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“Patrakeevka — a Pomor village”: local identity features of the Patrakeevka village residents, Primorsky district, the Arkhangelsk Oblast¹

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Abstract. The article presents the research of local identity of Patrakeevka villagers (Primorsky district, Arkhangelsk Oblast). The study grounds on the fieldwork materials collected during the folklore-ethnographic expedition of the Northern (Arctic) Federal University to Patrakeevka village in 2015. In the period of globalization, a study of local

communities and their identity allows to reveal traditional culture peculiarities. The village is located on the shore of the White Sea. Therefore, it has a fishing type of economy and culture. The indigenous people there belong to the local group of Pomors from the Northern Coast of the White Sea. To study local identity of the indigenous community, the author deals with traditional and trade practices, functioning of local-group nicknames and peculiarities of historical and cultural memory. The study also defines boundaries of the micro-area with Patrakeevka being its center.

Keywords: *local identification, Patrakeevka village, the White Sea, Pomors, fishing and sea-hunting culture*

Introduction

The identity of the population of the coast of the White Sea has only recently become the subject of scientific research. The local identity of the Koida village of the Mezensky district of the Arkhangelsk region is the subject for N.V. Drannikova's research [1]. The Pomor identity issues among the population of Kandalaksha coast are discussed by I.A. Razumova [2]. Contemporary folklore and ethnographic tradition of the White Sea coast is of interest for T.A. Bernshtam, A.P. Filin, M.D. Alekseevsky, A.I. Vaskul, I.V. Kozlova, N.G. Kamelina, N.V. Drannikova, T.N. Morozov [3; 4; 5; 6; 7; 8; 9; 10; 11.].

In July 2015, there was an organized folklore-ethnographic expedition to the municipality Patrakeevka of the Primorsky district of the Arkhangelsk region. The aim of the expedition was the study of local identity and the fishing tradition of the Winter Coast of the White Sea, often associated with fishing and hunt. The study is based on the data collected during the folklore-ethnographic expedition of the Northern (Arctic) Federal University (NArFU) to Patrakeevka village. The NArFU students took part in the expedition headed by N.V. Drannikova. Thirty locals aged 40-90 were interviewed during the expedition. The recordings made consist of descriptions of symbolic and everyday commercial practices, superstitions and beliefs about local fisheries, sto-

¹ The article is a part of the scientific project N 15-14-29002 supported by the Russian Scientific Fund for Humanities.

ries about the past of the village and the Pomor calendar. The data collected is placed in the Archive of the NArFU Center for the Study of Traditional Culture (hereinafter — FA NArFU), Fund 16, folder 615.

Methodology

The object of the study is “field materials” and self-describing traditions in them. The data was collected during the field dialog with the use of traditional methods of collecting: conversation, interview, and survey combined with participant observation method.

In the article, we use the terms: tradition, local identity, cultural space, local micro group, the settlement group, and oral story. Methodologies that are suitable for the study of sustainable peasant cultures and preserve them in museums, poorly correspond to the situation when urbanization is not limited only to cities, and agricultural culture transforms into the industrial one. The problem, says L. Honko, could be solved by the study of cultural identity of local communities, if people are interested in its preservation and maintenance [12]. They operate this knowledge, even if they cannot clearly express it. The term tradition is used here with several meanings. First, it is a mechanism of socialization and inculturation of the people, the channel for storage and transmission of information and values from generation to generation; second, it means elements of social and cultural heritage we place to the folklore archives; thirdly, it is the experience and knowledge of a social group.

Honko L. describes the concept of “tradition” as a broader identity than the cultural one. The researcher understands identity as a term of the second order and sees it as part of a collective tradition, dedicated to representing the group in cultural communication [12]. Local identity (hereinafter LI) — the identification of a person with a place of residence. The concept of “cultural area” we use to denote the geographical area of close artifacts and cultural phenomena. The population of one village, we believe, is possible to be called a local micro-group, as it is a specific cultural space with a distinct identity [13, Drannikova N.V., p. 30]. The settlement group is a group of villages that exists over a long period of time. In the article, we rely on a speech genres classification by M.M. Bakhtin [14]. Oral stories are the primary speech genres that occur in a dialogue. K.V. Chistov emphasized the difficulty of isolating the oral story [15]. Along with the speech genres, we use the common folklore genre classification, which is based on substantive, formal and pragmatic characteristics. The term “tradition”, we understand as the text that refers to the past.

Historical and cultural characteristics of Patrakeevka village

The village Patrakeevka is situated at the Winter Coast of the White Sea, 70 kilometers away from Arkhangelsk and a few kilometers from the sea, in the part called Sykhoe More. It is a

broad, shallow reach with sandbanks, North of Berezovsky mouth of the Northern Dvina River and is part of the Dvina Bay of the White Sea. The Winter Coast is a part of the coast in the southern part of the White Sea. It starts from the mouth of the river Northern Dvina and ends with the Cape Voronov. Patrakeevka village is located on the banks of the river Mudyug. Currently it consists of five settlements: Verkhove, Kushkushar, Navolok, Gorka and Patrakeevka. 3 kilometers from the village Kad' and 25 from the villages Kuya and Kozli.

We were not able to find any information about the date of the Patrakeevka foundation day. Researchers agree that Patrakeevka parish, formerly Mudyugsky, was formed during the 16th century [16, Leontev A.I., p. 144]. Since its residents were engaged in maritime trades, seafaring and navigation, it was one of the richest counties in the Arkhangelsk region, and its residents had a higher cultural level than the residents of other villages on the Winter Coast of the White sea. The village got school is much earlier than other localities. Many of its residents were literate before the nineteenth century. E.g., parish schools in Arkhangelsk province began to appear at the end of the XIX century. Interest in education had been increasing that time, especially after 1908, when Russia began the implementation of a program of primary education². Schools in the villages were opened by decision of the rural societies. The population of Patrakeevka wanted children to be literate, so they could serve as sea pilots in the future. In 1841 in Mudyug a skipper school was opened. The Treasury kept it³. Since 1849, they had a village school, where boys and girls could study together⁴. We know about a high level of life of the Patrakeevka villagers from the information published in 1915 in "Lociya Belogo Morya". It was noted there that "the Patrakeevka parish had a population of 1,762 people, 3 churches and 339 houses, 246horses, 286 horned cattle, 1014 sheep, 68 seaworthy vessels, 89 karbasses and 156 boats"⁵. In 2015, in time of our expedition, the population of the village was 335 people. Among the churches mentioned in "Lociya", in Patrakeevka, there were only two: the wooden St. Nickolas church built in 1744–1746 and the brick church of Assumption of the Blessed Virgin Mary built 1870–1878, the church of the Three Saints was in the village of Kad'. In Soviet times, churches were almost destroyed, and now the locals are trying to restore them.

² According to the plans of the Ministry of Education, all children of preschool age were to receive a free minimum education. Rural administration (zemstvo) developed appropriate plans. Mandatory training for everyone was introduced in 1908.

³ Ibid.

⁴ *Kratkoe istoricheskoe opisanie prihodov i cerkvej Arhangelskoj Eparhii* [A Brief Description of the parishes and churches of the Arkhangelsk Eparcy]. Arkhangelsk, 1894. Vol.1: Uezdy Arhangel'skij i Kholmogorskij. P. 135. [in Russian]

⁵ *Lociya Belogo Morya* [Sailing Directions of the White Sea]. Petrograd, 1915. P. 155. [in Russian]

Patrakeevka village like the other villages along the coast of the White Sea has a fishing type of housekeeping and culture. Most of its population was involved in shipping, shipbuilding and various fishing activities related to the fishing of salmon, herring, coregonus and flounder, or under ice fishing of cod and smelt and marine mammals hunt. At the same time, the villagers were engaged in pastoralism and agriculture, which did not receive much development here. In the revolutionary time, Patrakeevka was widely known by its shipowners, who, according to the residents, had “more vessels than in Arkhangelsk”. On the boats, they went to Norway for trade, which took place in the coastal Norwegian settlements, ranging from settlements located near the Kola Peninsula to the town of Tromsø. The residents of Patrakeevka village were carrying timber, lumber, hemp, tar, dishes, flour and other products to Norway. They bartered goods for fish and sold the fish upon their return to Arkhangelsk [17, Popov G.P., Semin A.A., Burkov G.D.; 18, Nurpeisova A.V, p. 11]. In the 19th – early 20th century, the government introduced concessions for the trade and construction of ships, which stimulated the development of exchanges between the White Sea population and Norwegians. During the Civil war, many of the Patrakeevka’s residents who had sailing boats and their families moved to Norway⁶.

In 1929, the agricultural artel “Krasnoe Znamya” was created in Patrakeevka, and in 1933, it transformed into a fishing collective established for coastal fishing and production of bottom and oceanic fish species in the Barents Sea and the Atlantic Ocean. In the 1990s, the new social and economic situation has severely demoted the status of fishing collectives.

Analysis

The level of self-identification of the local community and the awareness of its residents about its distinctiveness had proved to be rather high. Most of our respondents thought they were Pomors. Pomors — is a Russian-born ethnic group. Its members live on the coast of the White Sea and are engaged in marine fisheries. Our question about whom else in the Arkhangelsk region could they call Pomors was answered like that: “*the most Pomor people are Mezency, Primorjane (residents of the Primorsky district) and Onezhane, up to Kholmogory – everybody are Pomors*” (S.I. Burkov, born 1948). The identity the local community was closely linked to the memories of indigenous fisheries. Its particularity is hidden in the widely spoken proverbs: “*The Sea is our field*”, “*who has never been to the sea, did not pray to God*” and others that perform the integrating function.

Another feature of the identity of the Patrakeevka residents is their belief in cultural affinity with the residents of Arkhangelsk: “*Arkhangelsk, Solombala and Patrakeevka are the one*”, they

⁶ Popova T. Patrakeevka. *Ribak Severa*, Arkhangelsk, 1981. 11 June. pp. 3–4. [in Russian]

say. Solombala is an island part of Arkhangelsk; it became a part of the town rather late. The locals note the proximity of Patrakeevka village from Arkhangelsk by saying that they “*traveled with samovars on sea boats⁷ from Patrakeevka to Solombala*” (A.G. Kokorina, born 1938). Our respondents categorize residents of Arkhangelsk as “theirs” and do not separate themselves from them. The Patrakeevka villagers believe that the residents of Arkhangelsk, means they, are well treated and “*respected everywhere*”. This conviction is because, in Soviet times, Arkhangelsk ships and boats were welcomed in every world port they came. The residents of Patrakeevka and Arkhangelsk use the same local-group nickname (hereinafter — LGN) — *treskoedy* (“cod eaters”). Its existence is a witness of a well-developed local identity of a micro group. The origins of this LGN our respondents explained by saying that cod was their favourite food (“*from cod, in fact, people have lived before...*”). The nutritional basis of the coastal villagers was fish. The role of the fish was particularly great in the war-hungry years. A second explanation is the participation of the locals in the Murmansk cod fisheries (“*the basic fishing was the fishing of cod*”).

In addition to the endonym-selfnaming, the Patrakeevka residents have some more LGN, one of which, like the previous LGN, is linked to the fishing activities of the local population — *revcheedy* (“*revcha eaters*”). (“*There is the fish Revcha (Cottus quadricornis)⁸, it looks so terrible, so lumpy. The villagers catch it and eat*” [13, Drannikova N. V., p. 330]). Both nicknames are well known for the residents of the neighboring villages. The villagers of Patrakeevka accept nickname *the Turks/Patrakeevka Turks*, used by the neighboring community. In Russian folk culture, the ethnonym “Turk” is associated with the ignorance of the rules, cultural backwardness and violation of the social norms. Other ethnic anthroponyms are associated with the category “foreign”. Our respondents’ explanations explicit these associations.

“Patrakeevka villagers are the Turks. People said: “*a priest was exiled to Mezen, he was driving by, and the elder woman did not allow him to sleep in her house*”. The priest replied, “*What Turks!*” Others say that it was Voroshilov” (V.N. Zamyatin, born 1937); “*Patrakeevka — Turkey. Kliment Ephimovich Voroshilov was in exile, ran from Mezen and he was not welcomed*”. (J.D. Zamyatina, born in 1942)

Means the argument of the nickname origin is an indication of the prevalence of this information, represented by a formula of “rumors and thoughts” — *they say*. Instead of taking the priest for the night or in the second variant, K.E. Voroshilov, the people of Patrakeevka refused to let them in. Their actions violated the set-standards of behavior and corresponded to the percep-

⁷ Karbas — a big boat with high boards for sea or river transportation or fishing.

⁸ Revcha — a small bull.

tion of “alien” in popular culture. K.E. Voroshilov seems to be a kind of cultural hero of the Northeastern part of the Arkhangelsk region. Similar anecdotal texts about K. E. Voroshilov exist in other localities along the coast of the White Sea (e.g., in the village of Dolgoschelye of the Mezensky district and the village of Lopshenga in Primorsky district) [13, Drannikova N.V., pp. 315–316; p. 329]. Explanations about the origin of this LGN contain a play on the geographical position of Patrakeevka and Turkey – near the sea: “*Turks are behind the Black Sea, and Patrakeevka is behind the Dry Sea*”. (A.G. Kokorina, born 1938)

Residents of Patrakeevka are proud to call their village *a captain's village*. They explained this paraphrase by claiming that only in 1960s–1980s in the town of Murmansk there were 40 captains — natives of this village: “*In Murmansk more than forty of our captains lived. Patrakeevka is the so-called captain's village*” (S.I. Burkov, born 1948).

Many captains are out of there. Kopylovs, Borkows, Kopytovs, Strelkovs — many captains. Now it is Antufiev, what is his name, Valera Funnikov are captains. These are the present, and earlier — Lapin, my father — a captain, Strelkovs from Kad', and then Antufiev from Patrakeevka. (T.A. Kopytova, born 1947)

The formulas “*a lot of captains*”, “*what a captain*” were pronounced during the conversation for several times. It strengthened the credibility of the respondent's story. In recent decades, there was one more circumlocutory name of Patrakeevka — “*Patrakeevka — the birthplace of captains and sailors*” intertextual associated with the title of the book by G.D. Burkov “Patrakeevka — Pomor village, the birthplace of captains” [19]. In this case, the name is case-text in relation to the resulting rephrase.

One of the factors to update the identity is the possibility of inter-group comparison, which represents the foundations for evaluating “their” and “foreign” groups. In a situation of comparison (and opposition, in certain cases,) with a group of “strangers”, the villagers have a clearly defined criterion of identity. Kinship and economic relations closely linked the villages of a cultural micro area with the center in Patrakeevka. Despite this, when arguing, the villagers called each other by nicknames. E.g., the Kuya villagers were called *propubniki* (“holemakers”). It demonstrates the cultural and economic features of the local community. Motivational reflection connects the origin of the nickname with a great number of ice-holes in winter, made by the villagers: “the ice-holes were made, and each family had its own” (A. Kokorina, born 1938). The Kuya village had one more LGN well known to all the surrounding villages, which may have preserved the memory of the first settlers — *the people of Novgorod*: “*people say the first settlers were from Novgorod*”. (E.M. Padzior, born 1929). The neighboring village Kozli was called with an ornithologi-

cal name, popular in the Northeast of the Arkhangelsk — *chabar* (*a baby gull*)⁹. The second naming of the village is *pskovichi/pskovityane* (*people from Pskov*).

“We have, then, something like this: people married in Kozli and moved to Kuya, married in Kuya and moved to Kozli. The sharing of blood occurred. Some of them were called novgorodtsi, the others — pskovityane. Some of them were prorubniki, but I do not remember: the novgorodtsi may be... I can't remember: novgorodtsi was the name of people from Kozli or Kuya, but, in general, novgorodtsi and pskovityane, and prorubniki — made ice-holes only”. (A. Kokorina, born 1938)

During meetings of the residents of different villages, the LGNs performed the function of disengagement of the micro-group.

Except for the residents of Arkhangelsk, the Patrakeevka residents consider the communities of neighboring villages Lapominki, Poborki, Lodma and Izhma, located within a radius of approximately 50 km, as “we”. The territory of these settlements, including Arkhangelsk and its island part of Solombala and the villages Kuya and Kozli mentioned above, form a cultural micro area. Residents of settlements married, the land they are located is an area of distribution of certain local cultural types and traits related to marine fisheries. Residents of Patrakeevka know the LGNs and sayings of these settlements.

The stereotype of the “alien” contributes to the establishment of local identity. Residents of the Pomor villages Koida and Ruchii, 170 km away from Patrakeevka in the Mezensky district, are not considered as “we”. Therefore, the Patrakeevka villagers do not know their nicknames. The neighboring village Zimnyaya Zolotitsa is located 82 km from Patrakeevka and is part of the Primorsky district, the residents of Patrakeevka opposed themselves to its population: Zolotitsa is “our”, but at the same time, it is a “stranger”. The Patrakeevka villagers did not like the Zolotitsa residents because they, in their opinion, were loners and were in a bad contact with the more educated people from Patrakeevka. The latter know the LGN of the Zolotitsa residents — *demon*. According to popular belief, the representatives of the “other” world can cause changes in the weather. The residents of Zolotitsa were associated with the belief that their appearance on the sea causes the bad weather (V.M. Firsov, born 1950).

Despite the population of the Pomor villages located at a great distance from Patrakeevka, its residents oppose themselves to the population of the villages located in the forest, and the Cossacks. Although the local community has beliefs about spirits — the “masters” of nature and

⁹ Chabar — a bird.

cultural space: wood-goblins, water spirit and mermaids, hostess of the log hut¹⁰ and brownies, but at the same time the narrators say that the data representations are more typical for inhabitants of the "forest" villages, which are less educated than they are.

When during a field dialogue, the question about the attitude of the Pomors to the Cossacks arose the Patrakeevka villagers believed that the Cossacks had lived more easily than Pomors, because of better climatic conditions and that they had had an ego and a penchant for buffoonery. Pomors' priority over the Cossacks, according to our respondents, is that the Pomors mastered the Arctic, Siberia and Alaska. Pomors are explorers, travelers, and conquerors of Siberia, the Far East and Alaska: native of Solvychegodsk in the Vologda province — E.P. Khabarov, Velikiy Ustyug — Semyon Dezhnev, the conqueror of Siberia — Yermak Timofeyevich, born in the town of Kargopol, the founder of Russian settlements in Alaska and its first Governor — A.A. Baranov. One of our narrators came into a rhetorical argument, claimed that the Cossacks were not capable of such difficulties and trials: *"What are the Cossacks? Cossack went South, I agree, but here... Pomors went by the Sea! The family names are our"* (S.I. Burkov, born 1948).

In the past, the local community opposed not only the Cossacks, but also the Nenets — representatives of the Samoyedic people on the territory of Mezensky district of the Arkhangelsk region and Nenets Autonomous district. Currently, the Nenets stopped visiting Patrakeevka, but before they were treated with concern and were considered sorcerers.

Well-preserved historical and cultural memory relates to cultural context of the local identity of the Patrakeevka villagers. "Social memory" unites the group and differentiates it from the others. We have oral stories about the historical past of the village among our records. The stories are on the foundation of the village, the raids by Norwegians, seafarers and shipowners, pre-revolution relations with Norway, the old believers, the dispute with the Solovetskiy monastery of usali, visit to the Solovetsky monastery, the Civil war and intervention. Among the latest are the stories about the escape prisoners of the red army from the prison created by the interventionists on the island of Mudyug, cannibalization, etc. "Memories" about the Novgorod origin are an integral part of any local community history. In popular versions and oral tradition, the first settlers of Patrakeevka came from Novgorod, which, according to residents, were running there from Moscow Tsar or, according to another version, were deported after the annexation of Novgorod by the Moscow Principality at the end of the 15th century: *"All our ancestors were deported from Novgorod by Ivan The Terrible"* (V.N. Zamyatin, born 1937). In "A Brief Historical Description of the Parishes and Churches of the Arkhangelsk Eparchy" in 1894, the description Mudyug parish contains

¹⁰ Tonya — a sea area adopted for fishing.

the record of a folk story, made in 1822 by a local priest Avenir Rozhin. The text supports the idea that the first settlers of Patrakeevka came from Novgorod¹¹.

In the local tradition keeps the division of family names on Novgorod and Moscow. In folk-speech discourse, Novgorod Moscow are opposed to each other. Respondents are proud of their “Novgorod” origin. They give their Novgorod ancestors such traits as resourcefulness and freedom. The auto-stereotypes they use are to characterize their own local small group.

In Patrakeevka, legend about three brothers – Negodyai, Bezborodiy and Morozko is widespread. The main motive of the legend is their abandonment of the Novgorod because of “the wrath of Ivan III”. The villagers think their names are the origin of the local family names Nego-daev, Bezborodov and Morozov. The second version, less spread: the first settlers came to Mudyug from the village Orletsy, located up the Northern Dvina River, 120 km from Arkhangelsk, where, according to tradition, they had clashed with the locals, who, after the defeat from Novgorod, went over the Ural. (S.I. Burkov, born 1948). The folk tradition of the settlement of combines two layers of knowledge: the first – about the historical homeland and the second – on close contacts of the Dvina residents and the Patrakeevka villagers. In folk prose, tsars Ivan III and Ivan the Terrible constitute one-mythological image of Tsar Ivan, who defeated Novgorod and then annexed it. In these stories, the image sometimes refers to Ivan III, and sometimes to Ivan the Terrible. The narrator adopts the story, so the collector would understand it.

Cultural context of many oral stories is linked to the personality of the performer — S.I. Burkov (born 1948). He is a good storyteller, reads a lot and is interested in the history of his village and worked as the head of the local communication node for a long time and travelled a lot along the coast. The Finnish scientist M. Suojanen introduced the classification of different types of storytellers. When using it, we include S. I. Burkov to the observer-analyst type. He did not only present familiar material, but at the time, he gave assessment and links and conducted various associations.

In the folk-speech tradition, three brothers of Patrakeevka are mythologized characters. The motive of the brothers-pioneer has a nationwide existence. As G.N. Krynychnaya mentions, this contributed to “the preservation of the tribal relations, the settlement of the territory by related groups — patronymic, the breakdown of the extended Patriarchal family” [20, p. 12]. In the Russian North, these stories present tales about the Chud settlement, the foundation of villages made by the settlers running from the foreign invaders or runaway soldiers. Y. I. Smirnov [21] in-

¹¹ Kratkoe istoricheskoe opisanie prihodov i cerkvej Arhangel'skoj Eparhii [A Brief Description of the parishes and churches of the Arkhangelsk Eparcy]. Arkhangelsk, 1894. Vyp. 1: Uezdy Arhangel'skij i Kholmogorskij. P. 130. [in Russian]

vestigated the story of two brothers, who built a village, throwing each other an axe from one bank of the river to the other. Even though some of his versions have “Chud” motives (E.g., the legend of Konchak), Y.I. Smirnov, relying on the texts written in the southern regions of Russia, Bulgaria and Lithuania, convincingly proved Slavic origin of this story. He considered the options of this text with similar motifs [21]. In the legend about the establishment of settlements in Garnitsky Bay (Zaonezhye), its first settlers are brothers, fled from Novgorod. The legend of the brothers-pioneer, who through an axe to each other while constructing the village, still exists in the village of Valdeevo in Konosha district of the Arkhangelsk region [22, Drannikova N.V., p.34].

Our field recordings 2015 contain stories about Chud. Oral stories about the meeting of the first settlers with the native population are widespread in the Russian North. They presented a story about the struggle of the Novgorodians with the Chud and circulated in Pinega, Verkhnetoemsky, Konoshsky, Leshukonsky, Vilegodsky areas of the Arkhangelsk region [23, Drannikova N. V.]. The main motives of these legends (according to the classification of N.A. Krinichnaya) is the struggle with the antagonist, getting rid of him, disappearance of the character or a specific community in specific location [24]. The last motif in the folklore prose is often presented in the texts by the following elements: immersion (leave) in the ground, the mountain, source; self-burial; death. Legends like the ones in Patrakeevka with the motif of assimilation [23, Drannikova N.V.] or withdrawal (escape, retreat) from the area to other land are less common. E.g., the book by N. A. Krinichnaya has only texts about how Chud moves to the Novaya Zemlya [24]. In our case, Chud goes east, as it happened in two other texts from the collection of N.A. Krinichnaya [24]. In the legend recorded by priest A. Rozhin in Patrakeevka, the motive of assimilation of Chud is more colorful compare to the other publications [23, Drannikova N.V.; 24, Krinichnaya N.A.]. In this text, the natives begin “to hide their origin” after assimilation with the Russian population.

Most of the recorded stories are about hunting. The main theme of these stories is the production of a seal in times of the *veshnyi put'* or a hunting company for young seals, held in March. It took place near the village of Zimnyaya Zolotitsa. The hunting started on Vlasev Day (11/24 of February) and ended in early March. Stories about hunting relate to the 1950s — 2000s, and end in 2007 when the state prohibited the seal hunt. These stories contain so many ethnographic details. They include historical information, e.g., that in the early days, during the fishing season many hunters died, or the sea ice-blocks carried people away to the White Sea or special *boat-sledges* with the runners to move on the ice existed to transport dead seals, etc. In the Soviet time, trapping campaign was done on icebreakers. Respondents gave a detail description of the seal cultivation. The gender of the respondent influenced the style of the stories. The female per-

ception of hunting is full of sympathy for the seals. A woman-respondent told about baby seals as about children: *they beat kids with hooks*; she called trapping *the meat grinder* and the cages for seal pups — *the concentration camp for animals*. The accuracy of the narratives is given by the names of the place: the stories mentioned Zemnegoisky and Veprevsky beacons, located near the village Zimnyaya Zolotitsa. Narrators positively evaluate the changes in the life of the hunters that have occurred in the Soviet period. They consider them more *comfortable* compared to the pre-soviet times. The cognitive context of these stories is filled with tragedy. It is associated with extreme natural conditions for the trapping and hunt. Their extremity is passed through the gradations of episodes included in the text of the story: *the ice will break away from the fast ice*; the ice-hole is full of shuga¹²; *sometimes there were several kilometers of the broken away ice*¹³. The respondents agree upon the great role played by hunting in the life of Pomors, but their stories about it imposed the Soviet context that manifest its importance for the country. Importance of hunt for our respondents reinforces their knowledge of the historical facts. During the Great Patriotic War, the residents of Arkhangelsk survived because of the seal meat. Some of the stories about hunting represent hypertext formations — they include toponymic legends about the origin of the name of the village Zolotitsa, which thou would have occurred from the *gold fur*¹⁴. (A.G. Korina, born 1938)

A part of the local identity of the Patrakeevka is a good knowledge of the local fishing calendar. Because the fishing did not stop in the Soviet period, the calendar did not change. The residents of Patrakeevka know the dates of the different approaches/*walks* for salmon, whitefish and herring, timed to coincide with the calendar holidays. Each of those trips aimed at catching a certain type of fish: Ivanovo salmon campaign (June 24/July 7) for *small salmon*, or *tinda*; Petrovsky campaign (June 29/July 12) — *black-spined herring*; Ilinsky campaign (July 20/August 2) — *Il'inka* (*Atlantic salmon*), *black-spined herring*; Transfiguration (August 6/19) and Assumption campaigns (August 15/28) — *black-spined herring*, Alexander Nevsky campaign (August 30/September 12) — *black-spined herring*, Semenov day campaign (September 1/14) — *pokrovka*, or *freshwater whitefish*; the Displacement (September 14/27) and the Cover campaigns (October 1/14) — *pokrovka* or *freshwater whitefish*; the Kazan icon of the Mother of God salmon campaign (October 22/November 4) until November — *small Atlantic salmon*. The last salmon was called *pioneer* or "*zaledka*" (means "behind the ice"). Whitefish was caught on the Ilin day (July 20/August 2), herring — since the Cover day (1/14 October) and until the Candlemas (Feb 2/15). The fishing cam-

¹² Shuga — shallow ice.

¹³ Inflow.

