest complex where remains the possibility of implementing new projects in the logging, sawmilling, woodworking and pulp and paper industry. However, the inertial scenario is based on the forecast of a low growth of macroeconomic indicators and the development of forestry enterprises at

the expense of their own capabilities. At the moment the timber industry needs state support and reducing the tax benefits, in particular. State support for this scenario should be implemented in accordance with the RF Governmental statement, June 30, 2007 № 419, which provides state support through the privileges on rent paid to the federal budget.

Under this scenario, the strategic development aimed at preserving the principles of industrial activity, raw timber supplies to the world market without taking into account the reproduction of forest resources.

The innovative scenario allows to make fundamental changes in the structure of the timber industry at the expense of a priority development of the pulp and paper industry through the creation of large forest complexes (centers of growth) and the introduction of facilities for production of completely new types of products, for the production of sawmill glued beam in order to ensure the domestic market with local products and strengthen its position in the international market.

Production of laminated veneer lumber will ensure the development of wooden housing construction in accordance with the national project "Available and Comfortable Housing — to Russian citizens". The project aims at introduction of housing in the amount of 140 mln m^2 per year, i.e. 1 m^2 per resident of Russia. Also some more environmental projects could be introduced. The use of new waste processing technologies for the production of biofuels and the use of secondary resources contribute to the conservation and restoration of forest areas.

Under this scenario, it is advisable to develop public-private partnerships through the development of PPP-projects. As a result, the growth rate will be determined by the investment attractiveness of housing projects; favorability of credit conditions; availability and rates for the lease of sawmill and woodworking machinery; and amounts of state support aimed at developing national production, taking into account environmental parameters of the areas. Perhaps it will be done from the standpoint of "green economy".

For the study and implementation of the proposed scenarios and strategies and in order to develop the investment policy, a number of problems and challenges of the forestry reveals (Table 1).

Table1

Interconnection of aims and challenges of the forestry development

	Aims of the forestry development														
	economic			management		production					social				
	Improvement of competitiveness of products	Improving the efficiency of the resource use	Improving the budget profits	Integration of the regional forestry and the world economy	Development of the state forest management, ecological security	Improving the productivity	Production capacities for the wooden housing construction	Development of the infrastructure	Reproduction of forests	Modernization of production	Conservation and creation of new jobs	Improving the working conditions	Improving the level of salaries	Reduce of the unemployment
Decrease of the forests' quality	*	*		*	*				*					
Use of the old technologies and equipment with a high degree of the manual labor and low productivity, which reduce competitiveness of the products	*	*	*	*		*	*			*				
Low innovation activity and attractiveness for investors, caused by reduce in amount of scientific centers working for production	*	*	*	*	*		*	*	*	*				
High level of tension in forest settlements, unclear lease regulations		*				*	*	*	*		*	*	*	*
Limits for forestry when introducing new types of products, demanded at national and international markets	*	*	*	*	*		*		*	*				
Unclear structure of production and export	*	*	*	*	*	*	*			*				
Reduced growth of the timber industry	*	*	*	*	*	*	*	*	*	*		*		
Poor developed infrastructure		*			*			*			*	*		
Lack of qualified workers, low salaries and low productivity	*										*	*		
Low level of ecological responsibility of the timber industry	*	*		*	*			*	*	*				
Lack of effective state strategy for the forestry	*	*	*	*	*	*	*	*	*	*	*	*	*	*

One of the tools to address these challenges is the development of the forestry program, the aim of which is to ensure the progressive development of the territory of the forest complex on the principles of sustainable management. Forestry development program should include a phased implementation of the following measures.

Stage 1 (2015—2020)

- ✓ works on conservation, protection and reproduction of forest resources to ensure the stability and continuity of forest management;
- ✓ improvement of forest management on the principles of sound distribution between the forest users identified by the Forest Code of the Russian Federation in 2006;
- ✓ forestland transport development in the areas of active drying of forests;
- ✓ implementation of measures to stabilize the volumes of wood harvesting and processing in existing plants;
- ✓ improvement of forest resources to ensure wood processing;
- ✓ modernization of production capacities of wood-processing companies;
- ✓ introduction of facilities for the production of plywood and fibreboards,
- ✓ plants for wooden housing with domestic and foreign investments;
- ✓ creation of capacities for the biofuels production for the needs of municipal boiler houses in seven districts of the region.

Stage 2 (2021—2030)

- ✓ construction and modernization of forest seed and nursery based on co-financing of major leaseholders;
- ✓ new capacities for production of lumber and construction materials from wood for wooden houses; providing the needs of the regional building and construction complex;
- ✓ scientific research in order to improve the sustainability of forest management, reforestation and improved technology of cutting;
- ✓ creation of technologies and equipment for advanced mechanical, chemical and energy wood processing to reduce the environmental threats.

Forming a group of technological, economic and organizational interconnected industries, companies and organizations operating in the forestry sector, will contribute to the improvement of the existing mechanism of forestry at the federal and regional levels [1]. In this context and with a view to considering the possibility of cooperation between the state and business structures, it is advisable to organize not only the existing legal documents that define its activity (Pic. 1), but and forestry management practices as well (Table 2).

Federal level	Forest Code of the Russian Federation, adopted on the 8th of November 2006	FR Government, Russian State Duma, the Federal Forestry Agency, Departments for Forestry
	Concept for the long term development of the Russian Federation for the period until 2020, adopted by the RF Government on the 17th of November 2008, № 1662-p.	
	Fundamentals of the state politics on security, protection and reproduction of forests in the Russian Federation for the period until 2030, adopted by the RF Government on the 26th of September 2013 r. № 1724-p.	
	Report on effectiveness and development of the forestry for the period until 2030, prepared for the meeting of the State council of the Russian Federation on the 11th of April 2013.	
	Forecast of development of the forest sector of the Russian Federation for the period until 2030, prepared by FAO and UNECE.	
	State program of the Russian Federation "The development of industry and increase its competitiveness."	
	State program of the Russian Federation "Development of forestry".	
Regional level	The development strategy of timber industry complex of the Arkhangelsk region for the period up to 2030.	Ministry of Natural Resources and Forestry of the Arkhangelsk Region
	Forest plan of the Arkhangelsk region 2009-2018.	
	Policy documents on the development of roads, transport, infrastructure, housing, energy.	
	The State Program "Development of shipbuilding 2013-2030 years"	
	The state program "Development of transport system of the Arkhangelsk Region (2014 - 2020 years)»	
	State program of the Arkhangelsk Region "Development of trade in the Arkhangelsk Region (2014 - 2020 years)	
	The national project "Affordable and Comfortable Housing - to Russian citizens."	

Forestry industry

Picture 1. Legal acts on forestry regulation in the Arkhangelsk region.

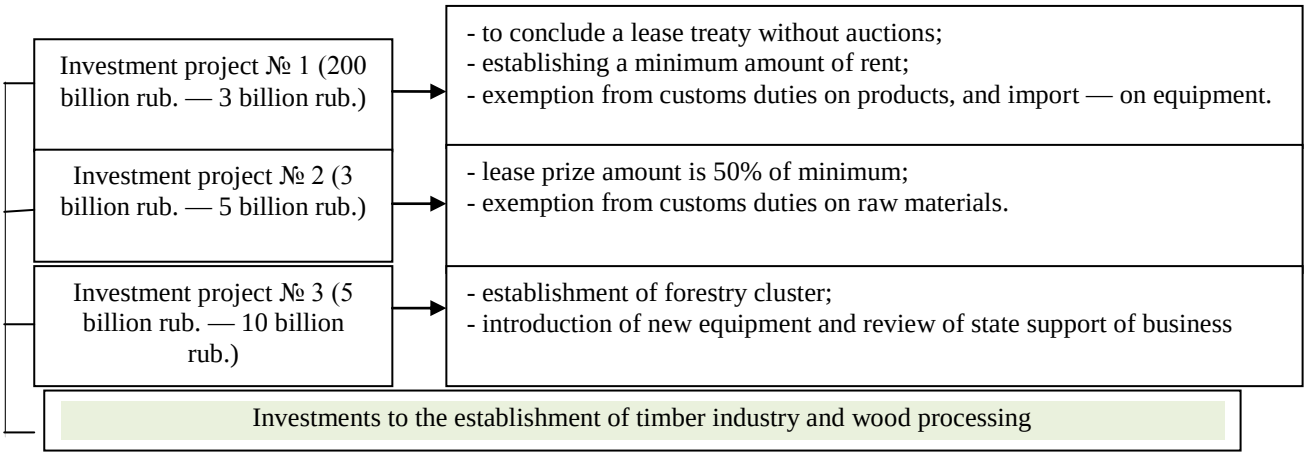
Table 2

Management of forestry in the Arkhangelsk region

Type of measures	Tools
Economic	Subventions, tax breaks, subsidies, public contracts, rates, fines
Administrative and legal	Programs of social and economic development. Forecasts. Concept. Strategy, regional programs, the Forest Plan, action plans, standards, regulation
Management	Ministry of Natural Resources and Forestry Complex of Arkhangelsk region, the timber industry enterprises, the Agency for Transport of the Arkhangelsk region
Social and psychological	Auctions for loggers, state and regional prizes and awards

The current management structure of the forestry is not perfect, since the methods are focused only on the sectoral tasks. Therefore, there is a need for a deeper coordination of activities of state, local authorities and business aimed at development of social and industrial infrastructure through the implementation of targeted programs and the use of the cluster approach. In this connection, it is an issue of management, aimed at the production of competitive products. Given the competitiveness of the products, we cannot forget about the limited

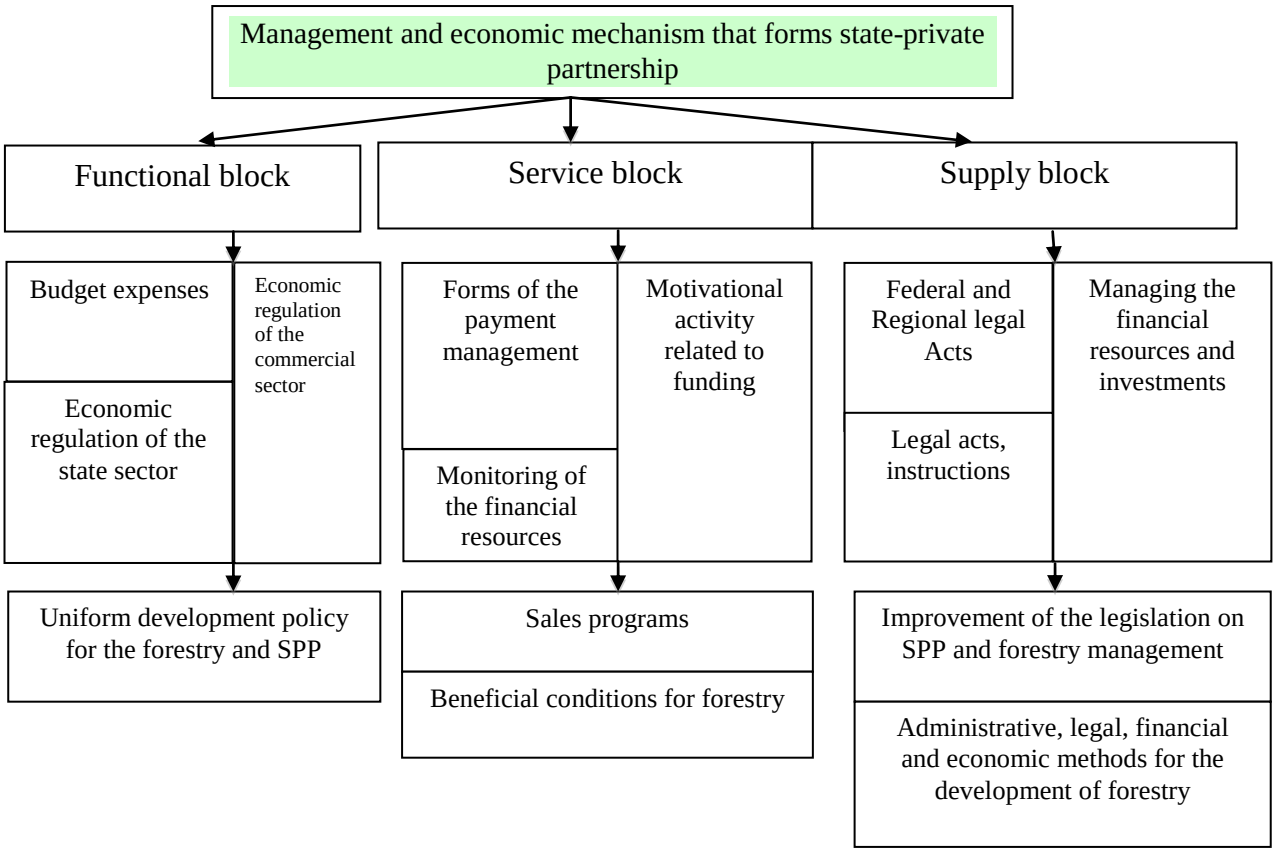
resources: natural, financial and investments. Achievement of a multiplier effect may contribute to the formation of the technological chain, formed due to the interaction of related industries and the complementarity of products that will ensure the growth of the value added. The need to attract investments to create and modernize timber production and timber infrastructure and to create favorable conditions for forest management should be mentioned.



Picture 2. Forms of investments for forestry

In order to improve the interaction between the authorities and businesses, forestry complex needs a mechanism of public-private cooperation, operating through specific management practices, organizational structures and the rule of the law, which contributes to the manifestation of forms of public-state partnership. Financial and economic development of forestry practices and regulatory cooperation between the state, business and society include fiscal and monetary management. Forms of organization and management of calculations and payments should define specific rules and borders of cooperation. Also there is a need to monitor, to regulate and to systematize financial and investment resources that determine the development of plans and programs for forestry. It is advisable to use direct and indirect methods of state regulation and interaction to stimulate motivation to financing and investing the forestry [6].

The legislation of the Russian Federation and its subjects determines the implementation of administrative methods of state regulation and forms the legal basis of forestry and state-private partnership (SPP) using regulations and guidelines.



Picture 3. Management and economic mechanism that forms state-private partnership

Institutional regulation of financial and investment resources implies endowing the state and business structures with the relevant rules and regulations on the development of forestry. The study of different forms of interaction between the state and business structures, allows us to conclude that the necessary organizational and economic mechanism is based on the optimization of existing structures and forms, taking into account the economic, environmental, social and political conditions. Focusing on the use of state-private partnership allows the use of forestry investment opportunities for the state and private investors [5], to implement significant projects on a wide range of areas ranging from infrastructure development and R&D organizations to training. Education, consulting and applied research have the increasing impact on the forestry.

Forestry cluster

Creation and development of a timber industry cluster provides state support for large regional integrated self-developing market-oriented corporate structures; foreign and domestic investment in new forest enterprises; improving the competitiveness of forestry, woodworking, chemical, pulp and paper industry; strengthening the industry's leadership in world production of high-tech wooden products; increasing the share of the region in the global market for timber

products [3]. Participants of the regional cluster in the Arkhangelsk region are, for example, administration, business associations and business organization.

Table 3

Draft of the regional forestry cluster in the Arkhangelsk region

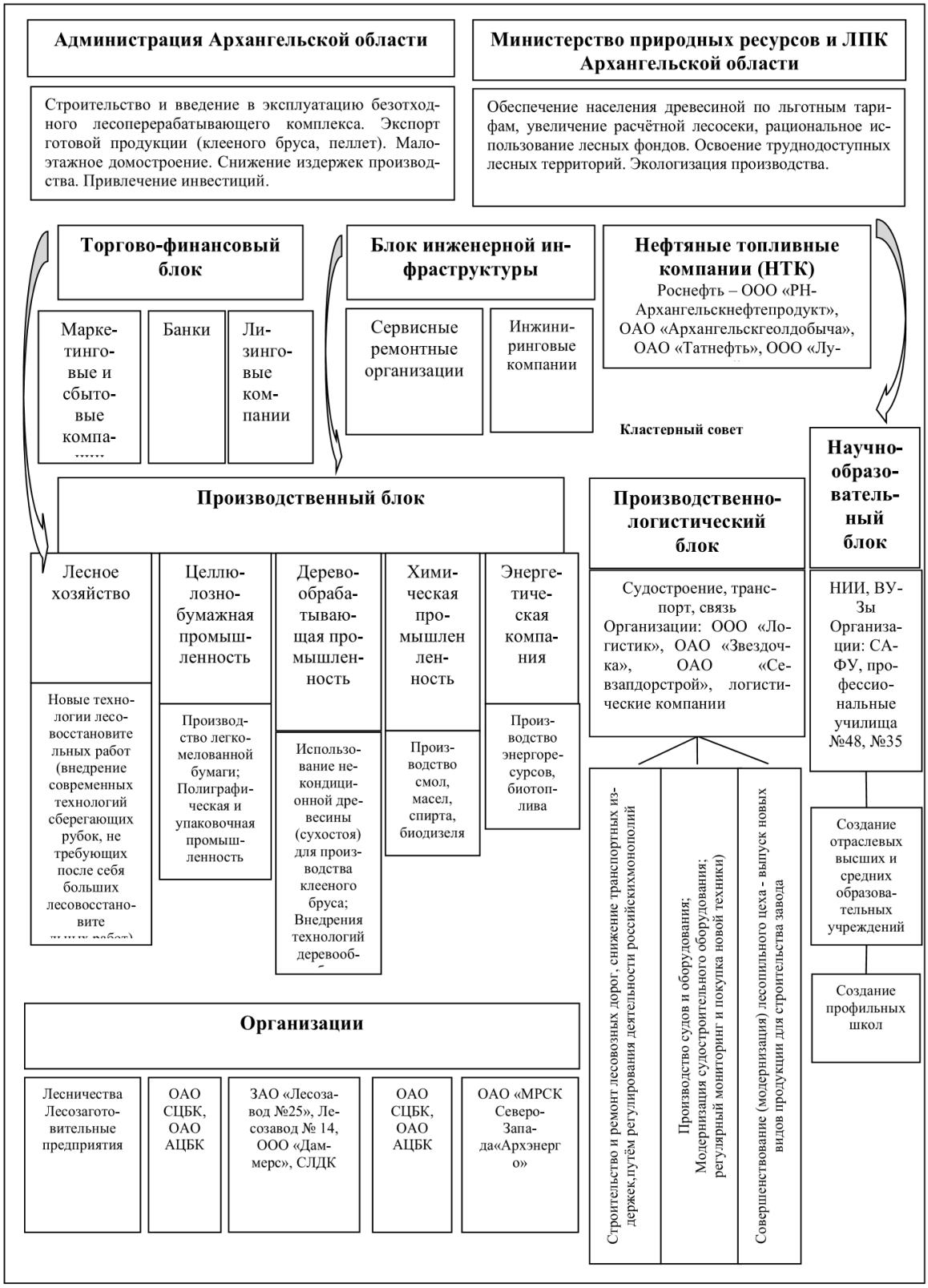
Elements of the cluster	Participants of the regional cluster
State and municipal authorities	Ministry of Economic Development and Competition Policy of the AR, Ministry of Finance of the AR, AR Transport Agency, the Ministry of Fuel and Energy Complex and Housing and Public Utilities of the AR, Ministry of Natural Resources and Forestry Complex of the AR, Ministry of Industry and Construction of the AR, the Ministry of Labor, Employment and Social Development of the AR, the Agency of Architecture and Building of the AR, municipalities of the AR, Fund of development and support of small business of the AR.
Associations of companies	Association of enterprises and representatives of small and medium-sized businesses in the timber industry complex of the AR, the Association for Foreign Trade and the Association of oil and gas suppliers “Sozvesdie” of the AR.
Cluster Council	Representatives of the participants listed in the Table.
Forestry	Forest areas of the AR, logging enterprises of the AR.
Forestry, wood processing, furniture production, production of wood and wood pellets	Filial JSC “Gruppa Ilim” in the AR, JSC “Arkhangelsky CBK” (owner — Pulp Mill Holding GmbH (Austria), CJSC “Lesozavod № 25” (a part of the “Titan Group”), JSC “Onegsky LDK” (a part of the FIJ “Systema”), JSC “Arkhangelsky LDK № 3», CJSC “Arkhangelsk plywood plant”, LLC “Veslky DOK”, ULK Group.

This cluster mechanism must take into account the full potential of the territory, to ensure the effective development of forestry enterprises as well as the integration of the regional economy in the world markets and the development of networking, possible due to the interaction of state, regional governments and municipal authorities, business and the local community. The mechanism for the creation and development of a timber industry cluster could be discussed in three stages. *Preparations* shall consider establishing a cluster by studies of economic, resource and organizational prerequisites, such as subsidies, co-financing, investors, bringing together different structures in the timber industry cluster. *Main stage* includes goals, objectives, establishment of the cluster, its composition, the feasibility study of cluster’s design: the financial plan, business plans of investment projects, tools to establish a cluster, including measures of the state support and financial forecast, which determines the effectiveness of the cluster. *Concluding stage* is aimed at creating a cluster management mechanism based on legal documents and a development plan, including: the legal framework, regulation and control; mechanism for stimulating investment activity; control over the business association, study of effective resource use; mechanism for the provision of public benefits and subsidies; co-financing of the RF regions; tax incentives and reduced customs duties.

Organizational-economic mechanism of creation and development of cluster and interdependence of development tasks and forestry problems contribute to the development of the model of a timber cluster (Pic. 4). In order to create and develop the regional cluster model, it is necessary: to improve the RF forestry legislation aimed at effectiveness of the forestry management and development; to attract foreign and domestic investment; to have closer cooperation between production and innovation infrastructures; to create the Cluster Council to unite the leaders of the cluster (manufacturing unit), representatives of small business, regional and municipal authorities and representatives of scientific institutions, who deal with the effect of cluster development in the region. High-tech parameter of the cluster and research intensity will be provided as a result of close cooperation between all patterns of production, transportation and an innovative infrastructure, which will positively affect the development of the region in terms of road transport network and IT-equipment [2].

The Arkhangelsk region has sufficient prerequisites for the implementation of cluster approach. In September 2014 a territorial timber cluster “PomorInnovaLes” was established. The cluster includes 24 participants: JSC “Arkhangelsk CBK”, JSC “Arkhbum”, CJSC "Lesozavod № 25”, timber enterprises group “Titan”, LLC "Belomorsky les”, PC Ltd. “Interstroy”, Ltd. “Priroda”, JSC “Plesetsky lespromhoz”, LLC “Niva”, JSC “Northern Shipping Company”, LLC “Nord-Wood”, JSC “Arkhangelsk Sea Commercial Port”, JSC “Arkhangelsky fanerny zavod", LLC “Arhbioenergo”, JSC “Solombalsky mashinostroitelny zavod”, JSC “Arkhangelskaya remontno-ekspluatacionnaya baza flota”, Northern (Arctic) Federal University named after MV Lomonosov, Moscow State University, Northern Scientific research Institute for Forestry Development (NSRIFD), Novodvinsk Industrial College, LLC “NordTehSad” and JSC “Arhgiprobum”. The cluster also includes representatives of small and medium business in the region: public organization “Regional Association for initiatives of small and medium-sized businesses” and LLC “Pomorsky lesnoy tekhnopark”. The initiative of the Arkhangelsk Pulp and Paper Mill to establish an innovative regional timber cluster was supported by the local Governor Igor Orlov, the Government of the region, the Arkhangelsk Regional Council of Deputies, the Arkhangelsk Chamber of Commerce, the regional office of the Russian public organization “Business Russia”. Chairman of the cluster Board is the GM of the JSC “Arkhangelsky CBK” Dmitry Igorevich Zylev. The cluster was established as non-commercial partnership[1] .