¹⁴ Seal fur was precious.

paings confined to the holidays of Christmas and Epiphany. Fishing of pike depended on the phases of the moon. It was believed that pike was caught especially well on the waning moon. Agricultural calendar compared to the fishing calendar is lost. It was not functional for the local community. In addition to the *fishing campaigns*, the calendar holidays in Patrakeevka were the navigation of vessels to Norway. The boats departed from Arkhangelsk to Norway between the Spirits Day and the Semenov Day (September 1/14). They returned to Patrakeevka by the Cover day. *“On the Spirits Day, our sailors believed, that the wind would be from the mountain, it is East or South-East, to leave the White Sea and move to Norway. They left before the Semenov Day but came to Arkhangelsk, not here, it's shallow here”*. (S.I. Burkov, born 1948)

The ethno-cultural traditions of Patrakeevka has ritualistic behavioral norms belonging to the ritual and mythological knowledge. A high degree of safety of behavioral standards is due to the nature of this activity: “a person here, more than in any other sector of the economy, feels at the mercy of natural forces, and sometimes he is directly aware of his helplessness” [25, Tokarev S.A., p. 231]. One of the most respected festivals in the Patrakeevka is The Annunciation. In old days, there were ritual prohibitions to the work this day: *“Ships at sea do not go out on <the Annunciation>, the same is on Monday, the same, not to be out in the sea”*. (V. N. Zamyatin, born 1937). The respondent noted that the prohibition had a higher obligatoriness than bans on other religious holidays, and compared the need for compliance with a law: “Nobody starts any work, do not start. It is as a law”. (V.N. Zamyatin, born 1937). The Annunciation in Patrakeevka, as in the Koida village of the Mezensky district (FA NArFU, p. 605), was more important than Easter. This might indicate the impact of old believers who had the same attitude to these holidays [3, Bernshtam T.A.]. The transformation of traditional consciousness in the Soviet period is clearly visible in the responses to the questions regarding the content of the prohibitions on fisheries for the other holidays — that is why the researcher and the respondent started to put the different cultural meanings in the traditional mixture for the local community vocabulary. Our question about a prohibition to fish on the Ilin Day (July 20/August 2) was not understood by the respondent. Therefore, he answered within the logic of the current discourse associated with the official ban on fishing: *“No, before there were no prohibitions, there are various prohibition right now, and before that, fish any time you want, how much you want and the longer the better”*. (V.N. Zamyatin, born 1937)

The traditional culture of Patrakeevka had a belief in different objects-amulets well known to our respondents. It was believed that to access the sea successfully, it was mandatory to have an icon, mostly with the image of St. Nicholas. Local population honored him as the patron of sail-

ors and anglers. Sometimes the icon had the image of angler's saint patron. In addition, a talisman could be a rag doll made by female family members. It was believed that the doll would bring the luck of the "spirit of the house" (J.D. Zamyatin, born 1942).

Phenological observations remain functional for the local community. They are preserved as signs and beliefs. The population of Patrakeevka, as well as the other villages of the Winter Coast, divided favorable and unfavorable winds for crafts. A North-West wind or "poberegnyk" ("coastal wind") was the most favorable for fishing: *"And so it is usually called autolec — when it was blowing West or North-West, rinsed for three or four days, then turned to the mountain, and the Mountain is the North wind or the North-East, that's why it is called 'autolec'. Then put nets on the salmon and manage. The water is muddy — the fish cannot see anything, rushing like a tank to the nets. Men call it 'autolec', that means a will that is given to you"* (S. I. Burkov, born 1948). The non-favorable winds are Southwest, Southeast and East winds. Such an attitude is in proverbs, common for this area: *"If the wind is west — fish stop. The fish are not biting"* (V.M. Firsov, born 1950); *"The East won't put into a cup but takes out. The rottenest winds are East and Southeast winds to the Sykhoe More, because the water squeezes too much."* (S.I. Burkov, born 1948) *"If it is blowing east then from the spoon: people ate their reserves, and the fish was not caught"*. (J. D. Zamyatin, born 1942). Explanations of the negative effects of eastern winds on the fish catch reveal gender difference: the men explanation relates to the nature and climate, women's — to the household.

The widespread superstition about a large crop of mountain ash and the rain weather received fishing rethinking: *"When there is a lot of green ash fruits on the trees, there will be a salmon" — people told"* (S. I. Burkov, born 1948). Despite the widespread use of phenological observations in local folk-speech discourse in recent decades due to climatic changes, the respondents aged less than 60–70 years note their senility and understatement: *"These are the old omens. Now many of them do not match...Yes, it was something about the case. Now, it should be so, but it is rather different. Many omens do not match"* (V.M. Firsov, born 1950). Some of the respondents, who are not involved in fishing, can hardly remember them.

In Soviet times, the farewell to the hunting of seals was lost. The question about how the farewell was performed was answered that there were no farewell, because *"they left not for a holiday but to kill the mammals"*. Modern ritual practices include the Fisherman's Day, celebrated instead of the traditional St. Peter and Paul Day on the July 12. Previously, he was a common holiday held in the central village of the Patrakeevka parish — The Patrakeevka village. The Fisherman's Day was a Soviet professional holiday. It brought all the residents of the fishing collective

together. Now, on this day, a common meal from the salmon or pink salmon is cooked for the members of the collective. A cultural program accompanies the feast. People recall famous fellow villagers and organize games for children and adults. The games symbolically manifest the identity of the local community. Some of them resemble fishing, which, until recently, has been the main activity. The children's game "fishermen and fish" has a competition between its participants in the number of "caught" fish to get the status of the winner in the eyes of the local community.

The factors that support and enhance the local identity are the presence of prominent or famous villagers among the local community members. The residents of Patrakeevka are proud of Ivan Ryabov (I.E. Sedunov) who repeated the feat of Ivan Susanin. During the Northern war, in 1701, the Swedes captured him and demanded to show the pass to capture the Novodvinsk fortress. Ryabov I. put two Swedish ships ashore under the walls of the fortress. The ships were destroyed. One more famous resident of Patrakeevka is the shipowner N.I. Kopytov. He bought in England the first metal trawler in the Arkhangelsk province. In 1856, during the expedition to the North, the writer S. V. Maksimov visited his ship [26, Maksimov S.V.]. The least known man among the resident of Patrakeevka is a shipbuilder and ship owner I.I. Burkov (1861–1938). He had his own shipping company to compete with "the Arkhangelsk-Murmansk Express Steamship Company". Burkov I.I. was shot in 1938 because of the case of the Norwegian Consulate in Arkhangelsk. Some more famous people from this village: the ship-owner G. I. Burkov who had seven sailing vessels, like I.I. Burkov shot in 1938; a member of the V.A. Rusanov's missing Arctic expedition 1912, a sailor of the ship "Hercules" — A.S. Chukhchin; captain of the icebreaker "Sadko" made a significant contribution to the development of the Arctic and the Northern Sea Route — V.N. Burkov, and the captain of the first soviet research vessel "Persey" P.I. Burkov; head of the collective "Krasnoe Znamya" and the Chairman of the Union of fishing collectives of the Arkhangelsk region — L.M. Selyaninov.

Conclusion

Let us sum up the results. The study leads to the conclusion that ethno-cultural tradition of the Patrakeevka village is a local type of Pomor culture. Patrakeevka is the center of cultural micro areas which includes the villages of Kuya, Kozli, Kad', Poborka, Lod'ma and Izhma. The villagers have a positive identity. They are proud to tell about the historical past of their village and know it well. They are also proud of their ancestors – residents of Novgorod, the fact that they had no serfdom and their village was founded before the town of Arkhangelsk. The villagers are also proud of the fact that they had more fishing and trade ships than Arkhangelsk, had their own salt-works, the first schools in the province, being a center for the education of sailors, higher cultural

level of its residents and being richer than the other Pomor villagers. The Patrakeevka residents believe their ancestors were freedom-loving, brave and enterprising people. The same features they see in themselves and their micro group. They are proud of their fellow villagers — the captains and ship-owners, chairpersons of the local fishing collectives of the Soviet period.

In the minds of the locals, there are several levels of opposition to the others. Historically they oppose themselves to Moscow, Chud and Nenets; currently — to the villages, located far from the sea, and to a lesser extent, to the Pomor villages that are far from Patrakeevka in neighboring Mezensky district of the Arkhangelsk region. An important part of the local identity of the Patrakeevka villagers is a representation of their cultural proximity to the residents of the Arkhangelsk and its old part — Solombala, and a knowledge of the fishing traditions and phenological observations available in the form of signs and beliefs.

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The Arctic Council: transition of chairmanship from the US to Finland, further strengthening of Russian-Finnish cooperation



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Abstract. The article deals with the results of the 2 years of the US chairmanship of the Arctic Council, notes positive results and draws attention to the weak points of the US Arctic policy. It reveals that the US has chaired the AC to solve its own problems related to the Arctic. The authors also analyze the ministerial meeting in Fairbanks (Alaska) and describe the current Russian position in the Arctic. The foundations of the Finnish Arctic policy and the analysis of the first

statements of politicians and experts helps the author to predict the Finland's plans for the chairmanship in the Arctic Council 2017–2019, and its possible impact on settling differences in Russian-American and Russian-Western European relations. In addition, it is important to take a closer look at the role of the Finland's chairmanship in strengthening the Russian-Finnish cooperation in the run-up of the 100 anniversary of the independent Finnish state (December 2017). It is found that in contrast to Canada, the United States did not transfer the existing contradictions between the US and Russia to the work of the Arctic Council. It largely contributed to the positive results of the US chairmanship, especially on the development of multi-lateral cooperation of the coast guards, international fisheries in the Arctic Ocean and the problems of communication networks in the Arctic.

Keywords: *The Arctic Council, the Arctic, Russia, Canada, UN Convention on the Law of the Sea, Northern Sea Route, ice-breaker fleet, scientific research, national security*

The chairmanship of the Arctic Council (AC, the Council), whose members are Denmark, Iceland, Canada, Norway, Russia, USA, Finland and Sweden, was passed from Washington to Helsinki on May 12, 2017 at the meeting of the Ministers of Foreign Affairs in the American town of Fairbanks (Alaska). The U.S. Secretary of State Rex Tillerson handed over the chairmanship of the Arctic Council to the representative of Finland — Minister for Foreign Affairs Timo Soini.

The Chairmanship is moving from one participating country to another on a rotational basis for two years. The first country-chairman of the Council was Canada (1996–1998), and then it was the USA, Finland, Iceland, Russia, Norway, Denmark and Sweden. The second cycle of the chairmanship began in 2013, and then Canada was replaced by the United States two years after.

Results of the US Chairmanship of the Arctic Council

The presidency of the United States in the AC took place from 2015 to 2017. That time the world social and political situation was extremely complicated. All the Arctic countries imposed sanctions against Russia, which, in turn, responded with its counter-sanctions. So, the Arctic cooperation minimized, especially in environmental protection. However, to the credit of the United

States, they did not move the existing issues between the US and Russia to the work of the AC, which is not true for Canada, who chaired the AC before the United States.

First, a certain progress has been achieved in the development of multilateral cooperation of the coastal guards. On October 31, 2015, in the town of New London (USA), the official representatives of the agencies, performing the functions of the coast guards of the AC member states, signed the Joint statement of intention to develop a multilateral cooperation in a form of a Forum of the Arctic Coastal Guards. It has the status of an independent body legally not affiliated to any agreements. Participating countries: Russia, Denmark, Iceland, Canada, Norway, USA, Finland, and Sweden. The change of chairmanship is done on a two-year rotation basis and interconnected with the chairmanship of the Arctic Council.

The Forum participants discussed the risks and security threats in the Arctic: the development of oil and gas deposits on the Arctic continental shelf; the development of the sea transport and the increase of shipping along the Northern Sea Route and Northwest Passage; cooperation in the field of search and rescue at sea; emergency response to the marine environment damages. It was noted that the development of offshore fields, scientific research, tourism and maritime traffic lead to the increase of risks in the border area. It is violation of borders, illegal migration, smuggling, possible infiltration of terrorism in the region.

The FSB of Russia Border Service (FSBR BS) has a positive practice of interaction with colleagues from the Arctic States [1, Zdorovtsev I.A., pp. 102–105] especially with the units of the Coast Guard of Norway and the US 17th district Coast Guard [2, p. 59]. The FSBR BS together with the Norwegian colleagues make the joint efforts in protecting the marine biological resources of the Barents Sea. It means the prevention of poaching; broader cooperation in the search and rescue of persons in distress at the Barents Sea; information exchange during the monitoring surface conditions in the adjacent waters; the exchange of experience on the protection of maritime boundaries and training of crews of the ships.

The US Coast Guard and the FSBR BS for the Kamchatsky Krai (Petropavlovsk-Kamchatsky) have gained quite extensive experience in joint patrols made by ships and aircraft to ensure the compliance with the Convention for the Conservation of Anadromous Stocks in the North Pacific Ocean. A certain cooperation is visible in the exchange of information during patrols in the Chukchi Sea. In addition, the guards of both states share information on shipping in the Bering Strait

(see Art. 2 of The Russia — United States maritime boundary agreement June 1, 1990¹) and the movement of ships, which crews are suspected of unlawful activities.

At the Arctic Coast Guard Forum, despite of some differences in the functions of participants, there is a great potential for joint solution of regional security issues. The common efforts will enhance the maritime safety and security of every person in the Arctic.

Secondly, the Forum was a place for fruitful consultations on issues of international fisheries in the Arctic Ocean. In June 2015, Russia, USA, Norway, Canada and Denmark signed an agreement to ban fishing in international waters of the Arctic. The agreement applies to high seas area located outside the exclusive economic zones of the Arctic states.

Thirdly, for the first time in the AC history, the USA studied the communication networks in the Arctic region.

Fourth, the analysis showed, during the US presidency, the country understood and publicly acknowledged that the US had paid insufficient attention to the Arctic and had fallen behind Russia, Norway and Canada [3, Zhuravel V.P., pp. 19–21]. To prove it, we could mention that the US President Obama was the first incumbent U.S. President visited the area behind the Arctic Circle and met its residents.

The USA are a step behind in the construction of icebreakers. Currently they have three of them, but only two can operate in the Arctic. In addition, according to experts, the existing icebreakers are unable to provide quick and efficient help in case of possible disasters caused by the oil production in the Arctic Ocean. The US President decided to start building another heavy icebreaker with a total value of up to \$1 billion with the commissioning two years earlier — in 2020. On May 5, 2017, the commander of the US coast guard Paul Zukunft in his speech² complained about the lack of icebreakers in the country.

That time, several activities strengthened the interest of the US citizens to the polar affairs and the “Arctic status” of America. Primarily, it is about the signing of the UN Convention on the Law of the Sea. While the USA is not a part of the UNCLOS, it hurts the image of the country and creates a discrepancy of its position and the position of the other AC countries. It is also the potential to change the US position on the Arctic issues.

Fifth, we should note that the AC bodies continued to operate in the former regime during the US chairmanship. It allowed the US and its AC colleagues in the AU to prepare several im-

¹ The Russia — United States maritime boundary agreement was signed in Washington on June 1, 1990. The agreement delineates the territorial sea, economic zone and continental shelf in the Chukchi and Bering Seas and the Arctic ocean

² Rossiya ne ostavila shansov SShA v Arktike. [Russia did not leave any chances for the US in the Arctic]. URL: <https://www.ridus.ru/news/251741> (Accessed: 13 May 2017) [in Russian]

portant documents to be signed in Fairbanks. The Arctic Council consists of six working groups on its major activities: Arctic Monitoring and Assessment Program (AMAR); Conservation of Arctic Flora and Fauna (CAFF); The Emergency Prevention, Preparedness and Response Working Group (EPPR); Working Group on Protection of the Arctic Marine Environment (PAME); Sustainable Development Working Group (SDWG); the Arctic Contaminants Action Program (ACAP).

Sixthly, the foreign Ministers of the eight Arctic States discussed key issues of strengthening international cooperation in the Arctic to contribute to the sustainable development of the region. The final Fairbanks Declaration 2017 reaffirms the commitment to the peaceful development of the Arctic, mutually beneficial cooperation, focus on environmental activities and emphasizes the importance of a joint steps to adapt to the climate change. The §23 of the Declaration states: ... the Arctic is warming at more than twice the rate of the global average, note with concern that the pace and scale of continuing Arctic warming will depend on future emissions of greenhouse gases and short-lived climate pollutants, reiterate the importance of global action to reduce both greenhouse gases and short-lived climate pollutants to mitigate climate change, and call for the Arctic Council to undertake additional analyses to contribute to the assessment reports of the Intergovernmental Panel on Climate Change and continued collaboration with all levels of governments...".

Seventh, in accordance with the decisions of the Ministerial meetings of the AC, reflected in the Kiruna Declaration 2013 and Iqaluit Declaration, 2015, the participants of the meeting signed an Agreement on Enhancing International Arctic Scientific Cooperation³. The purpose of the Agreement is to strengthen cooperation in the field of scientific activities, to improve the efficiency and effectiveness of the scientific knowledge about the Arctic. The Agreement aims to facilitate international research, to intensify the contacts between scientists and the exchange of scientific knowledge, to simplify the border crossing and create more opportunities for joint use of scientific infrastructure.

It clearly defines the geographical areas where the countries-participants will help in obtaining permits to conduct research, use of scientific infrastructure, etc. in accordance with the home and international legislation. The Agreement's structure does not leave any space for prejudice the existing agreements between the Arctic and non-Arctic states and does not narrow the possibilities of scientific research in the Arctic for the latter. The development of this Agreement took four years within a specially established AC working group. The group's co-chairs were Russia and the US.

³ The draft of this Declaration was approved by the Russian Government on the April 19, 2017 Order № 735-p.

This is the third agreement. Two more had been signed before: on cooperation in aviation and maritime rescue (January 2013) and on oil spills and marine environment in the Arctic (May 2013). These international binding agreements increased the responsibility for decision-making and at the same time, contributed greatly to increase the authority of the AC.

Meeting in Fairbanks held in a friendly atmosphere. Originally, a place of meeting was Anchorage. However, the public of Fairbanks had offered their town, as it was the northernmost settlement of the US with airport and railway. The Minister of Foreign Affairs of Canada Chrystia Freeland welcomed the Russian delegation in Russian. The Minister of Foreign Affairs of Russia Sergei Lavrov, Russia's Ambassador in the U.S. Sergey Kislyak and the mayor of Fairbanks Jim Matherly laid wreaths at the monument to the heroes of the air route Alaska — Siberia. In 1942–1945 Soviet and American pilots took about eight thous combat aircrafts from Fairbanks under the lend-lease program⁴. At the Fairbanks meeting, Switzerland got the AC observer status. It does not provide the right to vote but this event once again demonstrates the increased interest in the Arctic from a wide range of non-Arctic States⁵.

Focus of the Finland's chairmanship of the Arctic Council

At the meeting in Fairbanks, The Minister of Foreign Affairs of Finland spoke out about the four main areas for the AC until 2019:

- 1) Environmental protection and biodiversity conservation in the North; healthy ecosystems and human well-being in the Arctic require effective conservation measures. It is proposed to focus on the conservation of biological diversity, the prevention of pollution, adaptation to climate change, exchange of practices and new technologies to promote sustainable and responsible development of the Arctic;
- 2) Development of communication networks in the region. Electronic communications services increase the safety and quality of life of those living in or temporarily located in the Arctic. Access to broadband facilitates the e-learning, contributes to the digital health systems, social services and media. It is proposed to continue the AC work for telecommunications and to explore the possibilities of improving communication and broadband network accessibility in the Arctic;

⁴ Dobro pozhalovat v Ferbanks: sotrudnichestvo v Arktike na dele, a ne na slovak. [Welcome to Firebanks: cooperation indeed, not just words] 12.05.2017. URL: <http://tass.ru/mezhdunarodnaya-panorama/4246374>; Lavrov i Kislyak vozlozhili cvety k pamyatniku geroyam Alsiba na Alyaske. [Lavrov and Kislyak laid flowers to the monument to the heroes of the Alsib Alaska]. URL: <http://tass.ru/politika/4246202> (Accessed: 18 May 2017) [in Russian]

⁵ Todorov A.A. Na Alyaske podpisano trete panarkticheskoe soglasenie. Chto prinesyot Rossii predsedatel'stvo Finlyandii v Arkticheskom sovete? [In Alaska, the third pan-Arctic agreement was signed. What will bring the Finnish chairmanship of the Arctic Council will bring?]. URL: <https://riss.ru/analitics/40836/> (Accessed: 18 May 2017) [in Russian]

- 3) Increase the number of weather stations to monitor the condition of the ice, ocean and atmosphere. This will increase public safety, benefit the international shipping and air traffic, help the development of climate science in the Arctic, increase the quality of networks of monitoring and observation, and the management of risks associated with climate and water. Enhanced monitoring on land, sea, atmosphere and space will help in obtaining accurate data and filling in geographical gaps, which in turn will lead to the improved transport services and forecasting in the Arctic and will help to develop much-needed scenarios of climate change. It is proposed to continue cooperation between Arctic states with the assistance of the World meteorological organization;
- 4) Implementing educational programs for indigenous youth⁶.

Finland's activities in the Arctic aimed at maintaining stability and the peace; it believes that the region can and should be an area of cooperation and security [4, Antyushina N.M., pp. 54–61]. The President of Finland Sauli Niinistö declared that during the two-year AC chairmanship, Finland could mitigate the global political situation by hosting a summit with the presence of the US and Russian leaders⁷.

The country acknowledges the existence of real threats to the vulnerable Arctic environment; it gives priority to the development of maritime navigation and infrastructure, supports the participation of indigenous peoples in international cooperation.

Finland is sympathetic to the interests, strategies and policies of the Arctic States and it is carefully watching their actions. At the end of 2016, Canada and the USA banned the issuance of licenses for offshore drilling. Norway focuses on research and training of qualified personnel to use the resources effectively. Priorities of the Danish-Greenlandic policy in the Arctic are energy and mining, and conservation of nature. Iceland is occupied with the development of transport in the Arctic, shipping but air connections, opposes militarization of the Arctic beyond national jurisdiction.

Finland, like other Nordic countries, while recognizing the successes of Russia in the development in the Arctic [5, Zhuravel V.P., pp. 30–36], records the increase in its military presence in

⁶ Finlyandiya predstavila programmu svoego predsedatel'stva v Arkticheskoy sovete. [Finland presented its plan for the AC chairmanship]. URL: <http://ru.uarctic.org/novosti/2017/5/finlyandiya-predstavila-programmu-svoego-predsedatel'stva-v-arkticheskoy-sovete/> (Accessed: 12 May 2017) [in Russian]; SShA peredali Finlyandii predsedatel'stvo v Arkticheskoy sovete. [The USA passed the AC chairmanship to Finland] 16.05.2017. URL: <http://www.da-voda.com/news/ssha-peredali-finlyandii-predsedatel'stvo-v-arkticheskoy-sovete/> (Accessed: 18 May 2017) [in Russian]

⁷ Arkticheskaya povestka Finlyandii porodnit Rossiyu i SShA [Arctic issues will relate the USA and Russia]. URL: <http://geo-politica.info/arkticheskaya-povestka-finlyandii-porodnit-rossiyu-i-ssha.html> (Accessed: 4 April 2017) [in Russian]

the Arctic with anxiety. However, the analysis shows that the level of militarization of the Arctic is not beyond the limits of reasonable sufficiency. All charges in the Russian militarization of the Arctic are groundless. According to the head of Department of Disarmament and Conflict Resolution of the Center for International security at the RAS National Research Institute of World Economy and International Relations named after E.M. Primakov, A.V. Zagorsky: "Despite the worsening of relations between Russia and West, the overall situation in the Arctic remains stable and predictable, and the agenda for regional cooperation — constructive. Until recently, the Arctic has been one of the few regions where cooperation was not sacrificed to the current deterioration of Russia's relations with the United States and other Western countries. However, the medium and long term international risks in the region may increase in case of further political tension in Russia's relations with the West" [6, Zagorskiy A.V., p. 102]. This position had been repeatedly expressed by participants of the international scientific forum "The Arctic — Territory of Dialogue" held in March 2017 in Arkhangelsk.

Our country takes some steps for the deployment of military infrastructure aimed at protecting Russia's national interests, contribute to the balance of forces in the region. It is important now to restore military contacts, to reduce suspicion, to avoid misunderstandings between NATO and Russia.

The position of Russia at the meeting in Fairbanks

At the international meeting of the AC in Fairbanks, Russia clearly outlined its position on the AC activities and current international cooperation⁸.

First, according to the Minister of Foreign Affairs of Russia Sergey Lavrov, all the problems that may arise in the Arctic should be resolved through political negotiations in full compliance with the UN Convention on the Law of the Sea (1982). He noted that Russia had done much and would do even more to the Arctic development as an area of peace, stability and cooperation. He expressed the idea that there were no potential conflicts and the international law could reliably ensure the national interests of the Arctic states responsible for the long-term development of the far North.

⁸ Vystuplenie Ministra inostrannyh del Rossii S.V. Lavrova na ministerskoj vstreche Arkticheskogo soveta [The speech of the Russian Minister of Foreign Affairs S.V. Lavrov at the ministerial meeting of the Arctic Council], Fairbanks, 11 May 2017. URL: http://www.mid.ru/ru/foreign_policy/news/-/asset_publisher/cKNonkJE02Bw/content/id/2752051 (Accessed: 13 May 2017) [in Russian]; Vystuplenie i otvety na voprosy SMI Ministra inostrannyh del Rossii S.V. Lavrova po itogam uchastiya v rabote ministerskoj vstrechi Arkticheskogo soveta [The speech and answers to the questions of the Russian Minister of Foreign Affairs S.V. Lavrov after the ministerial meeting of the Arctic Council], Fairbanks, 11 May 2017. URL: http://www.mid.ru/ru/foreign_policy/news/-/asset_publisher/cKNonkJE02Bw/content/id/2752061 (Accessed: 13 May 2017) [in Russian]

Secondly, Sergey Lavrov stressed that the Agreement on Enhancing International Arctic Scientific Cooperation was relevant to the objectives of conservation, adaptation to climate change, the establishment of a regular system of exchange between the arctic scientists, as well as economic development. The Minister was sure that the Agreement also met the needs and helped the improvement of the living conditions of the indigenous peoples and all the other residents of the far North. In his opinion, this Agreement would give an additional index of the joint research work of scientists of all countries.

Thirdly, in terms of security in the Arctic, he proposed to return to the previous practice of annual meetings of chiefs of the armed forces of the Arctic States that had facilitated the strengthening of trust and understanding between states.

Fourth, the Minister of Foreign Affairs of the Russian Federation confirmed that Russia — the biggest Arctic power would continue to contribute to the resilience to global challenges, the implementation of the UN document “Transforming our world: the 2030 Agenda for Sustainable Development”, expansion of mutually beneficial economic ties, development of cooperation in the framework of the AC in the field of telecommunications and activities of the Arctic Economic Council.

Fifth, successful development of cooperation is impossible without strengthening of its resource capabilities, and the value which belongs to the AC support of projects, allowing to use new technological solutions and to implement environmental initiatives, including reducing emissions of black carbon, the elimination of accumulated governmental industrial waste.

Sixthly, the Minister of Foreign Affairs of Russia Sergey Lavrov invited the Arctic partners to cooperate in the implementation of the Russian program of economic development of the Arctic in combination with environmental protection, measures to improve the quality of life and support of indigenous culture and traditions as well as the culture of the other residents of the North.

Conclusion

The AC meeting in Fairbanks strengthened the foundation of the peaceful cooperation in the Arctic. This region has a huge economic potential. Its future should not become a subject of controversy or conflict among the Arctic states. Russia proceeds from the fact that there are no reasons for conflict there. In addition, peaceful cooperation in the Arctic has a solid international legal basis.

Russia is open to international cooperation in the region. The most important issues in the Arctic are, of course, peace and sustainable development of all the Arctic territories, as well as

large-scale environmental interventions in the context of human activities in this highly vulnerable, from an ecological point of view, area of the planet.

There is a confidence that the Finnish chairmanship of the AC, with the account of its long experience of working in the Arctic, will be successful and productive. The country had important achievements in environmental protection. In addition, Finland, being a neutral state with great authority in the Arctic Council, will try to contribute to the mitigation of international tension between the leading world countries. It is necessary to consider the fact that the US President Donald Trump has proposed to cut funds for environmental and climate research.

Finland and Russia have much in common on the Arctic track. It might become an impetus for the further strengthening of Russian-Finnish relations. Currently, Russia ranks third after Germany and Sweden among Finland's trading partners. Since 2014, we observed the decrease in turnover (more than two times: from \$18 in 2014 to \$9 billion in 2016). It stopped last year. In January — February 2017, the trade volume grew by 58% (\$1.8 billion). Investments and cooperation are also stable. In the summer 2016, the amount of accumulated direct Finnish investments in Russia amounted to \$3.7 billion, Russian in Finland — \$2.7 billion. Currently, the Russian market has over 400 Finnish firms. About seven thous Finnish companies directly or indirectly trade with Russia. In Finland, there are about three thous companies with Russian capital, mainly in the field of trade, mediation, consulting, tourism, transport and logistics. High activity of different mutual trips of Russians and Finns. The number of Russian-Finnish border crossing is very impressive. It reduced from 13 million in 2013 (a record number) to 8.8 million in 2016⁹ but it is still impressive. In July 2017, the Finish Ministry of Economy and Labour agreed to the construction of the “Nord Stream 2” gas pipeline in the territorial waters of Suomi in March 2018.¹⁰

In 2017, the cooperation between our countries takes place under the sign of the 100th anniversary of the state independence of Finland.