[1] URL: http://cluster.hse.ru/news/1523 (Accessed: 02.06.2015)



Picture 4. Model of establishment of the regional cluster

At a press conference on the 27th of November 2014, Arkhangelsk Governor I. A. Orlov commented on the creation of the cluster in the "Interfax" central office and said that the forestry companies of the Arkhangelsk region had harvested 12mln m^3 of wood per year, 6.5 mln m^3 of this share had been harvested by small business. So, it seems to be important to stabilize the relationship between the participants of the cluster and to contribute to the dialog between

them[2]. The GM of the JSC "Arkhangelsky CBK" D. I. Zylev supported the Governor: "Cluster-first of all, is a dialog and cooperation, it allows combining the interests of huge companies and small business. For example, our company is not involved in logging; we have contracts with small and medium-sized business. We are interested in high quality of wood and high quality companies in the cluster"[3]. Interaction within the cluster is based on an economic. At the same time, the conditions for the social development of the territories where the cluster exists get new industries and new jobs. Territories of the cluster discussed in this article is limited to the areas of Novodvinsk, Arkhangelsk, Plesetsk and Pinezhsky, Primorsky and Kholmogorsky Districts of the Arkhangelsk Region.

In practical terms, the interaction of governing bodies at the level of state, region, municipalities and businesses will undoubtedly contribute to the growth of forestry, investment and infrastructure development. Significant role is played by forestry enterprises and institutions of regional and municipal management. Also within the framework of public-private partnership, some measures are required: distribution of private investments in venture capital funds operating on the basis of public-private partnership, with government support through the tax benefits; attracting private capital to build the complex machine-building and house-building industries, focused on the use of innovative technologies needed for the construction of forest roads, harvesting of wood, its transport and processing; support for small and medium-sized business, active in specific forestry sector [9]. Development of the Russian economy and its northern regions in the context of improving the forestry management should be considered in terms of the transition from a state-private partnership to new forms of interaction. Large timber companies are the "points of growth" of the whole forest complex. So they should be considered as the main agents of the government, able to implement state and industrial policy in the forestry sector.

In general, the timber industry in the Arkhangelsk region has sufficient industrial and economic potential, which can be used for further growth and public policy, regulating its development, taking into account domestic and foreign experience. I think it is appropriate to introduce a limited extent to native forest settlements as a private property in order to create a small forest companies.

Conclusion

[2] URL: http://lesregion.ru/main/2208-pomorinnovales-zaintere soval-moskvu.html (Accessed:02.06.2015)
[3] Ibid.

The growing importance of the North and the Arctic for Russia's economic development needs balanced solutions for the most important economic problems associated with the development of natural resources and social issues related to the life and interests of the population. The predominant economic activity is the production and its three main types (mining, manufacturing, production and distribution of electricity and water) have approximately the same specific importance. Areas of the North have different structures. As you know, in the Arkhangelsk Region and the Republic of Karelia more than a half volume of industrial production is manufacturing, and in the Komi Republic — mining. There is an interregional project “Belkomur” (White Sea — Komi — Ural). Three regions of Russia are involved in the project, focused on the creation of deep water port of the Arkhangelsk; construction of the railway, as well as construction and modernization of a number of industrial enterprises including forest proceeding. Energy resources generated as a result of the recycling of waste after harvesting and processing of wood could be used in other Arctic countries. The development of this type of production can be one of the tools for modernization of the country.

Northern territories play a key role in the national economy, in ensuring security and geopolitical interests of Russia [4]. We should agree with V.S. Selin and E.P. Bashmakova that the North and the Arctic have significant human potential adapted to living and working in extreme conditions, and qualified scientific and technical personnel. Natural resource potential of the northern territories, their production facilities contribute to their economic attractiveness and sustainable development [7]. But it should be noted that these regions have high level of migration caused by climatic conditions, low wages and lack of proper housing. Therefore, in the framework of the Northern Sea Route development project, it is advisable to consider the possibility of exports of wooden housing constructions to the other countries. Investments will contribute to the implementation of development projects of the forest areas through the creation of centralized systems and woodworking for the needs of the population of northern regions.

Western buyers impose ever more stringent environmental. Most of the forestry enterprises of the northern regions are far away from the “environmental” excellence. Existing problems of illegal logging, pollution of the atmosphere and water are acute for the forestry enterprises. Northern forestry products, including the one from the Arkhangelsk Region, are exported to European countries, to “environmentally sensitive” markets. So, the issue of ecological certification is very important. In this regard, the new Forest Code should take into account certificates that confirm environmentally responsible forest management [9].

In order to reduce the taxes for the forestry, there is a need to make changes to the tax legislation providing for a partial exemption of the payment for income tax, resulting from the sale of products manufactured within the investment projects; to remove or to reduce the import custom duties for imported equipment; review of value-added tax paid by suppliers (contractors).

It should be said that large regional forestry enterprises, in the Arkhangelsk region as well, are not fully provided with the raw materials because of the lease rights for the forest areas are not legally perfect. Only major tenants are involved in reforestation, fire-prevention measures, development of leased forest areas and forest villages. So, the state policy should include ensuring the long-term use of forest resources and control over their rational use, improvement of fee and tax system. In this regard, the need to develop a new forest policy provisions reveals as well as the securing the lease rights for forest resources.

The recovery of forestry enterprises needs innovative public policy providing the development of the forest sector. Investment development of the timber industry may be done by attracting new owners, effective functioning of a regional timber industry cluster associated with the intensive use of the rich forest potential and capable of stabilizing the economic development of the region, ensuring its stable future and strengthening the economic independence. In the current economic conditions the state's role in the implementation of innovative projects should be strengthened as long as own funds of the forestry companies and credits are extremely limited. The development of the forestry sector and the improvement of its socio-economic status may occur as a result of the public policy adjustment regulation of the timber cluster, taking into account the market situation; the development of a regional timber industry cluster; the interaction of timber, fuel and energy production, agriculture and etc.; projects on use of biofuels by introducing mini-CHP at the forestry enterprises; projects aimed at the use of dry trees for the production of laminated veneer lumber; development programs of affordable housing; attracting research institutions, researchers, professionals and practitioners for the development of applied programs designed to improve the forestry; attracting foreign investments for housing projects, forest roads projects and etc. and the public-private partnership.

It is the development of the forest industry that associated industries and infrastructure and leads to economic and social stability in North and is increasing the economic growth, improving the economy and demography, solving the problem of unemployment and improving living standards.

The practical significance of the study is in the fact that its research results may be used to develop and improve the state regulation of the timber industry, the development strategies and

programs for the industry, aimed at solving problems of sustainable socio-economic development of the European North of Russia. In order to estimate key areas of forestry and address the main issues two variants of strategy, management and economic mechanism of establishment and development of the forestry cluster have been suggested and a model of its establishment has been developed.

The main conclusion is that the timber industry, on the one hand, is a city-forming factor for the northern regions and, on the other hand, it needs to develop a new and effective strategy based on the current situation. The policy in the field of forestry needs to be based on interaction of government and business and the development of effective forest management at the regional level, holding the optimal investment policy in order to improve the competitiveness of the North and other measures.

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Evaluation of geo-environmental risks in the influence zones of oil and gas industry in the Russian Arctic

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Abstract. The article discusses the integrated scientific research program aimed at developing the acid deposition monitoring and geo-environmental risks evaluation in the Russian polar terrestrial and marine ecosystems in the areas of the oil and gas industrial influence.

Keywords: *Arctic, acid depositions, critical loads; geo-environmental risks, oil and gas industry*

Introduction

Acid precipitation monitoring in the Russian Arctic is important due to the cross-boundary pollution (circumpolar transfer of pollutants from the west), and the development programs for the extraction of hydrocarbons on the continental shelf, in particular, on the platform "Prirazlomnaya" owned by "Gazprom Neft" — a subsidiary of JSC "Gazprom". In the short term perspective, oil and gas exploration is going to be possible in the Kara Sea, the Gulf of Ob and in the Pechora Sea [1].

In the longer term perspective, oil and gas companies of JSC "Gazprom" and "Rosneft" consider the Barents Sea as perspective from the exploration point of view. Acid precipitation monitoring should be done after the extraction and transportation of the hydrocarbons in the Arctic and should be accompanied by quantitative risk assessment of acidification and eutrophication of terrestrial and marine ecosystems based on international approaches to calculation of critical load (CL) using the other relevant established international approaches [2, 3,

4] and the results of the research, some of which are citied in the sources we use for the article [5—18].

Therefore, managing the risks of lower environmental quality of terrestrial and marine ecosystems in the expansion of oil and gas production in the Polar Regions becomes an urgent task as well as the studies of the biogeochemical fundamentals of terrestrial and marine ecosystems of the Arctic during the emission of acids in the areas of oil and gas industries [6].

Proposed methods and approaches to reach the goal are: 1. Quantitative assessment of the acid precipitation in the Arctic areas with current or panned oil and gas extraction activity. 2. Monitoring the changes in biogeochemical parameters of terrestrial and marine ecosystems in the Arctic areas where the influence of oil and gas production and transportation of hydrocarbons is observed. 3. The calculation of CL values of acidifying and eutrophying compounds of acidic emissions (nitrogen oxides) for the ecosystems in the areas of production and transportation of hydrocarbons. 4. Quantitative assessment of geo-ecological risks (GER) and the forecast of geo-ecological situation with identification of factors for cross-boundary transportation of acid precipitation and local emissions.

The concept of the GER assessment using the methodology of the CL pollutants

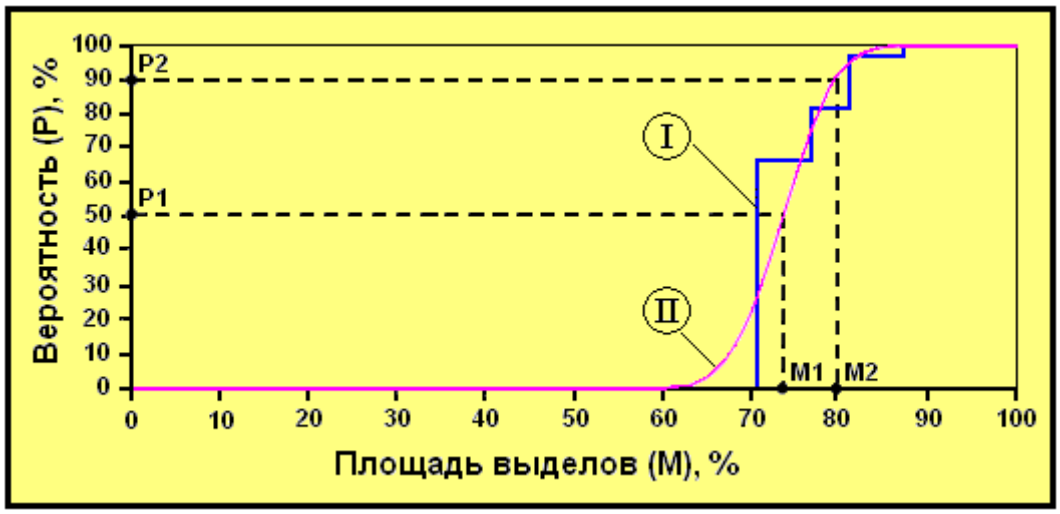
Under the proposed approach, the GER is defined as dimensional figure, characterized by the probability of negative changes in the state of ecosystems as recipients and the magnitude of such changes. Quantitative evaluation of the GER is based on distribution and spatial analysis of the exceedances of pollutant CL X (Ex (X)) within the boundaries of the zone of influence of the designed object. Excess of the CL reflect the ratio between the size of exposition (actual value or predicted pollutant load) and the safe level of exposure (the value of the critical load of pollutant). The value of influence for ecosystem is suggested to be calculated as the CL exceeds percentage of the total area selected (for example, of the sanitary protection zone of designed or existing object). Choice of criteria of acceptability of expected changes depends on the nature of the affected ecosystems. For ecosystems with the status of particularly valuable or vulnerable, the value of the CL should not be exceeded 100% of their area. In other cases, we are invited to follow the principle of “95% protection” of the ecosystems, according to which a level of acceptable load of pops is the level when 95% of the studies area is Ex (X) ≤0.

Calculation of GER should be done with the help of probabilistic modeling for the CL exceeds based on the Monte Carlo method. Unlike traditional method for calculation the CL exceeds, the input data for the model is not individual values of biogeochemical parameters

(default values or average values), but — arrays of their values. Array input data may be prepared on the basis of field data and the results of the analysis of objects-analogues. As a result, each individual receptor site receives a set of values for Ex (X) indicator. The frequency distribution of these values allows us to calculate the probability of P (from 0 to 100%) to achieve positive value of Ex (X) for each singled within the calculated area. Each value of P (Ex (X)> 0) will correspond to the value of M (Ex (X)> 0) — the total area of allotments with CL excess. Based on arrays of values (M; P) the risk function (R (X)) reveals:

$R(X)=F\{M,P\}=F\{M(E_x(X)>O, P(E_x(X)>O\}$, where M – the area of allotments with excess CL (Ex (X)> 0); P — the probability of exceeding the CL.

The GER function is a function of the distribution. With a large number of receptor plots an array of values (M; P) is well approximated by a continuous function of the normal distribution. If the number of allotments is small, then the transition to a normal distribution is impossible and the function will have a stepped form (Pic. 1).



Picture 1. Functions of the GER (R(X)) based on the stepped form of distribution (I) and the continuous function of the normal distribution (II)

The distribution function allows us to calculate the probability of exceeding P1 CL on the territory that is smaller than M1 and for a given range of values M ($M1 \le Mi \le M2$): P = P2 - P1.

The procedure of the GER evaluation based on the CL methodology

The GER assessment based on the CL pollutants means following the formal risk assessment procedures. At the stage of the risk identification we should be define the sources of emissions to determine possible scenarios of anthropogenic impact and make a complete list of pollutants contained in the emissions of the projected enterprise. In addition, it is necessary to

outline the circle of potential recipients of impact (ecosystems within the zone of influence of the designed object) and classify them. On the basis of available information on the risks and its recipients it is necessary to make a qualitative description of impacts and to define the list of pollutants for a detailed risk assessment (priority pollutants). Exposure assessment should include a detailed description of the recipient (incl., the recipient ecosystems and receptor sites) with the establishment of a background and predicted load level of priority pollutants — quantities of pollutants (g / ha per year or the equivalent / ha per year). During the geoecological effects evalua-tion stage, there should be carried out a mapping and calculation of the CL values of priority pollutants characterizing maximum level of load on the selected recipients. Description of the GER should include calculations of the recipient's changes, their probability, as well as the definition of the acceptability of such changes according to the selected criteria. It is proposed to make a risk description in two stages. The first step is a calculation of the CL exceeds based on the averaged input data. Then, in the case of receptor sites with Ex (X)> 0, it is advisable to evaluate the GER and use the models discussed below.

Studies evaluating the GER should be ended by the uncertainty analysis of results. In order to do so, it is necessary to describe the sources of uncertainty in each stage of the risk assessment and to evaluate the reliability of the calculations. The GER evaluation results GER are supposed to be used to rank individual project alternatives and developing the approaches to soften the impacts on the environment within the evaluation of environmental impact of planned economic activity.

Conclusion

The proposed risk assessment methodology for the ecosystems affected by the emissions of pollutants produced by the oil and gas industry, allows quantifying not only the values of changes in ecosystems, but also their probability. It is possible to make a detailed description of ecosystems as the objects of technogenic impact. In addition, this method takes into account the close relationship between individual components of the terrestrial and maritime ecosystems, and variation of natural parameters usual of these ecosystems. The GER assessment could be done when preparing environmental reports for oil and gas industry, located in areas with a high degree of uncertainty, including the Arctic region.

Currently, these studies made within cooperation between the Institute of Physical, Chemical and Biological Problems of Soil of the RAS/FASO, JSC "Gazprom" and NArFU. Approaches to monitoring acid precipitation, evaluation of biogeochemical transformation of the polar

ecosystems and quantitative evaluation of the GER have been developed. Similar studies are carried out in a number of Scandinavian countries and Canada within the framework of the UN Convention on Long-range Transboundary Air Pollution. V.N. Bashkin had been a deputy Chairman of the Scientific Committee of the Convention for a long time.

The GER evaluation is carried out by the JSC "Gazprom" [6], and its continued use in the practice of other oil and gas companies will let to evaluate the probability of these risks when developing Arctic deposits and identify ways to manage these risks, through the environmental insurance system [1, 2, 5, 14, 16,18].

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Boris Lavrov, the commander of the first Lena expedition

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Abstract. The article is devoted to the life of Boris Lavrov, an Arctic explorer, one of the directorsof the Northern Sea Route Headquarters, the organizer of the Igarka port construction and Kara expeditions, the commander of the First Lena expedition, unjustifiably repressed and executed. Much attention is paid to the First Lena expedition aimed at sending ships with cargoes from Arkhangelsk to the Lena River delta.

Keywords: *the Northern Sea Route, the development of the Far North, the First Lena expedition, Boris Lavrov*

Introduction

Recently we have seen the opening of new oil fields in the platform “Universitskaya-1” in the northern part of the Kara Sea. But a hundred years ago, the number of ships, managed to pass the waters of the Kara Sea, did not exceed a few dozens. Today's success in the development of the Arctic comes after a great number of expeditions. The names of some of the employers we know, the others remain unknown or almost forgotten. The Northern Sea Route (NSR) played an important role in the development of economic activities in the Arctic.

A huge contribution to the development of the Northern Sea Route has been made by our country in 1930s. In 1920, Committee of the NSR was established in order to develop the way through the Kara Sea to the mouth of the Ob and Yenisei and establish economic relations with European countries. In 1928, the Committee was transformed into the North-Siberian State JSC of the Transport and Industry “Komsevmorput”. Its Chairman was Boris Lavrov. He controlled the construction of the port of Igarka on the Yenisei, the organization of Kara expeditions and in 1933—1934 he was the leader of the first Lena expedition aimed at shipping cargoes from Arkhangelsk to the mouth of the Lena River. The aim of this article is to give to the memory of Boris Lavrov, the person who had made a considerable contribution to the development of the Arctic, and probably could had done even more if political repressions of the 1930s—1940s did not

cut short his life[1]. Economic development, northern societies, the Northern Sea Route, Arctic expeditions and politics closely intertwined in his life and tragic fate.

The first attempts to explore the Northern Sea Route

One of the first attempts to cross the Kara Sea and reach the mouth of the Yenisei River, was the expedition on the schooner "Ermak" in 1862 under the command of Pavel Pavlovich Kruzenstern (1834—1871). His schooner was trapped in the ice of the Kara Sea. So the team was forced to leave it and walk until they could reach the land[2]. Expedition was funded by the merchant Mikhail Konstantinovich Sidorov (1823—1887), born in Arkhangelsk and then he moved then to Krasnoyarsk [3]. Failure of P. Kruzenstern did not stop M.K. Sidorov, who offered an award of two thousand pounds to the first man who would go along the Northern Sea Route and reach the mouth of the Ob and Yenisei. The first man to prove the possibility to go along the NSR was a British Captain J. Wiggins (1832—1905), who started the merchant shipping through the Kara Sea on the ship "Diana" and several times reached the mouth of Ob and Yenisei Rivers [4]. The next important step was the expedition to the Yenisey in 1875 and 1876 of the famous Swedish Arctic explorer Nils Adolf Erik Nordenskiöld (1832—1901), funded by M.K. Sidorov and a Swedish merchant A. Dixon [1, p. 661]. The island in the Yenisei Gulf was named Dixon in his honor. In 1878—1879 on the vessel "Vega" N. Nordenskiöld was the first to pass from the Atlantic to the Pacific Ocean with one wintering and returned back to Sweden through the Suez Canal [1, p.661]. The vessel "Vega" was escorted by the ship "Lena" till the mouth of the Lena River, which then went up the river and arrived in Yakutsk.

In 1893—1896 expedition of the Norwegian polar explorer Fridtjof Nansen (1861—1930) on the ship "Fram" went via Northern Sea Route from Norway to New Siberian Islands. Its aim, however, was not the way to the Pacific Ocean, but failed attempt to reach the North Pole. In 1913 F. Nansen on board of vessel "Correct" went from Tromsø (Norway) to the mouth of the Yenisei [1, c. 604].

Among other famous expeditions: Russian Polar expedition in the 1900—1902 on board of "Zarya" under the leadership of a geologist, a polar explorer Baron Eduard Vasilyevich Toll (1858—1902). The objectives of the expedition were extensive and included detailed study of the New

[1] The article contains documents and photos from the B.V. Lavrov's Family Archive

[2] Kruzenstern Pavel Pavlovich URL: http://dic.academic.ru/dic.nsf/enc_biography/64322/Крузенштерн (Accessed: 13.07.2015). P.P. Kruzenstern – grandson of the leader of the first Russian expedition round the world – I.F. Kruzenstern

[3] Sidorov Mikhail Konstantinovich spet 1.7 mln rubles for the exploration of the North and the NSR in 1852—1882, that's why he was bankrupt. Buried at the Lazarevskoe graveyard near M.V. Lomonosov. URL: http:// dic.academic.ru/dic.nsf/ruwiki/1040243(Accessed: 13.07.2015).

[4] Wiggins Joseph. URL: http://www.gpavet.narod.ru/Names/wiggins.htm (Accessed: 13.07.2015).

Siberian Islands and the search for a hypothetical Sannikov Land. The fate of this expedition was tragic. In 1900 difficult ice conditions forced E. Toll to stay for all winter in the Kara Sea, and the second stay was on the New Siberian Islands. All members of the E. Toll's crew who decided to walk to the islands, died, and they are still not found [2, 3].

Two more famous expeditions — by a naval officer George Lvovich Brusilov (1884—1914 or 1915) on the sailing steam schooner "Saint Anna"[5] and by a geologist and Arctic researcher Vladimir Alexandrovich Rusanov (1875—1913?) on a small motor-sailing boat "Hercules" (captain — A. Kuchin). Both expeditions took place in 1912, had a task to pass along the Northern Sea Route from the East to the West, and both ended tragically [1, p.109, p. 823]. The year 1912 was extremely unfavorable for sailing in the Arctic Ocean because of difficult ice conditions. In the same year expedition on ships "Taimyr" and "Vaigach" had an attempt to go from Vladivostok to St. Petersburg. They could reach Cape Chelyuskin, but heavy ice fields forced the expedition to return to Vladivostok [2, 3].

In 1913—1915 hydrographic expedition under the command of a polar hydrographer Boris Andreevich Vilkitsky (1885-1961) on ships "Taimyr" and "Vaigach" managed to make a *second* expedition after N.A.E. Nordenskiöld through the Northern Sea Route. In 1913, the expedition failed to break beyond Cape Chelyuskin and it had to return back to Vladivostok. The first voyage from Vladivostok to Arkhangelsk happened in 1914—1915 with one wintering off the coast of Taimyr [1, c.149]. As a result, the expedition discovered new islands in the Arctic Ocean and officially declare them the property of Russia.

The *third* voyage (after N. Nordenskiöld and B.A. Vilkitsky) was made by Norwegian polar explorer and traveler Roald Amundsen (1872—1928) on the schooner "Maude" with two wintering in 1918—1920 [1, c.31].

In 1932 in the Soviet Union there was voyage through the northern seas during a single navigation on the icebreaker "Sibiryakov". The leader of the expedition was Otto Ulevich Schmidt (1891—1956), research onboard was led by Vladimir Yulevich Wiese (1886—1954), who participated in the expedition of Georgy Sedov in 1912—1913, and wrote a fundamental book "Soviet Arctic Sea" [2].

The expeditions listed above were implemented by enthusiasm of the northern pioneers and were exploratory mostly. But in 1920s—1930s the task of establishing a regular navigation in North revealed. It was necessary to deliver cargoes to the mouth of the Ob, the Yenisei, the Lena and other Siberian rivers, shipping of timber and other goods from Siberia to European ports.

[5] Expedition of G.L. Brusilov was organized by his personal funds [1, c.109].