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⁹ Kommentarij Departamenta informacii i pečati MID Rossii v svyazi s vizitom v Finlyandiyu Ministra ino-strannyx del Rossii S.V. Lavrova. [Review of the MFA of Russia Department for Information and Press in connection with the visit of the Minister of Foreign Affairs of Russia S. V. Lavrov to Finland]. 3.05.2017 r. URL: http://www.mid.ru/ru/foreign_policy/news/-/asset_publisher/ckNonkJE02Bw/content/id/2743105 (Accessed: 13 May 2017) [in Russian]

¹⁰ Pogosyan A. Finlyandiya daet zelyonyj svet “Severnomu potoku-2” [Poghosyan A. Finland gives the green light “Nord Stream-2”]. *Izvestiya*. 2017. 13 July. [in Russian]

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Export-import economics of the northern regions of Russia at the crossroad of international sanctions: past and present, geopolitics of compromise



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Abstract. In this article, the author discussed historical prerequisites for the inclusion of the North in the world economy and analyzed the participation of the Arctic territories of the Russian Federation in international trade 2000–2016. The impact of the Western sanctions and their influence on the dynamics and structure of foreign trade is also in a focus of the present article as well as the political economy provisions that allow overcoming the negative nature of international economic relations between the Russian Federation and Western countries. The author proves the expediency of changing the geopolitical positions of the West and Russia with a view to moving towards a compromise model of economic cooperation between the North of Russia and the EU and other countries.

Keywords: *Euro-Arctic territories of Russia, Arkhangelsk in history of trade, foreign trade, export, import, new technologies in production, geopolitics, international sanctions*

Introduction

The European North of Russia has a long history of international economic relations. The establishment of the Arkhangelsk Sea Port and town was largely possible because of its favorable economic and geographical position. It also made possible to establish good neighbor economic relations with the other states and, conventionally, with the nearest neighbors — modern Arctic states. The formation of the Barents Euro-Arctic Region and the Arctic Council at the end of the 20th century — beginning of the 21st century contributed to the institutional recovery of the cross-border partnerships, economic, scientific-technical, cultural interaction with the global economy.

However, the intensification of international contacts in 2014 was under threat of freezing due to the deformation of the geopolitical conditions for the Russian foreign trade. In 2016, the US and the EU extended the anti-Russian sanctions. The USA still advocate the position: “the Russian economy is in much worse shape than if there were no sanctions and that is why a lot is wearing down in Russia”.¹

Discriminatory actions, despite the heterogeneity of political attitudes, are kept by the EU countries, Japan and others. In 2017, the US Administration can keep the European allies in the wake of the sanctions policy against Moscow. Such actions (political dominance) launched in 2014–2016. It is an erosion of good practices of international cooperation of the Russian Federation on a bilateral basis and within regional organizations. The US initiated the war of sanctions

¹ Glava Minfina SShA schitaet, chto sankcii oshhutimo vredyat Rossii [The US Minister of Finance believes that the sanctions significantly harm Russia]. URL: <https://news.mail.ru/economics/> (Accessed: 20 January 2017) [in Russian]

and counter-sanctions trying to devalue trust and mutual attraction of the Euro-Arctic states and regions of the Russian Federation typical of the recent history of the Arctic cooperation [1, Voronov K., p. 2; 2].

Such political decisions of Western countries are the source of long-term financial and investment risks of the international trade. Business and government should not be ignored. Especially when the home economic crisis has narrowed down the prospects for strengthening Russia's positions on the world commodity markets. In other words, it is complicated for Russia to maneuver the absolute and relative benefits of the national products on global markets and it is even more complicated for the Russia's Arctic areas. It cannot weaken the Russian economy. It makes the deeper understanding of the world trade transformation extremely important now.

The scientific diagnosis below will assess the deformation in the structure of the international trade and highlight the geopolitical and market risks of foreign firms operating in the European North of Russia. Therefore, the adjustment of the integration into the world economy — a serious challenge both for the Arctic countries and Arctic areas of the Russian Federation. They are forced to consider the existing institutional constraints for timely adaptation to the world commodity markets. It is an occasion for additional understanding of the sanctions, the behavior of some geopolitical players and its impact on the dynamics and structure of foreign trade of the Euro-Arctic territories of the Russian Federation.

The author of the article proceeds from the hypothesis about the possibility of acceptable forms of realization of financial, economic and technological interests of Russia and its Northern territories in international cooperation and world trade. It is necessary to abandon the absolutism of sanctions as a realistic method of changing the political position of Russia on major international issues. The likelihood of such a trend is illusory. Any positive views on the prospects of geopolitical normalization should be accompanied by a willingness to renew political and economy concept of the Russia — Europe relationship (see the conclusion of the article).

Historically intolerant is that the political corrosion undergoes a fruitful experience inside-Arctic economic, scientific and cultural cooperation accumulated over the three preceding centuries. It is the most valuable capita. A look at the problems of modern geo-economics cooperation of the Arctic civilization subordinates to the timely reminder that the North and the Arctic should continue to be a site of mutual understanding and respect. It is what we need to save in Northern Europe, even in case of the author's assumption of a long-term period of political pressure on Russia (5–15 years). That is why it is necessary to examine the structural changes in global economic

platforms, to consider prior historical practice of the Arctic cooperation and actively rebuild the business strategy of foreign economic activity of the Russian North in the search for new partners.

Arkhangelsk opened a trade window from the Russian North to Europe

Entry into the subject requires to a look at historical and economic reasons that emerged five centuries ago on the geographical map Russia and a new settlement at the mouth of the Northern Dvina river — Arkhangelsk. The objective laws of economic development of the Russian North carried out by migrants was, according to our deep belief, Russia's access to world markets of goods and services. Chancellor's accident was an occasion for Russia, but not for the English sailors. They had the task from the English company of merchants to open not visited by sea lands for the sale of goods. Hence, on August 24, 1553, the first day of the crew of a British ship and Richard Chancellor on the White Sea coast — it is possible to declare the beginning of international (maritime) economic relations of Arkhangelsk, the day of the foreign investor.

Moscow state is obliged to Arkhangelsk because of the trade relations with Western Europe, established in the 16th century. Arkhangelsk originally was the functional capital and concentrated the overseas trade and cargo operations. The fact that the time of signing the first trade agreement with England refers to 1556, does not reduce all-Russia importance of the day of *unusual accident* (it was called so in the report the Kholmogorskiy warlord to Ivan the Terrible). Ivan the Terrible granted the right of free trade to British merchants, 5 years after — to Dutch. Since that time, the structure of urban households had become logical. Myron Velyaminov described it: "among 153 yards, English, Dutch, and German merchants had two each". Earlier the author has emphasized that by 1624, the rapid growth in the number of shopping in Arkhangelsk (over the 40 years of its existence) could be described the first historic leap of the modern North of Russia in the European market [3, Zalyvsky N.P., p. 224]. The 16-century Arkhangelsk had secured the function of the state trade center between Russia and the West. It was a center that worked on the effectiveness of the national trade and intensification of fees to the state Treasury.

It might be useful to know the composition of the goods which were the subject of international bargaining. Western merchants bought a wide range of food products and crafts of the Arkhangelsk earth. For example, wax, Russia leather, linen, yarn and flax seed, hemp yarn, and fish glue. Overseas export is also canvas, fabric, bristle, tar and furs, candles, tallow, bast, blubber, wood products. Products for overseas life: bread, beef, lard, eggs and fish teeth, rhubarb and agarika, simple soap, a bird feather, feathers, goose, larch potash, silk, mica and other. List of products underlines the historical specificity of trade exchange. *Foreign trade of Arkhangelsk*

started with timber trade. Products of primary processing of agricultural and fishing dominated exports.

What was the original imports? Import had two characteristics of commodity supply. The local population bought exotic products of colonial origin; public institutions bought the weapon, indirectly reflecting a more developed industry overseas. Diverse consumer goods were unloaded to the coasts of the Northern Dvina. Among them precious stones, cotton and writing paper, needles and knives, lace and velvet, glass, cloth, sugar and prunes, lemons and nuts, herbs and wine. Guns, gunpowder, coins, gold, silver and red copper were also imported to Arkhangelsk and Russia.

The number of ships arriving at the port of trade confirmed the increase in the economic value of Arkhangelsk in Russia. By 1811, the number of vessels exceeded 400. In the few years, it had increased to 500. The port of Arkhangelsk was among the first-class ports of Russia until the 1850-ies. Unfortunately, the arrival of foreign merchant ships was short-lived episode for Arkhangelsk and its duties of the Russia's center of the international economic relations. The transformation into a provincial capital in 1707 could not help to save the situation. Peter the First founded a new city and port — St. Petersburg and concentrated all trade there. In 1722, he issued a decree, according to which Arkhangelsk got only goods necessary for the residents of the province. Thus, the crystallization of modern approaches to the emerging world market had stopped for a century.

In our view, local adoration of the Peter the First is disproportionate to historical in consequence of the restrictions imposed for trade. They were an unfavorable factor in the development of the economy of Pomor towns. It was the beginning of unstable North, as would be now said, "regional" policy of the center. These events laid very unfavorable conditions for the development of Arkhangelsk in 19th century. Native Northern goods had been monopolized or given to commercial use of people "close to power". Salted meat, leather and canvas, linen yarn, caviar and salmon, Norwegian cod, and foreign salt had been forbidden to import or export and then, again, the state allowed trading these good for some merchants. The similar was the case of resin that stopped being among monopolized state goods.

Another estimate has the policy of Catherine the Great. She should be called the first reformer of the institutional conditions of foreign economic activity of the Arkhangelsk producers on a free market. She announced the northern crafts free from restrictions. It caused the rise of local market trade. In 1762, Arkhangelsk and St. Petersburg got the same trade rights. Soon the number of vessels in the port of Arkhangelsk rose to 206 (1772).

However, the period of recovery was short. In 1790–1810, the trade value of Arkhangelsk weakened due to the cancellation of certain benefits for the Russian merchants on trade with foreign partners. The solution was found in 1810, after the introduction of new customs tariffs and transportation of goods by ships with a neutral flag. The reduction of trade activity in the 1850s–1890s was the crisis the port of Arkhangelsk caused by technological conditions: the shallowing of the river, the low level of port facilities, poor transport network and connection with the Central Russia. The construction of a railway Arkhangelsk — Vologda — Moscow changed economic and geographical position of Arkhangelsk, but the town could not return the status of the trade center.

Nevertheless, three-century practice of trade relations with other countries enshrined the three-fundamental characteristic of mutual communication. First, the international economic relations of Arkhangelsk were based on natural, social and economic opportunities of the North of Russia. Secondly, a significant role (positive and negative) was played by a subjective and institutional rule governing trade with other countries. Thirdly, together with the distant overseas trade, Arkhangelsk also became the ancestor of the active foreign trade contacts of modern Arctic territories of the Russian Federation. Cross-border exchange in Pomors household existed since time immemorial.

***Euro-Arctic territories of Russia in the global market:
dynamics of export-import controversy***

Why Russia and its territories are engaged in international trade? These motives are well known. The international trade theory has a ready answer: the world trade of the country — consciously or intuitively — is trying to get the absolute comparative benefits from the strengths of its technological specialization in the international division of labor, the timeliness of the sharing factors is available in abundance, on the rare ones owned by other countries.

What are the results of real practice? The results and the presence of the Arctic areas of the Russian Federation on the world market in 2000–2016 reveal the parameters of their economic niche. We emphasize at once that before and now the Northern territories of Russia are active participants of international trade. They have a wealth of experience, both as buyers of overseas products (technologies) and sellers of goods regional economies. What is the ratio between them?

The dynamics of foreign trade indicators Euro-Arctic areas of Russia is available for the past 15 years (see tab. 1): volumes of exports and imports, commodity structures, partly — geographical partners of the external economic relations.

Table 1

Dynamics of external commodity turnover of the Euro-Arctic areas of Russia 2000–2015.² (\$ mln, export/import)

Areas	2000	2005	2010	2012	2014	2015
The Arkhangelsk Oblast, incl.:	757,1 93,9	972,3 117,1	5392,6 190,4	2616 231	2155,5 138,0	1936,0 100,7
NAD	-	12,9 1,5	2343,8 0,9	1396 1,8	0,1 0,9	0,0 0,7
The Murmansk Oblast	587,9 125,4	1187,3 203,6	1731,3 201,9	1663 623	2195,9 427,9	2169,3 354,1
The Republic of Karelia	531,6 1453	965,3 180,6	1382,7 231,3	1170 269	955,2 178,4	644,1 135,7
The Komi Republic	1102,8 129,2	522,6 208,8	736,0 227,4	1960 234	3023,5 231,1	1532,6 160,4

One concept is important for the preceding analysis of the foreign trade measurement results. One of its institutional determinants is the government of the country. It is a very important subject of macroeconomic influence. Such a clarification is important for understanding who and where defines the goals and methods of interaction of the country (or subject of the Russian Federation) with the world economic community. As a rule, the place and role of world trade is to be found in the foundations of foreign economic policy of the state (or its entity). It is subject to the strengthening of the international positions of Russia in the world economy, the optimization of the directions and tendencies of its international economic relations.

The policy articulates national interests on the world market, its direction and the content of its international economic relations. The state program of the Russian Federation issued on April 21, 2014 “Social and Economic Development of the Arctic Zone of the Russian Federation for the period until 2020” declared the priority of bilateral agreements and work within regional organizations for “...good-neighborly relations of Russia and the Arctic States, the intensification of economic, scientific, technical, cultural and cross-border cooperation”³.

Values and dynamics of the export-import activities of the Arctic areas in tab. 1 is the implementation of this policy. What are the trends in foreign trade of the Arctic areas of the Russian Federation? First, it is a considerable excess of export over import in 7–10 times. The ratio between export and import is a public indicator of the integration of these areas into the world economy and the indirect indication of the dependence on it. What dependence?

² All statistics collected from the Russian Federal State Statistic Service. URL: <http://www.gks.ru> (Accessed: 19 January — 10 February 2017)

³ Postanovlenie Pravitelstva RF ot 21.04.2014 N 366 “Ob utverzhdenii gosudarstvennoj programmy Rossijskoj Federacii “Socialno-ekonomicheskoe razvitie Arkticheskoy zony Rossijskoj Federacii na period do 2020 goda” [The Order of the Russian Government 21 April 2014 No 366 “On approval of the state program of the Russian Federation “Social and economic development of the Arctic Zone of the Russian Federation for the period until 2020”] URL: www.consultant.ru (Accessed: 02 February 2017) [in Russian]

The answer requires an analysis of changes in the commodity structure of imports. Let us solve this problem below. Here we will also pay attention to the dynamics of foreign trade turnover of the period 2012–2015. In two years the volume of export for the Arkhangelsk Oblast, the Komi Republic had dropped by 11% and 50% respectively. In the Republic of Karelia, a steady decline in exports has been observed for the last five years. Preliminary data of the Federal State Statistical Service in 2016 shows the negative trend of the indicators. In 2014–2016, a significant decrease in the export volume of the Arkhangelsk Oblast was observed in Germany, Denmark, Ireland, and the Netherlands but at the same time, it grew up in Belgium and Hungary.

We cannot ignore new touches in export. In the Arkhangelsk, in 2014–2015, there was seen a significant increase in the sale of leather raw materials, furs and products made of them, as well as textiles and shoes. However, their volume had no significant impact on the export structure optimization. Imports to the Northern territories practically duplicates the Russian trend, where in 2015, consumer goods were about 36.4%, the intermediate goods — 40.4% and investments — 23.2%. Import in the Arkhangelsk region lost 37.5% in 2014–2015 and the decline of the overall commodity turnover was 13.2%⁴. Finland and Germany are still the main importers. These countries import equipment, ships and boats, electrical machinery, instruments and various devices to the Arkhangelsk Oblast. The cost of imported machines and equipment decreased 2 times in 2014, and their share decreased by 12.5 %.

A slight change in the geographical structure of foreign trade partners took place. If in 2006, the subjects of the Arkhangelsk Oblast supported economic relations with 84 states, in 2015 — 97 countries. In 2015, the leaders in the total turnover (56.3%) in Arkhangelsk region were the Netherlands, Belgium and India. In 2006, this group included the United States, Norway, Finland, Ireland and Great Britain. The structural shift in the composition of the leaders is, of course, the sanctions consequence. The change occurred not only in the share of the foreign trade turnover of the Arkhangelsk region but also in its volume. The decrease was about 96–97%.

Therefore, it is quite possible to name two points about the causes of such situation: the impact of Western sanctions on foreign economic activity, which coincided with the extreme decline in oil prices, and failure to adapt home producers under the changed market conditions in commodity demand.

The appropriateness of the Northern areas of Russia on the world market and the economic profitability of export-import operations is largely determined by the presence of natural re-

⁴ Obshchie itogi vneshnej torgovli Arhangelskoj oblasti za 2015 god [General results of the foreign trade of the Arkhangelsk Oblast in 2015] URL: <http://www.rusexporter.ru/research/region/detail/4261/> (Accessed: 14 February 2017) [in Russian]

sources on the mainland and the Arctic continental shelf. Russia, as you know, is often called the “raw workshop” of the world economy. It exports raw materials which have a leading place in commodity structure of export (tab. 2) and reproduces this image and adhered to the Arctic territories of Russia.

Let us expand the idea of shares of goods in the exports of a subject of the Russian Federation. This clearly indicates their place in Russian labour division:

Table 2

The structure of the commodity flow from the Euro-Arctic territories of the Russian Federation to the foreign countries (\$ mln and the share in export)

Subject of the Russian Federation	2010	2013	2015	% to the export volume		
				2010	2013	2015
Energy industry (group 27)						
The Arkhangelsk Oblast	4598,6	1287,7	800,1	85,2	60,3	41,3
The Komi Republic	642,5	2983,4	1146,1	87,2	91,7	74,8
Wood, wood products (groups 44–49)						
The Arkhangelsk Oblast	740,5	794,1	785,5	13,7	37,1	40,0
The Republic of Karelia	741,7	585,8	323,8	53,6	57,4	50,2
The Komi Republic	369,8	550,1	496,0	50,2	16,9	32,3
Metal and metal products						
The Murmansk Oblast	1162,9	1087,9	1229,9	67,1	48,9	56,6

Russia, as you know, is a leader in natural gas and oil reserves. Accordingly, a high share of energy products in the exports of the Arkhangelsk Oblast and the Komi Republic is typical. It pushes the export of hydrocarbons for the accumulation of foreign exchange reserves in volumes sufficient for functioning in case of future crisis. This, of course, we could welcome, if there were no one ideological trick. The oligarchic elite still dominates the conceptual idea about natural resources as a guaranteed source of budget revenues. Here, in my opinion, is a doubt about the identity of the theoretical objectives and use from the presence of Russia on the world energy market. Echo of a doubt are the words of one colleague of mine about a “Golden drop” from the sale of local resources that had never fell on the Arkhangelsk ground [4, Smetanin A.V., p. 310].

There is a concern that in political and economic shadows, we find the questions about the public benefit of the use of about 3 trillion dollars received from the sale of oil and gas. Let us specify at least one base. Over the previous two decades of economic development of Russia, no foundations for the further development had been created. If the situation was opposite, the country could save +9% of economy in the time of the global crisis — the worst crisis indicator compares to the industrial leaders [5, Khasbulatov R.I., pp. 4–5].

In short, the possession of natural energy resources is, of course, a benefit and a competitive rental advantage of the national economy. Has not the public consciousness been annoyed by the Western clichés about Russia as a “gas station”, and the Arkhangelsk Oblast as a “sawmill” that cuts the “green”? Hope on commodity revenues — a direct consequence of technological backwardness of the country. A strategy for transforming the oil (gas) revenue in innovative technologies of basic industries of the Russian economy is needed. Without it, the country will never create strong centers of advanced development and, accordingly, will never fundamentally improve the structure of export trade. Sure, it will never be possible to create import-substituting segments in the local economies in the production of machinery and equipment at least for the relevant sectors of the northern economy.

The Arkhangelsk Oblast still has a negligible amount of export, including vehicles. In 2015, it had the amount of \$137 mln. Could use the satiation and create a sustainable policy for innovation cluster in the local machinery. Instead of waiting for re-sanctions and technological constraints, in my opinion they are inevitable due to the geopolitical relations with the West, it is better to proceed from the strategic feasibility of establishing a high-tech economy for the independent production and reproduction of the active part of fixed assets of the civilian economy. Some reasons for this are the subject of the next section of the article.

***Borrowing new West technologies is a forced way
to the modernization of the Euro-Arctic Russia's economy***

The Northern entities of the Russian Federation and the Arkhangelsk Oblast in particular have long-term used international channels of borrowing modern technology (machines, equipment) from foreign manufacturers (sellers). It is the most notably in forestry and maritime transport.

The establishment of forestry and modern navy in the Arkhangelsk Oblast has always been historically linked to foreign capital and foreign technology [6, pp. 17–18]. The largest pulp and paper mill in Arkhangelsk Oblast are the Arkhangelsk and Kotlas mills (and the Solombala mill before its bankruptcy) and the use only imported equipment. Solombala mills exploited the American debarking-chipping complex and German (“Rexroth”) equipment for hydraulic press packaging line.

The history of the Arctic fleet is also almost a textbook confirmation of the demand for Western goods manufacturer. Everybody knows about the need of the USSR and the Russian Federation in the specialized icebreaking transportation and ships to ensure navigation via the North-

ern Sea Route to satisfy the shipbuilders and owners of other countries [7, Krasavtsev L.B., pp. 86–89].

We will list those that had a direct impact on the economy of the Murmansk Oblast and Arkhangelsk Oblast, maritime history and development of the Arctic. The UK sold six icebreakers to Russia in 1915–1916; the Netherlands gave five icebreaker-transport diesels-electric vessels of reinforced ice class to the USSR in 1954–1956. They are known under the names “Lena”, “Yenisei”, “Indigirka” and “Ob”. The USSR ordered a series of icebreakers in the GDR. The vessels built after 1977 (over 20 vessels) were large, for carrying containers and had a reinforced class for transportation of goods from the port of Dudinka. In the early 1980s, Finland provided the Soviet Union with multipurpose icebreaking transport vessels of “Norilsk” type — “Tiksi”. They could overcome the ice thickness of one meter and could be used at maximum temperatures. Finally, in 2004–2009, Germany made four vessels with even greater technological capabilities. They could overcome the ice thickness of about one and a half meter, moving astern.

Steady demand for European equipment from leading industries Euro-Arctic territories of the Russian Federation (forestry, engineering, energy, mining, metallurgical industry and others) is confirmed by the statistics of foreign trade and lists of technological acquisitions of business. Meeting the needs of home producers in technological innovations and high technologies is possible due to imports and foreign investment. Due to these sources, it has become possible to replace old production technologies, create exceptional prerequisites for positioning Russia in the world trade and competitive motivation of foreign consumer goods to the home enterprises. It is worth noting the desire for the latest production technology of the Arkhangelsk pulp and paper mill. It is unlikely that it would supply its products to partners from 43 countries without new technologies (2014).

Table 3

Hi-tech import dynamics of the Euro-Arctic territories of Russia in 2005–2015

Area	Number of agreements				Costs of the agreement's subject, \$ thous				Payments per year, \$ thous			
	2005	2010	2014	2015	2005	2010	2014	2015	2005	2010	2014	2015
The Republic of Karelia	6	8	-	-	191.7	901	-	-	107.9	555.4	-	-
The Komi Republic	22	44	37	62	10276.8	49560.1	40704.1	400248.2	10276.8	47142.3	35335.8	91201.1
The Arkhangelsk Oblast	14	18	35	32	1511.3	2309.6	8710.7	8364.1	727.9	1732.1	4870	4928.5
The Murmansk Oblast	18	32	22	14	10537.1	28985.5	57525.3	24056.9	9705.9	26566.0	55619.6	4538.0

What can we observe in the current international economic partnerships? Let us follow the intensity of buying new technology by the Northern territories of the Russian Federation, deter-

mine the pressure of sanctions, if any, on the dynamics of borrowing of Western technology (tab. 3).

The data in the table imply different conclusions. E.g., it is possible to observe both the deformation trend of using the Western technology and the inertial strength to resist this deformation. The international cooperation regime of each northern territory has its own distinctive sanctions breaking. Thus, the Republic of Komi is one of four subjects of the Russian Federation, able to double the number of contracts for buying technologies from the Western partners. Perhaps this is the paradox of inertia introduced by the EU restrictions. Moreover, the cost of the agreements, compared to 2010, fell by \$9 mln. This is a significant decline especially if we consider the fact that the reduction is more than the cost of contracts of the Arkhangelsk Oblast for 2014 or 2015. The largest breakdown (-41.8%) in the intensity of technological relations with Western countries occurred in the Murmansk region.

Let us look on some aspects of its economy, as deterioration of the producing funds reduces the export of the manufacturing industry. The Murmansk mining complex or MMC (extractive and manufacturing industries) is environmentally dangerous. Modernization and innovation are the key issues for the production capacity of the industry and technological criteria that could narrow the gap between the MMC and other countries of the world [8, Zalyvsky N.P., pp. 69–72]. Many MMC factories have recognized the imperatives of import. JSC “Olenegorsky Mining Processing Plant” is active in use of foreign equipment and regularly purchases new means of production. E.g., technology of fine screening screens bought from the Derric Stack Sizer. “Olkon” company also bought a crushing and screening plant for €7 mln from Metso Mining & Construction. The complex includes a large crusher Nordberg C200, medium crusher Nordberg HP800, conveyors and steel structures.

A significant renewal of technology and other equipment is a core component of long-term development strategy. It also ensures the future stable operation not only for the “Olenegorsky MPP”. The Development Strategy of the Murmansk Oblast for the period until 2030 means technological innovation, development of new types of industrial activities (extraction of fuel and energy resources and oil refining) and new types of products (liquefied gas, products of oil, chromite ore and metals of platinum group processing). The logic of relying on moderate innovation way of development assumes increase in fixed investment, which means the promotion of technological modernization of the local economy.

In the opinion of the author, the link between the crisis of the engineering complex on the European North of Russia in 1993–2000 and 2006–2009 and the medium-term need for new

equipment is obvious. Crisis meant the decrease in the volume and proportion of output in the industrial production, chronic unprofitability of many metal working industries (Arkhangelsk Oblast, The Republic of Karelia). The management of the plants (about 150) clearly realizes of the need for systemic modernization of the technology aimed at working on global markets and meet the demand of the national economy in a more progressive equipment.

The growth of state military order aggravated the value of technology, modernization of the military-industrial complex, including the shipbuilding cluster. Most of the products was designed 25–30 years ago. Earlier small volumes of a complete set of products predetermined the choice of small enterprises with outdated production technologies. Now the optimization of production processes is one of the key issues, e.g., energy efficiency, environmental friendly technologies, intellectual equipment, the tonnage and geography of production.

This is one of the prerequisites for promising new niches of specialization and the new conditions of world shipbuilding development. Russia has never been a leader in shipbuilding. It is represented on the world market by only 0.5% of the total sales⁵. The realism of the future in this example is rather invariant, because even the optimal strategy does not guarantee the redistribution of the major shipbuilders' positions in the short term. Proactive companies are not forbidden to express their technological advantages, which increase the demand for products.

This also applies to the shipbuilding cluster, and forestry of the Arkhangelsk Oblast. Especially when you meet optimistic public expectations about the "orientation of the reference zones in the sea ports of the Northern Sea Route that will help to revitalize the shipbuilding and ship-repair enterprises of the Arctic zone, and in other subjects of the Russian Federation" [9, Smirnova O.A., Kudryashova E.V. et al., p. 152]. Such an optimism transforms hope into the factor of optimization of the Arctic economy of Russia and the possible improvement of the Russian civilian shipbuilding on the world market. The positive feature is a demonstration of the ability to create new preconditions for holding (extensions) of export shown by some enterprises of the European North of the Russian Federation. The Center of ship repair "Zvezdochka" and JSC "United shipbuilding Corporation" have recently delivered a set of propellers for the ABB Oy Marine and Ports (Finland). A large investment project (7–11 bn of rubles) for forestry 2017–2020 goes well with the corporate desire to provide the Solombala PPM, once the largest and the export oriented enterprise in the European North of Russia, with modern equipment.

⁵ Koncepciya "Razvitie klastera sudostroeniya" [The concept of "Development of shipbuilding cluster"] URL: <http://cedipt.spb.ru> (Accessed: 28 December 2011) [in Russian]

Practice and investment intentions deepen the modernization trend in the development of the Northern economy. So, we need not only to be familiar with international market of the equipment but also to be able to submit (escalate) the imperatives of the Russian mechanical engineering for commercial production and sales of machinery. The overcoming the technological sanctions (import substitution) will not cause doubts among Western businesses. To do so, it is better to “run” in the information and market space by the similar “swallows” showing the growth of technological authority of the Russian enterprises.

Yet, a long-term presence of foreign equipment for the timber industry of the Republic of Karelia, the Komi Republic and the Arkhangelsk Oblast confirms the slow production of innovative equipment for woodworking industry in Russia. There are many reasons for that. First, the Russian mechanical engineering is not able to offer high-tech and environmentally friendly equipment. E.g., the Ustyansky PPM Group actualizes the demand for environmental and resource saving technologies and equipment.