Since 1920 shipping in the mouth of the Ob and Yenisei, known as Kara operations, had been started. In 1932, Chief Directorate of the Northern Sea Route was established and got the basic functions of "Komsevmorput". B.V. Lavrov, at the time — a member of Chief Directorate, presented a draft on transfer of cargo ships from Arkhangelsk to the mouth of the Lena River. The passage presented in the draft is known as the First Lena Expedition.

Boris Lavrov: before and after the revolution

Boris Lavrov born on the 21st of October 1886 in the village of Feodoritskoe, Rybinsky Uyezd of the Yaroslavl Province in the family of a priest. Village of Feodoritskoe does not exist now — it was near the confluence of the Volga and Mologa and was flooded after the construction of the Rybinsk power plant and the Rybinsk Reservoir. He studied in the Yaroslavl Theological seminary. In the beginning of the 1900s, Boris Lavrov joined the revolutionary movement and had been an active member of the Bolshevik Party since 1903.

Picture 1. Boris Vasilevich Lavrov

Lavrov involved his fellow from the village school N.A. Uglanov in political work. Later, this per-son became a prominent figure of the October Revolution and had responsible positions in the Party and Government in the 1920s. Uglanov wrote in his autobiography [4]: "my fellow and friend from the school, the son of a priest of our village, Boris Vasilevich Lavrov, had been studying at the Yaroslavl seminary and had already been a social democrat…I remember specific moments. B.V. Lavrov arrived for the Christmas holidays, had brought a lot of literature, Resolutions of the II Party Congress and explained me in details all the reasons for the split that took place at the Congress. He announced himself a Bolshevik and a supporter of Lenin...". For the revolutionary activities Lavrov was expelled from the seminary. Later on, he studies at the Kazan University and was also expelled and sent into exile to Arkhangelsk province under police surveillance.

In 1912—1913 he worked with V.I. Lenin for the newspaper "Pravda", in 1915—1917 was working on the fronts of the First World War. Lavrov had been on the side of revolution, but, apparently, he had doubts on political issues. During the Civil War, he had left the Bolshevik Party,

and returned back in 1920. He tried to practice for the good of his country and had leadership skills, fully manifested in his work on the economic development of the North.

After October 1917 Lavrov was sent to the Narkomprod, in 1918 was regional prodcommissar in Vyatka. In the 1920s he worked in the Narkomvneshtorg in Central Asia and the North Caucasus. He served as a Trade Representative of the USSR in Afghanistan. The jurisdiction of the Commissariat was JSC "Komsevmorput". In 1928 he became Chairman of the JSC "Komsevmorput" and B.V. Lavrov was involved in the development of the North. The objectives of the JSC were to construct factories, mines, shipyards in the upper reaches of the Ob and Yenisei. In 1929—1931, construction of Igarka port was the main business of the JSC "Komsevmorput" and its Chairman.

Igarka

Separate attempts to organize operation of the Northern Sea Route were made by Russian and foreign businessmen before the October Revolution. In 1911 Russian, British and Norwegian manufacturers created joint-Siberian Stock Company for this purpose. Activity of the company attracted even F. Nansen [5, 6]. In 1913 he sailed on a cargo ship "Correct" from Norway to the mouth of the Yenisei, partly repeating the path of "Fram" in 1893. Then Nansen traveled to Siberia and the Far East. Back home he wrote the book "In Siberia", which was published in Russian in 1915 with the title "In the country of the future" [7]. The book emphasized the thought of F. Nansen that the development of vast riches of Siberia was a task for the future, but not for the present time.

In 1916 the construction of the port of Ust-Yenisei began. It was 310 km from the mouth of the Yenisei. However, in the navigation period it was flooding. Its reconstruction required a lot of time and enormous costs that would prevent the upcoming release of Siberian goods on the world markets. Therefore, in 1927—1928 the Yenisei River was studied in order to determine the best location for construction of the port. Such a place was Igarka duct, formed by a deep bend of the Yenisei River [3]. On its banks the construction of a timber processing plant, the city and the port began.

In spring 1929 B.V. Lavrov came to Igarka. In that year the first house had been built and the construction of a sawmill № 1 had been started. The plant was opened in November and the first cargo ships came to Igarka. Two hundred people were wintering there. Work continued during the polar night, despite the hard conditions: permafrost, cold, sometimes reaching –60 C. The builders faced enormous difficulties; it was actually the first experience in such conditions.

The soil became hard as a rock, then turned into a swamp; building materials subjected to deformations which had not been described in the engineering literature.

The following year, the port of Igarka welcomed more ships. Two thousand people were wintering there, and a year later — twelve thousand. In 1931 in Igarka three sawmills were built. It took three years to build two-story houses instead of tents and huts. Igarka became a town. Shops, schools, stadium and club appeared there.

Boris Lavrov supervised the construction of Igarka not from the Moscow office. He was in Igarka with builders, was involved in the fusing of the forest, and appeared on unfinished berths. He gained enormous prestige among the people, he led. He also studied, received special knowledge, which helped to make the right decisions.

Lavrov was the head of “Komsevmorput” and therefore was responsible not only for construction of Igarka, but also for the implementation of marine operations in the Kara Sea. In 1930, the first sailing directions of the Kara Sea were released together with a detailed map. Instead of separate expeditions there were pre-planned cargo ships sailing there. Port of Igarka gained international importance. Ships began to arrive from Western Europe for Siberian wood materials to Igarka. Foreigners, who were visiting Igarka, were surprised by its growth. People wrote a lot about it in our country and abroad.

In 1935 a special “Arctic” issue of the journal “Technology for the youth” was published and it was devoted to the development of the Arctic and the Northern Sea Route. The journal also published the article by B. Lavrov about the construction of Igarka [8].

The First Lena

The next natural step was to spread the cargo transfer to the mouth of Lena River. In order to achieve this, the ships had to overcome the most difficult part of the Northern Sea Route — round the Taimyr Peninsula and cross the Laptev Sea. In 1930, Lavrov organized an expedition on the schooner “Beluga”, aimed at sailing around the Taimyr Peninsula, but heavy ice conditions did not allow this to happen. In 1932 Lavrov presented his project to the government and explained the possibility to pass on the cargo ships to the mouth of the Lena River. Lavrov defended the project against the skeptics and had been appointed a head of the expedition.

The expedition started in 1933. It was carried out on cargo ships “Volodarsky”, “Tovarish Stalin” and “Pravda" that had to go with the other ships almost all the way but it had a task to deliver equipment necessary for geological exploration for the expedition to the south-western part of the Laptev Sea. The plan was to transfer several ships to the Lena River and from the Ob and Yenisei Rivers. Icebreaker assistance was done by the icebreaker “Krasin”.

"Krasin" came from Leningrad in July 1933, passed the Baltic Sea and went round Scandinavian Peninsula, restocked in Murmansk and want to the Strait Matochkin Shar between the North and South islands of Novaya Zemlya. They had an appointment with "Tovarish Stalin", "Volodarsky" and "True". But these ships went out from Arkhangelsk later because of the delay in loading. The meeting took place on the 13th of August at the east entrance to the strait and "Krasin" led cargo ships through the ice of the Kara Sea to the edge of pure water. In pure water ships reached Dickson Island on the 18th of August. The leader of the expedition arrived there by plane from Igarka. Before taking over the leadership of the expedition, he had to finish everything related to the organization of Kara operations, which were under his control.

Dixon Island

Later, Boris Lavrov himself described the expedition in his book "The first Lena"[9]. Describing his arrival to the island of Dixon, he quoted from the report of N.A.E. Nordenskiöld's expedition, 1876: "In a short time this desert will become a meeting point for a great number of ships, which will contribute to the relations not only between Europe and Ob and Yenisei systems, but also between Europe and Northern China". But it is for the future. Expedition is ahead. Famous predecessors' experience was important for the expedition. Lavrov turns to the experience of F. Nansen, E. Toll and R. Amundsen. Graves of explorers, known and unknown ones are on the island. Not far from the island of Dixon, there is a grave of the P. Tessem, mem-ber of the R. Amundsen's expedition on the schooner "Maude". Lavrov asked himself a question: Why were people attracted by the North? Why was he attracted? And his answers were: "love to unexplored, to understanding the things had not been understood, the possibility of a broad scientific study and economic development of huge northern areas" [9].

Meanwhile, icebreakers "Rusanov" and "Sibiryakov" came to Dixon. "Rusanov" had to deliver goods to the Pronchishchev Bay on the east coast of the Taimyr Peninsula. "Sibiryakov" that in the previous year for had a historic sail along the NSR during one navigation, had to carry out scientific research in the Kara Sea. However, on the way, both icebreakers net heavy ice and had to return to Dixon. It was a concern. Due to delays with loading ships arrived at Dixon later than expected and it was the second reason for worries.

On the 23rd of August Lavrov called a Council on board the "Krasin". The council was attended by the Chief of the expedition onboard of "Sibiryakov" Professor V.Y. Wiese, captains of "Krasin", "Sibiryakov", "Rusanov", "Volodarsky", polar pilot A.D. Alexeyev and other mem-bers of the expedition.

The main question was: What way would the ships follow? Half-way along the Taimyr Islands there are so — called Minin Skerries — an archipelago of small islands, called after a navigator named Fedor Minin, one of the leaders of the Great Northern expedition whose members described the northern coast of Russia in 1733— 1734 for the first time.

Wiese said there were three possible ways: first — the coastal one, using straits between the islands of the archipelago; the second — to the north of the archipelago, and then via Vilkitsky Strait; third way- to the north, and then to Shokalsky Strait between islands of Severnaya Zemlya.

Picture 2. The map of the First Lena expedition, M.E. Singer “Lena path”

Opinions were divided. In the south of the Kara Sea there were large areas of ice. So, the northern path looked more attractive, but even riskier. Lavrov had not much experience like Wiese and polar captains. He led a polar expedition for the first time and had a full responsibility for it. At the Council it was decided to choose the second option — to go along the edge of Minin Skerries, and time had shown that solution had allowed the ships to get to the mouth of the Lena River in that navigation and avoid wintering at least on the way there.

Council on the island of Dixon was called historical — so important was the Lena expedition for the country. The meeting was recorded. The expedition was accompanied by journalists — a correspondent of the newspaper “Izvestia” M. E. Singer and a correspondent of the newspaper “Vodniy transport” S.T. Morozov. Their essays about Lena were first published shortly after these events [10, 11]. Singer, referring to the words of Lavrov, wrote that the correct option had been chosen in accordance to the Ob and Yenisei flow along the western coast of Taimyr, the thermal effect of the continent and the direction of winds, the experience of “Vega”, “Fram” and “Zarya”

expeditions [10]. Ice conditions were important as well. They had the data of air-exploration made by the pilot Alexeyev.

Morozov deserves a special mention. Savva Timofeevich Morozov — grandson and a full namesake of a well known Russian manufacturer; a young journalist who combined duties of a correspondent with duties of a fireman of the second class on the icebreaker “Krasin”, in future — a writer, honorary polar explorer, member of the Geographical Society of the USSR. Onboard of “Krasin” he made his way from Leningrad to Cape Chelyuskin, and then onboard of “Volodarsky” to Tiksi Bay. The book of essays “Lensky campaign” Morozov dedicated to “Boris Vasilevich Lavrov — the builder of the Soviet North” [11]. He met with Lavrov in Moscow before the expedition. Here's how S.T. Morozov described the leader of the first Lena expedition: “In this man there was something of the explorers — Ermak, Dezhnev, Khabarov ... Not in the appearance — but as a matter of fact. Of course, there was not a dense beard, nor clothing from animal skins or tall boots. Clean-shaven, in a light jacket and an open-necked shirt, with constantly smoking pipe in the corner of his mouth, he made impression of a typical citizen, business person, even a cracker. By the tone of how confident and slowly he picked up the phone, in concise phrases, addressed the invisible interlocutors, it was obvious that he had a great deal of cases, that his advices and instruction were waited for on the Yenisei River, where the wood rafts float, and in Leningrad on the Kanonersky island where a large icebreaker was repaired and assigned to sail to the Arctic, and in Sevastopol, where marine aviators complete a test of a new machine for a polar ice exploration...”[12].

On the 24th of August the vessels were set out. “Krasin” was making a way and was followed by timber carrier “Tovarish Stalin” damaged before arriving at Dixon and “Pravda”, then — the icebreaker “Rusanov”, timber carrier “Volodarsky” and the caravan was closed by “Sibiryakov".

Cape Chelyuskin

On the way to Cape Chelyuskin “Krasin” lost a propeller. It was a crucial moment, endangering the fate of the expedition. But, it was decided to break through the ice. On the 30th of August convoy managed to reach clean water, on the 31st of August they reached Cape Chelyuskin. At the same time, reports were received from ships “Chelyuskin” and “Sedov”: Shokalsky Strait was in ice. So, the right decision was made earlier. The path through the Shokalski Strait proved to be irresistible and ships could be jammed by ice before arrival at destination.

Chelyuskin Cape is the northernmost point of Asia with the only radiostation on the territory from Dixon to Tiksi. Wiese wrote, “Today, for the first time the Northern edge of Asia saw

such a great number of vessels: seven ships were there at the same time near the polar station at Cape Chelyuskin" [2]. This is a significant place for all polar explorers. Members of the expedition visited the polar station. On the shore — a pole put by R. Amundsen in 1919 during an expedition on the schooner "Maude". At the top of the column — a copper ball with the inscription: "To the Conquerors of the Northeast Passage Adolf Erik Nordenskiöld and his glorious companions. Expedition to the "Maude" 1918—19". It was another reminder from great predecessors.

The ships had gone further without icebreakers. "Krasin" had to return and help riverboats. "Rusanov" followed to the Pronchishchev Bay. "Sibiryakov" stayed for loading at Cape Chelyuskin. On the boat "Tovarish Stalin" spontaneous combustion of coal had been started even before the arrival at Cape Chelyuskin. The vessel had gas, oil and dynamite for geologists onboard as well. So, fire onboard was extremely dangerous. It was decided to unload some coal at Cape Chelyuskin and upload it onboard of "Krasin" and "Sibiryakov". Timber carrier "Pravda" went for unloading to the Bay of Noordwijk. "Volodarsky", where the head-quarters of the expedition moved, had to go the Bay of Tiksi together with "Tovarish Stalin".

Tiksi Bay

On the 2nd of September there was a heavy storm, which lasted until the 6th of Sep-tember. But the storm let the expedition to pass to Tiksi Bay together with the river boat "The First Five-Year Plan". East wind drove ice from the west coast of Taimyr Peninsula, making way easier. Lavrov realized this and called the "The First Five-Year-Plan" from Dixon.

On the 8th of September, "Volodarsky" entered the harbor of Tiksi. By the time of arrival, there were no buildings, except for the two houses of the polar station. Participants of Leno-Hatanga expedition wintered there. The task of their expedition was to conduct research in the Lena Delta region and to identify the place for the new port. The ships of the First Lena expe-dition brought to Tiksi Bay a new group researchers and cargoes for the Lena-Hatanga expedition. It was possible to see part of the schooner "Zarya" used for Toll's expedition in 1900—1902, a reminder of past tragedies. Wood, of which the schooner was made, was very strong. So, workers that wintered nearby could use it for firewood.

In the bay there were no conditions for unloading ships and were no piers. There were barges, but no tugs to take the barges to ships and to unload them in the sea. It was decided to use small boats for towing barges. But the boats turned out to be not ready. Lavrov went ashore to supervise the work personally. Unloading was done, at a great cost to members of the expedition.

On the 9th of September the ship “Tovarish Stalin” entered the Bay. A fire was in its hold, hatches were battened down to prevent the spread of fire and the deck was hot; the crew continuously cooled it with water. The rapid unloading of flammable substances started. The fire was extinguished the day after due to the pumping of water into the hold.

On the 12th of September the river boat “The First Five-Year Plan” came to the Bay. It passed from Dixon to Tiksi with the help of “Krasin” and brought a lighter (a kind of barge) used by “Volodarsky” and “Tovarish Stalin” to moor. This considerably facilitated further unloading. By the 16th of September unload had been done fully. It took one week instead of the estimated ten days, but by this time alarming reports had been arriving. Before the 10th of September Vilkitsky Strait off Cape Chelyuskin had started to cover with ice, and old ice began to transform in the large field. Here is what the chief of the expedition onboard of “Sibiryakov” Wiese wrote: "I am very worried about the Lena vessels and radioed the chief of the Lena expedition in Tiksi Bay: "The passage of ships of the Lena expedition through the Vilkitsky Strait after the 20th of September is the greatest concern even with an icebreaker”. B.V. Lavrov received daily meteorological and ice reports from the station at Cape Chelyuskin and, of course, and he was aware of the threat for Lena vessels. But it was impossible to stop the unloading — Yakut Territory needed the goods delivered from Arkhangelsk so much” [13].

The main task of the Lena Expedition was done. Establishing links with the East Siberia, which Fridtjof Nansen had left for distant future, became a matter of fact. Participants of the First Lena made it real. B.V. Lavrov discussed prospects with explorers. He said that it was possible to sail from Arkhangelsk to Kolima, that cargoes could be carried to Yakutia and back.

On the 16th of September 16 a farewell meeting was held and vessels started their way back. Correspondents left the expedition. M. Singer flew from Tiksi to Moscow on pilot Levanesky’s plane. Morozov went with a caravan of river vessels headed by “The First Five-Year Plan”, which brought up loads the Lena to Yakutsk. In the Bay of Tiksi the Lena-Hatanga expedition was left for wintering. They carried out the work that was the beginning of the Tiksi Arctic seaport construction (the name was approved by the NSR Board in March 1934) [14].

Wintering

On the 18th of September the vessels “Volodarsky” and “Tovarish Stalin” joined the icebreaker “Krasin”. Then the caravan was joined by the icebreaker “Rusanov”and timber carrier “Pravda”, which due to the weather conditions could not be unloaded in the Bay of Noordwijk. By the 20th of September convoy reached Vilkitsky Strait. Because of the cold, the Strait seemed to be impassable for the timber carriers, even though they were led by powerful icebreaker “Krasin”.

The situation was more difficult to the West of Cape Chelyuskin where the icebreaker “Sibiryakov” was trapped in ice near the archipelago of Nordenskiöld.

Ice conditions in the Kara Sea, as well as the delay of more than ten days because of the loading of the ships “Volodarsky”, “Tovarish Stalin” and “Pravda” in Arkhangelsk made the wintering inevitable [10]. On the 23rd of September it was decided to prepare the ships for the wintering and to let the icebreakers “Krasin” and “Rusanov” go; they could be used for other purposes, to release “Sibiryakov” of the ice trap. A place for wintering had to be chosen so that the ships were not caught by drifting ice, and the risk that the shrinking ice would crush the vessels was minimal. Thus they decided to stop for wintering place at the Samuil Islands (now Komsomolskaya Pravda Islands), near the north-eastern coast of the Taimyr Peninsula. A Selection of people staying for the winter was held: primarily those who could contribute of the expedition with strong spirit and physical endurance. The rest continued the way home onboard of “Krasin” and “Rusanov”. Boris Lavrov was then allowed to leave the wintering, as the main goal — delivery of cargoes to Yakutia — was done. But he did not consider such an opportunity.

People had to stay for almost a year in the “land of ice and night” for wintering [6]. According to the memoirs of one of the members of the expedition N. N. Urmantsev, those who were left for wintering had strong negative feelings caused by leaving of “Krasin” and “Rusanov”, their heads were full of dark thoughts about the upcoming winter [16]. It was necessary to overcome such sentiments.

Due to B.V. Lavrov skill the wintering was used for scientific research in the Far North. Urvantsev, the leader of the geological group, went onboard of “Pravda” to the Bay of Noordwijk and he was appointed a leader of the scientific operation. Meteorological, hydrological, topographic studies were made and a connection with the group at Cape Chelyuskin was established.

The ships were in the ice but there was a rist that the storm could break the ice and damage the sips. So, on one of the nearby islands it was decided to build a house, station and warehouse. Other adjacent islands were explored as well.

Winterers were engaged not only in scientific research but everyday routine also. There were classes for those who wanted to study the Maritime College program. These classed allowed a sailor to become a navigator and a fireman — to become a mechanics. Teaching was done by more experienced members of the expedition; they also were the members of the Exam Commission,

[6] One of the first Russian translations of F. Nansen’s book “Fram” in the polar sea” was published with the title “On the land of ice and night”[14].

which, in coordination with Narkomvod order got the right to issue students diploma of the college level. Winterers had their small entertainments and even a theatre...

Picture 3. B.V. Lavrov in 1933

In Tiksi Bay the plane P-5 was taken onboard of "Volodarsky". It was decided to use it for air exploration. The first flight was made in October 1933 to the polar station at Cape Chelyuskin. The plane was operated by the polar pilot Mauno Yanovich Lindel. Planned flights to the Severnaya Zemlya were delayed: P-5 motor was broken. Lavrov spent almost a month visiting wintering station. Later Lindel got the U-2 aircraft. He used for air exploration. The aircraft had an open cockpit. So, it was convenient for observation, since it was flying within a small speed, which allowed considering all the details of the terrain and the pilot and observers felt themselves uncomfortable in the polar conditions. A test flight was made to the Bolshevik Island of Severnaya Zemlya and then Lavrov and Lindel came back from Cape Chelyuskin to the wintering grounds.

A polar night was around with all its severity and beauty: light of the moon and stars, relentless game of the Northern lights... Life flowed over with a strict schedule. Sessions of radio contact with relatives that stayed away and other winterers made the life more interesting. Together with the whole country they were watching the fate of "Chelyuskin" trapped by drifting ice...

On the 30th of January 1934 the sun came out for the first time: the northern gray twilight lasted two hours. In February air exploration was resumed. Under the command of N.N. Urvantsev an expedition deep into the Taimyr was prepared and conducted [16]. The expedition lasted 21 days, from the 20th of March to the 9th of April aimed of topographical survey and tests in arctic conditions. Off-road vehicles crossed the northern part of the Taimyr from the Gulf of Teresa Klavenes (the name was given by R. Amundsen during the expedition of 1918-1920) to Mogilny Cape where two members of the Vilkitsky's expedition 1914—1915 on the ships "Taimyr" and "Vaigach" were buried. Then their route lay along the Taimyr coast to Cape Chelyuskin, and then — to the place of the wintering through the Maud Bay where Amundsen wintered in 1919.

Training plane U-2 could fly only a short distance. In order to expand the range of flights, an additional petrol tank was installed. The winterers began to explore near the island of Malyi Taimyr and the eastern shores of Severnaya Zemlya. B.V. Lavrov constantly served as a pilot

observer. The flights were not without accidents. May 11, 1934: due to the strong wind the aircraft was off the course. Visibility dropped to zero, but Lindel managed to land the plane. They were twelve to fifteen kilometers from the ships. After a while they decided to walk. Then the blizzard increased, and the wind changed and its direction gave the landmark. The outlines of objects and distances were distorted due to refraction (bending of light rays in the atmosphere). In icy conditions, without clear guidelines, it is very easy to get lost and freeze. The path to the ships took twelve hours with a few stops for rest. According to the words of one winterer, Lavrov and Lindell "looked straight into the jaws of the polar death".

On the 26th of May they flew to the Pronchishchev Bay, where the wintering hunters were. The flight was risky, since at the Pronchishchev Bay and on an airplane there was no radio. In case of an accident it was impossible to rely on help. Sunny weather changed to the foggy one, but there was no hope for the better weather conditions. They flew along the the east coast of Taimyr. The fog forced to land several times.

Lavrov wrote about one of the forced landings: "We landed in a deep snowy ravine ... landing place is not known exactly. It should be somewhere between the Andrey islands and the islands of Peter, at East Taimyr Cape" [9]. Due to the fog it was possible to leave this place the day after.