The dominance of foreign logging machinery in the harvesting, hauling and processing of timber in home woodcutting is not only a nod to the production techniques, approved by neighboring Finland in the 1970s and 1980s. It is a means to increasing the efficiency of business activities of logging companies. Buying Tigercat, harvesting wheeled or tracked complexes means the use of Scandinavian or Canadian production technology. Their financial and economic profitability (cost of a cubic meter of wood and high profit margins) commensurate with the ability of a business to organize the work of staff. Imported forestry equipment requires highly skilled workers. These are requirements dictated by high-tech production and sustainability of forestry enterprises on the global market. The Ustyansky PPM Group products was purchased by 20 countries (2016). The CJSC “Sawmill 25” is now modernizing its Tsiglomen production using three stages to the selection of equipment suppliers considering prior practices. It shows that such a policy contributes to the competitive position of the business. A possibility of processing of 800 thous m³ of raw materials is one of the powerful arguments for the long-term cooperation with the Estonian company Hekotek. The company sold boiling equipment.

This means that market competition forced home industry to sign contracts with foreign companies for the supply of equipment to strengthen innovation through the business and sustainability on transnational markets in 2000–2015. *Such an import is a fundamentally important resource for the transition to new technologies of extraction and processing natural resources, expanding the boundaries of the spatial organization of economic activities of forestry enterprises of the Russian North. Modernization of the enterprises in the Arkhangelsk and Murmansk Oblast*

cause the expansion of exports and the number of buyers, consolidation of export niches on the markets of other countries.

Now we will turn to the dynamics of the volumes of imported equipment to the Northern territories of the Russian Federation and evaluate its intra-regional specificities (tab. 4):

Table 4

Volumes (\$ mln) and a share of machinery, equipment and transport in the total volume of import (Commodity nomenclature of foreign economic activity of the Eurasian economic Union 84–90)⁶

Year	Volume of import			Share of import (% to the volume of import)		
	2010	2013	2015	2010	2013	2015
The Arkhangelsk Oblast	152.5	190.2	71.6	80.0	84.5	71.1
The Murmansk Oblast	56.5	196.3	171.2	27.9	26.3	7.4
The Republic of Karelia	96.9	69.8	49.3	41.9	36.7	27.0
The Komi Republic	129.4	164.4	77.1	56.9	61.4	38.3

What conclusions could be made using the data from the table 4? First, we see the business needs on the import of machinery and equipment that improve technological capabilities of enterprises (firms) for successful competition for the global consumers in 2013–2015. All these needs ran into a barrier of sanctions. Second, Russia needs to import high-tech equipment for narrowing the gap indicators of social productivity of labor compared to the United States and European countries. If there will be no solution for this, then in the next 15–30 years, Russia is to lose its reputation and place among the five leading economies in the world.

Large businesses of the European North of Russia see commercial and technological reputation the first requirement for strategic management. An illustrative example of reputational stability in the world market is JSC “Kondopoga”⁷. Newsprint paper is more than 80% of its total exports. The main buyers are in Hamburg (Germany) — 41%, Dubai (UAE) — 11.5% and Istanbul (Turkey) — 10%. Naturally, a steady demand for newsprint is the other side of modernization and reconstruction of the pulp and paper industry, supported by the best equipment.

It is worth noting that the foreign partners form the demand for products of home enterprises. They recognize the technological maturity of the relevant Russian enterprises to meet this demand. In advance to prepare such a market match is the task of enterprises. E.g., JSC “Sapkarellas” (Republic of Karelia) is consciously seeking for advanced level of production and is offering

⁶ Regiony Rossii. Socialno-ekonomicheskie pokazateli. Tovarnaya struktura eksporta i importa [The Regions of Russia. Socio-economic indicators. Commodity structure of export and import] (2010, 2013, and 2015). URL: <http://arhangelskstat.gks.ru>; URL: <http://murmanskstat.gks.ru> (Accessed: 24 June 2014; 27 January 2017) [in Russian]

⁷ See: Pyatnadcat projektov budut realizovyvatsya v Karelii v ramkah osnovnyh napravlenij strategii-cheskogo razvitiya strany [Fifteen projects will be implemented in Karelia in the framework of the basic directions of strategic development of the country.] URL: <http://karelinform.ru/article/business/> (Accessed: 08 February 2017) [in Russian]

competitive products. This company is an active participant of foreign trade. It could organize its timber production according to the world standards.

Sanctions conditionality of reduction and small volumes of supply, a high proportion of equipment and machinery in the local volume of import move us to two generalizations. While the demand of the companies (enterprises) in the West of the new technology (equipment) is high and uncontested, the state response to Western sanctions should be selective. It should not limit the optimism of enterprises for harmonization import of high-tech equipment and the political atmosphere of cooperation with European partners.

Second, enterprises in the Arctic areas of the Russian Federation should remember about proactive testing technology for industrial import substitution and the growth of its export capacity, about the importance of creating the technological prerequisites for extending the export goods (services). Moreover, we have the examples to learn. Engineers from Arkhangelsk and Vologda established a company "Podyomnie Mashini". They hold an attractive position on the issue of hydraulic manipulators competing at the commercial performance, reliability and price with foreign counterparts. One more example is the "Northern machine-building plant", which in 2016–2017 switched to 100% electronic modeling of complex mechanical engineering products, first manufactured by the enterprise. This technology contributes to a significant reduction in labor costs of engineers. The company is also involved in the concept making, design and construction of ships with the use of the most advanced shipbuilding technologies. Eventually, the creation of an innovative segment in the economy of the Arkhangelsk Oblast, the formation of science cities based on machinery complex in Severodvinsk and the cosmodrome "Plesetsk" will lead to a positive effect: the share of high-tech goods (works, services) of home enterprises that are in demand on world markets will continue to grow.

After summarizing long-term contacts with regional producers with foreign suppliers of equipment and examples of their output to their own technological innovation, it is possible to hypothesize that high technology will continue to be a subject to sales and buying. European and Arctic countries are physically unable to get out of the system of international economic relations, motivating to the increase of mutual geo-economic margins.

We see a lot of evidence of this. The establishment of modern agricultural complex based on the LLC "Ustyanskaya" and JSC "Rodina" [10, Falkowski A., pp. 8–9] in the Arkhangelsk Oblast revealed the special value of growth of the business economy. It was possible due to the ability to combine the best equipment of the world with a high-quality management of staff. One of the criteria for the quality control is effective technological operations. The OJSC "Kolskiy mining and

metallurgical plant” works on implementing the best technologies to produce non-ferrous metal mining and ore dressing. The plant produces electrolytic nickel and copper, carbon nickel powders, cobalt concentrate and concentrates of precious metals. High quality of products is famous worldwide and meets the most stringent international standards. The “Arkhangelsk pulp and paper mill” had a priority investment project on the reconstruction of the cardboard production together with the Valmet Power Oy, which supplies equipment for the project, namely reconstruction of the second board machine and building the new steam station. The factory has one more successful project of multi-fuel boiler for Sewage and wood waste incineration.

Such a corporate and regional practice in the Euro-Arctic territories of Russia (before and after the sanctions) inspires. It gives confidence in improvement of political climate and international economic relationships. Such a belief is stronger than the power of the pessimism generated by political elites of countries, joined the sanctions. The North of Russia needs this optimism to maintain the hi-tech level of the national economy, not because it needs imported equipment and update of countries production background for \$14 billion in ten years⁸. It is because the good-neighborliness is always better than geopolitical quarrel.

***The politico-economic concept of updating the principles
of economic cooperation of the Arctic Russia and its Western partners***

As you know, Russia starts from the North. The 21st century once again demonstrates the correctness of Mikhail Lomonosov’s words about the growth of economic power of Russia due to Siberia and the North. In the context of the present article, their power to influence the economic growth of the Russian Federation depends on the foreign issues, social and cultural cooperation of the Arctic territories with the rest of the world. It contains many dangerous trends, the vagaries of world leaders, artificial hostility, loud cynicism and the seeds of discord. Together, they deform the intergovernmental relations between the West and Russia.

To overcome this, we certainly need updating attitudes to each other. Geopolitics that is now “harmful” for the world civilization interferes with trust and intensity of economic contacts. Some of its problems we are going to examine.

Only together, we can eliminate billions of US dollars that the EU lost from counter-sanctions. Only together, we can eliminate the technological sensitivity of the Northern territories of the Russian Federation to the effects of international reprisals. We have noted, “A single space of geopolitical friendship exists where a House of the future world with a single system of principles of communications is being constructed” [11, Zalyvsky N.P., p. 170]. While geopolitical dialect-

⁸ See: The Forecast of scientific and technological development of the Russian Federation for the long term until 2025

tics is alien to the compromises, the author will adhere to the thesis that the world needs a new ideological structure and the foundations for better understanding of countries and peoples. *Understanding the Eastern or Western consciousness is a strategic key*: 1) to the normal international trade; 2) to Arctic civilizational cooperation; 3) to a reasonable mix and complement of the European peoples' values; 4) to the refuse from demonization of Russia everywhere (sports, hacking, rights of citizens, a threat to peace, etc. or geopolitical phobias to discredit).

Any economic interaction is a two-way movement, where everyone should operate the same standards of respect. Now, they are almost absent. The EU and other states considered sanctions a permissible means of influence on Russia. The task of damaging the Russian economy was proclaimed. This is a counter-productive geo-strategy. Centuries-old experience of application of this instrument (starting from the Megarian psephisma in 432 BC to the sanctions against Cuba and Iran) does not reveal the examples of lowering the quality of life of the ruling elite or reduce of their assets [12, Khasbulatov R., pp. 916–918]. In addition, the tendency to demonize the actions of Russia generates not only the mutual alienation, but also distorts previous history of good-neighbor relations between the European countries and peoples.

It was disappointing that our neighbors in the Arctic (Norway, Sweden and Finland) are among the active supporters of the Atlantic sanctions solidarity — a tool of pressure on Russia. What's for? For the democratic will of the population of Crimea. This vector of geopolitical morality of our neighbors is perceived as a hybrid Institute of social and cultural war against the citizens of the Russian Federation, a symptom of political and moral hypocrisy of the ruling elite of the US and the EU. The fact is that it ignored its own humanistic value of the right to a decent life without an external "whip". When this elite demonstrates the double standards in the assessment of actions of the Russian Federation for the promotion of new sanctions, it is, in fact, adds up to the cons in the logic of instability of future of the world and the Arctic.

The motive for the normalization of international cooperation in the global economy implies a counter desire of European countries, the new U.S. administration to the understanding that *Russia sees its historical future of in the context of a multipolar world*, the denial of the US claims to global dominance. To optimize a place and a role in the world, Russia needs to find tools and the elimination of the US paradigm of exclusiveness (because of financial and military power). Now and in the future, its effect will prevent the aging of the new geopolitical relations of Europe and Russia based on the compromise values of both civilizations.

The successful solution of this problem includes two aspects. First one is the monitoring the nature and dynamics of the conflict and interest transformation of the EU and the US, which

are “actively “pulling the blanket” on themselves to promote their interests in Transatlantic trade zone”⁹. Secondly, we *need a consensus on geopolitical principles*. Accordingly, Russia, the US and the EU are urged to the formation of a mutually acceptable composition of European values as a criterion for the stability of modern civilization.

To do so, Western partners should not stick to the version of the return of Crimea to Ukraine as a reason to cancel sanctions. Why? On the one hand, such a step will be the akin to a historical farce of Russia; it will humiliate its constitutional dignity, embodied in the will of the Russians to restore the historical justice. On the other hand, it is just an expectation of an absurd move from Russia. It blocks the movement towards normal international partnership, respect of the national interests of Russia and, of course, complicates the global dynamics.

The future of Russia and Europe needs equal partners. This is an *exceptional institutional framework for the convergence of the Arctic countries*. They tend to similar motives and cooperation in the circumpolar world. We are convinced that, primarily Northern Europeans need to release the political outlook from the paradigm of teaching a partner. Rather, the “training” Russia to play the role of the weak-willed stepson of the western political strategy.

A turn to that paradigm of economic and cultural cooperation is pushed by an objective trend. E.g., the political elite of the West resigned to the Brexit as the real fact of the modern European history. The same reconciliation is permissible in relation to the annexation of Crimea as it is an accomplished fact. In any case, in March 2017, the Arctic countries managed to conclude a mutually acceptable agreement on joint work in the Arctic in case of emergency.¹⁰ It is advisable to associate with Russia and recognize de jure the legitimacy of the Crimea referendum. It will build the road to the peace after the military-political confrontation and barriers for high-tech exploration in the Arctic. Besides, in 1990–2016, Russia managed to transcend the positive components of the European “democratization” while Europe is in the center the internal spiritual and the institutional drama. Russia is ready to accumulate advanced of socio-cultural ideas of those countries that are constructive in the search for intergovernmental consensus and optimal global economic cooperation.

Sample searches in this direction are visible. The Arkhangelsk Oblast is the active subject of international cooperation in the Barents region. List of evidences of the multilateral integration of

⁹ Soglashenie o sozdanii transatlanticheskoy zony svobodnoj trgovli otkladyvaetsya [The agreement to establish a transatlantic free trade area is postponed] URL: <http://world-pressa.ru/economics/> (Accessed: 20 March 2016) [in Russian]

¹⁰ Rossiya i SSHA zaklyuchili soglashenie o sotrudnichestve v Arktike [Russia and the United States signed an agreement on cooperation in the Arctic] URL: <http://rusplt.ru/news/rossiya-zaklyuchili-soglashenie-652502.html> (Accessed: 26 March.2017) [in Russian]

the economy and people of the North in European economic and public-political processes, the expansion of contacts with various international foundations and organizations are constantly updated. It is a signal that the Northern provinces of Russia with all its natural wealth and centuries-old trading relations with Western Europe and Scandinavia are willing participate in harmonization of the common house called "United Europe" and include the apartment with a sign "Russia".

Since the development of Europe is complicated because of the ratio of national and European, because of the inequality of needs in cooperation with Russia, because of differences over migration issues. It is a continuous exchange of views on the future of Europe. It is important need to realize the inferiority of sanctions and counter-sanctions and contradictions of co-existence. Is Europe able to be a partner for Russia and manage the external economic relations of the Arctic states together?

Why doubts about the positive answer are possible? Maybe it is because of the US — Moscow dialog dialogue from a position of strength or because the European organizations invest in civil institutions of Russia hoping to get¹¹ the erosion of Russian public opinion related to Ukraine and Crimea, Arctic and its shelf or management of the Northern Sea Route. Such a logic is strange. *Russia can become the most modern and civilized part of Europe and the world.* It can be in the regime of positive solidarity with the Europe, ready for a self-critical process (i.e. the ability to recognize and correct its mistakes) and mutual rapprochement of positions on the existing problems.

The consolidation of Europe is hardly possible due to discriminatory pressure on Russia. It is, in our opinion, should remain a short-term zigzag in the objective of civilizational patterns. Objectively, the peoples face the civilization of the future. What are their alternatives? They are to accept or reject the need for European-Russian historical, economic, social and cultural interaction. They are to recognize or prevent the possible effects of the sanctions of the American-European Alliance. *The future requires a compromise model of cooperation.* It is important to find criteria for the balanced national interests in "automatic" mode; balancing based on common principles, done in the interests of the European continent.

A prototype of the urgent search for the "unmanned" regulation of international relations could be a model for monitoring relations of the Arctic states. It is necessary because of the threat of disputes among the Arctic countries. The USA under the cover of NATO "strongly blurs the ex-

¹¹ Akula kapitalizma ne pytaetsya s'est' RF. [A shark of capitalism is trying to eat Russia] URL: <http://worldpressa.ru/inostrannaya-prensa-o-rossii/5365-akula-kapitalizma-ne-pytaetsya-sest-rf-latvijas-avize-latviya.html> (Accessed: 10 February 2017)

clusive rights of the Russian Federation and Canada in the region”¹². In such a situation, it is necessary to sign an agreement with the Northern European countries and to refuse to host the NATO infrastructure in the North. In addition, in my opinion, all Arctic states should refuse from any military exercises in the North and close the air and sea space at a thousand kilometers from the state borders. These measures may guarantee peace on *the Arctic part of Europe and tranquility for its residents*.

Search for new mutually acceptable rules of the Arctic European countries could be a part of regular discussions within international meetings, e.g., the international forum in Arkhangelsk “The Arctic — Territory of Dialogue”. Discussions make the overcoming of geopolitical contradictions easier. *Our desire to be trained by the European colleagues should be in harmony with duty of our Western partners to learn how to respect the constitutional and mental foundations of Russia*. State elite of our Arctic neighbors and the EU countries could contribute to the new way of cooperation between Europe and Russia.

However, in our view, this does not mean their readiness to remove economic sanctions — a tool of the archaic geopolitics. The real policy of the USA and the EU will probably remain the limiting of the purchase of the most modern technologies due to the commitment to a geopolitical idea of restraining the economic rise of the Russia. It is sufficient to say about the G7’s inert response to the Russia’s request for \$24 billion for the purchase of technology, equipment to produce civilian goods in crisis times of the soviet political system. Even that time the decision was 100% dependent on the words of the United States [13, Shcherbakov V.I., pp. 1060–1061].

To some extent, conferences (forums) are useful to be perceived the centers for diagnosis of the causes that complicate the construction of new Europe (The EU+Russia); forum could be common institutional and historical formations or social and governmental institutions of scanning of the problems of modern international relations.

Willingness to solve problems indicates the geopolitical value of the EU for Russia. It sees a special historical mission in the diversity of European countries. Russia also reconsiders its relations with the EU¹³ and demonstrates ultimate patience in waiting on equal partnership. Russia sees itself as inseparable link with no claim to leadership, relying on the fair cooperation in the Arctic and a constructive role in addressing global challenges.

¹² Bor'ba za Arktiku prevrashhaetsya v slozhnyuyu igru [The struggle for the Arctic is turning into a complicated game]. URL: <http://vl-club.com/23123537--borba-za-arktiku-prevraschaetsya-v-slozhnyuyu-igru-v.html> (Accessed: 12 February 2017) [in Russian]

¹³ MID Rossii provedyot pereocenku otnoshenij s Evrosoyuzom [The Foreign Ministry of Russia will re-evaluate relations with the European Union]. URL: <https://news.mail.ru/politics> (Accessed: 17 March 2016) [in Russian]

Of course, we assume that the sanctions on Russia is a temporary phenomenon of the Western geopolitics. However, naivety should be irrelevant for Russia especially when predicting the advantages of international division of labor. First, we should realize that the Western partners are not motivated to help Russia to establish the high-tech segments of the national economy. They do not need a strong geo-economic competitor. That is why Russia is obliged to everything itself, relying on its own scientific resources and innovative potential.

Such a strategy should be a reason for the historical indifference of the Russian Federation to sanctions of the West — technological or sectoral, which will remain in the future cooperation and geopolitical demarcation. At the forum “The Arctic — Territory of Dialogue” emphasized the importance and timeliness of government programs to support high-tech economy, including the technology for the Arctic.¹⁴ This is an indirect recognition of the specialty of the modern international trade. Russia considers its position in the world markets important. It wants to be the vanguard and seller of high technology for the North and, as a minimum, a pioneer of icebreaking shipbuilding, a supplier of equipment for extraction and processing on land and offshore.

Conclusion

A conceptual judgment of the article is that Russian trade with the Europe is more than five centuries old. The practice and problems of foreign economic activities of the Euro-Arctic territories of the Russian Federation represent a real portrait of contemporary Europe. They are convinced that a historical window into the global economy will never be closed, despite the presence of forces seeking to complicate the Russian actions on the global market.

Trade and economic relations of the Northern territories of Russia with other countries feel the impact of international sanctions. A negative change occurred in 2014–2016 in all indicators of international trade. However, it has no constant impact of the dynamic of the Russian GDP and on the development of the Russian North. Euro-Arctic territories of the Russian Federation can adapt to the restrictions. In 2017 everybody is sure that the attempts to discriminate the export-import transactions, isolation from the world markets and advanced technology, exclusion from the system of European values are unproductive. They will not block the GDP growth until 2020, but emphasize the historical importance of the import-substituting technologies for Russian. Perhaps, it is necessary to assume that the sanctions will remain a long-term or permanent companion of international relations of the Russian Federation. The country needs reserve production capacities for the replacement of demand by the home products.

¹⁴ Uchastniki Arkticheskogo foruma predlozhat puti razvitiya regiona [The participants of the Arctic forum will suggest ways of development of the region]. URL: <http://1prime.ru/News/20170329/> (Accessed: 30 March 2017) [in Russian]

Russia is an inseparable part of Europe, and inseparable cannot be separated. Its Northern territories have been a necessary component of the EU economy and other economies of the world. They remain active agents of the economic interests of the country and the stakeholders of foreign economic cooperation. Euro-Arctic territories of the Russian Federation are ready to continue the external borrowing of technologies that correspond to the world scientific and technical level and the requirements of the 21st century. The examples discussed in the article confirm the image of Europe as a prospective seller of modern technologies (equipment) and may be an expanding market for products from the Euro-Arctic territories of Russia.

Regional and corporate managers must be sensitive to the geopolitical costs of international cooperation and patient while waiting when European partners will stop using sanctions. Such an optimism is combined by attempts to limit the historical economic relations of Arkhangelsk and Murmansk ports. It is important to return to the traditions, mutual respect and ideas of common future. It's time now. We are talking about harmonious Europeanization of the needs and interests of the population of Russia and the EU: economic, social, political, and humanitarian. It is very real. These expectations are caused by a belief in the fruitfulness of interregional contacts, as well as a rich practice of mutual integration on both sides of state borders.

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Conditions and perspectives of the Russian and foreign Arctic research fleet



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Abstract. The article is devoted to the conditions of the Russian and foreign research fleet able to work in the Arctic waters according to its technical specifications. The study has revealed that a modern common trend is construction of multi-functional

research and expedition vessels, able not only to conduct research, but also to transport cargoes and to serve as icebreakers or carriers of aircrafts. The authors conclude that the Russian Arctic research fleet is the most numerous. However, it needs to be modernized because the most of the vessels were constructed in 1970s and 1980s.

Keywords: *the Arctic, research activities, fleet, research vessels, research and expedition vessels, ice class*

Introduction

The specificity of the Arctic scientific study requires the availability of advanced research fleet of the ice class. It is impossible to carry out hydrobiological, hydro chemical, meteorological, geophysical and other studies without proper supply. We offer an overview article on the scientific fleet of the countries most active in the exploration and study of the Arctic and most adapted for operation in the harsh climatic conditions of the region.

The analysis considered the vessels of the ice class not less than Arc 4 adapted for scientific research and study and relevant to the Russian Maritime Register of Shipping (RMRS) or equivalent class relevant to the classifications of the other Arctic states. The Arc 4 class vessels are used in the Arctic and Antarctic in summer, in waters with the ice destroyed by melting (residual) thin annual ice. The Regulations on Navigation in the Waters of the Northern Sea Route, approved by the Russian Ministry of Transport in 2013, allow the navigation for the vessels with lower ice class or even without it but in July — November 15 and with a significant restriction of the area of navigation [1, Tarovik O.V., p. 15].

The database of vessels with information on vessel's name, country, year of building, hull length, purpose, ice class and its equivalent according to the RMRS rules is in Appendix 1.

Russia

Today the Russian Federation possesses the largest research fleet designed to work in Arctic. It consists of 29 ships, which exceeds the total number of similar vessels of the United States, Canada, Norway, Sweden, Denmark, Finland, Germany, the UK, China, Japan and the Republic of Korea.

Most of the Russian ships belong to ice class Arc 4 or Arc 5. They are regularly used in a relatively favorable ice conditions (thin, residual or young ice) in the summer and autumn navigation. Difficult ice conditions are for the vessels “Akademik Fedorov”, “Akademik Treshnikov” and “Mikhail Somov” (ice class Arc 7 — independent navigation throughout the waters of the Northern Sea Route with all types of ice conditions in summer-autumn navigation or with icebreakers in the winter-spring navigation in the thick annual ice with thickness up to 1.8 m).

Among 29 Russian vessels, 26 were exclusively designed for research; the three other vessels (“Akademik Treshnikov”, “Akademik Fedorov” and “Mikhail Somov”) belong to the class of scientific and expedition ships, adapted for transportation of goods. This allows using them to supply the remote areas and polar stations.

The equipment of the vessels allows carrying out complex hydro chemical, hydrobiological and hydrometeorological studies. Twelve vessels are specialized in carrying out geophysical surveys of the seabed for mineral exploration. The geophysical vessels are used by business: JSC “Sevmorneftegeofizika” — 4 vessels, JSC “Morskaya arkticheskaya geologorazvedochnaya ekspeditsiya” — 3 vessels, JSC “Dalmorneftegeofizika” — 2 vessels, OJSC “Sovkomflot” — 1 vessel.

Despite the indisputable leadership in the number of Arctic research ships, Russia is facing an acute need for the fleet renewal. Today, 27 of the 29 ships were built before 1990 and are outdated. Their average age is 30.4 years in 2017. Russia has only one modern scientific and expedition vessel “Akademik Treshnikov” capable of research, icebreaker assistance, rescue work, and freight.

Almost all the Russian vessels were built on the shipyards of Finland and Poland in the 1970s and 1980s. Economic crisis and reduction in state funding in the 1990s led to the situation when some of research vessels had been sold or converted for cruise and other purposes (e.g., “Academician Shuleikin” and “Professor Vize”). Some vessels are still owned by the Russian state institutions and are used for marine scientific research, cruises in the Arctic and Antarctic or delivery of scientists to the polar stations (“Akademik Shokalsky”, “Professor Khromov”). The latter enables owners to maintain their scientific fleet in the proper condition.

The renewal of the Arctic and Antarctic research fleet is reflected in the state program “Development of shipbuilding and equipment for offshore fields development in 2015–2030”. The document secures the priority of the state policy in the shipbuilding, the creation of a competitive specialized marine equipment, ships and vessels for the development of the continental shelf and the Northern Sea Route, the creation of high-tech medium-tonnage transport and support vessels, high-tech fishing vessels, marine and inland research and scientific expedition vessels.

The Sub-program “Expeditions in the World Ocean” of the Federal target program “World Ocean” for 2018–2023 involves the construction of the research expedition vessel of the Arc 7 ice class to replace the R/V “Mikhail Somov” and to study the Arctic and Antarctic seas and to maintain the remote polar stations. However, the Government of the Russian Federation has not approved the Federal target program by now.

The Russian Navy plans construction of the research vessels. By 2024, it plans to introduce two ocean-going research vessels with ice class. The main task of these vessels will be carrying out a wide range of scientific studies in the Arctic¹.

Canada

Now Canada has seven ice-class vessels for scientific research. In contrast to the Soviet Union and Russia, Canadian scientific and research fleet is at the disposal of the Canadian Coast Guard. Three of seven vessels are oceanographic research vessels and meet the ice class Arc 4 (CCGS ‘Hudson’, CCGS ‘John P. Tully’ and CCGS “Teleost”). Three more vessels (CCGS “Samuel Risley”, CCGS “Sir Wilfrid Laurier” and CCGS ‘Martha L. Black’) are multifunctional vessels of ice class Arc 5. These vessels also provide the icebreaking assistance to ensure the supply of beacons, are involved in rescue and other work. The highest ice class among the Canadian research vessels (Arc 6) has the CCGS Amundsen — the icebreaker, converted in 2002 for research purposes. In summer, the vessel is a research ship and in winter, it mainly provides the icebreaker assistance.

The main problem of the Arctic research fleet both in Canada and in Russia is the age. The average age of the vessels is 34.7 years. The youngest vessel was built in 1988. A limited number of ice-class vessels and a long coastal line in the Arctic have negative effect on the quality of research. That’s why, in 2015, the expedition on the ship CCGS Amundsen was forced to interrupt its research and change the route to ensure the icebreaking assistance².

¹ Voenno-morskoj flot poluchit dlya issledovaniya Arktiki dva sudna ledovogo klassa [Military fleet will get two ice-class vessels for the Arctic research]. URL: <http://sever-press.ru/vse-novosti/item/4300-voenno-morskoj-flot-poluchit-dlya-issledovaniya-arktiki-dva-sudna-ledovogo-klassa> (Accessed: 11 March 2017) [in Russian]

² Canada’s ocean science capacity is limited with resource constraints. URL: <https://cullenlab.ca/2015/07/27/canadas-ocean-science-capacity-is-limited-with-resource-constraints-the-globe-and-mail/> (Accessed: 11 March 2017)

In 2010, Canada started the construction of the oceanographic vessels to replace CCGS Hudson, which in 2017 turns to be 54 years old, CCGS Teleost and two more vessels without the ice class. The vessels supposed to be built by 2014, however, an unplanned increase in the cost estimates led to a tightening of delivery, which is expected in 2017–2018.^{3,4}

The USA

The US have a small but relatively well-equipped research fleet with the ice class — 5 vessels. The average age of the US fleet is 20.2 years; 4 of 5 vessels — built after 1990, including the newest research vessel R/V Sikuliaq with the class Arc 6 in the possession of the University of Alaska Fairbanks.

Two USCGC “Healy” (class Arc 7) and USCGC “Polar Star” (class Arc 8) are at the disposal of the U.S. Coast Guard and are used not only for research but also to provide the icebreaker assistance. High ice class allows the vessels to operate in two-year and perennial ice throughout the year.

Despite the small number of research vessels with ice class, the public sources do not contain any plans for the construction of such vessels and even no need in such vessels is indicated. Now, the priority of the US is the construction of powerful icebreakers that can operate in complicated ice conditions and ensure the US presence in the Arctic region⁵.