Despite the risks, Lavrov would complete ice exploration, before the new navigation season and the sailing of the second convoy to the Lena River. The convoy supposed to sail from the East to West along the Northern Sea Route guided by the icebreaker "Fyodor Litke". Eastern District of Taimyr had not been covered by air exploration before. In order to get the full picture, it was necessary to make a flight to Severnaya Zemlya. The plan was to visit the wintering on the Domashny Island. This tiny island, which could only be found on a topographic map, is a part of the Sedov's islands, belonging to the Severnaya Zemlya archipelago.

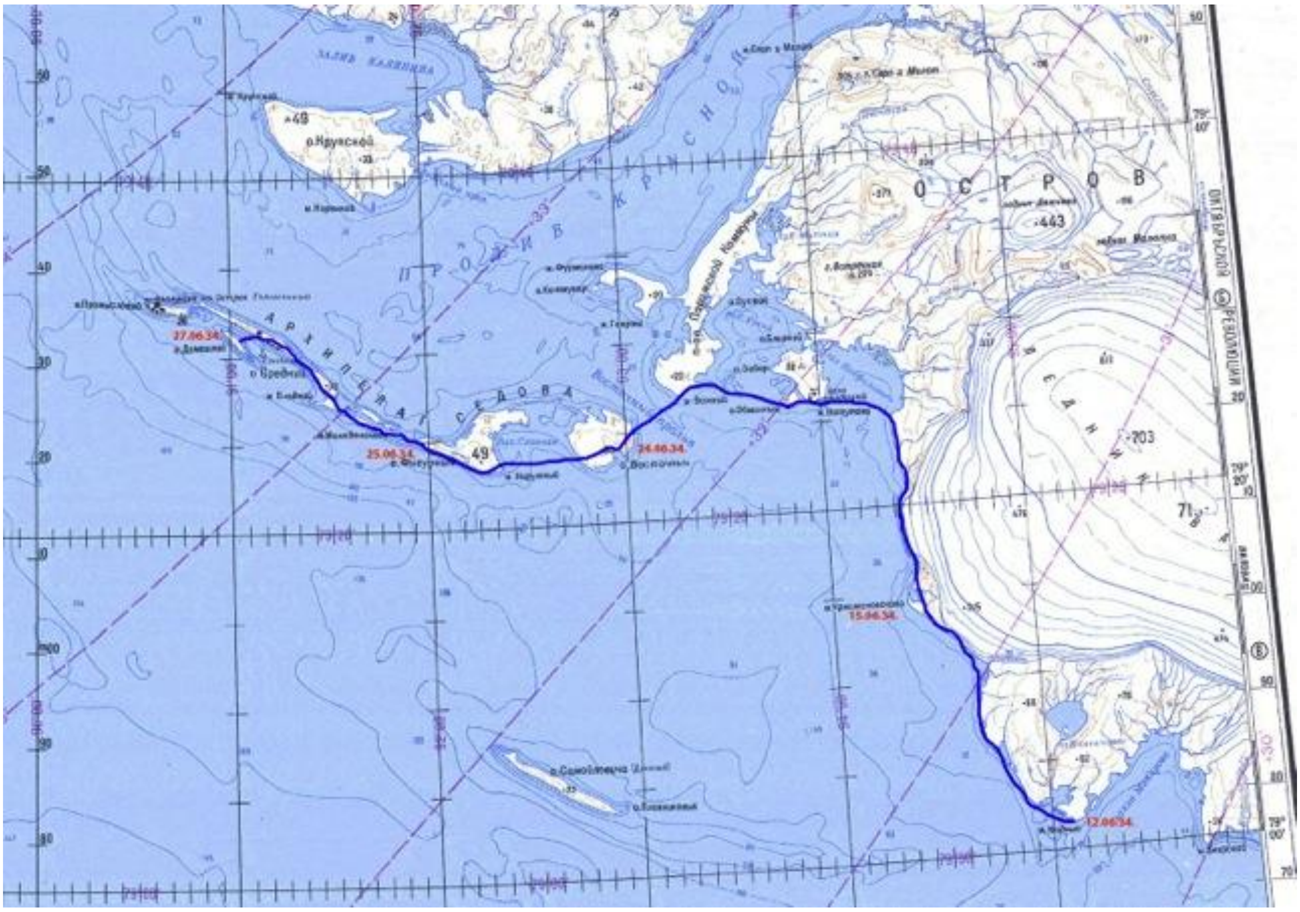
Picture 4. Ice cover near the North-East coast of the Taimyr Peninsula in 1933 according to the air observations during the First Lena expedition (from the B.V. Lavrov's book "The First Lena").

The islands were discovered in 1930 by the expedition on the icebreaker "Sedov" and until 1937 were called Kamenev Islands. Then they were renamed in honor of the vessel that discovered them. On the 12th of June Lavrov and Lindell flew from Cape Chelyuskin to the Severnaya Zemlya. During flight there was a serious accident.

On the way home

The flight had to be from Cape Chelyuskin to the northwest across the Vilkitsky Strait, to the Cape Neupokoev and Bolshevik Island. Then the plane flew over the Shokalsky Srtait, along the Krasnoflotskie Islands, Snegnaya Bay, Oktyabrskaya Revolutsiya Island and Gamarnik Cape (since 1937 — Cape Copper). After Gamarnik Cape, one of the cylinders of the engine failed. Lindell was able to land the plane, but he could not fix the motor. There was no hope for help. It was impossible to organize the search with dogs and vehicles because of the polar summer conditions. They had to survive and get out of this situation by themselves. First of all it was necessary to resolve the issue: to return by foot to Cape Chelyuskin or to go to the wintering on the Domashniy Island? The first way was familiar, well-versed, and easy not to go astray. But the distance to Cape Chelyuskin, of not less than three hundred kilometers, excluded this option.

The Domashniy Island was in about 150 km. It is extremely difficult to find a small point among thousands square kilometers of white lifeless space. “I remember many of the polar journeys of sailors and Arctic explorers after losing their vessels,” — writes Lavrov [9]. “How many were ended well? Few, though many of them were better equipped than we did” [9].



Picture 5. Approximate route Lavrov and Lindel followed until the Domashniy Island in June 1934 (reconstructed according to the B.V. Lavrov’s book “The First Lena”)

Lavrov and Lindel had no special preparation for such a situation. Lavrov wrote about Lindel: “In the wintering camp everyone knows that he was trained to fly perfectly and at the same he is a bad walker for long distances” [9]. Some experience of walking along the polar ice had been gotten during the winter. But that that moment the conditions are even worse. In the polar summer conditions, the snow started to melt; it was snow on the surface and the thin ice under that did not withstand human weight. Feet fail and fall on the sea ice, covered with a layer meltwater. It was almost impossible to find a dry place to put a tent. Light tent does not hold heat and get wet. Clothing, shoes, blankets — all became wet and there was no hope to dry them.

They made the sled out of the top cover of the fuselage. On the 15th of June Lavrov and Lindel spent a night on almost dry soil of Cape Krzhizhanovsky. The next day they saw islands at the sea. They got a hope that this was the Kamenev archipelago. Therefore they made an attempt

to go there directly. The attempt failed. The Gulf of Stalin was next on the road (Now – Panfilovtsev Gulf). It was important to cross it and get on its northern shore to shorten the path.

But the road was extremely difficult. The lack of clear guidelines, short stops in the wet tent, fog that was hiding the sun so it was impossible to determine the time. When the sun was up it was hot, pain in the eyes and sunglasses do not help.

B. V. Lavrov had been writing a diary. Several times there were confident that they had already reached the Eastern Island of the Kamenev archipelago, but confidence turned out to be wrong. Only on the 24th of June Lavrov and Lindell had reached that island and after comparison with the map doubts disappeared. Then it was necessary to go along the islands of the archipelago. On the 25th of July they crossed a large bay and got to the Sredniy Island.

They were exhausted. Gloomy thoughts were is their heads. They were worried about the ice cover of the strait that separated the Domashniy Island. Lavrov wrote: “depletion and general decline of physical forces can put an end to our further work. Of course, we will still fight for a different outcome; it is early to give up”. They did it. On the 27th of June they came to the wintering on the Domashniy Island.

End of the expedition

Wintering of the First Lena expedition and research done by its participants received the highest rating. In June 1934 Chief of the Northern Sea Route O. Schmidt sent a telegram: “... I have heard a lot about your wonderful work, about you, who managed to turn a wintering into a brilliant scientific expedition to study the North Asia ...”[17].

Lavrov was awarded the Order of Lenin. And also that was the yeas when five years of Igarka was celebrated. The decision of the Central Executive Committee of the USSR, 25th of July 1934: “Noting the huge work carried out by Comrade Lavrov Boris Vasilevich on the creation and construction of Igarka, organization of the Kara expeditions and Lena expedition in 1933, and also his energy and perseverance in carrying out scientific research during the wintering of the Lena expedition, the Central Executive Committee of the USSR states: to award Comrade Lavrov Boris Vasilevich the Order of Lenin for his contribution to the exploration of the Arctic”[11].

That time Lavrov was still on the Domashniy Island. Polar station was built there in 1930—1932 by the G.A. Ushakov’s expedition. The expedition included four people, including N.N. Urvantsev. Coastlines of the Severnaya Zemlya islands had not yet been mapped by that time. In two years, participants of the expedition managed to do it, except for the northernmost Schmidt

Island. It was found out that the Shokalsky Bay discovered by Vilkitsky's expedition was actually a strait.

In 1932, the icebreaker "Rusanov" brought a new team to the polar — four people headed by woman-polar explorer N.P. Demme. In 1933, the icebreaker "Sedov" had to bring a new group of wintering there. However, as we already know, the ice conditions in 1933 were difficult and icebreaker "Sedov" was not able to come to the island. Demme's group stayed there for the second winter, which was hard due to the lack of provision. In spring three out of four people had been sick. Hunting for bears helped a bit. Lavrov and Lindell had to deliver means against scurvy there. But it was not possible to do. Lavrov and Lindell came there. They were totally exhausting and saw those people in a difficult situation. They took over the hardest work — cleaning of the territory. Their own clothes and boots turned into rags, but they had nothing to replace them. They waited for the arrival of the icebreaker "Sadko", but it was trapped by ice. It soon became clear that "Sadko" would not come.

A real threat of a third winter became clear too. Finally, on the 30th of August 1934 a plane, piloted by A.D. Alexeyev landed. The aircraft delivered six people and fifteen dogs to Cape Chelyuskin. Winterers were taken on board of "Sibiryakov". For one of winterers, seriously ill with scurvy, help came too late — the day after he died.

They had to leave dogs because there was no place for them on the plane. There was a hope that new group would come but it never happened. However, the head of the expedition Nina Demme managed to take the three cats and a kitten in a suitcase. She brought cats with her two years ago, and a kitten was born during the wintering.

Nature and animals were described a lot in the book about the First Lena expedition by Boris Lavrov. He watched the northern dogs, mentioned birds — gulls and snow Buntings- occasionally pleased polar explorers with their visit. The author revealed as a man, carefully observing the nature and, at the same time, anxious about the fate of natural wealth of our country. Lavrov participated in the hunt for the bear many times but he was sorry when a bear was killed not because of the vital needs, but only to fulfill a hunting passion. He talked about the "senseless murder" and warned against the risk of destruction of bears and walruses populations; underlined the need to develop hunting rules in the Far North.

Meanwhile the icebreaker "Fyodor Litke" went along the Northern Sea Route from Vladivostok to Murmansk. It was given the task released the first Lena expedition's ships [13]. Head of the research on "Fyodor Litke" was Professor V.Y. Wiese. On the 12th of August "Fyodor Litke" approached the northern entrance to the strait between the Samuil Islands; the strait was

covered with ice. “Fyodor Litke” was different from the other icebreakers that split ice by pushing it with their bow. “Fyodor Litke” ice could cut the ice by a frontal bow shock. Five days and “Fyodor Litke” made a channel of nine km length towards the ships of the first Lena expedition; after that the bow was completely broken but the ships were released. Timber carrier “Pravda” went to the Noordwijk Bay for unloading, and “Volodarsky” with coal — to Bay of Tiksi. “Tovarish Stalin” and “Fyodor Litke” went to Dixon. On the way back “Volodarsky” and “Pravda” met “Sibiryakov” at Cape Chelyuskin. By this time there Lavrov, Lindel and winterers from the Domashniy Island had been there. Vessels of the Second Len expedition came from the West led by the icebreaker “Ermak”. After meeting them “Sibiryakov”, “Volodarsky” and “Pravda” left the Cape Chelyuskin, and three days after reached Dixon. The First Lena expedition was completed.

According to S.T. Morozov, back in Moscow Lavrov celebrated his second birthday on the 27th of June, when he and Lindel reached the Domashniy Island [12]. “In this situation I'm supposed to live no less than one hundred years”, — he said. A short time was left to live ... Just a few years of normal human life before his arrest.

Several years after the Lena expedition

In 1935 B.V. Lavrov became a director of the Research Institute of Economy of the North. In the short time he managed to recruit many specialists and organize research. One result of this activity is, for example, the book by Sibirtsev and Itin “The Northern Sea Route and Kara expeditions” with Lavrov’s foreword and reduction [3].

Lavrov could not stay at the Institute, he wanted some practical activities. Back in 1933 an exploratory expedition led by N.N. Urvantsev was sent to the Noordwijk Bay. Urvantsev and his team had to spend winter with the ships of the first Lena expedition; in 1934 the icebreaker “Rusanov” brought them to Noordwijk Bay. Development of oil fields in the area looked promising. In addition, in the Noordwijk Bay some other mineral were found — coal and salt. With the active participation of B.V. Lavrov the draft of the “Nordvikstroy” project was pre-pared. Lavrov became its leader.

The objective of the trust was to conduct geological exploration, field development, construction of the city and the port. Plans were no less ambitious than in construction Igarka. However, Lavrov had no chance to do it.

Political repressions

Lavrov B.V. was arrested as head of the trust “Nordvikstroy”. By that time N.A. Uglanov, his schoolmate and friend had been arrested and killed. Geologist N.N. Urvantsev, captain of

"Volodarsky" N.V. Smagin and other people who knew him at work in the Arctic had been arrested as well. According to the NKVD report, published on the "Memorial" website, Lavrov was exposed by the statements of Uglanov, Urvantsev and others. Today, we know how these statements were written. He was charged as a member of anti-Soviet Right-Trotskist organization, where he was involved by Uglanov. In addition, Lavrov was said to be involved in sabotage activities at the trust "Nordvikstroy"[7]. On the 6th of July 1941 Military Collegium of the USSR Supreme Court sentenced Lavrov to death. He was shot on the 28th of July 1941[8].

Boris Lavrov's brothers were arrested. Dmitry Vasilevich Lavrov, teacher of mathema-tics and physics at school in Rybinsk, was accused of leading peripheral counterrevolutionary organization, which he created after the instructions of Uglanov. He was shot. Alexei Vasilevich Lavrov, hydraulic engineer, chief engineer at "Gidroelektroproekt" in Rostov-on-Don, spent two years in prison. However, the charges against him were not proved and in 1940 he was released. All brothers were recognized as victims of political repressions.

After NKVD archives had been declassified, Boris Lavrov's relatives got a chance to look through the documents. At the end there was a petition for clemency attached. According to his daughter Natalia Borisovna Lavrova[9], the petition was written on the 7th of July 1941 (the day after sentencing) — a clear handwriting, set out on two pages, logically sustained. It says that he (B.V. Lavrov) had never taken part in the counterrevolutionary organizations and he had never been a threat; he had never refused from hard work that he was assigned to by the party and government. Further — where and how he worked in the Arctic, and at the end — "... I'm asking to save my life". In content it was not a petition for clemency, but the appeal for a ret-rial. Apparently, he had a desire to leave a paper, which would clarify what had happened, and there were no hope of preserving life under those circumstances.

Memory

In 1972 a bay in the Laptev Sea on the Taimyr Peninsula was called in honor of Lavrov [18, 19]. The title was awarded by Khatanga District Executive Committee on the proposal Hydrographic Enterprise of the Ministry of the Navy and Hatangsky hydrobase on the 2nd of March 1973 and was approved by the decision of the Krasnoyarsk Krai Executive Committee. This is the same bay where Lavrov and Lindell had a forced landing of the 26th of May 1934, "somewhere

[7] URL: http://stalin.memo.ru/spravki/13-225.htm (Accessed: 15.02.2015)
[8] URL: http://www.sakharov-center.ru/asfcd/ martirolog / т = & ID страницы =9847 (Accessed: 15.02.2015).
[9] Lavrova N.B. private correspondence

between the islands of Andrew and Peter". This small bay can be found only on the topographic map, its coordinates — 76° 40' north latitude, 111° 30'east longitude.

Journalist and writer S.T. Morozov did alot to preserve the memory of Boris Lavrov. He wrote a series of articles and a book "The ice and people" where B Lavrov is represented under the name Yegor Bagrov [20]. In 1964 Morozov visited Igarka. Then, it was its thirty-five year anniversary. Talking to Chairman of the City Council, he mentioned Lavrov, but it turned out that the Chairman did not hear anything about Lavrov [21]. After that, Morozov expressed his opinion about the need to keep the memory of the man who organized the construction of Igarka in a great number of publications. "There must be Boris Lavrov's street in Igarka!" — he said at the end of the article in the newspaper "Krasnoyarsk Rabochiy" published in 1987 [12]. After the publication in late 1987 Igarka City Council decided to name one of the streets in honor of B. Lavrov, taking into account the wishes of the citizens[10].

Boat "Boris Lavrov"

A boat built in 1980 was named in honor of Boris Lavrov. It was widely discussed in the press. Articles about the person whose name appeared on the board of a boat were published in a great number of newspapers: starting from a regional Tiksi newspaper "Mayak Arktiki" [17] and ending up by the article in "Izvestiya" written by Saava Morozov [23]. Symbolically, "Boris Lavrov" was assigned to the port of Tiksi and carried cargoes along the Northern Sea Route. It is an ice-class ship, which could go to the Arctic seas from Murmansk to Anadyr and enter the Arctic rivers such as Lena and Kolyma.

According to the lists of vessels, placed on the website "Water transport", in July 1993 the boat was owned by OJSC IC "Arctic Shipping Company". In 2009, the company transferred the ship to the foreign company ARSCO. Shortly thereafter, the sailors stopped receiving any salary, went to Court and even demanded the arrest of the vessel. In September 2010, "The Arctic Shipping Company" was declared bankrupt, and its ships, including "Boris Lavrov", were auctioned. The new owner of "Boris Lavrov" is LLC IC "Vega" and its new port is Vostochniy. In April 2011, the ship got new name "Alexsandr"[11]. Renaming a ship when it enters a new owner — is not uncommon. However, it is a special situation. Once on board the ship the name of Boris Lavrov have erased, a piece of history of our country has disappeared. People saw the name on the board, someone (not everyone) wondered who a man that gave the name of the ship was and what he did. Can a "speaking

[10] Krasnoyarsk region. Igarka/site "World travel and adventure". URL: http://www.outdoors.ru/region/krasnoyarsk/krkr354.php (Accessed: 15.02.2015).
[11] "Alexander" ("Boris Lavrov") / site "Water transport". URL: http://fleetphoto.ru/ship/14761/ (Accessed: 15.02. 2015).

nothing" name "Alexander" encourage someone to continue the work of the Arctic exploration, which requires the efforts of many dedicated people? It is quite obvious that the answer is no.

Picture 6. The boat "Boris Lavrov". Beginning of 1980s.

What made the owners to change the name of the ship is unknown. Were they not aware of Boris Lavrov's fate, or did not they want to have a name of a person who used to be called "Bolshevik of the Arctic" on a board of their ship? The ship is still working now. However, it does it not in the northern latitudes, but in the Pacific Ocean. But the name of Boris Lavrov disappeared from the boat. As if he was again a subject of repressions.

Conclusion

The article was aimed to show the connection between economics and politics through the prism of the life and fate of one of the Main Directorate of the Northern Sea Route leaders, the organizer of the Igarka port construction, Kara expeditions and chief of the First Lena expedition. The goal — to pay tribute to Boris Lavrov, the man who had made a considerable contribution to the development of the Arctic, has been reached. The article introduces the activities, character of B.V. Lavrov, conditions of life and work, difficulties he faced while managing the Arctic expeditions, development of the Northern Sea Route in the 1920—1930s.

We are talking about a man whose life was tragically cut by political repression, the author avoids dry presentation. At the same time, all contained in the article is based on documentary, supported by references that could be tested.

What conclusions could be made after discussing the life and destiny of B.V. Lavrov? Of course, the society is obliged to preserve his memory, as well as the memory of thousands of other people who devoted their life, strength and professional competence for economic development of the country and were tragically affected by years of political repressions. At the same time it must be

mentioned that value of a human life was, unfortunately, very low that time. The high price of life itself, the incredible efforts of many Soviet people created a powerful industrial base, new sea ports and developed transport communications for the years ahead and determined the socio-economic development of the Arctic region, ensured the delivery of goods to the remote areas of the Far North and the welfare of the population living there. All this was paid for dearly.

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Indefinitely on the Ice: Indigenous-explorer relations in Robert Abram Bartlett's Accounts of the *Karluk* Disaster

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Abstract. In 1914, the Canadian Arctic Expedition (CAE) attempted to advance Canadian sove-reignty in the Arctic as part of the colonial project, itself propelled by imperialist impulses rooted in complex imperialist ideology. The CAE came to an abrupt end with the sinking of one of its ships, the *Karluk*, with survivors setting up camp on Wrangel Island in the Arctic Ocean. With the Alaskan Inupiaq Claude Kataktovick[1], Robert Abram Bartlett, captain of the *Karluk*, trekked hundreds of miles over rough ice to and then through Chukchi territory in Siberia. From there, Bartlett was able to mount a rescue of the remaining *Karluk* survivors. Bartlett's accounts of his weeks with Kataktovick and the Chukchi serve as a case study of explorer-Indigenous relations in the era of exploration. The Indigenous people of the Arctic were subject to explorers in a hierarchical relationship built around supporting exploration. Despite their often central and sometimes life-saving roles, as actors, Indigenous people are generally invisible in polar narratives. Yet the story of the *Karluk* demonstrates that, even within the constraints of this context, Indigenous people could emerge as central agents and explorers could move towards more egalitarian relations with Indigenous people.

[1] Although his name is spelled differently elsewhere (usually as Kataktovik), I use Bartlett's spelling [3, 4].

Keywords: *Robert Abram Bartlett, Karluk, Indigenous—explorer relations, Chukchi, Inupiat, Arctic exploration, Canadian Arctic Expedition*

Introduction: Looking within the Framework

This article uses Robert Abram Bartlett's accounts — his 1916 narrative *The Last Voyage of the Karluk* and his 1926 memoir *The Log of Bob Bartlett* — to analyze relations between Arctic explorers and Indigenous people during the waning years of polar exploration. Besides Bartlett's accounts, this paper is based on primary research at various archives and libraries in Canada, the United States and Britain [2]. Bartlett's accounts are not and cannot be entirely representative of explorers' experiences because of individual differences and varying circumstances. But Bartlett's place and status as a lauded explorer advancing imperialist ambitions resembles that of other such agents including but not limited to Fridtjof Nansen, Robert Falcon Scott, Ernest Shackleton, Edward Shackleton, and Roald Amundsen. Bartlett was, for weeks, immersed in Chukchi culture as he attempted to mount an urgently needed rescue of the stranded survivors of the sun-ken *Karluk*. An experienced explorer by this time, he spent an even longer time in the company of a young Inupiaq, Claude Kataktovick, as the two made the dangerous trek from Wrangel Island to Siberia and along the coast to East Cape. The narratives demonstrate that Bartlett remained rooted in the hierarchical masculine nation-building culture of exploration and generally acted to reproduce this culture's marginalization of Indigenous people, despite the centrality of Indigenous people to the

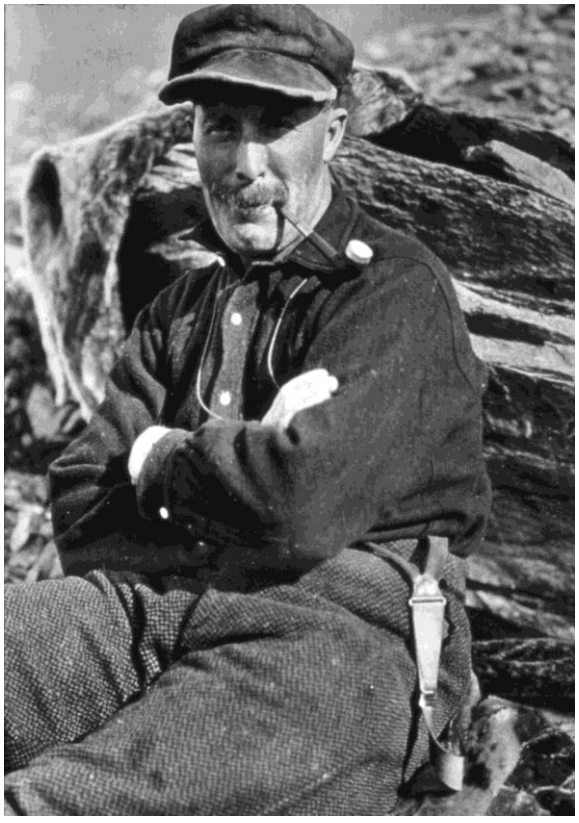
Picture 1. The *Karluk* cutting a path through Arctic ice in August 1913. Courtesy of Flanker Press (the National Archives of Canada [PA74047] and the Historic Sites Association of Newfoundland and Labrador).

[2] These include: the Bartlett Papers, Special Collections, Bowdoin College, Brunswick, Maine, US; the Scott-Polar Research Institute, University of Cambridge, UK; the National Maritime Museum, Greenwich, UK; the Canadian Museum of History, Gatineau, Quebec, Canada; the Rooms Provincial Archives of Newfoundland and Labrador, St. John's, NL, Canada; the Centre for Newfoundland Studies, Queen Elizabeth II Library, Memorial University, St. John's, NL, Canada; and the Historic Sites Association of Newfoundland and Labrador, St. John's, NL, Canada.

imperialist mission. Through his work Bartlett maintained the hierarchal explorer-Indigenous relationship with male and female Indigenous "local assistants," as explorers called them, subordinate and wedded to the background with white male explorers in the foreground. Yet the generosity of the Chukchi and the courage and appeal of Claude Kataktovick coupled with the dire circumstances facing the Karluk survivors allowed Indigenous people to emerge as central actors. Further, within the longstanding framework of explorer—Indigenous relations, the story of the *Karluk* features encounters marked by genuine humanity.

The Canadian Arctic Expedition

The *Karluk* was part of the Canadian Arctic Expedition 1913—1918, at the time the largest ever scientific mission to the Arctic [1]. The expedition was international with members coming from Australia, Estonia, Portugal, Norway, New Zealand, the Netherlands, Scotland, Canada and the United States [2]. It was also the Canadian government's first such expedition to the Western Arctic [1] and had as one of its aims the advancement of Canadian sovereignty in the Arctic. The Canadian Arctic Expedition included prominent scientists from several disciplines including topographer Bjarne Mamen, 22, meteo-rologist William McKinley, 24, geologist George Malloch, 33, and anthropologists Henri Beuchat, 34, and Diamond Jenness, 27 [3, p. 11], some of whom would not survive the trip. Besides scientists, there were 13 crew members on the *Karluk* as well as the local assistants Kuraluk, a hunter, and Kiruk, a seamstress, their children Helen and Mugpi, and Claude Kataktovick[3], aged 19, also a hunter [4]. The expedition was organi-zed by the charismatic Icelandic — Canadian anthropologist Vilhjalmur Steffanson who believed there was a northern continent yet to be discovered; this was called Theoretical Land by R.G. Harris, a mathematician with the U.S. Coast and Geodetic Survey [3, p. 8].



Picture 2. Captain Robert Bartlett, Peary Expedition, 1909, some five years before the Canadian Arctic Expedition. Courtesy of Flanker Press (the Peary/MacMillan Arctic Museum and the Historic Sites Association of Newfoundland and Labrador).

[3] I use Bartlett's spelling of the young Inupiaq's name throughout this article.

The expedition was divided into two groups, each with their own mandate. The Northern Party in the *Alaska* would search for this land mass while the Southern Party in the *Karluk*, skippered by Robert Bartlett, 39, would roam the Canadian Arctic islands to conduct scientific work.

The CAE was intended to advance the Arctic sovereignty ambitions of Canada, an inheritor of Britain's colonial project[4]. The colonial project itself was spurred by the deep-rooted imperialism of Western nations, imperialism being 'more than a set of economic political and military phenomena (but also) a complex ideology which had widespread cultural, intellectual and technical expressions." [5, p. 23]. Thus, in Linda Smith's words, the "imperial imagination enabled European nations to imagine the possibility that new worlds, new wealth and new possessions existed that could be discovered and controlled" [5, p. 23]. Theoretical land, opined the Ottawa *Journal*, might be home to vegetation as well as animals, mineral wealth, and "even new families of the human race with habits, customs and beliefs that will be of exceeding interest to everyone" [6, p. 13]. "Discovery" and scientific activity were tools of this project. In this context, Indigenous peoples became objects of discovery. When the novelty of their discovery has worn off, as in the case of the Inupiat long before the CAE, Indigenous people became part of the infrastructure of exploration, much like ships, pemmican, and hunting rifles — necessary for survival but rendered passive rather than active and subject to explorers' orders and even whims. Thus, Indigenous people were dehumanized and the Arctic was transformed from their home to an open laboratory for science and its urges towards measurement, quantification and collection, expressions of imperialist impulses and so necessary to the colonial project. Meanwhile, explorers are ennobled[5], motivated, to use Amundsen's words, by "pure unspoiled idealism" [7, p. 127]. The CAE, with its large contingent of scientists and its stated aim of discovery, epitomizes this characterization of "exploration".

The male nature of exploration cannot be overlooked; in the western imagination, powered by imperialistic impulses, the Arctic became a masculinized place, its female residents made invisible, although in their roles as seamstresses and fishers, they, too were crucial for the explorers' survival. As Victoria Rosner explains, "the grand heroic tradition of polar exploration defines the polar regions as all-male spaces of bonding, conquest, and noble suf-fering" [8, p. 491]. This can happen only if the unpredictability and dangers of the Arctic are emphasized, as they are in Bartlett's accounts, and if the poles are seen as empty of women. Indeed, women rarely factor into explorers' narratives — again, despite the contributions of Indigenous women to exploration

[4] Canadian sovereignty in the Arctic is a high priority for Canada's Conservative Government; Prime Minister Stephen Harper makes annual summer trips to the region as a statement of possession.

[5] Sometimes this was literal, such as when Ernest Shackleton was knighted by King Edward VII.

— and Ernest Shackleton turned away female applicants for his Antarctic voyages [8, p. 490]. The concept of the Arctic as free of women constitutes an "an aspirational fantasy rather than a practical reality" [8, p. 491] but it creates an ideal laboratory for male scientists and an undiscovered terrain for ambitious male explorers. These men, including Bartlett, were visitors and interlopers and had no legitimate claim to the Arctic, although their claims and the implications of these claims for sovereignty were legitimized by the complex ideology that is imperialism.

Newfoundland. Bartlett's Background

Robert Abram Bartlett was born in Brigus, Conception Bay, Newfoundland, part of British Empire, in August, 1875 to a prominent family on both his maternal and paternal sides. The explorers felt ideologically comfortable in their own countries and cultures but existentially longed for the Arctic, remaining "proud of their native place, nation and culture" [9, p. 96]. This was true of Bartlett who was very much the product of his environment, itself ideally suited to exploration. His great-uncle, Captain John Bartlett, accompanied American Dr. Isaac Israel Hayes to Devil's Thumb, Melville Bay, Greenland [10, p. 30]. John was "one of the most successful seal killers," averaging over 69,000 seal pelts annually from 1839 to 1862 [10, p. 189]. Captain John once lost 24 men out of a crew of 40 who were fishing in small boats from his larger ship [11, p. 30], the *Deerhound*, but the stoicism that out of necessity characterized Newfoundland seagoing culture meant that the survivors went back to work the next day. An an obituary of Bob's Uncle Sam read, "(Captain Samuel Bartlett was from) a famous family of Newfoundland sailing masters, which has long been identified with Arctic exploration… and has made a name for the sterling qualities of its members" [2, p. 436]. Samuel Bartlett was master of the *Diana* in 1899, the *Windward* in 1990—1901, the *Erik* in 1905 and 1908, and the *Jeanie* the following year, all of which went to the Arctic [2, p. 436]. Foreshadowing his nephew's *Karluk* voyage, Sam skippered the *Neptune* with the Canadian Government Expedition to Hudson Bay in 1903—1904 [13, p. 383]. This voyage advanced Canadian sovereignty in the Arctic, establishing the first Canadian Government systems of customs and justice in the islands of the Eastern Arctic. The *Neptune* party also claimed Ellesmere Island for King Edward VII, who was the head of state of the Dominion of Canada and of Newfoundland, her neighbour. Bob Bartlett replaced Sam when his uncle declined to accompany Peary to the Arctic in 1904 and subsequently became the first captain to take a ship north of 88 degrees [14, p. 130].

Captain John's namesake and nephew, John Bartlett, Bob's uncle, acted as master on Robert Peary's ship before passing the baton to other Bartletts. John, wrote Bob, was "the first

Bartlett to get his nose away in beyond the Arctic Circle. Tales of his voyages among the ice laid the foundation for my own love of polar work on which I put so many years of my life" [11, p. 48]. John schooled Bartlett in navigation through shifting ice on the *Windward* with Peary and taught him how to judge distance at sea. In 1866, John Bartlett became the first Newfound-lander to earn his master's certificate from London [15]. Bob's uncle, Henry (Harry) Bartlett, the only Bartlett to die at sea, went north several times with Peary. Harry Bartlett had his own ambitions; as Peary's wife, Josephine wrote, "(Harry) was determined to break the record in the crossing of this water — thirty six hours — on this his first voyage to the Arctic regions" [16, p. 214]. And he did, reaching Melville Bay in less than 25 hours [16, p. 214]. When Peary falsely claimed the North Pole, it was Bob Bartlett who took him north in the *Roosevelt*.

Brigus itself was an important town and the home of many notable affluent sealing and fishing captains besides the Bartletts and other relatives of Bob's. By the mid-1700s, no less than 66 ships left Brigus annually in search of seals, several of them skippered by Bob's ancestors [17]. Coming from such a renowned place was one factor that contributed to Bartlett's confidence, an attribute that would serve him well in his Arctic career, especially during the *Karluk* saga. Brigus, then, and the Bartlett family in particular were sites that reproduced the ideology of exploration and supplied men and expertise for ventures of Arctic exploration, discovery and the commercialization of Arctic land and waters.

The Arctic Ocean. The Sinking of the Karluk

An early snowstorm on August 1, 1913 [18, p. 4] hinted at the disaster that was to come; the *Karluk* was in Alaskan waters, south of Point Barrow [18, p. 4]. Immediately Bartlett and his crew sighted sea ice near the cape, which turned into a solid ice pack to the eastward. Bartlett favoured a return to the south but Steffanson insisted on pushing on [18, p. 4]. Bartlett had also seen a polar bear, which he regarded as "a beacon toward future disaster": "I am more than ever a believer in signs," he wrote [19, p. 228], a sentiment that Katiktovik and the Indigenous Siberians the two later encountered would likely have understood. By August 12, the *Karluk* was stuck in the ice; the next day she was aground [18, p. 4]. This would become, wrote Bartlett, the "most tragic and ill-fated cruise of my whole career" [11, p. 227]. Pushed by the Japanese Current, the ship drifted until she was north of Alaska. She had once been within sight of land but she ended up north of Wrangel Island. On January 10, the ice punctured a hole in the *Karluk*'s hull and Bartlett gave the order to abandon ship. She sank the next day. As the ship slipped below Arctic water, Bob Bartlett sat in the captain's cabin, demonstrating his dramatic flair by playing Chopin's "Funeral March" on the Victrola.

Picture 3. The region in which the *Karluk* sailed and sank. Note Wrangel Island, Russia, where the survivors camped, and Point Hope, Alaska, the home community of Claude Kataktovick.

Fortunately, the crew had long set up what came to be known as Shipwreck Camp on the ice and Bartlett directed that they would stay there until February when the Arctic darkness would decrease, allowing for travel over ice to Wrangel Island in daylight. Four of those on the *Karluk* — including physician Alistair Mackay, and the scientists Henri Beuchat and James Mur-ray — disagreed with Bartlett's plan and set out for land in January, never to be seen again. In another episode that emphasized the precariousness of their situation, four crew members were lost when they got trapped on Herald Island while setting out caches for the planned trip. Stefansson was long gone, having taken a hunting party away from the ship for what he said would be a ten day hunting trip; after the ship drifted his group could not find it again [20; 6; 21].

Wrangel Island, Russia

Russia's Wrangel Island was named for Ferdinand von Wrangel who led a Russian expedition there in the 1820s. The island is marked by mountain ridges stretching over 80 kilometers from one end of the island to the other; in the south there are coastal lowlands and in the north there is tundra [22, p. 357]. Some of the peaks reach 2500 feet and there is very little vegetation on the island, which is frequented by polar bears in the winter and birds in the spring and summer [18, p. 18]. Although it was uninhabited in 1914, fortunately, for the *Karluk* survivors,

there was plenty of driftwood on the island [18, p. 18]. On March 12, after walking for 100 miles, the remaining 17 *Karluk* survivors reached Wrangel Island. Bartlett had intended to walk them all to Siberia but realized this was impossible, given the conditions, the size of the party, and the inexperience of most of its members. Those left behind would suffer semi-starvation, disease and further tragedy.

Alaska, United States

Indigenous actors in exploration are rendered almost invisible; they are transformed into infrastructure that supports the goals and work of the explorers. Although there are exceptions, such as Jennifer Niven's *Ada Blackjack* (23), most polar literature pays scarce attention to the role of "local assistants" like Kuraluk, the hunter, and Kiruk, his seamstress wife, who were hired for the Canadian Arctic Expedition. Generally, polar explorers and scientists took Indigenous peoples for granted, although, again, it was very often the skills of Indigenous people that enabled the explorers' survival. This is even true of Claude Kataktovick, the nineteen year old who accompanied Bartlett across the ice to Siberia. Fortunately Bartlett's account of the Canadian Arctic Expedition and the *Karluk* has some focus on Kataktovick, with the story of his participation in the rescue attempt woven through the narratives, especially his 1916 book [20]; Bartlett also provides significant information on his encounters with the Chukchi. This gives us a case study of explorer-Indigenous relations in 1914; as the Chukchi and Kataktovick become central figures in the narratives, Indigenous people move closer to centre stage than in most other polar accounts. Claude Kataktovick in particular is presented to us as an individual, rounded out to a degree rarely seen in texts written by explorers. An even fuller understanding of Kataktovick and the Chukchi and the contexts in which they lived is possible through reference to the historical and contemporary academic literature on Siberian and Alaskan Indigenous peoples as well as Bartlett's records.

Kataktovick was Inupiat (sometimes spelled Iñupiat); Inupiat is plural with Inupiaq bring singular [23]. The Inupiat lived and live in Coastal Alaska and are part of the Inuit who live across the Circumpolar region [6]. The Inupiat constructed driftwood and sod houses which were partly subterranean [24]; thus, Kataktovick would have spent much of his life in such structures.

[6] Although there is regional variation from one Inuit group to another, all Inuit are the descendants of the Thule with their communities coalescing about 1000 years ago [13, p. 32].

Picture 4. Kuraluk and Kiruk with their two childred Helen, about 11, and the toddler Mugpi. The Inupiat couple was hired to hunt and to sew winter clothes for the *Karluk* expedition crew. Courtesy of Flanker Press (the National Archives of Canada [C70806] and the Historic Sites Association of Newfoundland and Labrador).

Kataktovick was a native of Point Hope, Alaska, a community in North Slope Borough, Alaska, United States. These houses, home to one or two families totaling eight to 12 people, were built around another larger building, a *qargi*, which served as the council house [25, p. 26]. The Inupiat built their economy and society around the bowhead whale with the yearlings they often hunted weighing about 10,000 kilograms [25, p. 32]. Whalers were organized into crews that hunted from *umiaks*, relatively large boats, lead by *umialiks*, who owned the boats and the equipment, directed the rituals that governed hunting, and welded considerable social and econo-mic power in the com-munity through the distribution of resources, including whale meat and trade goods [25, p. 32]. There was, then, a well-developed social hierarchy in Inupiat so-ciety, which was "relatively stable" for almost a millen-nium [25, p. 31]. Being socialized into a rigidly hierar-chical society smoothed the transition of Inupiat into rigidly hierarchal expeditions like the CAE; Kataktovick, for instance, would have been accustomed to taking orders from social superiors like *umialiks* or sea captains.

While Claude Kataktovick's ancestors witnessed little change in their lives, this was not true for Kataktovick himself who was born in a time of great transition. The three deepest changes were inter-related and had profound effects on the Indigenous people of Alaska: the decline of the bowhead whale economy; the arrival of European diseases that soared to epidemic proportions; and the rise of Christianity. Claude Kataktovick would have been born about 1895, when the bowhead whale-based economy had virtually disappeared due to American whaling activity. Its decline began in the 1850s and escalated in the 1880s [24, p. 90]. At the same time the whaling economy was disappearing, the caribou population was "all but exterminated by the Inupiat themselves, and epidemic diseases were introduced for the first time" [24, p. 90]. Burch explains the impacts as follows: "The result was the decimation of the human population. Population loss, in turn, destroyed the political basis of the

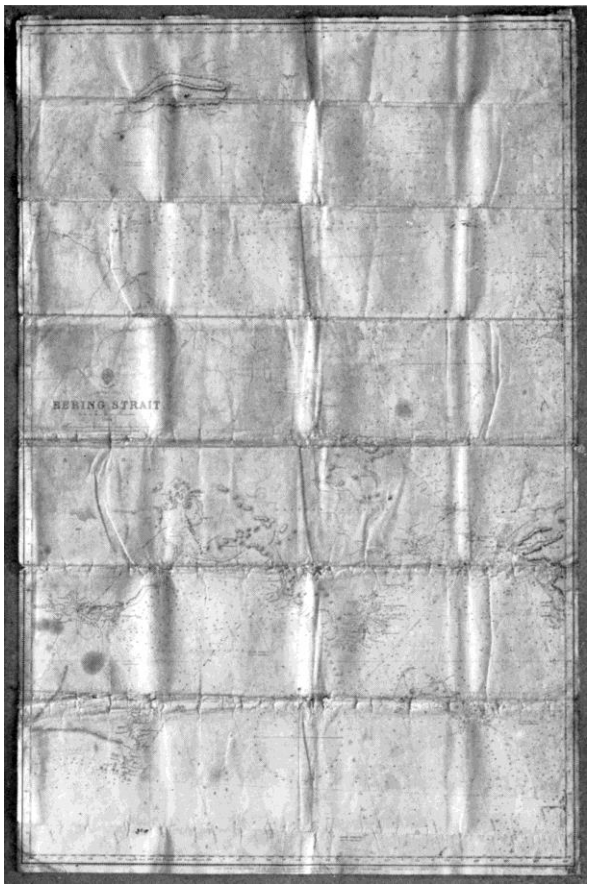
traditional social system because the several societies that comprised it no longer had enough members for collective self-defense" [24, p. 90]. This, of course, set the scene for Inupiat receptivity to Christianity, a religion the Inupiat would transform according to their own belief system. Burch writes, "In 1890 there probably was not a single Christian Inupiaq Eskimo. Twenty years later, there was scarcely an Inupiat who was not a Christian" [24, p. 81]. This means that Christianity was taking root during Claude Kataktovick's lifetime, presuming that his family, like most, would have converted. While Inupiat society was in a state of flux during this time, Christianity was very new and Kataktovick would have been raised with Inupiat values and stories as well as those related to the emerging "Eskimoized Christianity." One example of the persistence of Inupiat culture is his fear of the Indigenous peoples of Siberia, which he would have learned from his parents and possibly grandparents who were aware of the history of warfare between Arctic peoples. Given the multiple changes that were occurring after 1000 years of relatively stability, Kataktovick's childhood would have been stressful, even traumatic, unlike Bartlett's, which Bartlett presents as stable and contented among the Brigus elite in his memoirs [11].

The Arctic Ocean

From Bartlett, we know that Kataktovick was a widower although he was still a teena-ger, and left his daughter with his mother to work for the Canadian Arctic Expedition; thus, he had experienced personal tragedy [26, p. 19]. Interestingly, Kataktovick could read and write and Bartlett, who often loaned him books and magazines, taught him to reach nautical charts as well [26, p. 60, p. 179]. Bartlett also gave him blank books to write in, and mused, with reference to Peary's belief that Inuit should not become "dependent on the white man's methods of life", "What would Peary say?" [26, p. 60, p. 179]. Here Bartlett's actions do not, for once, follow Peary's. Yet his comments reflects explorers' views of Indigenous people as fixed in time, unchanging and ahistorical; these views are rooted in and contribute to the ideology of imperialism and allowed explorers to fix Indigenous people as subject to them.

Bartlett's Inupiat was rudimentary as was Kataktovick's English and they seemed to have spoken a mixture of both languages to each other in a very basic way. By the time they've lodged at Camp Shipwreck after the sinking of the *Karluk*, Bartlett's references to Kataktovick are casual, similar to the mentions of his non-Indigenous crew members and the scientists. There are, in *The Last Voyage of the* Karluk, many instances that demonstrate the young Inupaiq's resourcefulness and budding leadership skills. Kataktovick spent weeks laying trails and making roads with Bartlett, sometimes just the two of them together, experiences that fueled the captain's confidence in Kataktovick.

After this work together, Bartlett decided how rescue would be achieved: “I would take Kataktovick with me. He was sufficiently experienced in ice travel and inured to the hardships of life in the Arctic to know how to take care of himself in the constantly recurring emergencies that menace the traveler on the eve-shifting surface of the sea ice” [26, p. 152]. He had originally planned to take Mamen but the Norwegian topographer had dislocated his knee; in addition, Bartlett was increasingly impressed with Kataktovick’s skills and the two had developed something of a rapport.



Picture 5. Bartlett’s chart of the Siberian Coast and the Bering Strait (Courtesy of Flanker Press).

Chapter 19 of *The Last Voyage* is titled “Kataktovick and I Start for Siberia”, an intimation of the respect Bartlett had for Kataktovick and the increasingly egalitarian — given the context — relationship between them [26, p. 158]. This relationship was not one of equals, however; Bartlett was almost twice the young Inupiaq’s age and old enough to be Kataktovick’s father, he was the captain, he was a famous explorer who had navigated for Peary, and he was white. In other words, the hierarchy of the explorer-Indigenous relationship was a constant layer over all their interactions. Thus, Bartlett frequently told Kataktovick what to do, including telling him to fetch his mug from the sled to bring into a Chukchi dwelling after they had finally reach Siberia; this may sound objectionable to the modern era but would have been typical behavior shaped by the context of the expedition and explorer-Indigenous relations in this era.