Norway

Despite the great attention to the Arctic at the government level, Norway has a small research fleet with the ice class. The Norwegian Polar Institute owns the research vessel “Lance”, class Arc 4, built in 1978. Another research vessel in state ownership was built in 1988 — “Helmer Hanssen”, class Arc 4. Both vessels were originally designed for fishing and then converted for oceanographic research and marine biology studies.

The Norwegian company GC Rieber owns the vessel “Polar Empress” class Arc 5, built in 2015. The vessel is designed for geophysical surveys of the seabed.

In 2012, the Norwegian government decided on the construction of the vessel “Kronprins Haakon” to address the problem of lack of modern research vessels. The vessel is adapted for op-

³ CCGS Hudson good to go after repairs. URL: <http://thechronicleherald.ca/metro/1311676-ccgs-hudson-good-to-go-after-repairs> (Accessed: 11 March 2017)

⁴ Shipbuilding strategy needs work to get ballooning costs under control, ministers told. URL: <http://www.cbc.ca/news/politics/shipbuilding-procurement-action-plan-1.3336604> (Accessed: 11 March 2017)

⁵ Changing Arctic demands new fleet of polar icebreakers. URL: <http://www.seattletimes.com/opinion/changing-arctic-demands-new-fleet-of-polar-icebreakers/> (Accessed: 11 March 2017)

eration in the Arctic. It is scheduled to launch in 2017 and will get high ice class PC3 (class Arc 7 according to the RMRS classification)⁶.

The UK

The British Antarctic Survey is a research unit of the UK Natural Environment Research Council (NERC) and includes two vessels with the ice class adopted for research. The research vessel RRS “James Clark Ross” class Arc 5 had equipment for biological, oceanographic and geophysical research. Multifunctional ship RRS “Ernest Shackleton” is used mainly to transport cargo and passengers in Arctic and Antarctic, as well as for oceanographic research.

Now, the NERC is building a modern research vessel, capable of operation in the ice with the thickness up to 1m⁷. It is planned to finish the project by 2019.

Other European countries

Among the other European countries, the most powerful and equipped research vessels are in Sweden (“Oden”) and Germany (“Polarstern”). Both vessels were designed for research and icebreaking. Along with the American civil icebreaker USCGC “Polar Star”, they have the highest ice class (Arc 8 and Arc 9) among the considered vessels. Less powerful research vessels are in Finland (“Aranda”, class Arc 5) and Denmark (“Dana”, class Arc 4). All these vessels were built in the 1980s. In 2002–2010 there were plans for the construction of the European research icebreaker “Aurora Borealis” with the highest ice class PC1 (Arc 10)⁸. In 2010, it was decided to stop the project in favor of its less expensive version — “Aurora Slim”. Currently, there is no public information about the construction of the vessel. Also in 2019, it is planned to complete the new German research icebreaker to replace the “Polarstern”⁹.

Asian countries

The most active Asian countries in the study and development of the Arctic own or plan the construction of the research ice-class vessels. Chinese multipurpose vessel “Xue Long”, class Arc 4 was purchased in Ukraine in 1994 and converted into a research ship [2, p. 130]. In 2019, it is expected to complete the second Chinese vessel with the higher ice class, which is also going to be used for research¹⁰.

⁶ Kronprins Haakon — icebreaker research vessel. URL: <http://www.npolar.no/en/about-us/stations-vessels/kronprins-haakon/> (Accessed: 11 March 2017)

⁷ About the ship. URL: <https://nameourship.nerc.ac.uk/about.html> (Accessed: 11 March 2017)

⁸ Aurora Borealis Polar Research Vessel. URL: <http://www.ship-technology.com/projects/aurora-borealis-polar-research-vessel/> (Accessed: 11 March 2017)

⁹ A new age of polar research. URL: <http://www.motorship.com/news101/ships-and-shipyards/a-new-age-of-polar-research> (Accessed: 11 March 2017)

¹⁰ Construction starts on second, high-tech icebreaker. URL: http://www.chinadaily.com.cn/china/2016-12/21/content_27729621.htm (Accessed: 11 March 2017)

In 2009 the Japanese icebreaker “Shirase” was built and replaced the vessel with the same name [3, Morozov Yu., Klimenko A.F., p. 183]. In the same year, a South Korean research vessel “Ar-aon” was put into operation [4, Zhuravel V.P., p. 125]. Both vessels have the ice class Arc 6 and are intended to conduct scientific expeditions.

In 2014, the government of India decided to buy a polar research vessel to support the work of two Indian Antarctic stations and the Himandri station on Svalbard¹¹.

Conclusion

Today, in the conditions of increased attention to the Arctic region, modernization and building of the research fleet with the ice class are on the agenda of the leading Arctic and non-Arctic states. These vessels are designed not only for scientific research, but they also ensure the effective state presence in the region. The common trend of the development of the Arctic research fleet is the construction of multifunctional scientific vessels that can be used for research and provide the icebreaker assistance, be the aircraft carriers and transport goods.

Norway, the UK, Germany, China and India are building new vessels adapted for operation in the Arctic. Modern exploratory vessels of an ice class are in Japan, Korea and the USA. Despite the commissioning of the research “Akademik Treshnikov” in 2012, Russian needs to update its research fleet, which was mostly built in 1970s and 1980s. The strategic importance of the Arctic for Russia makes the construction of modern research vessels with ice class one of the most urgent tasks in the development of the region.

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¹¹ Acquisition of a Polar Research Vessel. URL: <http://pib.nic.in/newsite/PrintRelease.aspx?relid=110933> (Accessed: 11 March 2017)

Russian and foreign ice class research vessels

No	Name	Year	Length, m	Purpose, area of scientific research	Ice-class	The RMRS ice-class
RUSSIA						
1	R/V "Academic Treshnikov"	2012	133.53	The vessel is of unrestricted navigation area, combines the functions of an icebreaker, tanker, cargo ship, passenger and research vessel, has a reinforced ice hull, equipped with modern navigation equipment, two helipads and a hangar, equipped with research laboratories that allow the efficient processing of results of oceanographic research, sensing of the atmosphere and other scientific experiments.		Arc7
2	R/V "Academic Fedorov"	1987	141.2	The vessel is for delivery of personnel, scientific equipment and goods to the Russian Antarctic stations and scientific research in the Arctic and Antarctic waters. The R/V "Akademik Fedorov" is equipped with 11 labs: the weather research; reception of satellite hydrometeorological information (APPI); hydrographic (surveying); oceanographic "dry"; oceanographic "wet"; hydro chemical; environmental; ice research; and densimetric. A helipad and control tower provide the operation of two helicopters based in a special hangar.	ULA	Arc7
3	R/V "Mikhail Somov"	1975	133.13	It is used for shipment of personnel, equipment and supplies to remote research stations and other remote objects in the Arctic, as well as for marine scientific research. It has an equipped research lab and a helipad.	ULA	Arc7
4	R/V "Academic Mstislav Keldish"	1980	122.2	Scientific equipment: Automatic synoptic station "VAISALA MIDAS 32"; hardware vertical profiling "NBIS" installed in the "Rosett" system; Lab scanner "GUILDLIN"; Deep-sea manned submersibles; Scientific labs: meteorological; hydrological; geological-biological; biochemical; geochemical; filtration; microbiology; and a photo-lab.	L1	Arc4
5	R/V "Academic Sergey Vavilov"	1988	117.1	The vessel is a mobile receiver of the super-weak hydro acoustic signals. It has 12 laboratories for comprehensive oceanographic research with total area of 380 m ² . In addition, the vessel can accommodate up to 3 container labs.	L1	Arc4
6	R/V "Academic Ioffe"	1989	117.1	R/V "Academic Ioffe" — a mobile emitter of hydro acoustic signals in the frequency range 25–500 Hz, power up to 150 W. The vessel has 12 labs with modern equipment for comprehensive oceanographic research. It is possible to put up to 3 additional container labs.	L1	Arc4
7	R/V «Professor Shtokman"	1979	68.87	The vessel is designed for oceanographic, geological and physical research in the oceans, in tropical and arctic climate On Board: 6 labs, total area — 95 m ² .	L1	Arc4
8	R/V "Academic M.A. Lavrentev"	1984	75.5	The vessel has 8 labs, total area — 270 m ² .	L1	Arc4
9	R/V "Academic Oparin"	1985	75.5	The vessel is designed for hydrological, hydro physical, and above all, hydrobiological studies of marine organisms in the World Ocean. It has 8 labs, total area — 270 m ² : 3 biochemical labs; a spectroscopic lab; physical and chemical lab; lab of hydrobiology; lab of biosynthesis; computers; darkroom; and a diving complex.	L1	Arc4

10	R/V "Academic Nikolay Strahov"	1985	75.5	Specialized vessel for geophysical exploration.	L1	Arc4
11	R/V "Ivan Petrov"	1989	49.9	The vessel is for carrying out scientific research in the field of oceanography, meteorology, hydrochemistry, biology and monitoring of internal waters, territorial sea, exclusive economic zone and continental shelf of the Russian Federation	L1	Arc4
12	R/V "Victor Byinitsky"	1986	49.9	The vessel is designed for the hydro-meteorological research in the Arctic seas of Russia and monitoring of internal waters, territorial sea, exclusive economic zone and continental shelf of the Russian Federation.	L1	Arc4
13	R/V "Pavel Gordienko"	1987	49.9	The vessel is for sonar, geological, oceanographic and environmental research in the Arctic and far Eastern seas of Russia, monitoring of internal waters, territorial sea, exclusive economic zone and continental shelf of the Russian Federation.	L1	Arc4
14	R/V "Professor Molchanov"	1982	71.06	The vessel is for scientific research in the field of oceanography, meteorology, hydrochemistry, biology in any area of the World Ocean and monitoring of internal waters, territorial sea, exclusive economic zone and continental shelf of the Russian Federation	UL	Arc5
15	R/V "Nickolay Trubyatchinsky"	1988	65.0	A specialized vessel for geophysical exploration.		Arc5
16	R/V "Geolog Dmitry Nalivkin"	1985	71.7	A specialized vessel for geophysical exploration.		Arc5
17	R/V "Professor Kurentsov"	1976	68.75	A specialized vessel for geophysical exploration.		Arc4
18	R/V "Academic Golitsyn"	1984	71.6	"Akademik Golitsyn" is equipped with a dynamic positioning system that allows staying on the point of underwater technical works at the wave height up to 6 m. Marine technical means and special equipment allow monitoring of the seabed, laying and operation of underwater pipelines and other complex underwater engineering works at depths up to 3000 m.	UL	Arc5
19	R/V «Vyachelav Tikhonov"	2011	80.81	A specialized vessel for geophysical exploration.		Arc4
20	R/V "Academic Nemchinov"	1988	84.4	A specialized vessel for geophysical exploration.	UL	Arc5
21	R/V "Academic Shatskyi"	1986	81.85	A specialized vessel for geophysical exploration.	UL	Arc5
22	R/V "Academic Lazarev"	1987	81.85	A specialized vessel for geophysical exploration.	UL	Arc5
23	R/V "Geo Arctic"	1988	81.85	A specialized vessel for geophysical exploration.		Arc5
24	"Orient Explorer"	1988	81.85	A specialized vessel for geophysical exploration.	UL	Arc5
25	"Zefir 1"	1987	81.85	A specialized vessel for geophysical exploration.	UL	Arc5
26	R/V "Academic Fersman"	1986	81.85	A specialized vessel for geophysical exploration.	UL	Arc5
27	R/V "Professor	1983	71.58	The vessel is for scientific research in the field of oceanography, meteorology, hydrochemistry,	UL	Arc5

	Multanovskiy			biology in any area of the World ocean and monitoring of internal waters, territorial sea, exclusive economic zone and continental shelf of the Russian Federation		
28	R/V "Academic Shokalskiy"	1982	71.06	The vessel is for scientific research in the field of oceanography, meteorology, hydrochemistry, biology in any area of the World Ocean and monitoring of internal waters, territorial sea, exclusive economic zone and continental shelf of the Russian Federation	UL	Arc5
29	R/V "Professor Khromov"	1983	71.06	The vessel is for scientific research in the field of oceanography, meteorology, hydrochemistry, biology in any area of the World Ocean and monitoring of internal waters, territorial sea, exclusive economic zone and continental shelf of the Russian Federation	UL	Arc5
CANADA						
1	CCGS "Amundsen"	1979	98.3	An icebreaker; in 2002, it was converted into a research vessel. The following labs are on board: filtration, geochemical, refrigeration, benthos, geology, paleology, nutrients, solemar, zooplankton, and others.	Arctic Class 3	Arc 6
2	CCGS "Hudson"	1963	90.4	An oceanographic vessel with hydrographic, geochemical and oceanographic labs.	Arctic Class 2	Arc 5
3	CCGS "John P. Tully"	1984	67.9	An oceanographic vessel with 2 labs on board.	Type A	Arc 4
4	CCGS "Teleost"	1988	63.0	An oceanographic vessel with oceanographic, biochemical and other labs.	Type A	Arc 4
5	CCGS "Samuel Risley"	1984	69.7	A multifunctional ship with the oceanographic lab.	Arctic Class 2	Arc 5
6	CCGS "Sir Wilfrid Laurier"	1986	83.0	A multifunctional ship with 1 lab on board	Arctic Class 2	Arc 5
7	CCGS "Martha L. Black"	1985	83.0	A multifunctional ship with the hydrographic lab.	Arctic Class 2	Arc 5
THE USA						
1	R/V "Sikuliaq"	2014	73.1	A research vessel with the ice class for hydrometeorological, geological, hydrographic, and biological research.	Polar Class 5	Arc 6
2	USCGC "Healy"	1999	128.0	An icebreaker for scientific research with 5 labs on board: biology, chemistry, weather etc.	PC 3	Arc 7
3	USCGC "Polar Star"	1976	122.0	The icebreaker with the possibility of geological, vulcanological, oceanographic, glaciological and other studies. Currently it is used in the Antarctic.	PC2/PC3	Arc 8
4	R/V "Lawrence M. Gould"	1998	70.2	A research vessel with the ice class for hydrometeorological, geological, hydrographic and biological research. Currently it is used in the Antarctic.	ABS A1	Arc 5
5	R/V "Nathaniel B. Palmer"	1992	94.0	A research vessel with the ice class for oceanographic, geological, geophysical and biological research. Currently it is used for work in the Antarctic.	ABS A2	Arc 6
NORWAY						
1	R/V "Lance"	1978	60.8	R/V Lance was built as a fishing and commercial vessel. In 1992, it was converted into a research vessel for the Norwegian Polar Institute. The vessel is equipped for the research in the field of Oceanography and marine biology.	DnV ICE-1A	Arc 4
2	"Helmer"	1988	63.8	The vessel "Helmer Hanssen" was a fishing trawler and then became a research vessel in 1992.	DnV Ice 1A	Arc 4

	Hanssen" (before — "Jan Mayen")			It has equipment for geological, oceanographic and marine biological research.		
3	"Polar Empress"	2015	112.6	A research vessel. The Norwegian company Dolphin Geophysical uses it for seismic surveys.	1A*	Arc 5
THE UK						
1	RRS "James Clark Ross"	1990	99.0	A research vessel equipped for biological, oceanographic and geophysical research.	IAS	Arc 5
2	RRS "Ernest Shackleton"	1995	80.0	A multifunctional ship with the oceanographic equipment.	DnV Ice 05	Arc 4
SWEDEN						
1	"Oden"	1988	107.8	An icebreaker was built for research and equipped for marine geology, oceanography, ecology, and atmosphere studies.	DNV POLAR-20	Arc 8 / Arc 9
FINLAND						
1	"Aranda"	1989	59.2	A research vessel equipped for biological, physical, chemical and geological studies.	1A Super	Arc 5
DENMARK						
1	"Dana"	1981	78.4	A research vessel equipped for biological, climatic, ecological and geological research.	ICE 1A	Arc 4
CHINA						
1	MV "Xue Long"	1993	167.0	It was built as a cargo ship for Arctic, reequipped and became a scientific and supply vessel with labs for maritime physics, chemistry, biology, meteorology and other research.	CCS B1	Arc 4
JAPAN						
1	"Shirase"	2009	138.0	An icebreaker able to host 80 researchers.	PC5	Arc 6
SOUTH KOREA						
1	R/V "Araon"	2009	109.5	An icebreaker equipped for oceanographic, sonar, geophysical, biological and other research.	DNV Polar-10	Arc 6
GERMANY						
1	R/V "Polarstern"	1982	117.9	An icebreaker equipped for oceanographic, geophysical, biological, geological, glaciological, chemical and meteorological research.	Arc3	Arc 8 / Arc 9

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Critical evaluation of the Roan wind farm (part of the Fosen wind project) from an impact assessment standpoint



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Abstract. The paper views the Roan wind farm, which is a part of the Fosen Vind Project — the biggest planned onshore wind farm in Europe — from an impact assessment standpoint. Using the traditional stages of the impact assessment (such as screening, scoping and identification of the baseline conditions and crucial impacts),

the research implements the 'traffic light system' to assess the magnitude of the core effects of the project on different dimensions — i.e. society and nature. Even though the previously conducted assessment describes the project as an extremely successful one with huge potential of generating sustainable energy, the current analysis reveals some of its greatest shortcomings. Social and wildlife aspects are its major drawbacks: the construction site is on the grounds used for the summer grazing by the Saami reindeers and the height and number of turbines significantly threatens migrating birds. Thus, even though the project happens to be economically attractive, it is a rather controversial undertaking when viewed from social and natural perspectives. The paper thus presents many solutions for the minimization of these negative impacts.

Keywords: *Roan wind farm, Fosen Vind Project, impact assessment, reindeer herding*

Abbreviations, acronyms and abridgements used in the article:

Directive 2014/52/EU — Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU of the assessment of the effects of certain public and private projects on the environment.

EEA — European Economic Area

HFSE — high-frequency sound emitters

EIA — environmental impact assessment

HVC — high-voltage cable

Planning and Building Act — Planning and Building Act of 27 June 2008 No. 71 relating to planning and processing of building applications

SDG — Sustainable Development Goal

Introduction

The Fosen Vind Project commenced in 2016 by the Nordic Wind Power, Statkraft and TrønderEnergi is expected to become the largest onshore wind power undertaking in Europe, capable of doubling the wind segment in Norway's energy mix after the estimated time of its commissioning in 2020¹. The Roan wind farm is the second largest farm of the six separate wind parks of the project, and the first to be constructed by 2018². Planned by Statkraft³ to be placed in the

¹ Statkraft. The Fosen Vind Project. URL: <http://statkraft.com/about-statkraft/Projects/norway/fosen/#> (Accessed: 20 October 2016).

² TrønderEnergi. Alternative for 1000 MW vindkraft i Midt-Norge utredes videre/ Alternative for 1000 MW wind farm in Central Norway is still under discussion URL: <https://tronderenergi.no/aktuelt/alternativ-for-1000-mw-vindkraft-i-midt-norge-utredes-videre> (Accessed: 21 October 2016).

³ Statkraft. The Roan wind farm. URL: <http://www.statkraft.com/globalassets/1-statkraft-public/1-about-statkraft/projects/norway/fosen/faktaark-roan-vindpark-uk.pdf> (Accessed: 21 October 2016).

Roan municipality of Sør-Trøndelag County, the wind park aims to provide cheap renewable energy to the nearby settlements as well as the national grid, which coincides with the UN Sustainable Development Goal (SDG) 7⁴.

Commercially, the undertaking is assumed to be a great success: it will be possible to generate electricity at the lowest cost in Europe due to the geographic conditions, enabling the average yearly full load to reach 3500 hours⁵. As per the investors, the local communities will also greatly benefit from reduced electricity costs, improved ecology and infrastructure⁶. However, as the statistical evidence of Wang, Wang and Smith [1, Wang S., Smith P.] shows, the impact of most of the large-scale energy projects usually tends to bear not only socio-economic benefits and advantages, but also challenges and concerns.

This paper aims at conducting critical evaluation of the key effects of the Roan wind farm from an impact assessment standpoint. It emphasizes the major impact categories indicated by the Norwegian legislation and environmental organizations and applies them for the analysis of the effects of the wind project. The paper estimates the magnitude of those effects and identifies the most significant positive and negative impacts. Finally, it represents some suggestions for the mitigation of the adversities and augmentation of the advantages.

Project background, screening and scoping

1. Project background

By placing the project in Roan, the investors aim at reaching the maximum load of turbines, subject to the regional geographic conditions — i.e. an extremely high number of windy days⁷. This argumentation explains the decision of the Fosen Vind (2016) to install many high-power turbines in the same region — 71 turbines with the total capacity of 255.6 MW — i.e. approximately one quarter of the total project capacity (1000 MW). That is why the unique geographic features are assumed to make the wind farm capable of providing electricity for 42.5 thousand households⁸.

⁴ United Nations. Sustainable development goals URL: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/> (Accessed: 02 November 2016).

⁵ Norwea. Europe's biggest and cheapest onshore wind project URL: <http://www.norwea.no/nyheter-1/europe%E2%80%99s-biggest-and-cheapest-onshore-wind-project.aspx?PID=1162&Action=1> (Accessed: 21 October 2016).

⁶ TrønderEnergi. Alternative for 1000 MW vindkraft i Midt-Norge utredes videre/ Alternative for 1000 MW wind farm in Central Norway is still under discussion URL: <https://tronderenergi.no/aktuelt/alternativ-for-1000-mw-vindkraft-i-midt-norge-utredes-videre> (Accessed: 21 October 2016)

⁷ Statkraft. The Roan wind farm URL: <http://www.statkraft.com/globalassets/1-statkraft-public/1-about-statkraft/projects/norway/fosen/faktaark-roan-vindpark-uk.pdf> (Accessed: 21 October 2016).

⁸ Statkraft. The Roan wind farm URL: <http://www.statkraft.com/globalassets/1-statkraft-public/1-about-statkraft/projects/norway/fosen/faktaark-roan-vindpark-uk.pdf> (Accessed: 21 October 2016).

At the same time, the permanent population of the municipality is only about 1000 people living in small settlements scattered around its territory⁹. Additionally, there is no major industrial activity in the region — instead, the population engages in fishing, fish farming and seasonal agriculture (primarily reindeer and sheep herding)¹⁰. None of the activities requires significant electricity supplies, meaning that the power produced by the wind farm will mostly be supplied to the national grid — i.e., it will not foster any local industrial development¹¹.

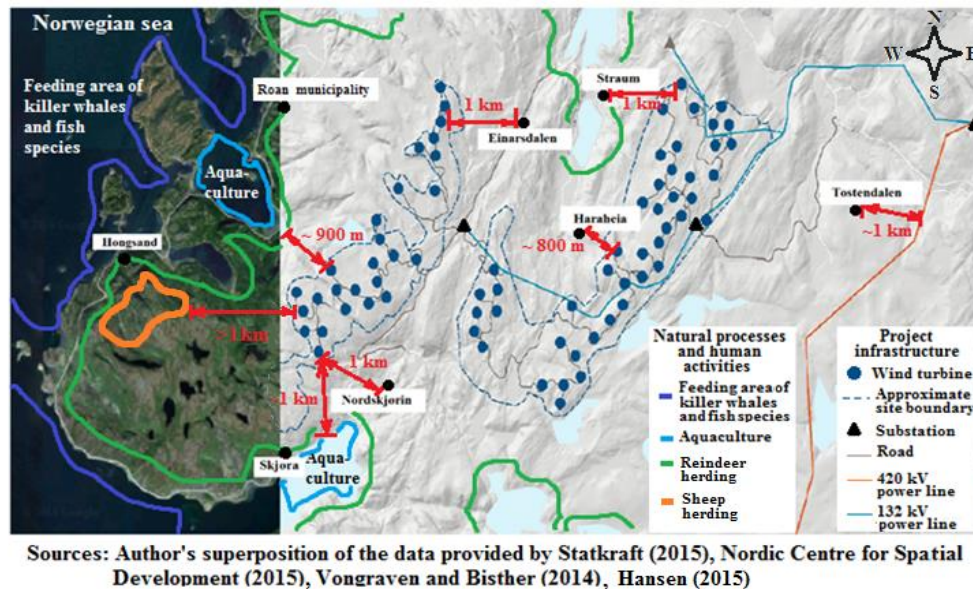


Fig.1 The Roan wind farm: Project infrastructure, natural processes and human activities

Considering low population density and specifics of the area's economic activities, the investors' decision seems to be well-reasoned. At the same time, due to the scale and complexity of the undertaking it will have remarkable *short-term* and *long-term* repercussions (see Fig.1). As we see from Fig. 1, the wind park will occupy substantial territory used for reindeer herding by the Sami. Some of the wind turbines will be placed in the relative vicinity (800 m — 1 km) of the settlements, fish farms and sheep husbandry areas. The fish farms, in their turn, are close to the open sea — i.e. habitat of marine fauna. Thus, apart from the wind farm itself, installation of 71 turbines, 3 substations, construction of 70 km of new roads, and laying of dozens of metres of high-voltage cables (HVCs) — the activities planned by Statkraft (2015) — will significantly affect the area.

⁹ Roan municipality. En rundtur i Roan/ An overview of Roan municipality URL: <https://www.roan.kommune.no/om-roan/en-rundtur-i-roan/> (Accessed: 25 October 2016).

¹⁰ Nordic Centre for Spatial Development. Reindeer herding area in the Nordic countries URL: <http://www.nordregio.se/Templates/NordRegio/Pages/MapPage.aspx?id=3619&epslanguage=en> (Accessed: 24 October 2016).

¹¹ Roan municipality. En rundtur i Roan/ An overview of Roan municipality URL: <https://www.roan.kommune.no/om-roan/en-rundtur-i-roan/> (Accessed: 25 October 2016).

2. Screening and scoping

In Norway, the legal issues of environmental impact assessment (EIA) for the objects related to the onshore energy infrastructure are regulated by the Planning and Building Act of 27 June 2008 No. 71 [2, Pettersson M., Ek K., Soderholm K., Soderholm P]. Additionally, being a signatory of the European Economic Area (EEA) agreement, Norway must follow the provisions of the EU's Environmental Impact Assessment Directive (Directive 2014/52/EU) which is integrated into the country's legal system [3, Bang G., Gullberg A.T.]

According to the Planning and Building Act¹², all wind projects with more than one wind turbine and capacity over 10 MW must undergo EIA. That is why, taking into consideration the scale of the project (see II.1. Project background), the *screening* stage of its implementation will detect the necessity to conduct EIA. In compliance with both the Planning and Building Act and the Directive 2014/52/EU, the *scoping* phase should include the following categories: (i) population and human health; (ii) biodiversity; (iii) land, soil, water, air and climate; (iv) material assets, cultural heritage and landscape.^{13,14}

However, focusing primarily on *environmental* aspects the Norwegian and EU EIA-related regulations do not completely cover the remaining pillars of the sustainability tripod — i.e. *society* and *economy* [4, Blewitt J]. Thus, upon reviewing the best impact assessment practices represented by Ali [5, Ali M.] and Holder [6, Holder J.] and consultations with local branches of international NGOs (Greenpeace Norway¹⁵ and Friends of the Earth Norway¹⁶), additional categories were added. This allowed the major impacts to be grouped into two main clusters: 'Society' and 'Biodiversity'. These clusters are analysed in terms of each impact's magnitude through the 'Traffic Light' colour code of the NATO Reporting and Tracking System¹⁷.

Here, the magnitude of each *predicted* effect is identified and marked with 'red' if negative, 'green' — if positive, and 'yellow' — if it has medium influence or both positive and negative impacts (Table 1.):

¹² HMKN Government. Planning and Building Act of 27 June 2008 No. 71 URL: <https://www.regjeringen.no/en/dokumenter/planning-building-act/id570450/> (Accessed: 27 October 2016).

¹³ Ibid.

¹⁴ European Parliament. Directive 2014/52/EU URL: <http://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A32014L0052> (Accessed: 06 October 2016).

¹⁵ Gulowsen, T. (truls.gulowsen@greenpeace.org), 24 October 2016. Re: *Fosen Vind Project*. Email to Greenpeace Norway (info.no@greenpeace.org).

¹⁶ Bjerkli, K. (kb@naturvernforbundet.no), 26 October 2016. Re: *Fosen Vind Project*. Email to the Friends of the Earth Norway (naturvern@naturvernforbundet.no).