Bartlett “knew as much about Siberia as he knew about Mars” but had faith that “the natives” there would help [20, p. 154]. As they traveled, the ice moved incessantly, there were blinding snowdrifts, and the light was bad. Much of the snow was deep and soft, making it difficult for the dogs and sledges as well as the two men on their snowshoes. Sledges broke and the repairs caused delays. The dogs kept chewing the harnesses and running away, with Bartlett and Kataktovick losing precious time and energy trying to catch them. They had no time to cook so ate the bear Kataktovick caught raw. The dangers of the trip necessitated constant decision-making; the dogs’ diets had to be carefully monitored, for instance, lest they overeat and become

lethargic. One night the wind tore the canvas top off their igloo, exposing them to the frigid air. Bartlett had a nagging pain in his left eye, which sometimes became acute. “It was a slow job,” he wrote laconically [20, p. 190]. Kataktovick, still a teenager, got depressed a times, telling Bartlett “We see no land. We no get to land; my mother, my father tell me long time ago Eskimo get out on ice and drive away from Point Barrow never come back” [20, p. 195]. After a cruel three-week struggle over jagged ice, Bartlett was relieved when Kataktovick called, “Me see him, me see him, *noone* (land)!” [20, p. 179]. By the time the two reached East Cape later, 37 days had passed since they had left their companions and they had travelled an astonishing 700 miles, most of it on foot [3, pp. 232—233]. He later explained their journey to a Siberian, “Kataktovick was with me and built our igloos and killed seal and bear. An Eskimo and a white man could live indefinitely on the ice” [20, p. 204].

Encounter: Siberia, Russia

Kataktovick feared the Indigenous peoples of Siberia Bartlett and had to be persuaded by Bartlett to continue on to meet them; wrote Bartlett, Kataktovick “was sure they were going to kill him. He told me it was a tradition of his own people that the (Siberians) were a blood-thirsty outfit” [11, p. 244]. Bartlett knew he needed the Inupiaq’s cooperation and presence; his strategy was to ignore Kataktovick’s misgivings, not lending them any credence. He also tried to appeal to Kataktovick’s smoking habit and the young man agreed to carry on only when Bartlett told him he would be able to secure tobacco from the Indigenous Siberians [11]. Kataktovick’s worries were based on conventional Inupiaq wisdom which held that Indigenous Siberians were dangerous and violent; this resulted from the history of warfare in the Bering Strait region with many cases, motivated by economics, recorded in the 18th and early 19th centuries [27, p. 52][7].

Bartlett began the encounter Kataktovick so dreaded by extending his hand to the Chukchi but neither party understood the other’s language. As Bartlett put it, “they were as ignorant of my language as I was of theirs” [20, p. 191]. As Bartlett described their initial meeting “… I put out my hand and walked towards them, saying in English, ‘How do you do?’ They immediately rushed towards us and grasped us each warmly by the hand, jabbering away in great excitement” [20, p. 191]. One “native” used the mariner’s term “old man,” puzzling Bartlett at first: “His question puzzled me at first; presently it dawned on me that he was speaking in nautical parlance and wanted to know if I was a captain. ‘Yes,’ I replied. ‘You come below in my cabin, old man,’ he said, meaning that I was to go into his aranga” [20, p. 203]. It turned out that the Indigenous man knew

[7] In 1881, the American scientific explorer William Healey Dall stated that the Inuit of the Bering Straits were “not on good terms” with one another and that they “cherish(ed) a mutual contempt” [9, p. 867].

other rudimentary terms in English; in fact, he understood “a good deal of what (Bartlett) told him” [20, p. 204]. In addition, he knew some of Kataktovick’s mother tongue. This limited language knowledge reflects the use of trade jargons in use in the Bering Straits resulting from interactions with American whalers mainly from New England beginning about 1846 [28, p. 53]. The Chukchi borrowed some English words — loanwords — mainly related to material culture, especially food [28, p. 58]. But Bartlett did not record these and relied more on paper to communicate: “By drawing pictures of trees and reindeer on the chart I found that I could make them understand what I wanted to know; then by marking on the chart they showed me that they made journeys of fifteen sleeps' duration before they reached the reindeer country” [20, p. 195]. Bartlett kept a diary and noted that he “studied” the people: “I did not, of course, acquire all my information about the natives from the first ones I met, though to be sure they were a typical group and exemplified, the more I studied them, all the customs of the country, especially that of continual feasting of the stranger within their gates” [20, p. 196]. The Chukchi were curious to know where their visitors had come from and indicated this with “signs” — hand signals. Bartlett’s response was to take out his charts and show them Wrangel Island, explaining, as best he could, his concern for the Karluk survivors who remained there.

The Chukchi lived in *arrangas*, fashioned from driftwood and skins which they made available to their visitors. Bartlett provided a comprehensive picture of these dwellings: “The Siberian Eskimo or Chukches, as these natives are called, know nothing of snow igloos or how to build them. Their house, as I was presently to learn, is called an *arranga*. There is a frame-work of heavy driftwood, with a dome-shaped roof made of young saplings. Over all are stret-ched walrus skins, secured by ropes that pass over the roof and are fastened to heavy stones along the ground on opposite sides. The inner inclosure, which is the living apartment, is about ten feet by seven; it is separated by a curtain from the outer inclosure where sledges and equipment are kept” [20, p. 192]. According to Bartlett, one *arranga* they stayed in held three lamps, fueled by seal or walrus oil, and was not ventilated with the result that it was hot inside, about 100 degrees, while it was — 50 outside: “Cold as it was outside, the air inside was very warm, too warm for comfort…” [20, p. 204]. It was crowded and tobacco smoking clouded the air, which Bartlett, with his abstentious background, found hard to cope with. Add to this the constant tubercular coughing of the Chukchi. Of another *arranga*, he wrote, “The air was hot and ill smelling, and filled with smoke from the Russian pipes which the Chukches used, pipes with little bowls and long stems, good for only a few puffs. When they were not drinking tea they were smoking Russian tobacco. All the time, with hardly a moment's cessation, they were coughing violently; tuberculosis had them in its grip.

When they lay down to sleep they left the lamps burning. There was no ventilation; the coughing continued and the air was if anything worse and worse as the night wore on. Sometime between two and three in the morning I woke up; I had been awake at intervals ever since turning in but now I was fully aroused. The air was indescribably bad. The lamps had gone out and when I struck a match it would not light. The Chukches were all apparently broad awake, coughing incessantly" [20, p. 198]. Despite his life onboard ship, Bartlett was an introvert and disliked crowds in small spaces; here he lacked the captain's cabin which had always provided him with a solitary refuge. Kataktovick, too, may have been introverted, although he lacked a retreat onboard ship, like Bartlett. The Chukchi offered the two *Karluk* survivors rancid walrus meat, pemmican and deer meat and allowed Bartlett to make "strong Russian tea," a favourite of theirs.

Besides sharing food with Bartlett and Kataktovick, the Chukchi mended their clothes and provided them with shelter. As Bartlett described it, "About eleven o'clock that night we all lay down together on the bed-platform, men, women and children; the youngsters had all remained outside the curtain until that time" [20, p. 196]. They let Bartlett borrow one of their dogs. They traded in a just manner, offering the visitors a much-needed dog for a gun, and one man went out of his way to return a dog he'd traded with Bartlett but that had run back home. Bartlett realized their level of sophistication by noting that his own behavior did not meet their standards yet they chose to ignore this. Of the dozen or so Chukchi Bartlett and Kataktovick first approached, the captain said effusively, "Never have I been entertained in a finer spirit of true hospitality and never have I been more thankful for the cordiality of my welcome. It was, as I was afterwards to learn, merely typical of the true humanity of these simple, kindly people" [20, p. 192] [8].

He was particularly taken with one Chukchi family at Cape Wankeram, noting with pleasure that the man, who he does not name, shared his love of music. This man "treated us to an extended concert, numbering 42 selections, starting off with "My Hero" from "The Chocolate Soldier"… Like the true music-lover, he kept on playing until he had finished all of his forty-two records" [20, p. 220]. That night Bartlett finally slept peacefully, which he had not done since leaving Camp Shipwreck. The Chukchi music-lover had a wife and two "fine-looking daughters" (as well as a son) [20, p. 218], and a collection of copies of the *London Illustrated News*, *National Geographic*, and *The Literary Digest*. Bartlett gave the family snow-knives, steel drills, a skein of fish line, a gill net, and ribbons of yard for the daughters. Bartlett was touched by the man's action

[8] Only one group was not happy to see Bartlett and Kataktovick as they were short of food [3]. They did not turn the visitors away, however [3].

of silently harnessing up his own dogs for the visitors, writing, “Our treat-ment at the kind hands of this Chukch (sic) family will always remain in my memory” [20, p. 221].

Even Kataktovick became relaxed around the Chukchi; he was able to procure flour from one and sometimes brought messages to Bartlett from them. His behavior hinted that he recognized elements of their culture. Interestingly, he worried about the captain’s excitement and enthusiasm in conversation: “You must not talk that way,” he told Bartlett, fearing their hosts would take offence and perhaps exact revenge on the visitors [20, p. 216]. This incident reflects a certain confidence on the young Inupiaq’s part and a move away from the traditional Indigenous-explorer relationship.

There were, Bartlett came to realize, two distinct Indigenous peoples in this part of Siberia: the coast people, who were hunters and used skin boats, and the deer people. The coastal people called themselves *anqa’lit* while the deer people called themselves *av ulat* [29, p. 178]. As Bartlett wrote, “… (there were) two kinds of natives, the coast Eskimo and the deer men, the latter a hardier type of man than the former. The coast natives get their living by hunting, their chief game being walrus, seal and bear. Some of them have large skin-boats for travelling from settlement to settlement; covering in this way considerable stretches of coast. They do not go out upon the drift ice” [20, p. 196]. Like Dall in 1881, Bartlett had begun to discern the dualism that became the focus of later academic research [30; 31]. Dall wrote of the “Reindeer Chukchi (Tsau’-yū-at)”: “They are… not the wandering or reindeer Chukchi, but that part of the nation which gain their living by sealing and fishing” [32, p. 860]. As Schweitzer and Golovko explain it, echoing and expanding on Bartlett’s observation as recorded in his 1916 account, “Reindeer herders of interior Chukotka exchanged their products for sea-mammal products with coastal communities on the Asiatic and American sides of the Bering Strait [27, p. 51]. Trade was indeed important to the Indigenous peoples of Siberia; “it was not a luxury but a necessity” [27, p. 51] and could even save lives by relieving hunger. In common with most cul-tures, exchange, then, was a key to the region’s Indigenous cultures and economies. Schweitzer and Golovko characterize the area’s networks as “enduring, flexible, and ever changing” with local and global influences [27, p. 54] [9]. The central place of exchange in the region served Bartlett well as he and Kataktovick journeyed along the coas[10]t; their presence was accepted and they were able to trade items with the Chukchi

[9] These relationships would be undermined by such events as the establishment of the Soviet Union and the development of the Cold War; according to Schweitzer and Golovko, it was difficult for Chukchi to cross borders to visit neighbouring villages in the mid-1990s [27, p. 54].

[10] The Bering Strait region is “historically heterogenous” with several linguistic and cultural categories including Chukchi, Naukan Yupik, and Unupiaq (or Inupiat) [27, p. 50]. However, Schweitzer and Golovko [27] point out that these categories would have meaningless to the Indigenous people themselves with people identifying with their smaller

and give gifts as forms of thanks, news of which would be forwarded to the next village they would be passing through.

The Rescue of the Karluk

Bartlett left Cape East on the *Herman* and wired Ottawa, the Canadian capital, from St. Michael, Alaska. He recovered from severe swelling in his legs, which virtually paralyzed him, while seeking a rescue ship. He sailed in the *Bear*, an American ship, on July 13, 1914 and was reunited with the *Karluk* survivors when the *Bear* met the *King and Winge*, a Canadian ship that had rescued them the day before [20, p. 277]. Thus, on Sunday, August 9, 1914, the anthropologist Stuart "Diamond" Jenness of the CAE began his diary entry "Great news" [33, p. 261]. Bartlett had reached Plover Bay (Siberia) "all in — he could hardly stand his feet were so broken up" [33, p. 261]. Jenness summarized the story of the *Karluk* as follows: "The Karluk drifted about 60 miles off the coast of Herald Island, about 65 miles from Wrangel Island in January. Here she was crushed by the ice … She sank with the (Canadian) flag flying, and the ice closed over her again. The men made Wrangel Island with provisions for 80 days and plenty of guns and ammunition. (Bartlett) with a Port Hope [11] Eskimo — Claude Kataktovick — crossed over to the mainland… The Herman butted through the ice at Plover Bay, picked up Captain Bartlett, and took him to Nome, whence he was telegraphing out." [33, p. 261]. In keeping with the style of most exploration narratives, Bartlett was the central figure for Jenness who mentioned Kataktovick only in passing. Meanwhile one survivor had died of a gunshot wound on Wrangel Island while disease had struck down two others, including Mamen, who had hoped to do the role Kataktovick did. It is interesting to speculate how Bartlett's and secondary narratives would have been shaped if Mamen, a Norwegian, had trekked to Siberia with Bartlett instead of the Inupiaq.

In 1914, there was great interest in the story of the *Karluk*, despite momentous events happening in Europe, and this interest was sustained. In November, 1916 the *New York Times* published an account by Bartlett and a chart showing the ship's progress until it was crushed [26].

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units based on where they lived and who surrounded them in nearby villages. Broader identities would become important only as outsiders developed a presence in the area and Kataktovick and Bartlett benefitted from existing networks as they traveled along the Siberian coast.

[11] Jenness is referring to Point Hope.

Picture 6. The *Karluk* survivors on board the *Bear*: Captain Bartlett is fourth from the left (Courtesy of Flanker Press).

Meanwhile, Bartlett, at least, expressed his appreciation for the skills and companion-ship offered by the young Inupiaq and sent his pay along to him as soon as was possible. Of their leave-taking at the East Cape, Bartlett wrote, "… we were parting here. I thanked him as I bade him good bye, for all that he had done, and told him how greatly I was indebted to him for his constant help and for his faith and trust in me" [20, p. 240]. Almost fatherly, Bartlett added, "I asked Mr. Carpendale (a trader) to tell the Chukches what a good boy Kataktovick was. I gave him the rifle we had carried on our journey and some other things we had with us, and then we shook hands warmly and parted" [20, p. 240]. By the time Bartlett wrote his book about the *Karluk*, he had, for the second time in his life, made international headlines; he was ensconced in popular consciousness as a man's man, a true hero, an icon to be admired and emulated. The crucial role of the teenaged Inupiaq Claude Kataktovick and the exceedingly generous Chukchi of Siberia in the *Karluk* rescue, meanwhile, faded into history.

The Meaning of the Encounter

Western intellectuals lack the cultural background to understand non-westerners (such as Indigenous people) and represent their experiences [34] so it is hard to understand the motives and perspectives of the Indigenous people who engaged in or supported Arctic exploration. Perhaps not surprisingly, explorers rarely tried to understand and seemed, at times, not even to realize that other — valid — perspectives existed; Peary and Bartlett, for instance, were both critical of the "spells" of Ahngoodloo, an Inuk, who was likely experiencing stress in reaction to the inherent power relationships and possible power abuse inherent in Arctic exploration [19, p. 2].

Indigenous analyses are sorely needed but there are few written accounts by Indigenous people, especially from the era of Arctic exploration[11].

Albeit from an explorer's perspective, Bartlett gives us a window into the life of the Chukchis after whaling had declined and before they were radically changed by external forces, specifically policies in the Soviet era which would begin a few short years after the *Karluk* drama. Although there is evidence of trade and sickness, Chukchi values and mores seemed essentially intact in 1914, at least from an outsider's perspective which lends the account some poignancy. Chukchi material culture seemed to be mainly Indigenous but they eagerly embraced items imported by the explorers and the whalers. It is impossible for us to know if the Chukchi felt their culture and economy were threatened or if they had the sense that their openness and ministrations likely saved the lives of their two visitors and, indirectly, the lives of the *Karluk* survivors.

We need to build on our attempts to understand the relationships that developed between "local assistants," who were Indigenous, and the white men who were frequently the recipients of international accolades, as Bartlett was; particularly needed are Indigenous perspectives on these relationships. Bartlett uncritically used language that reflects the ideology of imperialism, so central to his profession and peers; he wondered, for instance, if Chukchi were "afflicted with tuberculosis, to which so many primitive races have succumbed after contact with the beneficent influences of civilization" [20, p. 186]. Yet Bartlett's telling of the *Karluk* story is interesting in that it shows that the captain himself, while still very much entrenched in explorer-Indigenous power relations, had become tranformed to the point that he was able to individualize, respect and give credit to at least one Indigenous person, Claude Kataktovick. He did not record any of the names of the Chukchi in his accounts, although he mentions writing some of them down but losing the paper. He did not romanticize the Inupiat or the Chukchis, writing of an *arranga*, "It smelled worse than any Greenland igloo I have ever been in, which is saying a good deal" [11, p. 244]. This, in combination with his habit of seeking advice from Kataktovick and writing about this practice, suggests that Bartlett did not patronize the Chukchi or the Inupiat. Bartlett also tried to model courtesy in Siberia and praised the hospitality that probably saved his life. This is but a small debt repaid to the Indigenous people who were so vital to Arctic exploration and to whom exploration cost a great deal; still, it merits some attention. Bartlett's views of and relationships with Indigenous people occurred as part of an imperialist push, given that the Canadian Arctic Expedition aimed to advance the assertion of Canadian sovereignty over the Arctic, which was

[11] Hans Hendrik's book is a striking exception (Hendrik was a Greenlandic Inuit explorer) [16].

consistent with goals throughout the era of "exploration." The captain's account, however, demonstrates that, even in this sort of power-riddled and unjust scenario, genuine humanity can assert itself from all sides.

Although he has been for decades, Claude Kataktovick should be overlooked no longer. Through this young man, we are provided with an example of a skilled Inupiaq who was largely responsible for the rescue of the stranded survivors. Above all, Kataktovick was a resilient Inupiaq, a young widower who was set to remarry — to begin again — after a life of considerable turmoil, including the accomplishment of a harrowing walk from north of Wrangel Island to Siberia and the East Cape.

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UDK 396 + 902 (571.56)

Women if Russian settlements in the North of Yakutia at the end of the 17th century — beginning of the 18th century or the "women's issue" through the eyes of an archaeologist

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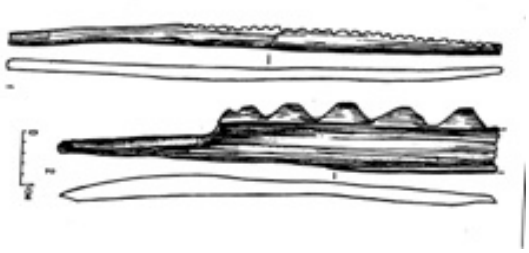
Abstract. The article deals with the life of women in the first Russian settlements in the North-East of Russia in the late XVII — early XVII centuries, known from various archaeological sources. The major idea of the article is opposite the prevailing regional historiography tradition. Archaeological findings show that in the Northern Yakutia, the first settlers came there not only with the representatives of the indige-nous peoples of the region, but also with Russian women.

Keywords: *Arctic, Russians, archeology, historical demography, comparative analysis, gender studies*

Information obtained from archaeological sources, as a method of knowledge of the cultures of the past allows reconstructing the everyday life of bygone eras to understand the role of women in the life of the first Russian settlements in the North-East of Russia at the end of 17th — beginning of the 18th centuries. Constantly improving methods of archaeological research provide a possibility of more accurate reconstruction the past, not only very distant epochs, but also the times that seem to be quite well-known with the help of great amount of written sources. Such periods of time include the development of Siberia. Bright history of this process was actively studied and continues to attract the attention of specialists but ordinary life of that era, including women, still remains in shadows.



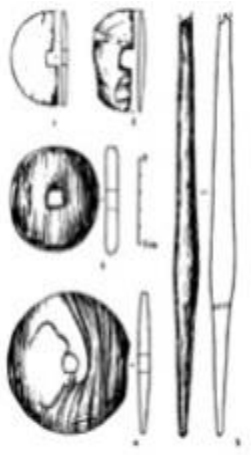
Picture 1. Combs [1]

Archaeological data is able to fill this gap, the data based on sources left by people unintentionally. Archaeological sites located in permafrost are, in this sense, the greatest value; here items and materials of organic origin are conserved — wood, bones, and textile, pelt used for a huge number of everyday items. Such findings are possible for Alazeisky and Nizhnekolymsky forts, studied archeological expedition of the YSU under the supervision of A.N. Alekseev in 1986—

1990. Research of the Nizhnekolymsky (Staduhinsky) fort was continued by the NPO group "Northern archeology – 1" under the supervision of G.P. Vizgalov in 2009—2011. Among the materials there are items that can give an idea of the life of Russian women in the north of Yakutia at the end of 17th — beginning of the 18th centuries. All items associated with women could be divided into two categories: the tools for fiber processing, sewing and embroidery, and fro clothing and decorations.

The first category is represented by a wide range of tools. These include combs, beater, spinning wheels, spindles and whorls found during the excavations of Alazeisky and Nizhnekolymsky forts. All of these tools are fixed product of characteristic shape. Lopaska of spinning wheels, unlike Siberian and Russian ones, are made quite rude and have no decorations in the form of thread or paintings. Wooden spindles are every interesting. No analogues could be found. They look like large wooden flat wheels with circular or square opening in the center, with a diameter of 15—25 cm. The large size of these spindles is for the whorl and is intended to stabilize the spindles, to facilitate the work of thread spinner and to make smoother. Usually spindles are made small, of stone or clay, I think, all will remember the famous Ovruchsky spindles from the rose slate, so popular in Russia in the 10th—12th centuries. Wood material is lightweight. So, to achieve the desired effect, it was necessary to increase the diameter of the spindles.

Picture 2. Beater and lopaska [1]



Picture 3. Whorl and spindle [1]

In connection with the above, the question arises: what kind of fiber used the women in the Arctic, where the where flax did not grow? The answer to this question is given by the archeological ma-terials and modern ethnographic observations. During the excava-tions at the Nizhnekolymsky fort in 1989, knitted socks and felted siskin made from dog hair were found. Modern women the down-steams of Indigirka and Kolyma rivers successfully spun wool from the dog's hair and knit beautiful and very warm clothes. Since traces of weaving have not been found yet in both forts, it could be assumed that in the studied time spun wool used the same way.

"Tools and materials for sewing and embroidery" represent the third category that includes needles, thimbles, needle bed and beads. The most numerous findings in this category are, of

course, beads — they are found at both forts in amount more than 400 pieces. Beads are of good quality, of various calibers, mostly white, blue, green and black.

Beads and different types of necklaces were usual for the North of Yakutia in the 17th — beginning of the 18 centuries and were the subjects of exchange trade. Such kind of beads is mentioned by G.F. Miller as the most demanded at the local market [5, p. 530]. A part of the beads was found strung on a thread. So it is possible to talk about using them for embroidery in the settlements. Multi-colored glass beads are rare and have reached settlements as a part of jewelry, possibly, together with their owners.

Found needles are made of iron; they are of different thickness — from the thick ones that were used for sewing leather, to thin bead needles found this year. Thimbles, found at Russian settlements of the 17th — beginning of the 18 centuries, are metal, of different size: from true women small ones, to fairly large, suitable for men's fingers. A part of thimbles has a closed top, and a part — open. Needle cases are tubes made of cooper or bone (long bones of animals or birds); inside — a place for needles, pinned on a small piece of leather or fabric.