¹⁷ NATO (2011) NATO Reporting and Tracking System URL: https://jatl.act.nato.int/NATO/data/NATO/lm_data/lm_12820/902/objects/il_0_file_34273/TTP%201%20draft%20110106.pdf (Accessed: 27 October 2016)

Table 1

Main impacts of the Roan wind farm

Impact categories		Baseline conditions	Local effects		Regional effects		Global effects	
			Short-term (construction)	Long-term	Short-term (construction)	Long-term	Short-term (const.)	Long-term
Society	Population & human health ¹⁸	Low population density ¹⁹ One of the best health indicators in Norway [7, Rehn, T.A., pp. 209–216]	Construction noise may cause temporary health disturbances (e.g. insomnia) [8, Kageyama, T., pp. 53–61]	Turbine noise and shadow flickering may deteriorate health [8]	No major impacts			
	Human activities [5]	Low unemployment rate and active reindeer breeding ²⁰ Fish farming & sheep breeding — in the vicinity ²¹	Limited reindeer herding due to construction [9, Skarn, pp. 1527–1540]	Decreased reindeer herding due to landscape fragmentation etc. [9]	No major impacts	Cumulative adversities resulting in changed reindeer migration in Scandinavia [8]	No major impact	
	Energy output & infrastructure [6, Holder, J.]	Low energy needs, but high energy price ²² Few number of roads ²³ Minor automobile and air traffic, but high maritime traffic ²⁴	Less complicated traffic due to the road construction ²⁵	Greater supply and lower energy prices ²⁶ Significant infrastructure development — increased traffic ²⁷	No major impacts	Potentially decreased energy prices ²⁸ Greater road development in Norway and Scandinavia ²⁹	No major impacts	

²⁰ Roan municipality. En rundtur i Roan/ An overview of Roan municipality URL: <https://www.roan.kommune.no/om-roan/en-rundtur-i-roan/> (Accessed: 25 October 2016).

²¹ Ibid.

²² Nordic Centre for Spatial Development. Reindeer herding area in the Nordic countries URL: <http://www.nordregio.se/Templates/NordRegio/Pages/MapPage.aspx?id=3619&epslanguage=en> (Accessed: 24 October 2016).

²³ Ibid.

²⁴ Ibid

²⁵ Statkraft. The Fosen Vind Project URL: <http://statkraft.com/about-statkraft/Projects/norway/fosen/#> (Accessed: 20 October 2016).

²⁶ Ibid.

²⁷ Ibid.

²⁸ European Parliament. Directive 2014/52/EU URL: <http://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A32014L0052> (Accessed: 06 October 2016).

²⁹ Statkraft. The Fosen Vind Project URL: <http://statkraft.com/about-statkraft/Projects/norway/fosen/#> (Accessed: 20 October 2016).

Nature & biodiversity	Culture & heritage ³⁰	No historical objects within site boundary, but some possible birdwatching [10, Haavik, A. & Dale, S., pp. 69–80] The Roan church — i.e. the nearest cultural object within 2.5 km from the turbines ³¹	No major impacts	Potentially decreased value of bird-watching area [10]	No major impacts		
	Soil and landscape ³²	The area is not arable — thin layers of soil (mostly rocks) ³³ The area is mostly tree-less with the ground covered with lichens and moss [10]	Construction reduces soil and lichens [11, Reichenberg, L., Johnsson, F., Odenberger, M.] Construction disintegrates the landscape [11]	HVCs reduce the growth rate of lichens and moss [12, Urech, M., Elcher, B. & Siegenthaler, J., pp. 327–334] Roads fragment the landscape [8]	Cumulative soil and lichens' adversities due to construction of the other farms [8]	Cumulative effects hampering lichens growth and causing fragmentation [13, Vistnes, I.I. & Nellesmann, C., pp. 215–224]	No major impacts
	Water ³⁵	Almost complete absence of underground aquifers because of the rocks ³⁶ Several shallow lakes with fish ³⁷	No major impacts	Turbine noise may disturb lake fish [14, Dooling, R.J., Leek, M.R. & Popper, A., pp. 29–37]	No major impacts		
	Air ³⁸	Significant number of migrating birds with low number of bat species ³⁹	No major impacts	Potential bird collisions [15, Croft, S., Budgey, R., Pitchford, J.W. & Wood, A.J., pp. 50–71]	No major impacts	Potential threat for bird migration [16, Marques, A.T., pp. 40–52]	No major impacts

³⁰ Roan municipality (2016) En rundtur i Roan / An overview of Roan municipality URL: <https://www.roan.kommune.no/om-roan/en-rundtur-i-roan/> (Accessed: 25 October 2016).

³¹ Ibid.

³² HMK N Government (2008) Planning and Building Act of 27 June 2008 No. 71 URL: <https://www.regjeringen.no/en/dokumenter/planning-building-act/id570450/> (Accessed: 27 October 2016).

³⁵ Ibid.

³⁶ Nordic Centre for Spatial Development (2015) Reindeer herding area in the Nordic countries URL: <http://www.nordregio.se/Templates/NordRegio/Pages/MapPage.aspx?id=3619&epslanguage=en> (Accessed: 24 October 2016)

³⁷ Ibid.

³⁸ HMK N Government (2008) Planning and Building Act of 27 June 2008 No. 71 URL: <https://www.regjeringen.no/en/dokumenter/planning-building-act/id570450/> (Accessed: 27 October 2016).

³⁹ World Bird Database (2016) Sør Trøndelag URL: <http://avibase.bsc-eoc.org/checklist.jsp?region=NOst> (Accessed: 31 October 2016).

Climate ⁴⁰	Good climate indicators — low CO ₂ emissions due to the electricity being used from the grid (hydropower and minor fossil use) ⁴¹	No major impacts	Lower CO ₂ emissions in the Roan municipality ⁴²	No major impacts	The Fosen Vind Project completion may turn Norwegian energy mix fossil-free ⁴³	No major impact	Contribution to the global CO ₂ reduction ⁴⁴
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As we see, some of the areas such as e.g. health and cultural dimensions or water-related domain do not have significant negative impacts, whereas others — e.g. those related to soil, air or human activities bear remarkable adversities. In contrast, the effects on infrastructure, green energy output and climate are solely positive. Nevertheless, we can see that infrastructure development negatively influences reindeer herding because of HVCs on lichens and the impact of roadbuilding on reindeer pastures. Similarly, the turbines pose a threat to birds. Thus, due to the significant scale and timeframe of these effects they should be viewed in detail.

Crucial impacts

1. Infrastructure development and reindeer herding

According to Sorkhabi et al [17, pp. 359–370] building wind farms and infrastructure (i.e. roads and HVCs) is more cost-efficient in rocky areas than in regions with soil due to the use of fewer building materials. However, despite being obviously economical, both activities lead not only to destruction of lichens and moss on the ground (i.e. reindeer fodder), but also to significant landscape fragmentation [13, Vistnes I.I. & Nellemann C., pp. 215–224]. Additionally, long-term exposure of moss and lichens to electromagnetic radiation of the HVCs decreases their growth rate, which negatively affects reindeer diet [12, Urech M., Elcher B. & Siegenthaler J., pp. 327–334]. In the opinion of Skarin et al [9, pp. 1527–1540] even a small-scale wind farm construction accompanied by road-building and power line laying leads to landscape discontinuity, which, in turn, has ‘a clear negative impact on reindeer habitat selection’ due to the ‘road avoidance instinct’ which prevents the reindeer from moving through such areas. On the example of the Kiruna wind farm in Sweden Pettersson et al [2, Pettersson M., Ek K., Soderholm K., Soderholm P] show the decrease of reindeer herding in the area caused by this factor, which provoked negative repercussions in the nearby regions. Considering the larger scale of the Fosen Vind Project, cumulative adversities

⁴⁰ HMKN Government. Planning and Building Act of 27 June 2008 No. 71 URL: <https://www.regjeringen.no/en/dokumenter/planning-building-act/id570450/> (Accessed: 27 October 2016).

⁴¹ Roan municipality. En rundtur i Roan/ An overview of Roan municipality URL: <https://www.roan.kommune.no/om-roan/en-rundtur-i-roan/> (Accessed: 25 October 2016).

⁴² Statkraft. The Roan wind farm URL: <http://www.statkraft.com/globalassets/1-statkraft-public/1-about-statkraft/projects/norway/fosen/faktaark-roan-vindpark-uk.pdf> (Accessed: 21 October 2016).

⁴³ Fosen Vind. Roan vindpark URL: <http://fosenvind.mynewsdesk.com/documents/nyhetsbrev-roan-vindpark-number-2-2016-58096> (Accessed: 21 October 2016).

⁴⁴ Statkraft. The Roan wind farm URL: <http://www.statkraft.com/globalassets/1-statkraft-public/1-about-statkraft/projects/norway/fosen/faktaark-roan-vindpark-uk.pdf> (Accessed: 21 October 2016).

of this effect launched in the Roan wind farm may potentially change reindeer migration patterns in Scandinavia.

Similarly, Urech, Elcher and Siegenthaler [12, p. 327] provide empirical evidence that *Cladonia stellaris*, *Flavocentraria nivalis* and *Cladonia ragniferina* — the core lichens in reindeer diet — show ‘substantially reduced growth rate’ after prolonged exposure to electromagnetic radiation. Such exposure is more significant in large-scale projects, which, as in the case of the Havøygavlen wind farm in Norway, can cause changes in reindeer diets and force them to move to richer pastures to avoid starvation [11, Reichenberg L., Johnsson F., Odenberger M.]. Thus, the combined magnitude of emissions of the Roan HVCs and the other Fosen farms alongside the fragmented landscape may potentially disrupt the habitat of Norwegian reindeer.

2. Wind turbines and bird migration

According to Barrett [18, pp. 270–277], 11 out of 344 officially registered bird species of Sør-Trøndelag County are globally threatened. Out of those vulnerable species the World Bird Database⁴⁵ mentions two endangered ones — steppe eagle (*Aquila nipalensis*) and yellow-breasted bunting (*Emberiza aureola*). The nine remaining ones and at least half of all the species present in the County are assumed to be migratory, which means they are prone to seasonal movement along the territory of Norway crossing the Roan municipality several times a year [18].

Based on the example of wind farms in Middle Sweden Hipkiss, Moss and Hörnfeldt [19, pp. 444–446] show that migrating and predatory species are most prone to collision with turbines, with the eagles (*Accipitridae*) family bearing the highest risk. Similar statistical evidence from the USA provided by Loss, Will and Marra [20, pp. 201–209] shows the death toll of migratory birds to be ‘between 140,000 and 328,000’ cases per year. According to Croft et al [15, pp. 50–71], the collision risk increases with the number of turbines. Thus, considering the extreme scale (71 turbines) and height (more than 117 m) of the project, we might assume significant danger to the migratory species of Roan after the farm’s commissioning.

Discussion

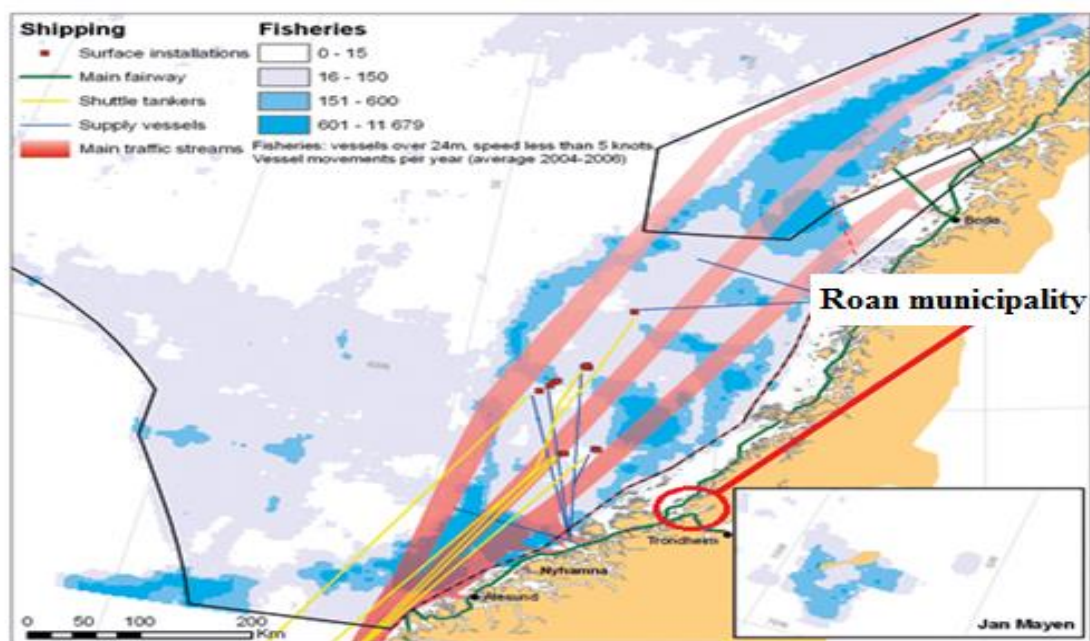
As we saw, although the population of Roan is sparse and the area almost treeless, the most significant troubles caused by the development of infrastructure and wind turbines per se relate to traditional human activity (reindeer herding) and wildlife (migrating birds). In such circumstances, the mitigation mechanism should not only decrease the negative effects of the project, but also preserve (and potentially augment) its positive affects — low-cost, carbon-free ener-

⁴⁵ World Bird Database. Sør Trøndelag URL: <http://avibase.bsc-eoc.org/checklist.jsp?region=NOst> (Accessed: 31 October 2016).

gy production, which coincides with SDG 7. The comparative research of similar Northern European cases conducted by Pettersson et al [2] shows two solutions to these challenges available at the current level of technological development: physical relocation of the wind farm and use of special mitigation tools.

In the opinion of Sorkhabi et al [17], to minimize negative effects, wind farms should be placed in areas far from population and wildlife with minimal human activity. That is why Haavik and Dale [10, pp. 69–80] explain the decision to move the Havøygavlen wind farm several kilometres to Northern Norway so that no important reindeer grazing areas and bird migration routes would be disturbed, despite this resulting in lower annual power load due to lesser wind magnitude. Alternatively, Pettersson et al [2] while providing the example of the Lillgrund wind park of Sweden, comment on higher capital costs associated with moving the farm offshore to preserve wind magnitude while avoiding problems related to bird collision and land-use.

Fig.2. Marine traffic along the coast of Norway



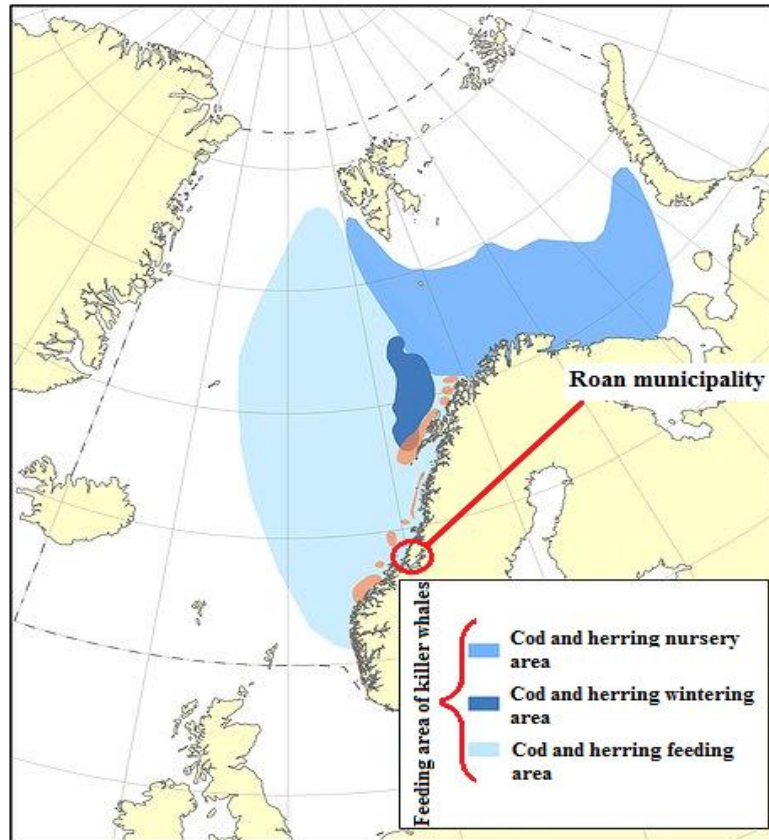
Sources: Author's indications on the map provided by the Nordic Centre for Spatial Development (2015)

Nevertheless, apart from increased costs, moving the Roan wind farm offshore might potentially interfere with aquaculture and marine traffic in the Norwegian Sea (see Fig.1 and Fig.2), with such interference going against national legislation (HMK Government, 2009)⁴⁶.

Additionally, Bergstrom et al [21, Bergstrom L., pp. 1–12] provide empirical evidence of the negative effect of noise on the Atlantic cod (*Gadus morhua*) and herring (*Clupea harengus*) — the

⁴⁶ HMK Government. Integrated Management of the Marine Environment of the Norwegian Sea — Report No. 37 to the Storting (2008–2009) URL: https://www.regjeringen.no/contentassets/1b48042315f24b0182c3467f6f324d_73/en-gb/pdfs/stm200820090037000en_pdfs.pdf (Accessed: 27 October 2016).

main food sources for the endangered killer whales (*Orcinus orca*), who, according to Samarra and Miller [22, pp. 963–971], are also distracted by anthropogenic noises. Given the presence of these species in Roan's coastal waters (see Fig.1 and Fig.3), going offshore seems to be problematic also for the fishing industry.



Source: Author's indications on the map provided by the Nordic Centre for Spatial Development (2015)

Fig.3 Cod, herring and killer whales in the Norwegian waters

Alternatively, special mitigation measures can alleviate the negative effects of the wind turbines themselves and their infrastructure. For example, as Pekkarinen, Kumpula and Tahvonen [23, pp. 256–271] show, in the case of the Kittilä wind farm located on the reindeer grazing areas of the Finnish Lapland, the adverse effects of the landscape fragmentation and decreased lichens' growth rate were addressed by the supplementary feeding of the cattle. Similarly, Bang and Gullberg [3] mention installation of high-frequency sound-emitters (HFSE) and painting turbines pink, whereas Paula et al [24, pp. 202–208] indicate the use of dogs by the local population among the most successful factors in lowering the bird- and bat-collision incidence associated with the Näsudden wind farm of Sweden. If applied to the Roan wind farm, these measures will incur comparatively lower expenditures than would actual relocation.

Naturally, the solution that does not presuppose physical relocation is the most cost-efficient. However, it does not mean that it is flawless. On the contrary, the use of reindeer pas-

tures raises the question of the violation of the rights of the indigenous peoples (Sami) to use their land, which is not legally secured [23]. Thus, the real sustainable solution might be in developing new types of wind turbines with greater productivity or lesser need for excessive infrastructure.

Conclusion

This paper provides critical evaluation of the Roan wind park from an impact assessment standpoint. Being a large-scale farm that is a part of the bigger Fosen Vind Project, it seeks to provide the cheapest wind-generated electricity in Europe. Due to the significant scope of the project's effects on each element of the sustainability triad — i.e. social, economic and environmental dimensions — implementation of the traditional EIA assessment categories envisaged in the Norwegian and EU legislative acts would not generate the complex picture. Thus, the inclusion of additional indicators and the “traffic light” colour code analysis helped to identify the most significant positive and negative impacts.

Apart from the long-term benefits of additional infrastructure development and relatively stable carbon free energy (the UN SDG 7), the Roan wind farm will most probably cause significant adverse changes to the reindeer and bird migration routes. As the paper reveals, the project-related infrastructure — i.e. roads and HVCs — hamper the reindeer migration. Similarly, the rotating turbine blades pose threats to migrating bird species.

The subsequent analysis of similar projects revealed two possibilities to alleviate the identified adversities. Relocation of the Roan wind farm to the areas far from human activities and fragile wildlife (e.g. offshore) or the use of special mitigation tools (HFSE, dogs or supplementary fodder) could help to find the acceptable cost-benefit balance. However, neither solution is flawless — offshore placement raises similar wildlife and industry concerns, whereas mitigation tools do not solve the problems of land use by the indigenous population. Thus, even though the investors might choose either approach to address identified challenges without termination of the project, some new technological solution needs to be applied to make the Roan wind farm more sustainable from an impact assessment standpoint.

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Traditional economy of the indigenous people of the North Yakutia in the post-Soviet period: some research results



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Abstract. Archival documents and sociological field materials lead to some study results on the development of the traditional economy on the Arctic and North territories of Yakutia in the post-Soviet period — 1990s–2000s. The author considered the following issues: environmental and economic zoning, the historical discourse of the traditional economy in the context of agrarian policy in 1990s and some theoretical

approaches to studying the phenomenon of the traditional way of life and the economy of the indigenous peoples of the North. In the first post-Soviet decade, we see a gradual decrease in the number of the northern livestock. The most vulnerable were the northwestern coastal areas with predominant reindeer herding. Sociological data on the second post-Soviet decade enabled us to identify three directions in the preliminary typology of the traditional economy of the indigenous peoples of the North Yakutia.

Keywords: *traditional economy, indigenous peoples, Yakutia, the Arctic, North*

Introduction

Among all the research devoted to the historical and sociological aspects of the traditional economy and adaptation of the indigenous population, it is necessary to mention the studies done by S.I. Kovlenkov, L.I. Vinokurova, F.S. Donskoy, M.H. Belianskaya and printed collections of the, IHR AS RSH (YA), the IPSPN SB RAS and the IHRISN (“Problems of the far North of Yakutia: status and solutions”. Yakutsk, 2001; “Contemporary Arctic: study experience and problems”. Yakutsk, 2005; “The ethno-social adaptation of the indigenous peoples of the North of Sakha (Yakutia)”. Novosibirsk, 2012).

To present the sociological part of the present research, the great role was played by the methodology of double reflexivity and its application in research on reflective rural studies made by T. Shanin, V. Danilov, and others. A great influence on our study have methodological approaches of the sociology of traditional economy of N.N. Zarubina, cultural-anthropological approaches of V.V. Marikhin, I.V. Udalova, et al. with the focus on ethnic self-consciousness and traditions. We also used the approaches and methods of qualitative sociological research, developed in the works of V.A. Yadov, S.S. Semenov, V.I. Il'in, An. Strauss, G. Corbin, I. Steinberg, and others.

A distinctive feature of the Republic of Sakha (Yakutia) is a significant proportion of rural residents (338. 8 thous or 35.9%) of the total number of its population. Most of the rural population are indigenous. According to the 2010 census, 15 Arctic and Northern ulus (district) that we've studied, have 9.4% of Sakha people, 43.2% of Evenks, 64.5 of Evens, 81.4% of Dolgan peo-

ple, 74.9% of Yukaghirs and 86.4% of Chukchi. The indigenous peoples make up for 66.9% (65.6 thous people) of the population of these areas. The number of rural residents in 15 the Arctic and Northern districts is 15.4% of the total rural population of the Republic of Sakha (Yakutia). If we will account only the population of these districts, we get 52.6%, of their resident who live in the countryside. It should be emphasized that the traditional economy and way of life are essential for all population, including the residents of cities and urban settlements of district significance.

Issues of the environmental and economic zoning of the area

The study of the traditional economy of indigenous peoples of the North in the post-Soviet period may be done within a study of 15 coastal Arctic and Northern (subarctic) ulus/districts of Yakutia (Abyysky, Allaikhovskiy, Anabarsky, Bulunsky, Verkhnekolymskiy, Verkhoyansk, Zhigansky, Nizhnekolymskiy, Momskiy, Oymyakonskiy, Olenekskiy, Tomponskiy, Srednekolymskiy, Ust-Yanskiy and Eveno-Bytantayskiy). The following ethnic groups represent the indigenous people, who keep the traditional economy: Yukagirs, Evenks, Evens, Dolgans, Russian old residents and Yakuts. In all districts, in varying degrees, people develop all traditional industries: reindeer herding, hunting, fishing, farming, herd horse production and breeding of cattle. The problems of the traditional economy development are about the development of all the indigenous peoples leading a traditional way of life in a certain area [1, Sannikova Ya.M., p. 122]. Specialists mention that in an extreme environment, cultural and economic characteristics are a subject to physico-geographical and ecological conditions that influence and change the traditional economy of the ethnic group. "...i.e. when we speak about the methods and means of hunting and fishing, first we should talk about the tundra or taiga methods, devices and instruments used for these types of work, the methods, different in geographical zones but not the ethnic groups" [2, Zykov F.M., p. 54]. The Arctic and North are different economic and geographical zones of the Northern hemisphere; they have so many common features. According to experts, an identical state policy could be applied to them. Therefore, our research reflects the issues of the development of traditional economy of Northerners, residents of the Arctic and Northern districts of the Republic.

The study of large territories, their climatic, economic and environmental conditions makes professionals to divide them into areas with similarities on the required characteristics [3, Tikhonov N.N., p. 384; 4, Moiseev I., p. 279]. The classifications of agricultural zoning made by N.N. Tikhonov and on environmental-economic zoning by I.I. Poiseeva are the foundation of our natural-economic division of leading traditional occupations of the indigenous population of the studied 15 ulus/districts. We've selected *three groups of areas of traditional economy development of the North*. The first one unites the Allaikhovskiy, Anabarsky, Bulunsky, Nizhnekolymsky, Ust-

Yanskiy, Olenekski, and Zhigansky districts. It is *the North-West-Coastal (reindeer-craft) group*. The group specialized in reindeer herding, fishing and hunting. The Verkhoyanskiy, Momskiy, Oimyakonskiy, Tomponskiy and Eveno-Bytantayskiy areas are the *North-Eastern group*. It is mainly engaged in reindeer herding, horse breeding, cattle breeding, hunting and fishing. The Abyyskiy, Verkhnekolymskiy and Srednekolymsk districts form the *Indigirka-Kolyma group*. The group is mostly involved in cattle and horse breeding, hunting, fishing and crafts. Also, all 15 districts have all types of livestock and fisheries somehow developed and locally represented by the whole complex of the Northern economy. Each group has its own leading traditional industries. They are addressed through the main parameters. E.g., in animal husbandry, it is the general dynamics of the number and proportion of the livestock, main quality indicators and the total production by types of farms. In fishery — the size of the allocated quota, the cost of fish, and the actual volume of catches. In hunting — trades, the size of the allocated quotas, the capacity of resources, and the amount of actual production. Characteristics of the main parameters identified three groups of areas and gave the opportunity to show the real situation of the Northern farms in the post-Soviet period.

In general, historically developed economy of indigenous peoples of Yakutia, who survived in the 20th century transformation of the Soviet and post-Soviet period, and dynamics of its development are largely dependent on environmental and economic peculiarities of the area, which is not always fully considered in agricultural policy. However, the whole life of the people occupied in the traditional economy, one way or another, is a constant process of adaptation to the Northern nature. The study of the traditional economy in modern conditions, the landscape and economic zoning require attention, being the basis of the development strategy that depends on regional and local specific.

***Dynamics of the traditional economy development in the North of Yakutia
in the context of agrarian policy of the 1990s: a historical discourse***

Since the mid-1980s, the agricultural sector, as the other sectors of the USSR national economy, experienced changes of management caused by the alteration of the state political system. That time the agriculture of Yakutia had its own features: a huge gap between the development of industry and agrarian sector, the disparity in prices for products, even though the main industries were traditional occupations of the indigenous peoples of the Republic. In this situation, at the end of 1985 it was decided to form a Union-Republic State agro-industrial Committee (Gosagroprom of the USSR) [5, Kavlakov S.I., p. 12], February 1986 — agro-industrial Committee of

the Yakutian ASSR [6, Sannikova Ya.M., pp. 104–115]. The aim of these actions was the improvement of the management of the agro-industrial complex at the level of the USSR and its republics,

In November 1988, the agro-industrial complex “Sever” was organized. Its management system was subordinated to the state agricultural Committee of RSFSR and the Council of Ministers of the Yakut ASSR. The highest authority was the Council of the agro-industrial complex, which took the decision to merge the farms, processing and service and organize their common management. With respect to Arctic and Northern farms, we can argue that changes in agricultural policy began in 1989–1991. That time, 33 farms of the AIC “Sever” accounted for 91% of reindeer (303 thous.), 17% of horses (29 thous.) and 7.6% of cattle (22 thous.) of the total livestock of domestic-animals of the Republic. The AIC owned 52.5% of the commercial and 47% of the cellular furs.¹ 22 farms with 265 teams and 1950 herders specialized in the reindeer husbandry. The importance of the Northern reindeer herding is reflected in the reports: *“In the economic and socio-economic terms, domestic reindeer herding is a major industry, which depends on financial and economic activity of the whole system of agrarian and industrial complex “Sever” [which is. — editorial note.] directly related to the enhancement of the cultural, household and living conditions of the peoples of the North”*.² Interesting was the real dynamics of the reindeer herding. In 1986–1988, no serious positive changes happened.

The decision was made to prepare to the transition to market economy, including the possibility of introducing of different forms of management, denationalization, privatization, improving the structure of economic activity of agrarian and industrial complex “Sever”, etc.³

It should be noted that even against the background of maintaining a centralized economic system and despite the gap between the authorities and the real state of the Northern farms, the common rules of the management contributed to the accumulation of experience of joint action, including development of social infrastructure, planning the objects of construction, etc. [6, Sannikova Ya.M., pp. 104–115].

Political and socio-economic transformation in the country (1990–1991) was followed by a breakdown of the economics of the Arctic and Northern farms. By 1992, virtually all the economy of the North of Yakutia experienced the organizational and financial-economic crisis. In this regard, I would like to draw attention to some common trends in the traditional industries of the North.

In 1992, the Republic of Sakha (Yakutia) officially ended the preparatory stage of agrarian reform. The first result was the changing forms of management and ownership. The Arctic and

¹ Nacionalnyj arhiv RS (Ya). [National Archive of the Republic of Sakha (Yakutia)] Ф.1500. Оп.1. Д.1. Л.1.

² Ibid. Д.3. Л.4, 48.

³ Ibid. Д.3. ЛЛ.71–74, 153.

Northern regions experienced the revival of the tribal communities and tribal land ownership as a distinctive form of traditional nature use in the interests of preservation and development of the indigenous numerically small peoples of the North. This process yielded the results. As of July 1, 1992, there were 70 tribal communities of 3 120 people, 83.3% of which were employed in the reindeer husbandry. By 1995, former deer field farms had become 170 tribal communities with 74.1 thous deer, 852 cattle, 2 185 horses, 196 pigs and 473 birds and small number of cellular animals [6, Sannikova Ya.M., pp. 104–115; 7, Borisov E.A., Garbuzov V.R., p. 16].

At the same time only for 1994–1996, in farms of tribal communities the number of reindeer decreased by 22.8% [8, Kulakov S.I., p. 81]. In 1994, 20.4 thous reideer died. It was 8.5% of total livestock at beginning of that year. The same year, predators hunted 18.8 thous (7.4%) of reideer. The loss was about 27.9 thous (11%) [8, Kulakov S.I., p. 98]. The reasons for this are different. The prolonged reorganization of the management was the most serious. In the rural areas of the Republic, a process of transformation of the agricultural sector was mass and spontaneous. Many farms (the only form of management available that days) were dissolved; their funds (cattle, horses, deer, equipment, workshops, and other household objects) were given to private owners to create tribal communities and farms [6, Sannikova Ya.M., pp. 104–115; 9, Popov A.A., pp. 41–42].

As it was mentioned above, in the first half of the 1990s, the state management of the agricultural sector had been undergoing continuous structural change and adapting to new tasks and functions, dictated by the market economy. In May 1993, the agrarian and industrial complex “Sever” was transformed in a joint stock reindeer herding company “Taba” with a local authority; in October 1993 The Ministry of Agriculture and Agro-industrial Complex of Sakha (Yakutia) took over the responsibility for the management of traditional economy of the North [6, Sannikova Ya.M., pp. 104–115].

It is seen from the archival documents, that time all levels of the executive authorities of the Republic of Sakha (Yakutia) resolved the questions about the improvement of the financial and economic position of the Northern farms. The relevant Ministry operated the Northern farms, but its solutions contained organizational problems and a lack of action. Regarding the Northern farms, the lack of financial support made the Ministry to deal with the specific small issues.

The critical situation in agriculture of Yakutia remained stable for a long time due to the rise in production costs, lower volumes of production and sales cause by the disparity of prices for the industrial and agricultural products, devaluation of funds allocated in the form of state sup-

port, unreasonably high interest rates on loans, growth of mutual non-payments and transport and energy costs.⁴

The archival materials show that the control of agriculture had no feedback on the ground, many of their decisions and orders could not always be fulfilled in real life. This is proved by the speeches of people engaged in traditional households at the annual meetings of the National Joint Stock Reindeer Herding Company “Taba”.⁵ These people drew attention to the need for an integrated approach in solving problems, including the social sector, and the undesirability of limiting economic performance and wages. In this context, it is impossible not to recognize the fact that neither ordinary workers nor the managers at different levels were not ready for the radical transformation, but at the same time, it is impossible to speak about their equal opportunities.

In 1995, the presence of excessively small economic organizations in the Northern districts was considered uneconomical. Since then, the focus was not just on the state support of agricultural producers, but also on the cooperation between the separate households and communities to create a market for the production and procurement. Economists, who stood at the origins of the agrarian reforms in the second half of the 1990s, recognized that the preservation and development of traditional industries of the North needed a mechanism for combining market economy with the state planning and regulation and appropriate financial and resource support [6, Sannikova Y.M., pp. 104–115; 9, Popov A.A., pp. 41–42]. In general, these six years of the agrarian reform in the study districts, the number of households and tribal communities had increased 5 times: from 62 to 322 units and from 28 to 198 units, respectively [6, Sannikova Ya.M., pp. 104–115; 7, Borisov E.A., Garbuzov V.R., p. 16].

As is known, the number of livestock is the main criterion of the prosperity of the North animal husbandry. Let us consider the statistics for the years 1990–1999.⁶ In the North-West coastal group, the largest decrease in the number of domestic animals occurred: reindeer — by 60.3 % (from 17 4874 to 69 424), horses — by 33.7% (from 2 279 to 1 511), cattle — by 56.7% (from 1773 to 767 heads), including cows — by 58.4% (from 875 to 364 goals), and as a result, the production of milk deceased by 78.5% (from 1 935 to 416 tons) and meat — by 90,6% (from 3 768 to 352

⁴ Obedinyonnyj vedomstvennyj arhiv MSHiPP RS (Ya) [Joined Departamental Archive of the MAaFP RS (Ya)] Ф.55. Оп.35. Д.1. Л.94–97.

⁵ Ibid. Ф.ХАОК «Таба». Оп.1. Д.4.Л.4–9.

⁶ *Osnovnye pokazateli agropromyshlennogo kompleksa RS (Ya) za 1999–2004 gg* [Key indicators of the agro-industrial complex of the RS (Ya) 1999–2004]. Yakutsk, 2005.p.66 [in Russian]; *Respublika Saxa (Yakutiya) za gody suvereniteta (1990–2000gg.). Oficialnoe izdanie* [The Republic of Sakha (Yakutia) in the years of sovereignty (1990–2000).Official Issue]. Yakutsk, 2000. p. 27 [in Russian]; *Ekonomika ulusov i gorodov RS (Ya) v 1985–1999 gg. Oficialnoe izdanie*. [Economy of ulus and towns. Official issue] Yakutsk, 2000 [in Russian]; *Ekonomika rajonov i gorodov RS (Ya). Oficialnoe izdanie*. [Economy of rural areas and towns.Official issue] Yakutsk, 2002. [in Russian]

tons). The greater vulnerability of the North-West coastal group derives from the single-industry nature of the livestock and associated with the significant loss in reindeer husbandry. In the North-Eastern group domesticated reindeer has decreased by 53.1% (from 111 445 to 52 221), horses — by 31.8% (from 24 640 to 16 799), cattle — by 31.4% (from 23 609 to 16 193), including cows — by 25.1% (from 9 043 to 6 777), milk production — by 47.7% (from 18 654 to 9 755 tons), meat — by 68,6% (from 7 130 to 2 239 tons). In in the Indigirka-Kolyma group, the number of domestic reindeer decreased by 73,7% (from 21 566 to 5 670), horses — by 21.8% (from 10 266 to 8 028), cattle — by 32.8% (from 8 728 to 5 872), including cows — by 20.2% (from 3 344 to 2 670), milk production — by 54.7% (from 6 274 to 2 845 tons), meat — by 67.7% (from 2 762 to 893 tons).

Thus, the 1990s were the most difficult in the development of traditional economy of indigenous peoples of Yakutia, both in economic and social terms. Transformation of ownership, land rights and agrarian reform in the Northern agriculture had no financial support. On the background of a systemic crisis, the national management structures at all levels could contribute only to the solution of situational economic problems of a critical character. That time, mechanisms of regulation of the new socio-economic relations in the farms formed. Neither the population of reindeer and cattle nor the production of the traditional industries could not reverse the process of gradual reduction of its quantitative and qualitative indicators. At the same time, the vector of development of the traditional economy of the North of Yakutia turned to the interest for all members of this sphere of life. All the existing problems of traditional agriculture highlight three main points: the role of social movements and the indigenous peoples of Yakutia; the position of the heads and workers of farms, management structures; the views of the village workers about agricultural reform and traditional way of life [6, Sannikova Ya.M., pp. 115–126].

The study of the phenomenon of traditional lifestyles and economy of the peoples of the North at the beginning of the XXI century

Systematization of the empirical findings of the field surveys 2004–2015 has been done with the use of the approved program of qualitative sociological research on the theme of research “The Evolution of the Traditional Economy of the Peoples of the North in the Context of the Agricultural Policy of the State”. This allowed formulating the main theoretical approaches in the interpretation of the traditional way of life and indigenous adaptation strategies in the North of Yakutia:

– the traditional way of life is a unique phenomenon, historical the economic lifestyle of the indigenous population of the area. It consists of three main levels (“pyramid”): the initial level includes a broader understanding of the traditional way of life and can be applied to the entire ru-

ral population of the studied area. In general, it is the foundation of the economic security in their daily life, is mostly traditional, and based on the production of traditional industries and trades (reindeer, cattle and horse breeding, fishing and hunting). According to the data collected in 2010, in 15 districts/areas we had studied, the rural population was about 51.6 thous people, or 52.6% of the total population of these districts. The rural population of the studied districts/areas of Yakutia had negative dynamics in the second decade (2002–2012) and was 16.8%–15.4% of the total rural population of the Republic. Despite a certain dynamic to the population decline in the middle of the decade, it did not have any important changes. The rural population continued rural life-style. The second intermediate level means understanding of the traditional economy as an entity of the state economic system and as a social phenomenon of traditional economy of the indigenous peoples. The third, upper level — maintenance of traditional occupations by the rural population is a unit of the agricultural economics and personal farms of the population.

– preliminary identification of indigenous adaptation strategies is based on conditional division of the following major components constantly interacting with each other: 1) spiritual or ethnic-oriented historical component: a common historically established traditional way of life of indigenous peoples; the continuity of the traditional economic through generations of families of the respondents — representatives of farms; 2) implemented or public component: a socio-economic activity of rural population separated within the economic system of the state on categories: clan community, agricultural enterprises (mostly state or municipal), peasant (farmer's) economy and personal farms; also the specialization of the economy based on natural-economic zoning of the region under study; 3) subjective or personal evaluation: assessment of agriculture and agrarian policy by the respondent, the value of the traditional economy for him/her (and his/her family) way of life.

Preliminary development of the typology of the indigenous economy of the peoples of the North in the conditions of post-Soviet social and economic transformations allows highlighting three typological directions.

Types level of specialization of the integrated Northern economy: 1) regional specialization based on natural-economic distribution of the leading sectors of the economy in the 15 studied ulus/districts for the three groups of the traditional economy of the North: North-West coastal group — reindeer-fishing type of economy; the North-Eastern group — reindeer-breeding and livestock-fishing type of economy; in the Indigirka-Kolyma group — livestock-fishing type of economy; 2) the district level of specialization on the basis of specialization of individual farms of the

ulus/district; 3) local level of specialization on the basis of the specifics of the development of the local economy of a rural locality.

Types of agricultural producers due to characteristics of business forms and positions of entities: a form of socio-economic organization of the rural population (tribal communities, private farms); organizational-economic forms of management (agricultural companies and farms enterprises, peasant (farmer) economy, individual entrepreneurs in agriculture).

Types of workers/leaders of households due to the roles and positions of the representatives of the farms: the collective worker — the individual worker — the leader of the collective farm, the leader of the individual farm — a worker of an individual farm.

Conclusion

Thus, the stability and the nature of traditional business is closely connected with historical way of life of indigenous peoples, geographical and climatic conditions of the North. At the same time, we have highlighted the complexity of the Northern economy. It is characterized by local development of all kinds of traditional occupations. The current structure of the agricultural economy of Yakutia reflects the economic development of the diverse landscapes that organized the Northern types of livestock. In this regard, the classifications proposed in a study of the traditional economy of the 15 Arctic coastal and Northern (sub-Arctic) ulus/districts of Yakutia are grounded on natural-economic distribution of traditional occupations of the indigenous population and highlight three groups of areas: North-West-coastal (reindeer-field), Northeast (livestock-herding-fishing), and the Indigirka-Kolyma group (livestock-fisheries).

Northern households in the extreme climatic conditions considered the number of cattle as the main criterion for the well-being. Therefore, in the 1990s, a huge reduction in the number of livestock made the situation of the traditional economy of the North of Yakutia very difficult. In the North-West coastal group, a single-industry nature of the breeding revealed significant losses in reindeer husbandry. In the Northeastern group, the decline of livestock was less, but we accounted for all three types of the animal breeding and the quantitative indicators “distributed” between them. The Indigirka-Kolyma group had the greatest reduction in the number of reindeer. In absolute terms, the most affected economy is the economy of the North-West coastal group. At the same time, each group of provinces experienced difficult situation in animal husbandry both on individual farms and in the whole ulus/district.

In times of the systemic crisis, the Republican administration tried to contribute to the solution of situational economic problems. However, in the second half of the 1990s mechanisms of regulation of the new socio-economic relations began to emerge. They could not stop the gradual

reduction of quantitative, production, and quality indicators. At the same time, the vector of development of traditional lifestyle of indigenous peoples became visible and turned to the interests of everyone involved in agriculture. It is possible to trace three main components of this process: the views of villagers on agrarian reform and traditional economic way of life; positions of managers and employees of farms, management structures; the role of social movements and the indigenous peoples of Yakutia.

In general, in the framework of the natural-economic distribution of traditional occupations, the dynamics of basic parameters for 1992–2012, the twenty-year post-Soviet period shows that there was a decline in the leading indicators, including the number of livestock: if in 1992 the reindeer breeding involved 83.9% of the total reindeer of the Republic, in 2012 — 79.3%; herd horse breeding — 18.3% and 14.6% of the total number of horses; cattle — 8.3% (including 9% of cows) and 6% (6.5% of cows) of cattle. In absolute terms, the real picture of the changes looks like that: reducing the number of reindeer by 47.5% (139 582), horses — by 34.7% (13 270), cattle — 60% (20 860), including cows — by 58% (7 850). The largest decline of indicators is allocated the North-West coastal group: the number of reindeer decreased by 60.3%, horses — by 33.7%, cattle — by 56.7%, including cows — by 58.4%, respectively, the volume of milk production decreased by 78.5%, meat — 90.6%.

In addition, it is worth pointing that the survey of farms in the Northern districts revealed that the workers of the traditional agricultural industries were trying to adapt to the requirements of agricultural policy. E.g., the farms of Srednekolymskiy ulus remain herding and herd horse breeding; fishing and hunting and individual farms are the priority. The households of the Olenekskiy ulus have: at the district level — herding and hunting (75% of residents live off the meat of wild reindeer) and cattle breeding at the level of localities. 50% of all ulus farms are tribal. Personal communication with rural worker revealed the orientation of the farms directly to the labor process, which is responsible for ensuring: a) rural employment; b) a rational interaction of humans and the environment; c) reproduction of ethnicity, languages, traditions and indigenous way of life of the peoples of Yakutia.

The systematization of empirical findings of field surveys 2004–2015 let us formulate some approaches. The traditional way of life is a unique historical phenomenon, economic lifestyle of indigenous peoples of the area consists of three main levels of understanding: rural lifestyle of the indigenous population; the specificity of the traditional economy in modern conditions; the nature of maintaining the traditional economic occupations of the indigenous population. The development of adaptation strategies of the traditional economy of the indigenous population is based on

conditional division of the following constantly interacting components: spiritual or ethnic-historical, implemented or public; subjective or personal evaluation. We identified three classifications: by the level (regional, district, local), by specialization, by the types of agricultural producers, the types of workers/leaders of households.

In general, despite social and economic turmoil of the 1990s — beginning of 2000s, the place and role of traditional households in the economy of the Republic of Sakha (Yakutia) is only as farmers. Field studies allow asserting that the commitment of rural workers to traditional occupations is determined by the greater system of basic values and preservation of the cultural traditions of economic life.

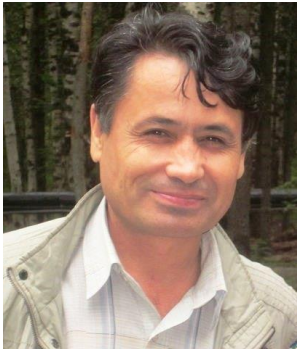
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The study of public opinion on industrial mining in the Nefteyugansk district of Yugra



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Abstract. In this article, we consider the views of respondents on the industrial development of mineral deposits on the example of the Nefteyugansky district, Yugra. The analysis of views regarding the development of mineral deposits represents a comparative sociological study. It summarizes the results of a poll

conducted in 2015 on the territory of Nefteyugansk district and earlier studies done in 2008 and 2012. The results of polls showed that most respondents had positive sentiments to the industrial mining. On the other hand, in contrast to 2008, in 2015, the proportion of people, who opposed the commercial development of mineral resources, got bigger. At the same time, most respondents believed that industrial mining resulted in environmental degradation of the area (district) of their residence.

Keywords: *industrial mining, public opinion, poll, environmental condition, respondents, small-numbered indigenous peoples of the North, experts, results of industrial mining*

The rapid growth and development of industrial facilities, new technologies, development of new mineral deposits, and creation of powerful industrial equipment represent a potential risk of industrial accidents and their negative consequences for human health and the environment.

This is because the deposits of mineral resources that meet the industry needs are mainly on the territories of traditional nature use (TTNU) of indigenous peoples of the North (IPN). The TTNU are generic lands, tribal (family) lands and grassland. Over the past 40–50 years in the district, there was a significant reduction in TTNU of the IPN. Their main traditional economic activities have trouble. It results in the deterioration of the social and economic situation of indigenous peoples, requiring a special attention now.

The uniqueness of the ecosystems of the North determines their special place in the system of national environmental interests. Therefore, the Northern areas are home of indigenous peoples and their system of environmental management. The ecological value of these territories is even more evident [1, Talkhigova M.S., pp. 385–388].

The industrial development of the subsoil of the Northern territories, especially the Khanty-Mansiysk Autonomous Okrug — Yugra, its economic, environmental and social aspects are explored in the works of V.G. Loginov, V.V. Balashenko [2], V.G. Loginov, F.V. Melnikov [3], N.I. Novikov [4], S.Kh. Khaknazarov [5; 6] etc. Let us note that an important milestone in the history that lead up to the next change of emphasis in national policy was the discovery of the richest oil and gas fields, coal

and diamonds in the remote areas. The departmental approach in the development of natural resources in 1960–1980 years, had determined the guiding principle of natural resource development. Its essence lies in the disregard of the protection of the environment and culture of indigenous peoples of the North. “Arrangement” the North took the form of predatory exploitation of its mineral and other resources.

Brief description of the study area

Geographically, the Nefteyugansk district is in the central part of the Khanty-Mansi Autonomous District — Yugra (KMADY) and in the middle reaches of the Ob River, within the forest and swamp zone of the West Siberian lowland. Its territory is 24.5 km². On the territory of the Nefteyugansk district, there are 11 settlements. They are home to 45.9 thous people, incl. little more than 480 indigenous people — the Khanty and the Mansi⁷. According to the Department of natural resources and non-commodity sector of Yugra, the district has 33 territories of traditional nature use (tribal lands, communities) of indigenous peoples, with a total area of 121 7140 hectares. The areas are home to 39 indigenous families (280 people). Their main activities are hunting, fishing, harvesting.

The area has a convenient and developed transport system: aviation, railway, water and road transport. The car road connected the area with the other district centers and settlements with paved roads. Dynamic economic development, active construction, and developed transport make it one of the most affluent areas of the KMADY.

The economy of the district is based on enterprises of the energy complex, e.g. “Yuganskneftegaz”, Salym petroleum development NV, OJSC “Surgutneftegas” and others. The most important fields are the Mamontovskoe, Pravdinskoe, Uzhno-Surgutskoye, Malo-Balykskoye, Ust-Balykskoye, etc. Pumping oil to refineries is a job for the OJSC “Sibnefteprovod” of the Control of Oil Pipelines. Forest processing industry is also developed in the Autonomous District, along with the oil industry. Its volume ranked second in Russia. Currently, there are four large timber developing and wood processing mills in the Autonomous District. All the autonomous district’s wood export amounts to more than 7 million m³.

Pollution of air on the territory of Nefteyugansk district is mainly determined by local sources and to a smaller degree — it is a transfer from the other areas. The main causes of air pollution are emissions from industry, burning of associated petroleum gas in flares, evaporation of light fractions

⁷Obshhie svedeniya o korennyh narodah [General information about indigenous peoples] URL: <http://www.admoil.ru/index.php/korennye-narody-severa/obshchie-svedeniya> (Accessed: 19 July 2016) [in Russian].

of hydrocarbons from the surface of oil spills, sludge pits, storage tanks of oil and exhaust gases of transport.

According to the “Report on the environmental situation...”⁸ in 2014, emissions of harmful substances (pollutants) into the atmosphere was 1,466.81 thous tons, including:

- solid pollutants — 56.90 thous tons (or 3.9%);
- gaseous and liquid pollutants — 1 409.91 thous tons (96.1%).

In 2013, emissions were 1 866. 16 thous tons. The share of solid pollutants was 4.5% (83.102 thous tons), and gaseous and liquid pollutants — 95.5 % (1,783.058 thous tons). Among the 23 municipalities of the Autonomous District, the largest air pollution is consistently accounted for Nizhnevartovsk, Surgut, Nefteyugansk and Khanty-Mansiysk districts. In 2014 their share accounted for 73.9% of all emissions (2013 — 74.0% and in 2012 — 78.1%).

According to data provided by oil and gas companies in 2014, the oil fields of the Autonomous District had 2,538 spills associated with extraction of hydrocarbons. 1,345 of incidents happened on pipelines, 1,159 — water supply system, 34 — gas pipelines. The main reason for emergency is corrosion — 2,457 cases (97%)⁹.

Assessment of the situation and the effect of the oil companies involved in production on the territory of the Autonomous District shows that, as in previous years, the highest number incidents are the oil companies on the territory of Nefteyugansk district. They are OJSC “NK Rosneft” — 2,307 or 91% of the total number of incidents on oil pipelines and water supply system and JSC “Tomskneft VNK” — 67 or 2.6% of the total number of accidents. The largest area of contaminated land¹⁰ are the lands of JSC “RN-Yuganskneftegaz” (OJSC “NK “Rosneft”) — 2,055 ha, accounting for 46.7% of all the contaminated land.

Administratively, the highest accident rates are in Nefteyugansk (57.8%), Nizhnevartovsk (28.7%), Khanty-Mansiysk (7.4%) and Surgut (5.1%). For the second year, the Khanty-Mansiysk is the third — 189 accidents, it is “ahead” of Surgut — 131 accidents (incl. data on accidents on gas pipelines).

Next, we turn to the generalization of the sociological survey results about study. In 2015, the staff of the Ob-Ugric Institute of Applied Research and Development (Khanty-Mansiysk) held

⁸ Doklad ob ekologicheskoy situatsii v Khanty-Mansiyskom avtonomnom okruge — Yugre v 2014 godu [The report on the environmental situation in the Khanty-Mansi Autonomous District — YYugra in 2014.]. URL: <http://prirodnadzor.admhmao.ru/doklady-i-otchyety/doklad-ob-ekologicheskoy-situatsii-v-khanty-mansiyskom-avtonomnom-okruge-yugre/vlozheniya/373983/> (Accessed: 20 July 2016) [in Russian].

⁹ Doklad ob ekologicheskoy situatsii v Khanty-Mansiyskom avtonomnom okruge — Yugre v 2015 godu [The report on the environmental situation in the Khanty-Mansi Autonomous District — YYugra in 2015.]. URL: <http://www.prirodnadzor.admhmao.ru/upload/iblock/b76/doklad-2015.pdf> (Accessed: 20 July 2016) [in Russian].

¹⁰ Ibid.

ethnic and sociological¹¹ research on the territory of Nefteyugansk district of Yugra to study current environmental and socio-economic status of indigenous peoples there. Sociological survey took place in the following settlements: Cheuskino, Lempino and Salym of the Nefteyugansk district of the Khanty-Mansiysk Autonomous District-Yugra. 73 respondents answered the questions about their attitudes to the resource extraction and processing industry.

During the studies we needed to know the attitudes of the respondents to the industrial development of the subsoil and its results on the territory of Khanty-Mansi Autonomous Okrug — Yugra.

Answering the question: *“How do You feel about mining in our region?”* a relative majority of respondents from the Nefteyugansk district had a positive attitude (41.1%). Negative and indifferent to the industrial development were 35.6% and 17.8%, respectively (tab. 1). Only 5.5% of the respondents found it difficult to answer.

Table 1

*The distribution of respondents' answers to the question:
“How do you feel about the fact that deposits of minerals are in the area/district of your residence?”*

<i>The response options</i>	<i>Number of respondents</i>	<i>% of respondents</i>
Positive	30	41.1
Negative	26	35.6
Indifferent	13	17.8
Undecided	4	5.5
Total	73	100.0

In contrast to 2008, in 2015, the proportion of persons who had a negative attitude industrial subsoil development is higher (27.15% in 2008 and 35.6% in 2015). Even though over the past 40–50 years, in the district, a significant reduction of the TTNU of the indigenous peoples of the North occurred and affected the major traditional economic activities, most respondents still have a positive attitude to the commercial development of mineral resources.

To determine the cause of these answers, we tried to clarify: *“If it's positive, why?”*. The information we got is in the table. 2.

¹¹The main method of research: a questionnaire. The survey was conducted through a questionnaire directly at the respondents' place of residence. Dates: June–July 2015. Population of the area: 289 indigenous representatives (over 18 years) of the district. A sample size of 73 respondents. Confidence probability 90%. The response rate — 25.25%. The confidence interval (“error” $\pm\%$) — 7.24%. The number of selection steps — single-stage sampling. The sample was a quota of representation by age, nationality and district of residence. Leader of the research — the author. An empirical survey was held in 2015 by the author. Processing of results using Excel and Vortex — scientific staff of the Division for Socio-Economic Development and Monitoring: V.T. Karamzin and N.V. Tkachuk.

Table 2

*The distribution of respondents' answers to the question: "If positive, why?"
(Respondents could select no more than 3 acceptable options)*

<i>The response options</i>	<i>Number of respondents</i>	<i>% of respondents</i>
It is beneficial for the economy of the country	18	24.7
This is beneficial for the economy of the district (area)	20	27.4
It helps the improvement and development of social infrastructure of the district	12	16.4
New jobs are created	26	35.6
Other	2	2.7
Undecided	34	46.6
Total	73	100.0

Data from the table 2 makes it clear that most respondents (35.6%) believed the development of mineral resources helped to create jobs. A third of respondents (27.4 %) believed that it was beneficial for the economy of the region (the surrounding areas). A minority (16.4 %) of the respondents supported the idea that the results of the industrial development of the subsoil contributed to the improvement and development of social infrastructure in the region. 24.7% of respondents believed that it was beneficial for the economy of the country. This data suggests that the economic issues (tab. 2) are much more important than environmental issues (tab. 3) for the respondents.

For comparison, we noted that the results of a survey conducted in 2013 on the territory of Nizhnevartovsk district revealed the similar opinions. In the respondents' view: the resource development industry creates new jobs — 64.7%; it helps to improve and develop the social infrastructure of the area — 50.0%; it is beneficial for the economy of the region (surrounding area) — 43,1%; it is advantageous for the economy of the country — 34.3% [5, Khaknazarov S.Kh., pp. 227–236]. In the context of the topic, it is important to have a look at respondents' assessment of the ecological status of the area. The views of respondents on what is happening in the industrial development of the subsoil are in tab. 3.

Table 3

*The distribution of respondents' answers to the question:
"Do you agree that a result of industrial development is ...?"*

<i>The response options</i>	<i>Number of respondents</i>	<i>% of respondents</i>
Worsening of the environmental condition in your area (district)	55	75.3
Improvement of the ecology of the area (district)	5	6.8
Causing the displacement of the indigenous population from the territory of residence	25	34.2
Other	2	2.7
Undecided	6	8.2
Total	73	100.0

The tab. 3 shows that the majority (75.3%) of respondents of the Nefteyugansk district noted that worsening of ecology is a result of industrial development. On the second place, there is the idea that the displacement of indigenous peoples and the degradation of their culture (34.2%) are the result of industrial development. Only 6.8% of the respondents noted that the industrial development contributed to the improvement of the ecology of the area (district) of their residence.

According to the results of the study completed in 2006–2008, a significant majority of respondents — representatives of indigenous communities and experts of the Nefteyugansk district also noted that the industrial development resulted in a worsening of ecology in the area (60.00% and 69.02% respectively). Unlike the experts, the respondents from the indigenous communities of the North put second the option that industrial development caused displacement of the indigenous population and the degradation of culture (30,77% and 24,51%, respectively) [5, Khaknazarov S.Kh., pp. 227–236; 6, Khaknazarov S.Kh., pp. 6–21]. According to the results of the survey made in 2012, most indigenous respondents (50%) of the Nefteyugansk district also noted that the industrial development resulted in a worsening of ecology. This indicator is accounted for 69.0% in 2008. 27.8% (6.77%)¹² respondents believed that industrial development would improve the ecology of the area and 25.9 % (15.59%) of respondents believed that the displacement of the indigenous population was taking place. The data in brackets proves that reduction of the two last indicators. This parameter was only 6.8% in 2015.