Picture 4. Thimbles [1]

In 2011, during the excavations of the Nizhnekolymsky wintering in a layer dating from the late 17th century, well-preserved women headdress [2] was found. Its design is interesting because along it there is roll of tightly twisted red cloth covered by main tissue (Pic. 6). At first the headdress was interpreted as povoynick with a roller, which could be found in the book of D.K. Zelenin on traditional Russian women headdresses. Povoynik is considered as local tradition of the Velikoustyuzhsk County of the Vologda Province [3, p. 26]. The study of the collection of hats in the funds of Velikoustyuzhsk State Historical and Architectural Museum-Reserve has shown that all traditional povoynik — “marhatka” of this region have the inside roll of fabrics, stuffed with tow linen, sewn in order to make a desired shape of the headdress (Pic. 7). At the same time, among all hats represented in the collection of Velikoustyuzhsk museum, the closest design to that found was the Kolyma volosnik. This headpiece is a soft round hat made of red silk; on the top of it — a roll of fabrics which is sewn “on vzderzhku” — a way the top of the headdress was made with an open crown. At the junction of the main part and the top was sewn from thick cushion of a roll of

Picture 5. Needle case [1]

canvas, sheathed by yellow silk and the bottom of the headdress was made of blue silk. This type of headdress — volosnik or samshura used with a round kokoshnik, that was traditionally worn by women of the northern regions of the Velikoustyuzhsk County, on the border with the Arkhangelsk Province and is now included in the Arkhangelsk region.

The so-called “women's issue” is one of the most debated issues in the study of the development of Russian Siberia. Specialists in Siberian studies of the 18th — early 20th centuries wrote a lot about small amount of Russian women in Siberia and their absence in the remote Siberian areas. Such an approach was traditional for Siberian studies. The gender misbalance problem took place, according to the numerous written sources, but it was solved quite well, and the beginning of the 18th century in the western regions of Siberia an imbalance has been eliminated [4]. Even in such a remote region of Siberia, as Yakutia, despite the common opinion, by the end of the 17th century the number of Russian women approached normal, as it is evidenced by the fact that the Russians married Russian in the early 18th century even in such a “bear corner” as Nizhnekolymsk [6, p. 129].

Picture 6. Povoynik. 17th-beginning of the 18th centuries, Nizhnekolymsk wintering

Thus, in the Russian settlements abandoned far beyond the Arctic Circle in 17th—18th centuries representatives of the beautiful half of humanity felt themselves quite confident. They were engaged in the usual kinds of women's needlework — spinning, beaded embroidery and processing of animal skins, which then were used for sewing clothes and knitting. Contrary to the common views, it is possible to say that on only “beautiful Yukagirs” who used stone scrapers and bone needles for their work, but Russian women as well. Tools for spinning found by archeologist give as a reason to say so. Especially if we will point out that spinning technique was unknown to indigenous peoples of the North of Yakutia. And if the earrings could be a bargaining chip or a gift, the traditional northern Russian povoynik would hardly be worn by the local Siberian women.

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Congratulations to the Institute of Humanitarian Research and numerically small peoples of the North, Siberian Branch of Russian Academy of Sciences on the 80th anniversary!

The first research institution of Yakutia was founded on the 17th of September 1935 as a Scientific Research Institute of Language and Culture at SNK of the YASSR. In 1944, it was renamed to Institute of language, literature and history, in 1947 the Institute became a part of the Academy

of Sciences of the USSR. In 1994 it became a member of the Academy of Sciences of Sakha (Yakutia) and was renamed to the Institute of Humanitarian Research. In 2008 after the union of Institute and the Institute of Indigenous Peoples of the North of the Russian Academy of Sciences it became the Institute of Humanitarian Studies and Indigenous Peoples of the North SB RAS — the successor of both academic institutions.

Siberian Branch of the Russian Academy of Sciences, Institute of Humanitarian Studies and Indigenous Peoples of the North, Russian Committee of turkologists at OIFN RAS held a special scientific session “Human studies in Yakutia: traditions and prospects” on 15—16 October 2015 (the 80th anniversary of IHSaIPN SB RAS).

URL: http://www.kon-ferenc.ru/konferenc01_09_15_2.html

Reviews

UDK 341+004

Self-determination and the legal basis for the Northern indigenous people development: an analysis of the documentary of the «Scientific Sibirica» database

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Abstract. The paper gives a brief description of the bibliographic database of the State Public Scientific-Technological Library of the Siberian Branch of the Russian Academy of Sciences (SPSTL SB RAS), generated for the information support of the topic "Indigenous peoples of the North". It was presented the bibliometric (logical-statistical) analysis of the documents selected from the database relating legal bases of development, self-development and self-determination of northern indigenous peoples of the Russian Federation and the world. The authors examined the temporal, typical, geographical, and language structures of the information flow, revealed so-called "nuclear" group of periodicals, characterized by high publication activity on this issue, mentioned the most important scientific events, where this problem was discussed by scientists and specialists, presented the recent monographs entering the library collection on the legal basis of the indigenous peoples development at the Far North.

Keywords: *information support of research, targeted data bases, indigenous peoples, Far North, bibliometric analysis, documentary flow*

Relevance. The state policy of the past decades in relation to indigenous peoples of the North aimed at creating favorable socio-economic conditions, guarantees preservation of traditional ways of life and traditional economic activities. The complexity of the implementation of the constitutional rights of the peoples of the north is a result for a number of reasons, listed in

the monograph by S.N. Kharyuchi. One of them is the relative small amount of people, living in extreme climatic conditions, deprived of the opportunity of choice other means of livelihood in addition to traditional, distanced from developed economic areas and limited cooperation with other peoples of Russia [1, 2008].

Materials and methods. The study of the problems of indigenous peoples of the Arctic and ways to solve them requires a modern information support. In order to ensure the infor-mation needs of scientists and experts engaged in studies of various aspects of life of indigenous peoples of the northern regions and development of recommendations and programs of sustainable development, the State Public Scientific and Technical Library of the Siberian Branch of the Russian Academy of Sciences (SPSTL SB RAS) has established a problem-oriented bibliographic database "Indigenous peoples of the North" [2, 2009]. Information array of the database can serve as a significant source of information for scientific research on a wide range of issues related to indigenous peoples. This database is designed to provide information support on a wide range of problems (social, economic, political, ethno-ecological, socio-medical, cultural and historical) of northern peoples. A distinctive feature of the database is its objective, geographic and ethnographic headings that make it possible for bibliometric analysis of the documentary flows (DF) on one or another problem of development of northern peoples or the range of issues concerning one the peoples or indigenous problems within the same region. Bibliometric (Logical and statistical) analysis provides information about the structure (type, chronology, theme, language and etc) of the documentary flow, data on productive base sources of information [3, 2000].

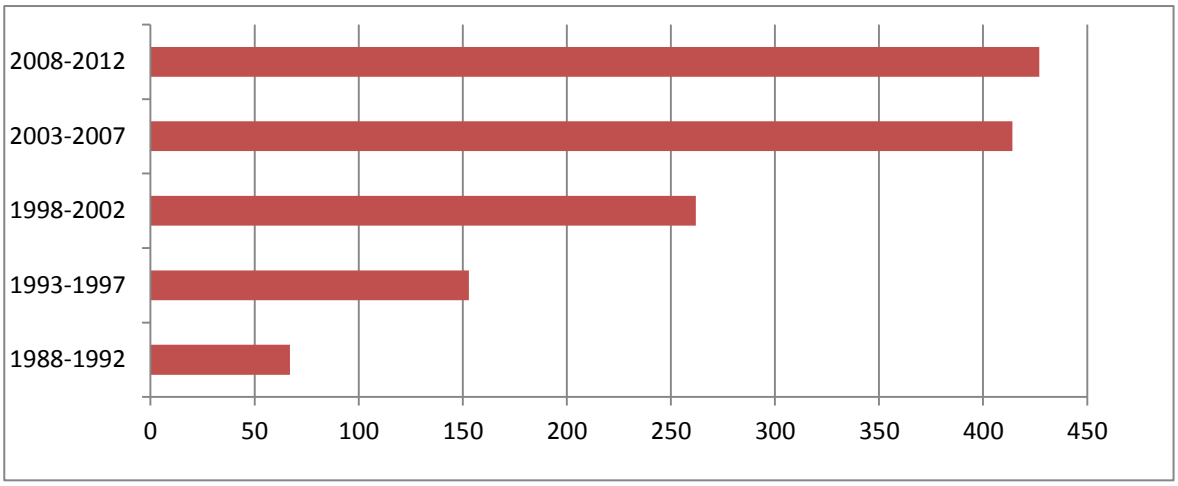
The volume of problem-oriented DB. In December 2014 it amounted to about 24,000 documents for the period 1988—2014. In 2011, DB "Indigenous Peoples of the North" was included in a thematic section with its subject categories in bibliographic DB "Scientific Siberica", freely available at the SPSTL SB RAS website for all categories of users.

Geographical coverage of the DB. It is large and includes materials on the northern areas of Siberia, the Far East, the European North of Russia (Arkhangelsk, Murmansk region, the Republic of Karelia and Komi) and polar regions overseas — Sweden, Finland, Norway, the United States (Alaska), Canada and Denmark (Greenland). The sources of the selection line for the establishment and replenishment of this database is a mandatory copy of Russian literature and foreign publications coming into SPSTL and materials from remote databases. Each docu-ment contains a full bibliographic description, the abstract, geographic headings, translations for foreign publications, sections. Search is possible for key words, authors, editors, year and place of

publication, location or subjects, language and type of publication. If necessary, you can combine the fields and use “complex” search by several parameters.

From a thematic section “Indigenous People of the North” a flow of documentary on legal issues, development and self-government was selected and a bibliometric analysis held.

Results. The term structure of the documentary flow over a 25-year period is represented in the diagram (Pic. 1); growing interest researchers to the aforesaid problem in the last decade is clearly observed.



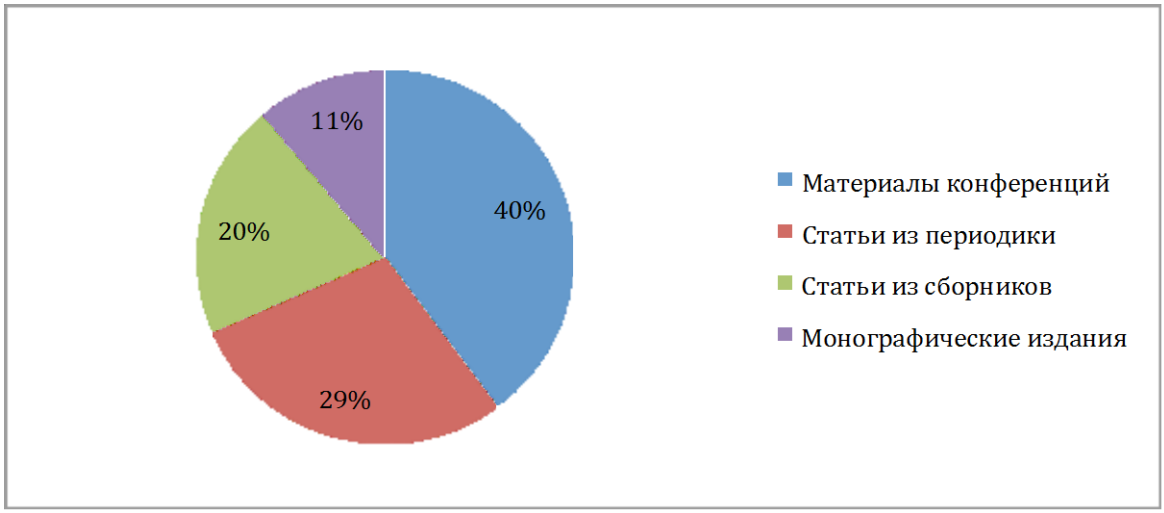
Picture 1. Documentary flow dynamics

Publications made in 2013—2014 are more actively enter the library funds, therefore they are excluded from the diagram; but their number is more than 300 documents by now and we can predict further growth.

The round diagram reflects the specific structure of the documentary flow where conference materials (40%) prevail. It should be noted that the scientific meetings play an important role in the exchange of information between scientists and specialists and their materials allow them to evaluate the state of modern fundamental and applied research. Regularity of scientific meetings at various levels on various aspects of studying the indigenous peoples of the North is a testament to the active work of specialists in this field.

It is impossible to list all of the conferences, focused on the indigenous issues. So just to name a few: permanent “Congress of ethnographers and anthropologists of Russia”, and “Legal problems of Norway and Russia”: Northern Dimension” (Arkhangelsk, 2010)," “Indigenous People in contemporary legal environment: challenges, priorities and prospects” (Khanty-Mansiysk, 2012), “Man in History: North-East frontier of Russia in the context of the political, economic, ethno-social and ethno-cultural processes of XVII — beginning of the XXI century” (Petropavlovsk-Kamchatsky, 2012), “The Arctic regions of Russia: problems of parliamentta-rianism, represen-

tation and regional identity. From tribal communities — to Parliament of Yamal" (Salekhard, 2012), "Political, economic and socio-cultural aspects of regional management in the European North" (Syktyvkar, 2013) and many others.



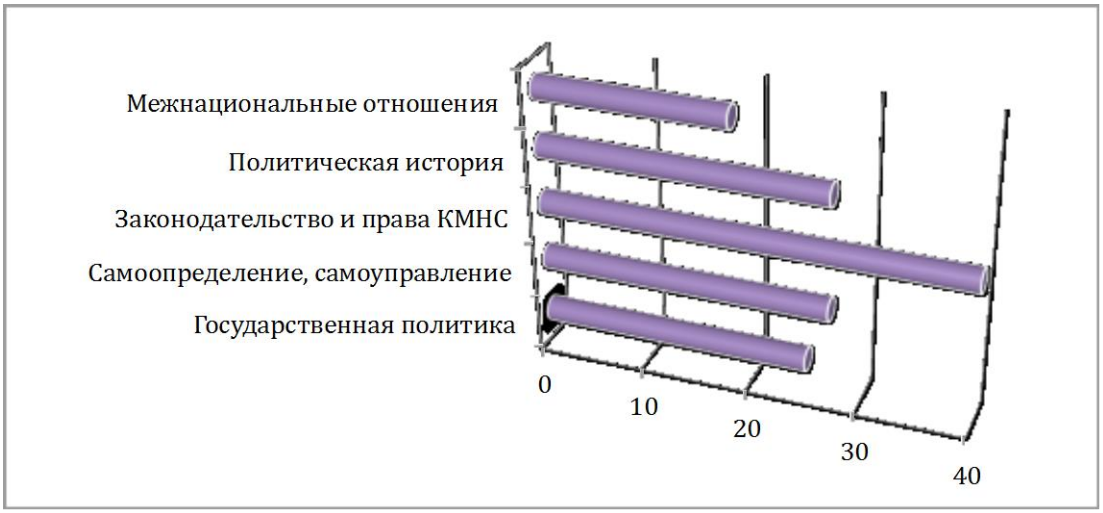
Picture 2. Type structure of the DB

More than half of publication consists of articles from periodicals (29%) and collections of scientific papers (20%), where the latest achievements of scientists and specialists are reflected. The most reliable periodicals on indigenous issues could be divided into two groups: 1) journals publishing laws and regulations: Gosudarstvo i Pravo of the Russian Federation","Bulletin of normativnih aktov federativnih organov ispolnitelnoi vlasti"; 2) journals publishing scientific articles: "Gosudarstvo i pravo", "Rossijskaya Federaciya segodnya", "Istori-cheskie, filosofskie, politicheskie i yuridicheskie nauki, kul'turologiya i iskusstvovedenie. Voprosy teorii i praktiki", "Vestnik Soveta Federacij", "Etnosocialnye processy v Sibiri", "Konstitucionnoe i municipalnoe pravo". Indigenous issues are covered on the pages of university perio-dicals (North East, Northern (Arctic), Novosibirsky and Sibirsky Federal Universities).

The diagram shows that the rights of indigenous peoples of the North are the most actively studied issues. The works devoted to the analysis of inter-ethnic relations in indigenous areas are not numerous.

The main contribution to the study of the legal issues of development, self-development and local self-government are introduced by institutes of the Russian Academy of Sciences: Institute of Ethnonology and Anthropology (Moscow), Institute of Philosophy and Law (Novosi-birsk), Institute of Humanitarian Research and Indigenous Peoples of the North of SB RAS (Yakutsk), Institute of Language and Literature and History of Karelian Research Center of RAS (Petrozavodsk). Research is done by university teachers from: the North-Eastern Federal Uni-versity, Tyumen State University, Northern (Arctic) Federal University, Moscow State University,

Komi Republican Academy of State services and Management, and others. It should be noted that universities publish monographs and textbooks online [7, 2013; 12, 2012].



Picture 3. Theme structure of monographs

Among the authors S.N. Gorbunov should be mentioned [20, 21, 22, 23]. He is dealing with the study of the rights of indigenous peoples of the North. In geographical terms the most active materials on the legal framework, development issues, self-determination and self-development of indigenous peoples of the Arctic are published in the Republic of Sakha (Yaku-tia), the Khanty-Mansi and Yamalo-Nenets Autonomous Districts, as well as in the European North of Russia.

The language structure of the analyzed information flow is rather homogeneous — more than 90% of the documents are published in Russian, the other materials presented in English.

Conclusion

Bibliometric analysis of documentary flows on legal aspects of development, self-determination and self-development of Indigenous Peoples of the North has shown its dynamics, specific, geographic, linguistic structure; revealed groups of magazines, "fresh" monographs. Information array of the problem-oriented bibliographic databases such as "Indigenous peoples of the North" can serve an important foundation for research on a broad range of issues concerning indigenous peoples. Materials are available for all researchers. Information from the database of own SPSTL generation is possible to find at www.spsl.nsc.ru ("Resources and Services" → "on-line catalogs and databases"→ "bibliographic database"→ "Scientific Sibirica"→ "Indigenous People").

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Reviewer: Morschihina Larisa Alexandrovna,
candidate of philosophy, associate professor

UDK 338.2+351/354

Arctic: nanotechnology, military-industrial complex, Investment, national idea

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

Abstract. Review of materials of the international investment summit on investment and development of the nano, engineering and biological, information and communication technologies, fuel and energy and raw material base of the Arctic region, the Arctic as a Russian national idea.

Keywords: *Arctic, investment, modern technology, the national idea*

February 24, 2015: Moscow hosted the II International Investment Arctic Development Summit "Nanotechnology, the military-industrial complex, investments and the Arctic, as a national idea". The main objective of the Summit-2015 was announced: the attention of top management to the Arctic sector investment and the development of nano-biological engineering, information and communication technology, fuel and energy and raw material base of the Arctic zone, practical solutions for the issues of financial and industrial origin, scientific and intellectual investments for the potential of the Arctic cluster.

The Summit-2015 program was planned as very extensive and contained following topics:

- ✓ Specific investment instruments of the Arctic regions.
- ✓ Structuring the business environment and state support of the development of the Arctic region.
- ✓ Investment in nanotechnology, biological engineering, information and communication technologies, fuel, energy and raw materials sector of the Arctic regions.
- ✓ Implementation of nanotechnology for the extraction and processing of raw materials.
- ✓ Structuring banking programs and state projects in the Arctic.
- ✓ Real fisheries sector of the Arctic regions (Barents and Bering Seas).
- ✓ New energy sources and energy efficiency in the Arctic.
- ✓ The Northern Sea Route as a national idea and the engine of the military industrial complex of Russia.
- ✓ The creation of leading industrial areas in the Arctic.
- ✓ The individual technical solutions and complex "turnkey" objects.
- ✓ Software upgrades to support NTRP programs in the Arctic.

- ✓ Seismic protection.
- ✓ Construction of ports in the Arctic regions.
- ✓ Air transportation in the Far North.
- ✓ Life-supporting technologies for the North [1].

The work of the Summit was built on holding three working sessions: “Investments in nano, engineering, communication technologies, fuel and energy and the primary sector of the Arctic regions”, “Northern Sea Route as a national idea and the engine of Russian military-industrial complex”, “International experience and infrastructure development of the Arctic”.

Among the participants of the plenary session of the Summit presented their reports: Assistant Director-General of FSUE “Atomflot” Stanislav Golovin; advisor of the Governor of the Arkhangelsk region Lev Levit, Ambassador Extraordinary and Plenipotentiary of the Russian Federation, Chief editor of the international journal “Arkticheskie Vedomosti” Alexander Ignatyev, president of the Arctic Public Academy of Sciences Valery Mitko, Deputy General Director of “Lyotno-issledovatel'skij centr aviacii special'nogo naznacheniya ”Vadim Oleynikov and others. Special guests of the Arctic Summit in 2015 are: Chairman of the National Assembly of the Republic of Sakha (Yakutia) Alexander Zhirkov, Deputy Governor of the Yamal-Nenets Autonomous District Alexei Bulaev, the main consultant of the Permanent Representation of the Krasnoyarsk region under the Government of the Russian Federation Aleksandr Rodionov, Deputy Minister of Industry and construction of the Arkhangelsk Region Alexei Rastoropov, first secretary of the Embassy of Canada on international issues cooperation in the Arctic Manuel Mulas, Attache for Science and Technology of the Embassy of France in Russia Balazar Michel, Chairman of the Commission on Urban Affairs of the Norilsk City Council of Deputies Alexander Pestryakov, Head of the Department for development of the sectors of economy Minestry of economic development of the Russian Federation Sergey Sevruk and the others [2].

Industry leaders discussed the issues of economic management, the transition from research ideas to mass production, the urgency of creating a bank of ideas and technology issues

[1] Arctic International Investment Summit 2015.pdf URL: http://arcticas.ru/docs/partners_arkticsummit (Accessed: 26.04.2015)

[2] February 24, 2015 Moscow hosted the II International Investment Summit Arctic Development “Nano technology, military-industrial complex, investment and the Arctic, as a national idea”. URL: http://neftegaz.ru/news/view/ 135245 (Accessed: 30. 04.2015).

for the real sector from order to delivery, as well as the problem of financing in connection with sanctions against Russia[3].

Picture 1. Round table discussion. Photo: Press-center of the Investment Arctic development Summit

Among the representatives of business community the expert opinion on investment and development of real sector of aviation icebreaker's construction, alternative energy and communications was expressed by the general director of the JSC "Transport" Nikolay Veselov, head of SKB-300 TSNPO "Leninets" Dmitry Gavrilov, chief designer of aircraft engines IPO "OVS" NP "ROSAVIATSENTR" Alexander Harmai, General Director of "Interaviagaz" Vyacheslav Zaitsev, General Director.

"Volna" Pavel Ivanov, General Director of JSC "YamalResurs" Dmitry Martynov, General Director of "Priklandnaya Rediofizika" Yuri Rusanov, Head direction of IT and cloud services «J'son & Partners s.onsulting" Alexander Gerasimov, Project manager of the LLC "Activiti" Maxim Gridasov and other experts.

Theme of the issues proposed for discussion was very urgent and it had drawn attention to this summit. Moreover, the Arctic was positioning as a national idea, and we had to go on with the most urgent problems of development of the Arctic region, technologies of the sixth technological

[3] В Москве прошел Инвестиционный Арктический саммит развития. URL: http://www.arctic-info.ru/news/26-02-2015/v-moskve-prosel-investicionnii-arkticeskii-sammit-razvitia (Accessed: 30.04.2015)

order, MIC and investments. The scientific potential of the Summit included the development projects and dozens of institutions and organizations represented[4]. In my opinion the theme of the Summit was formulated too broadly and was not adequately covered in media. Some questions remain unanswered: how real were declared nanotechnology for the Arctic? Where is it possible to get investments in crisis and sanctions against Russia? What is understood by the national Arctic ideas? Is it even possible to consider the Northern Sea Route the national idea and the engine for the development of the Russian MIC? Discussion on urgent problems of the socio-economic development of the Russian Arctic could be undoubtedly continued in order to clear the vision of those tasks that still have to be solved by our state, business and society in the high northern latitudes of the circumpolar space.

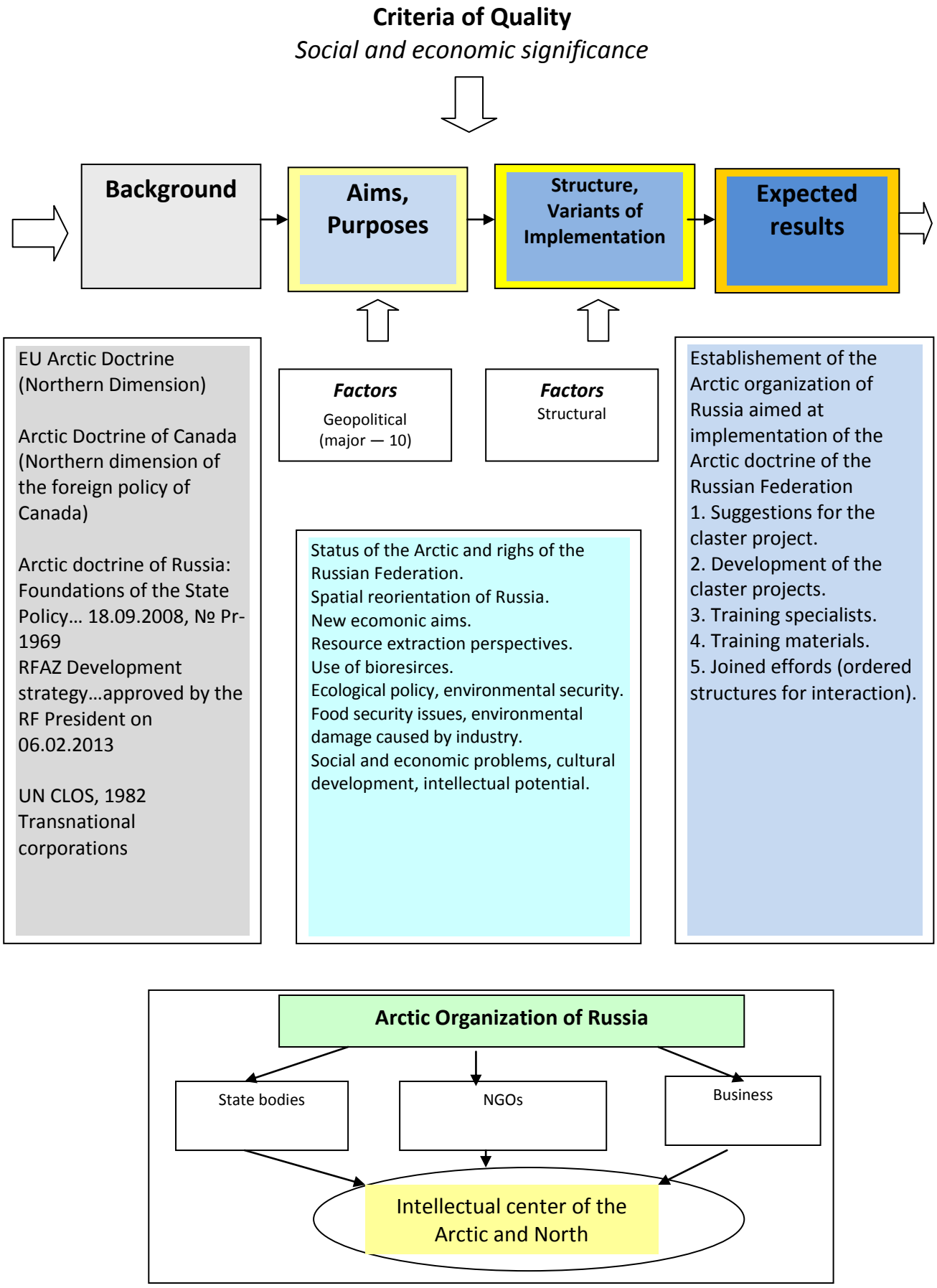
A positive result of the summit is undoubtedly the fact that it was followed up by concrete proposals to the federal bodies. President of the Arctic Public Academy of Sciences V.B. Mitko, for example, addressed his proposals D.O. Rogozin including the concept of the Arctic organization of the Russian Federation (AORF) as an instrument for implementation of the Russian Arctic doctrine. In order to implement its Arctic policy, Russia should establish an Arctic organization, including special facilities, organizations and institutions aimed at imple-menting the Arctic policy according to the Constitution of the Russian Federation, federal laws and other legal acts of the Russian Federation.

The NSR is not just a means of transport, but a symbol of Euroasian unity of the Russian Federation. Decades of discussions on profitability of the route are groundless from the stand point of geopolicy that defines the arctic mission of Russia. Evolution of geopolitical situation led to the present situation of extreme significance of the Russian economic activity in the Arctic, so clearly understood by our predecessors". [URL: http://b2bevent.ru/investment-arctic-forum].

President of the Arctic Public Academy of Sciences, Chairman of the St. Petersburg branch of the Sectionfor Geopolitics and Security of the RANS Valeriy Mitko.

[4] On February 24, Moscow hosted the II International Investment Summit Arctic Development "nanotechnology, military-industrial complex, investment and the Arctic, as a national idea". URL: http://www.morspb.ru/meropriyatiya/ii_mezhdunarodnyj_investicionnyj_arkticheskij_sammit_razvitiya1/ (Accessed: 30.04.2015)

Factors affecting the establishment and functioning of AORF (Arctic Organization of the Russian Federation, V.B. Mitko) are presented in the figure.



Authors, abstracts, keywords

Economics of the Northern communities. Politology

Джураев И.И. Артика не безлика. Арктика — это конкретные люди, со своей историей и опытом

Dzhuraev, Ildar I. Arctic is not faceless. Arctic is real people, with their own history and experience

Аннотация. Ильдар Джураев расказывает о своей жизни в Арктике, работе в качестве топ-менеджера, о своих профессиональных достижениях в управлении муниципальным образованием, планах на 2015 год. Даёт свою оценку развитию северных территорий, подчеркивая уникальность Таймыра, где найдены практически все полезные ископаемые. Он отмечает, что на Таймыре живут интересные, дейст-вительно сильные духом люди, которые обла-дают большим потенциалом и трудоспособностью, которые обеспокоены проблемами Арктики и готовы внести свой вклад в её освоение.

Ключевые слова: *Ильдар Джураев, Таймырский Долгано-Ненецкий муниципальный район, жизнь в Арктике, муниципальное управление, социальная инфраструктура, планы развития, ресурсы Таймыра, потенциал Арктики*

Abstract. Ildar Dzhuraev told the Journal about his life in the Arctic, work as a top manager, his professional achievements in the management of a municipal institution and plans for 2015. He presented his assessment of the development of the North, emphasizing the uniqueness of Taimyr, where almost all minerals could be found. He noted that Taimyr was inhabited by really strong-willed people with high potential and ability to work, who were concerned about the problems of the Arctic and were willing to contribute to its development.

Keywords: *Ildar Dzhuraev, the Taimyr Dolgan-Nenets Municipal District, the life in the Arctic, municipal management, social infrastructure, development plans, the resources of Taimyr, the potential of the Arctic*

Гальцева Н.В. Социально-экономическое развитие северных и арктических регионов Дальнего Востока: потенциал, проблемы и пути решения

Galtseva, Natalia V. Socio-economic development of the Northern and Arctic regions of the Far East: potential, problems and solutions

Аннотация. Показывается богатейший ресурсный потенциал северных территорий Республики Саха (Якутия), Магаданской области и Чукотского автономного округа, освоение которого сдерживает отсутствие инфраструктуры и инвестиций. Наиболее острой социальной проблемой северных и арктических регионов Дальневосточного федерального округа является снижение уровня жизни населения. Анализ показал, что относительно высокие среднедушевые доходы населения на самом деле не обеспечивают высокий уровень жизни населения, так как покупательная способность доходов (относительно величины прожиточного минимума) фактически даже ниже средне-российского уровня. Магаданская область и Чукотский автономный округ формально занимают лидирующие места в России по обеспеченности общей жилой площадью.

Abstracts. The article is focused on the rich resource potential of the northern territories of the Republic of Sakha (Yakutia), Magadan and Chukotka Autonomous District, the development of which has been hampered by the lack of infrastructure and investments. The most acute social problem in the Northern and in the Arctic regions of the Far Eastern Federal District is a decline in living standards. The analysis has shown that a relatively high income does not really provide a high standard of living, as the purchasing power of income (relative to the subsistence level) is actually even lower than the national average. The Magadan Region and Chukotka Autonomous District are formally occupying a leading position on a common housing area in Russia. However, if we exclude the old housing, we'll see that the supply of housing is actually below the national average, as well as the life expectancy at birth. The author offers a number

Однако без учёта аварийного, ветхого и неблагоустроенного жилья обеспеченность жильём реально ниже среднероссийского уровня, как и ожидаемая продолжительность жизни при рождении. Предлагается ряд конкретных мер, реализация которых будет способствовать повышению уровня жизни северян.

Ключевые слова: *Чукотский автономный округ, Магаданская область, Республика Саха (Якутия) ресурсный потенциал, уровень жизни, среднедушевые доходы, прожиточный минимум, покупательная способность, обеспеченность жильём*

of measures able to improve the living standards of the Northerners.

Keywords: *Chukotka Autonomous District, the Magadan Region, the Republic of Sakha (Yakutia), resource potential, standard of living, income, the cost of living, purchasing power, housing*

Говорова Н.В. Страны-наблюдатели Арктического Совета: сравнительный анализ человеческого развития

Govorova, Natalia V. The observer countries of the Arctic Council: a comparative analysis of the human development

Аннотация. В работе проводится сравнительный анализ человеческого развития стран-наблюдателей Арктического Совета. Выявлены сходства, различия и преимущества, применительно к качеству и динамике развития человеческого потенциала. Сделан вывод о позитивных тенденциях развития человеческого потенциала в них и перспективах совместного осуществлении важных социально-экономических проектов в Российской Арктике.

Ключевые слова. *Арктика, страны-наблюдатели Арктического Совета, человеческий капитал, индекс человеческого развития, уровень и качество жизни, образование, конкурентоспособность*

Abstract. The article represents a comparative analysis of human development of the countries — observers of the Arctic Council. Similarities, distinctions and advantages are presented in their relation to the quality and dynamics of human development. The conclusion is drawn on positive tendencies of human development and prospects of a joint implementation of the most important social and economic projects in the Russian Arctic.

Keywords. *Arctic, human capital, human development index, countries observers of the Arctic Council, education, standard of living, education, competitiveness*

Залывский Н.П. Северный морской путь: потенциал ожидания и реальные проблемы функционирования

Zalyvsky, Nikolay P. The Northern Sea Route: the potential of expectations and the real functionning problems

Аннотация. Главным предметом статьи являются проблемы позиционирования арктических регионов как участников реализации феде-ральной арктической стратегии. Они анализируются в контексте задачи повышения эффективности функционирования Северного морского пути, воспринимаемого весьма важным фактором их социально-экономического развития. Автор соизмеряет отдельные аспекты конкуренции СМП и Суэцкого канала, уточняет акценты в историко-экономическом желании Архангельска

Abstract. The main objective of the article is positioning the Arctic regions as the participants of the federal Arctic strategy. The Regions are analyzed in the context of improving the efficiency of the Northern Sea Route, perceived a very important factor in their economic and social development. Author compares some aspects of the competition between the NSR and the Suez Canal, with focus on the historical and economic desires of Arkhangelsk and Murmansk to be the main gateway to the Arctic

и Мурманска быть главными воротами в Арктику

Ключевые слова: *Северный морской путь, ворота в Арктику, конкуренция, Суэцкий канал, региональные проекты, транспортная инфраструктура, иностранные компании, модели управления СМП*

Keywords: *Northern Sea Route, the gateway to the Arctic, the competition, the Suez Canal, regional projects, transport infrastructure, foreign companies, management model of the NSR*

Кондраль Д.П., Морозов Н.А. Власть, бизнес и население в северных регионах России: проблемы и перспективы взаимодействия

Kondral, Dmitry P., Morozov, Nikolay A. Government, business and the population in of the Northern regions of Russia: problems and prospects of cooperation

Аннотация. Политическая стратегия развития Севера и Арктики России определяет перспективы взаимодействия власти, бизнеса и населения, формируя условия долгосрочного освоения северных территорий страны. Сегодня значимым является качественный учёт и реализация интересов ключевых акторов, что определяет необходимость оценки и совершенствования механизмов артикуляции и агрегации интересов власти, бизнеса и населения на Севере России.

Ключевые слова: *Север России, власть, бизнес, гражданское общество, политическое управление, стратегическое развитие, баланс интересов.*

Abstract. Political strategy of the North and Arctic Russia determines the prospects of the interaction between government, business and the public, creating conditions for a long-term development of the northern territories of the country. Today, the quality of accounting and promoting the interests are extremely important and determine the need to assess and improve the mechanisms of articulation and aggregation of the interests of government, business and the population in the North of Russia.

Keywords: *North of Russia, government, business, civil society, political management, strategic development, the balance of interests*

Летовальцева М.А. Стратегия устойчивого развития лесопромышленного комплекса как подсистемы региональной экономики

Letovaltseva, Marina A. Strategy of sustainable development for the forestry complex as a subsystem of the regional economy

Аннотация. Используя метод SWOT-анализа, в статье концептуально раскрываются проблемы лесной отрасли региона, инерционного и инновационного стратегических сценариев, мероприятия двух этапов программы развития лесопромышленного комплекса: 2015—2020 и 2021—2030 гг. Рассмотрены методы управления, взаимодействия государства и бизнеса. Разработаны проект структуры регионального лесопромышленного кластера и модель его создания. Отмечается, что кластер «Помор-ИнноваЛес», созданный в Архангельской области (2014), позволяет практически решать ряд возникающих проблем. Взаимодействие государства, региона, муниципалитетов и бизнес-структур будет способствовать привле-чению инвестиций, развитию инфраструктуры, решению социальных вопросов

Abstract. Using the method of the SWOT-analysis, the article reveals the conceptual problems of the forest industry in the region, inertial and innovative strategic scenarios, two phases of the program activities of the timber industry: 2015—2020 and 2021—2030 years. The method of management, interaction between government and business. Developed the project of the regional cluster timber industry and of model its creation. It is noted that the cluster "PomorInnovaLes" created in the Arkhangelsk Region (2014), allows you to solve a number of practical problems. Interaction of the state, regions, municipalities and businesses will attract investment, and the development of infrastructure and social issues.

Ключевые слова: *лесопромышленный комплекс, регион, стратегия, сценарии, программа развития, кластер, «ПоморИнноваЛес», инвестиции*

Keywords: *timber industry, region, strategy, scenarios, program of development, cluster, "PomorInnovaLes", investments*

Башкин В.Н., Трубицина О.П., Припутина И.В. Оценка геоэкологических рисков в зонах влияния предприятий нефтегазовой промышленности в Российской Арктике

Bashkin, Vladimir N., Trubitsina, Olga P., Priputina, Irina V. Evaluation of geo-environmental risks in zones of influence of oil and gas industry in the Russian Arctic

Аннотация. В статье рассматривается программа комплексных научных исследований, направленных на разработку мониторинга кислотных выпадений и количественную оценку геоэкологических рисков в российских полярных наземных и морских экосистемах в зонах влияния предприятий нефтегазовой промышленности.

Ключевые слова: *Арктика, кислотные выпадения, критические нагрузки, геоэкологические риски, нефтегазовая промышленность*

Abstract. The article discusses the integrated scientific research program aimed at developing the acid deposition monitoring and geo-environmental risks evaluation in the Russian polar terrestrial and marine ecosystems in the areas of the oil and gas industrial influence.

Keywords: *Arctic, acid depositions, critical loads, geo-environmental risks, oil and gas industry*

Шестакова Т.П. Борис Лавров, начальник первой Ленской

Shestakova, Tatyana P. Boris Lavrov, commander of the First Lena expedition

Аннотация. В статье рассказывается о жизни Бориса Васильевича Лаврова, исследователя Арктики, одного из руководителей Главного управления Северного морского пути, организатора строительства порта Игарка и Карских экспедиций, начальника Первой Ленской экспедиции, впоследствии необоснованно репрессированного и расстрелянного. Большое внимание в статье уделено Первой Ленской экспедиции по проводке грузовых судов из Архангельска в устье Лены

Ключевые слова: *Северный морской путь, освоение Крайнего Севера, Первая Ленская экспедиция, Б.В. Лавров*

Abstract. The article is devoted to the life of Boris Lavrov, an Arctic explorer, one of the directors of the Northern Sea Route Headquarters, the organizer of the Igarka port construction and Kara expeditions, the commander of the First Lena expedition, unjustifiably repressed and executed. Much attention is paid to the First Lena expedition aimed at sending ships with cargoes from Arkhangelsk to the Lena River delta.

Keywords: *the Northern Sea Route, the development of the Far North, the First Lena expedition, Boris Lavrov*

Культура народов Арктики и Севера
Culture of the Arctic and Northern peoples

Ханрахан, Мора. Бесконечность на льду: полярные исследователи и коренное население во время крушения корабля «Карлак» Роберта Бартлетта

Hanrahan, Maura. Indefinitely on the Ice: Indigenous—explorer relations in Robert Abram Bartlett's Accounts of the *Karluk* Disaster

Аннотация. В 1913—1918 гг. Канадская Арк-

Abstract. In 1913—1918, the Canadian Arctic

тическая экспедиция (КАЭ) осуществила по-пытку расширения канадского суверенитета в Арктике. В ходе КАЭ пошёл ко дну один из кораблей — «Карлак», на борту которого нахо-дилась интернациональная группа исследова-телей, часть её дожидалась помощи на острове Врангеля в Северном Ледовитом океане. Пытаясь найти путь к спасению, инупиат Клод Катактовики капитан «Карлака» Роберт Р. Бартлетт преодолели сотни миль по льду от побережья Аляски, а затем прошли через земли чукчей в Сибири. Оттуда Р. Бартлетту удалось организовать спасение людей, оставшихся в живых после крушения «Карлака». Сам Р. Бартлетт считал эти недели, проведенные с Катактовиком и чукчами, иллюстрацией отно-шений исследователя и коренного местного населения в эпоху освоения Арктики. Коренные жители Арктики часто выступали в роли про-водников и помощников исследователей, отно-шения с которыми носили сугубо иерархичес-кий характер. Несмотря на то, что коренное население часто играло ведущую роль в полярных экспедициях, для истории они оставались невидимками, практически исчезнув со страниц полярных дневников и рассказов. Тем не менее, история «Карлака» показывает, что коренные народы могут быть в центре событий, а исследователи в свою очередь способны на эгалитарные отношения с ними.

Ключевые слова: *Роберт Бартлетт, «Карлак», отношения полярных исследова-телей и коренного населения, Чукчи, инупиат, Арктика, Канадская Арктическая экспедиция*

Expedition (CAE) attempted to advance Canadian sovereignty in the Arctic. During CAE went to the bottom one of the ships, the "*Karluk*", carrying the international group of researchers, part of her waiting for assistance to Wrangel Island in the Arctic Ocean. With the Alaskan Inupiaq Claude Kataktovick, Robert Abram Bartlett, captain of the "*Karluk*", trekked hundreds of miles over rough ice to and then through Chukchi territory in Siberia. From there, Bartlett was able to mount a rescue of the remaining "*Karluk*" survivors. Bartlett's accounts of his weeks with Kataktovick and the Chukchi serve as a case study of explorer-Indigenous relations in the era of exploration. The Indigenous people of the Arctic were subject to explorers in a hierarchical relationship built around supporting exploration. Despite their often central and sometimes life-saving roles, as actors, Indigenous people are generally invisible in polar narratives. Yet the story of the "*Karluk*" demonstrates that, even within the constraints of this context, Indigenous people could emerge as central agents and explorers could move towards more egalitarian relations with Indigenous people.

Keywords: *Robert Abram Bartlett, "Karluk", Indigenous—explorer relations, Chukchi, Inupiat, Arctic exploration, Canadian Arctic Expedition*

Строгова, Е.А. Женщины в русских поселениях на севере Якутии в конце XVII — начале XVIII в. или «женский вопрос» глазами археолога

Strogova, Ekaterina A. Women in the Russian settlements in the north of Yakutia at the end of the 17th — beginning of the 18th century, or the "women's issue" through the eyes of an archaeologist

Аннотация: В статье рассматриваются свидетельства о жизни женщин в первых рус-ских поселениях на Северо-Востоке России в конце XVII — начале XVII в., полученные из археологических источников. Вопреки сложив-шейся в региональной историографии традиции археологические находки показывают, что на севере Якутии спутницами первых русских поселенцев были не только представительницы коренных народов края, но и русские женщины.

Ключевые слова: *Арктика, русские, археология, историческая демография, компаративный анализ, гендерные исследования*.

Abstract: The article deals with the life of women in the first Russian settlements in the North-East of Russia in the late XVII — early XVII centuries, known from various archaeological sources. The major idea of the article is opposite the prevailing regional historiography tradition. Archaeological findings show that in the Northern Yakutia, the first settlers came there not only with the representatives of the indigenous peoples of the region, but also with Russian women.

Keywords: *Arctic, Russians, archeology, historical demography, comparative analysis, gender studies.*

Обзоры. Reviews

Рыкова В.В., Горте Ю.Д. Самоопределение и правовые основы развития коренных малочисленных народов Севера: анализ документального потока из базы данных “Научная Сибирика”

Rykova, Valentina V., Gorte, Julia D. Self-determination and the legal basis for the Northern indigenous people development: an analysis of the documentary of the “Scientific Sibirica” database

Аннотация: В работе дана краткая характеристика библиографической базы данных собственной генерации Государственной публичной научно-технической библиотеки Сибирского отделения Российской академии наук (ГПНТБ СО РАН), созданная для информационного сопровождения научных исследований по теме «Коренные малочисленные народы Севера». В статье представлен библиометрический (логико-статистический) анализ потока документов, отобранных из вышеозначенной базы данных, касающихся правовых основ развития, самоопределения и саморазвития коренных народов северных регионов России и мира. Дан анализ временной, видовой, географической, языковой структуры информационного потока, выде-лена, так называемая, «ядерная» группа периодических изданий, отличающихся высокой публикационной активностью по данной проблеме, определены наиболее значимые научные мероприятия последних лет, на которых происходило обсуждение данной тематики учеными и специалистами, приведены последние монографические издания, поступившие в фонд библиотек, посвященные правовым основам развития коренных народов Крайнего Севера.

Ключевые слова: *информационное сопровождение научных исследований, проблемно-ориентированные базы данных, коренные малочисленные народы, Крайний Север, библиометрический анализ, документальный поток.*

Abstract: The paper gives a brief description of the bibliographic database of the State Public Scientific-Technological Library of the Siberian Branch of the Russian Academy of Sciences (SPSTL SB RAS), generated for the information support of the topic “Indigenous peoples of the North”. It was presented the bibliometric (logical-statistical) analysis of the documents selected from the database relating legal bases of development, self-development and self-determination of northern indigenous peoples of the Russian Federation and the world. The authors examined the temporal, typical, geographical, and language structures of the information flow, revealed so-called "nuclear" group of periodicals, characterized by high publication activity on this issue, mentioned the most important scientific events, where this problem was discussed by scientists and specialists, presented the recent monographs entering the library collection on the legal basis of the indigenous peoples development at the Far North.

Keywords: *information support of research, targeted data bases, indigenous peoples, Far North, bibliometric analysis, documentary flow*

Лукин Ю.Ф. Арктика: нанотехнологии, военно-промышленный комплекс, инвестиции, национальная идея

Lukin, Yury F. Arctic: nanotechnology, military-industrial complex, investments, national idea

Аннотация. Обзор материалов международного инвестиционного саммита, посвящённого инвестициям и развитию нано, инженерно-биологических, информационно-коммуникационных технологий, топливно-энергетического и сырьевого базиса арктического региона, Арктике как национальной российской идее.

Ключевые слова: *Арктика, инвестиции, современные технологии, национальная идея*

Abstract. Review of materials of the international investment summit on investment and development of the nano, engineering and biological, information and communication technologies, fuel and energy and raw material base of the Arctic region, the Arctic as a Russian national idea.

Keywords: *Arctic, investments, modern technology, the national idea*

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