For comparison, the results of the previous surveys in other regions of Yugra: 81% of respondents from the Kondinskiy, 74% — from the Khanty-Mansi, 56% from the Oktyabrskogo and 61% from Nizhnevartovsk districts expressed the view that the industrial development of the subsoil resulted in a worsening of ecology. As we can see, most respondents chose this opinion. Some respondents noted the displacement of the indigenous population and degradation of indigenous culture (31% in Kondinskiy, 41% in Oktyabrskiy, 47% in Khanty-Mansi and 35% in Nizhnevartovsk districts) [6, Khaknazarov S.Kh., pp. 6–21]. During the study, we got answers to the question: “How do you assess the current ecological situation in the area?” They are in the tab. 4.

Table 4

*The distribution of respondents' answers to the question:
"How do you assess the current ecological situation in the area?"*

<i>The response options</i>	<i>Number of respondents</i>	<i>% of respondents</i>
Satisfactory	27	37.0
Unsatisfactory	29	39.7
Indifferent	8	11.0
Undecided	9	12.3
Total	73	100.0

¹² The data for the year 2008 is in brackets

The table 4 proves that most of the respondents noted the unsatisfactory ecological situation in the area (39.7%). 37.0% consider it satisfactory, and 11.0% of the respondents did not assess the current ecology. In addition, according to the results of a survey completed in 2012, most respondents (55.6%) considered the ecological situation unsatisfactory [6, Khaknazarov S.Kh., pp. 6–21], whereas 33.3% said it was satisfactory. 7.4% of the respondents could not assess the ecology of the areas. It is important to note that the views of the respondents on this issue had not changed, i.e., most of the respondents felt that the environmental situation is unsatisfactory.

Answering the question (2015): *“How do you assess the environment in your residence?”* most respondents (52.1%) considered it unsatisfactory. 38.4% of respondents said it was satisfactory. 9.6% of respondents found it difficult to answer (Fig. 1).

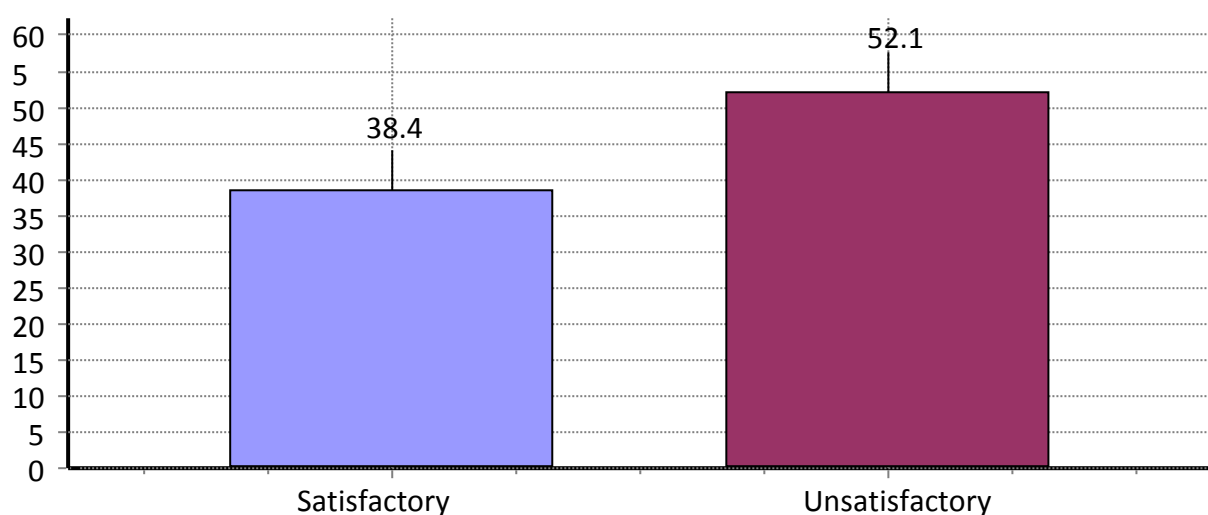


Figure 1. Distribution of answers to the question:
“How do you assess the environment in your residence?”
 (n=73) %, 2015¹³

Speaking on this matter, we noted the results of the previous survey made in 2012, when most respondents (61.1%) had also found their local environment unsatisfactory. However, 33.3% of the respondents found it satisfactory (Fig. 2).

¹³ This question has not been considered before.

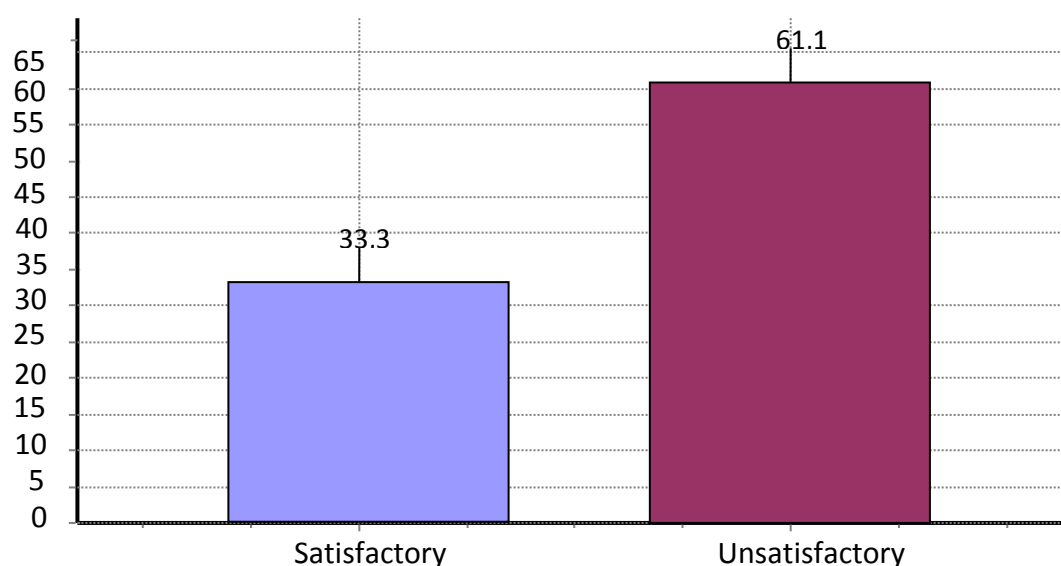


Figure 2. Distribution of answers to the question:
 “How do you assess the environment in your residence?”
 (n = 54) %, 2012

To find out the reasons for the unsatisfactory rating, we added the question: “And if it is unsatisfactory, explain why?” The respondents’ answers were distributed as follows (Fig. 3): pollution of rivers and water bodies — 79.6%; drying of forests and their cut down — 42.6 %; reduced number of animals, birds and fish — 38.9%; pollution of air — 26.9%; reduction of lands and pastures, etc. — 16.7%.

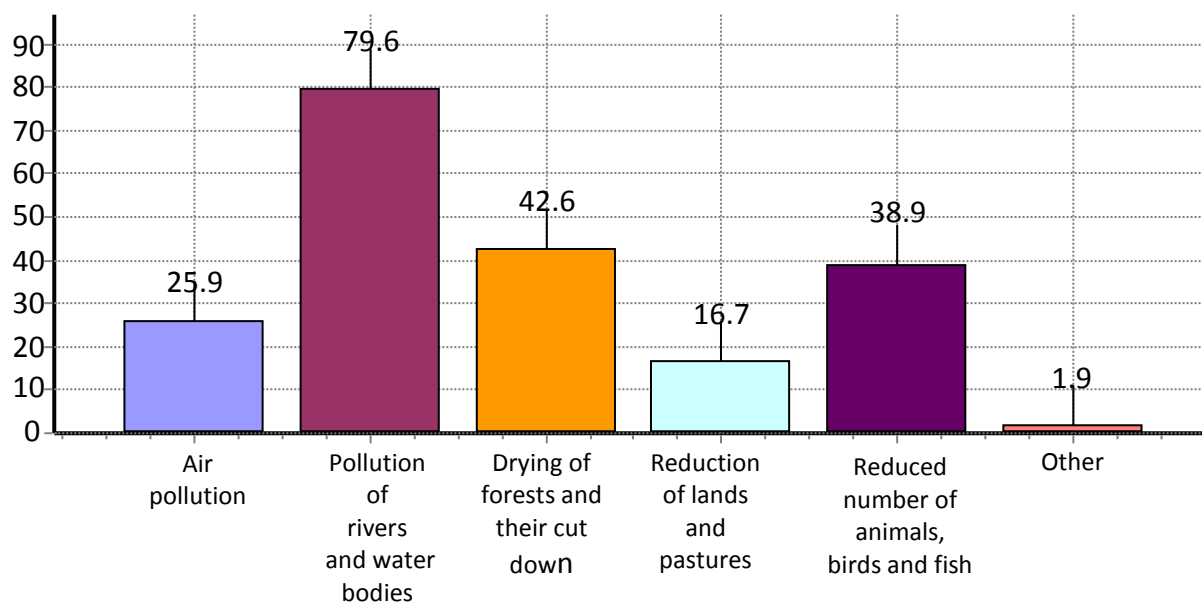


Figure 3. Distribution of answers to the question:
 “And if it is unsatisfactory, explain why?”
 (n = 54) %, 2012.

Answering the question: “What are the main polluters of the environment in your residence?” almost all respondents noted that the main polluters are: 1) oil and gas industry (59.3%); 2)

transport (25.9) and private companies (25.9%); 3) municipal utilities (14.8%); 4) fish processing (5.6%). 11.1% of respondents found it difficult to answer.

Turning to the issue of participation of indigenous representatives in environmental or other expertise, in the development of federal and regional state programs of natural resource use and environmental protection, we noted that most respondents (55.6%) answered that they had not taken part in it. 35.2% of the respondents believed that the indigenous peoples participated.

Conclusion

The residents of the Nefteyugansk district feel different about the consequences of industrial development of minerals. Most respondents from the district have positive attitude to the development of mineral deposits, arguing that the development of mineral resources helps to create jobs, and it is beneficial for the economy of the area (district).

At the same time, most respondents believe that industrial development of the subsoil still results in a worsening of ecology of the area (district) of residence, displacement of the indigenous people from the territory of their residence and degradation of their culture.

Most respondents also noted that resource extraction and processing industry pollutes rivers and water bodies, contributes to drying up of forests and cut down, reduces the number of animals, birds and fish and pollutes the air, etc.

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REVIEWS

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Tourism in the northern dimension (Some results of the Ninth International Congress on Arctic Social Sciences)¹



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Abstract. The article presents the summary of the Ninth International Congress of Arctic Social Sciences. The authors focus on the key issues of tourism development in the Arctic and Subarctic regions, such as sustainability, involvement of local people and climate change. The conference reveals how research in the field of tourism is based on multidisciplinary approaches combining economics, sociology, history and meteorology. Another part of this review is dedicated to the definitions and nature of ecotourism, its development and history in the national parks of Finland and the Republic of Karelia. National parks Koli and Paanajärvi were taken as case studies of ecotourism development.

Keywords: *ecotourism, Koli, Paanajärvi, Hannukainen, Svalbard, sustainable development, national park*

The 9th International Congress on Arctic Social Sciences (ICASS IX) was held in June this year in the Swedish town of Umeå. Reputable international forum has already become traditional. This year it brought together more than 800 participants from all over the world. 22 scientific sessions, organized at the University of Umeå, were devoted to various problems of the Arctic and sub-Arctic areas: history and literature, art and culture, indigenous people and religion, international relations and education. The International Arctic Social Sciences Association General Assembly was also held within the framework of the Congress. It elected the new President — Andrey Petrov, University of Northern Iowa. The next Congress 2020 is going to be held in the first Russian university selected — the Northern (Arctic) Federal University, Arkhangelsk, Russia.

The problems of tourism in the Arctic and sub-Arctic were discussed in a separate session, where the 19 specialists took the floor. In the focus of their speeches was the development of territories, climate change and its impact on the tourism, limits of growth and opportunities for the ecotourism. One of the key issues was subsequently discussed in the framework of the final discussion. It was the sustainable development of tourism in the Arctic. Mostly it was about Svalbard, which was the subject of a half of all reports. E.g., Alix Varnajot noted the plans of the archipelago's authorities to double the number of people employed in tourism by 2025. This could

¹ The research was done within the framework of the Green Zone Project with the support of the Kone Foundation.

mean a tripling of the number of tourists. "Will the fragile Arctic environment be ready to such changes?" — asked the speaker.

One of the leaders of the session — Pat Maher, Cape Breton University, drew the participants' attention to the problem of cruise ships. Simultaneous landing of several thousand people on the archipelago does not allow its infrastructure to cope with such a number of visitors, and its ecosystems experience a great load. Another question is how beneficial are cruise ships that visit the archipelago for a few hours. In this case principal cash flows go around Svalbard.

The growing interest towards the Arctic and Svalbard in particular can be traced in the geography of the participants of the session: in addition to the countries of Northern Europe, Russia, the USA and Canada, two researchers represented the Polish universities (University of Silesia, Cracow University of Economics), once again confirming the interest of Poland in polar research.

Interdisciplinary approach that combines meteorology, social and economic research under the development of tourism at the ski resorts were proposed by the group of Turkish scholars and presented at the Congress by Cenk O. Demiroglu. The method, earlier tested in Turkey, Slovakia and Bulgaria, summed up the results of a study made in Sweden. Using the data of meteorological observations (snow depth, snow type, minimum and maximum temperatures, avalanche danger and the number of the descended avalanches), as well as the economic performance of the resorts (the average length of stay, number of person-night,s average expenditure), the researchers offered recommendations for the duration of the season. Depending on the type of hotel (budget, network, and Suite), a group of researchers calculated the number of profitable days for each type, thereby putting into question the classical 100-day formula for the duration of the ski resorts season.

Mikko Jokinen, Natural Resources Institute Finland, had a report on the iron ore deposits near the town of Hannukainen in Lapland. Active use of the fields since the 1960s led to economic and social changes in the community. "Late" industrialization forced the local population to stop their traditional occupations: reindeer husbandry, lumbering and agriculture in favor of working on the ore deposits. Thus, after several decades not only a new economic structure appeared, but also a modern industrial image of the village, and a new generation that identifies itself with this image.

At the turn of 1980s–1990s of the iron deposits were closed, and Hannukainen experienced severe economic and social crisis, the output of which was the development of tourism. The nature of Lapland, Ylläs Ski Resort and National Park of Pallas-Yllästunturi in 20 km North-East from the village allowed to rebuild the economy of Hannukainen. Currently, 50% of the income comes from tourism.

The history of the Hannukainen mines continued 10 years ago with the plans for its reorganization. This news were supported by the locals, particularly by those who had identified themselves with the industrial image of the village. On the other hand, the mining, located just 8 km from the ski resort, threatens the tourism in the area. Discussion is still not over. It has splited the local community of Hannukainen and nearby villages on the supporters and opponents of mining. Unexpected solution would be the development of geological tourism and the transformation of the deposit into a tourist place. However, this is unlikely and the field is now being prepared for the full operation. The M. Jokinen's study aimed at analysing the conflict is going on as well.

The first part of the Jani Karhu's speech was devoted to the working group of the "Green Zone Project" 2017–2020. The project is supported by the Kone Foundation and is being done at the Historical-Geographical faculty of the University of Eastern Finland. Its leader and inspirer is Professor Maria Lahteenmaki. The project uses the pronicles of history and geography and explores historical routes and places, and national parks included in the Green Belt of Fennoscandia. The research team consists of four people: Oona Ilmolahti considers the cultural heritage of the historical routes and places; Jani Karhu and Alexander Osipov explore the history of the ecological tourism on both sides of the Russian-Finnish border and Maria Lahteenmaki examines the history of Pechenga.

The second part of the report began with a short introduction of the problems of ecotourism on the example of Koli National Park: contradictions in its creation and development as well as existing challenges and opportunities for growth. Ecotourism is one of the fastest growing sectors of the international economy. Tourists and travelers are more attracted by the environment, historical places, heritage and culture. Strong pull factors are also interactive activities and the involvement of local cultures. However, the definition of ecotourism remains controversial since the emergence of the debate in the 1970s.

The major problems of the concept "ecotourism" relate to its definition: what is sustainable, what is tourism, how to evaluate the pros and cons of tourism. The discussion concerns the phenomenon is also reflected in the name of ecotourism, in an effort to develop a new definition: responsible tourism, fair tourism, sustainable tourism, etc.

Tourism in Koli National Park has a long tradition rooted in the late 19th century, but the Park itself was founded only in 1991. Before that, the tourism in Koli had little in common with true ecological tourism. Its development was promoted by numerous photographs and drawings, representing the view from the Ukko-Koli peak to the lake and became extremely popular in the late

19th century. A regular visit to Koli that time meant a quick ascent to the mountain and a cup of coffee on its top and nothing more.

In winter, tourism in Koli was focused around the skiing complex. Some plans for its expansion came in the 1980s simultaneously with the proposal to establish a National Park. That period many of the locals supported the extension of the skiing complex and hotel, and opposed the establishment of the National Park, fearing that it could hinder the development of the territory. Discussion continued until 1991, when the skiing complex and the hotel suddenly became a part of the National Park. The operation of the hotel and the development of sports tourism was confirmed by the agreement and long-term lease contract; however, opening of the National Park killed all the plans to expand the complex.

After that, ecological tourism developed in Koli. The Park has a network of routes and a guide for tourists. The rich cultural history of the territory is perfect for tourism. Some old homesteads and other sites of cultural history experienced restoration to attract tourists. We can say that the Koli National Park and its nature provide great potential for the development of the nature and historical tourism. Natural resources for tourism there are truly endless.

Key issues for the development of nature tourism in Koli are the identification of opportunities and their subsequent use. Currently, old controversies related to the environment have become relevant again: environmental potential is on the one hand and brittleness — on the other. Thus tourism, presenting opportunities for the development of territory, can cause harm.

Another problem is to establish effective and sustainable cooperation. The successful operation of the National Park, the hotel and skiing complex, as well as local small businesses depends on the close cooperation. Tourism in Koli is seasonal and risky for small businesses, which represents additional risks for the local entrepreneurs.

The Koli area and its surroundings, e.g., Ruona offer great opportunities for businesses. Existing companies demonstrate the commercialization of nature-based tourism and its success in the market. Enterprises operating in the Park, adhere to the principles of sustainable tourism, one of which is the development while maintaining balance. The key issues of natural tourism: where does sustainability starts and ends, how to maintain a balance, who should get most of the benefits of growth?

Alexander Osipov's speech continued the theme opened by Jani Karhu. That time it was about the development of ecotourism on the territory of the Republic of Karelia in the framework of the Paanajärvi National Park in the North of Karelia. Before the end of the WWII, the area had been a part of Finland. In the 1930s it was a popular tourist destination. On the shores of the lake

Paanajärvi, there were several dozen peasant households, engaged not only in typical farming and fishing, but also in tourism. A Finnish artist Akseli Gallen-Kallela painted several works at Paanajärvi and made this area famous.

The territory of Paanajärvi is also known as “Finnish Switzerland”. It accommodated several thousand tourists a year before the war. After the WWII, the new boundary line ran West of the lake and the frontier status of the territory forbade any economic activity, unwittingly acting as means of preserving the environment for several decades. At the end of the 1980s, there were several purposes for this site. One of the projects was to create a Europe's largest pumped storage plant, which would lead to a serious damage for Paanajärvi ecosystems. After the intervention of the press, scientists and the public rejected the project.

The development of sports tourism in Paanajärvi was a subject of a three-year debate in the press. The project, developed by Finnish entrepreneurs was to build a skiing complex on the largest mountain in Karelia — Nuorunen mountain. However, the economic efficiency of the complex was deemed insufficient for the Republic, which supported the alternative use of the territory, proposed by scientists of the Karelian branch of the USSR Academy of Science. It was about the creation of the National Park. Its territory would include the lake Paanajärvi and the mountain of Nuorunen. The establishment of the Park in 1992 contributed to the preservation of the Paanajärvi unique ecosystems and, on the other hand, allowed to develop ecotourism.

However, winning scientists and the public could not solve the main problems: the lack of infrastructure and experience and low funding. In addition, the National Park had a negative impact on Pyaozerskiy village, located 60 km South of Paanajärvi. The village, built with the participation of Finnish firms in the 1970s, was conceived as one of the forestry centers in the Louhskiy District of the Republic of Karelia. The existence of the National Park means the stop of logging in the large areas owned by the timber companies before.

In the first years, the results of tourism were modest: in 1993 it was visited by less than a hundred people, and in 1996 — less than a thousand. The main efforts were directed to the study of ecosystems, development of routes, construction parking and guest houses and the increase in staff. A new impulse for development of the Park gave TACIS program (Technical Assistance for the Commonwealth of Independent States). It first began in 1996. The European funding was a panacea and solution to all possible problems of the Park.

Indeed, several projects were implemented in the Republic of Karelia together with the Finnish Environment Institute and Natural Resources Institute. The support of scientists of both countries helped to create the National Park's infrastructure and change the situation for the

Pyaozerskiy village. In 2002, TACIS helped to build a visitor center there. Later became a cultural center of the Louhskiy District. Expectations were too high. In 2010, the Park expected 35,000 tourists, while the figure was around 6,000 people. For comparison, Oulanka National Park, which constitutes a single biological system with Paanajärvi and is separated from it only by the border, hosts about 300,000 tourists a year. On the other hand, the statistics of visits allows us to speak about the minimal impact on nature, which meets the requirements of ecotourism. The Park infrastructure and calculation of its capacity involve the admission of 50 000 tourists per year, but the commercialization of ecotourism inevitably brings us back to the problem of sustainable development.

The final discussion of the session for the tourism focused on the key issues identified during the conference. They discussed sustainable development and the mechanisms of its regulation, problems the Arctic and subarctic residents and ways of their solution. The growth of tourism had a serious impact on the environment and the indigenous population. However, the economy of local communities is not always the beneficiary of such activities. The conference demonstrated the relevance of various approaches to the study of tourism that emphasizes the interdisciplinary nature of this field of knowledge. On the other hand, the problems of the Arctic and subarctic are largely common to every resident, and their joint discussions at conferences of this kind helps to identify possible solutions.

In conclusion, it should also be noted that approximately one fourth of all participants of the Congress were presented by Russian universities and research centers. It means not only the growth of tourism in the Russian North, but also the increase in scientific interest to the problems of tourism. Therefore, the following, 10th International Congress on Arctic Social Sciences, NARFU in Arkhangelsk is very symbolic.

THE NINTH INTERNATIONAL CONGRESS ON ARCTIC SOCIAL SCIENCES

ICASS IX

June 8-12, 2017 | Umeå Sweden



IASSA
INTERNATIONAL ARCTIC SOCIAL
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The Second International Arctic Vegetation Archive and Classification Workshop, Prague, Czech Republic, 30–31 March 2017



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Polar-Alpine Botanical Garden-Institute named after N.A. Avrorin of KSC RAS, Kirovsk, Russia.

Abstract. Here we present a brief overview of events and presentations at the International Arctic Vegetation Archive and Classification Workshop, held in Prague, the capital of the Czech Republic, on 30–31 March 2017. The purpose of the workshop was to collect and process data about the Arctic vegetation. The data supposed to be presented in a standard format for subsequent classification and

analysis. Twenty-nine scientists from most of the Arctic states were among the participants of the workshop. They presented an overview of existing databases on vegetation, discussed the possibility of sharing and pooling of data as well as possible ways of classification for the pan-Arctic vegetation.

Keywords: *the Arctic, conference, classifications, databases, vegetation*

An objective assessment of the Arctic biodiversity and a significant increase in the effectiveness of its study require the creation and development of modern public information systems that manipulate biological data.

Despite the significant progress and achievements of information technologies in the science of vegetation, the proportion of geobotanical data bases for the Russian Arctic in the European and global resources is small as well as the number of published geobotanical descriptions. International cooperation and the creation of circumpolar databases and other information resources is of great importance for the study of the Arctic biome. It was proved at a seminar on the study and classification of the Arctic vegetation on 30–31 March, Prague. The seminar took place in the building of the Czech Academy of Sciences. Financial and organizational support was provided by the International Arctic Science Committee (IASC), the National Aeronautics and Space Administration (NASA), the international organization Conservation of Arctic Flora and Fauna (CAFF) and the University of Alaska in Fairbanks. The seminar was attended by 29 specialists from the Arctic states: Canada, Norway, Russia and the United States, as well as from Germany, the Netherlands, Switzerland, the Czech Republic and Slovakia. Despite the small number of participants, the presentations and discussions of the seminar can be regarded as a slice of modern science on the Arctic vegetation. The main objectives of the seminar — discussion on creating a database (DB), geobotanical descriptions in the Arctic, necessary for the subsequent classification of the Arctic vegetation, and harmonization of North American and European approaches to the creation of such databases and the classification of vegetation.

The history of these conferences began in 1992, in Boulder, Colorado, the USA. The town hosted the first workshop on classification of the Arctic vegetation. Russia was represented by B.A. Yurtsev, N.V. Matveeva, V.Y. Razzhivin, A.E. Katenin (BIN named after V. L. Komarov of the Russian Academy of Sciences) and N. E. Koroleva (PABSI KSC RAS). The 1990s were a time of “discovery” of the science of vegetation of the former USSR for the West. Russian botanists actively traveled abroad. The Arctic became an area of intense international cooperation. Expeditions with the participation of scientists from different countries worked in marine and terrestrial ecosystems of the Russian and American Arctic. An extremely important achievement of this international scientific collaboration is the Circumpolar Arctic Vegetation Map (CAVM) [1]. Marilyn Walker (Boulder, USA) spoke about the first international workshops on the classification of the Arctic vegetation, the impact of the articles by B. A. Yurtsev on the scientific world and cooperation with Russian researchers during joint expeditions in the Arctic.

The organizer of the workshop Skip Walker (Fairbanks, USA) identified the main objectives: to get acquainted with European and Russian experience of creating databases of geobotanical descriptions and use them for the Arctic Vegetation Classification (AVC); to find out the current state of databases in each sector of the Arctic; to determine the possibility of integrating national databases in a unified all-Arctic database, which should be used for classifying vegetation and for the establishment of the Arctic prodromus of the known syntaxa. Also, S. Walker presented the database of Arctic Vegetation Archive (AVA-AK) for the American sector of the Arctic [2]. It includes more than 3000 descriptions of the 24 local bases of Alaska and Northern Canada. In addition, S. Walker analyzed the ratio of tundra habitats and known classes, orders and alliances of the Arctic Alaska.

Milan Chytrý (Brno, Czech Republic) told about the information system (IS) for storing and managing data on vegetation of Europe (European Vegetation Archive (EVA) URL: <http://euroveg.org/eva-database>) as the basis for the review of the European vegetation. The EVA has been collected since 2014 and now it includes more than 1.3 million geobotanical descriptions of about 70 national and local databases. Special attention was paid to the possible links between the EVA and the AVA databases, since the Arctic vegetation is still poorly represented in the basis of EVA, suggesting the need for cooperation between the two projects. Work on creating the EVA database of descriptions was closely associated with another European project — the creation and publication of a hierarchical classification of the European vegetation — EuroVegChecklist [3], which took 15 years of intensive work and cooperation of the most authoritative experts-geobotanists from 16 countries.

Stephan Hennekens (Wageningen University, the Netherlands) talked about the third version of the Turboveg v3 (URL: <http://euroveg.org/download/eva-rules.pdf>). This program is the basis for the IS of the EVA and is used by many Russian geobotanists for storage and processing of geobotanical data. An updated third version of the program will allow to choose data for processing in other programs and formats such as JUICE, GIS and Excel, and edit it, e.g., using the Google Maps.

Software issue were continued by the report of Lubomir Tichý (Brno, Czech Republic) and co-authors on the functions of formal classifications in the JUICE (<http://www.sci.muni.cz/botany/juice/>), which can be useful in the classification of vegetation at any level of the hierarchy. It is based on automation of selection and definition of plant communities [4].

The report of the manager of the vegetation database project AVA-AK Amy Breen (Fairbanks, USA) and her co-authors contain a detailed description of the database, which was created in response to the requirement of time regarding the needs of inventory of the vegetation and environment in the industrial development of the American sector of the Arctic and global climate change [5]. Another important reason was the need of digitization and preservation of existing data on vegetation, which might otherwise be lost. The basis for the AVA-AK is a joint pan-Arctic database of vascular plants, mosses, liverworts and lichen, the software Turboveg and the necessary mapping information. In addition to data on vegetation, each geobotanical descriptions has information on the location, a detailed description of the conditions and anthropogenic impact. The AVA-AK is partly incorporated into the national US database of geobotanical data VegBank (URL: <http://vegbank.org/vegbank/index.jsp>).

The report of William MacKenzie (Smithers, Canada) was the Geobioclimate Ecosystem Classification (BEC). This approach to the classification of vegetation was developed by prominent Canadian geobotanist, an immigrant from Czechoslovakia, Vladimir Krajina for the forests of British Columbia. Essentially, it includes ecological and floristic classification of plant communities, classification of habitat types and identification of the zonal situation, based on the composition and structure of vegetation. All three methodologies are integrated into a single system that is currently used in forestry in two Canadian states, and was tested for classification of tundra vegetation of the Yukon [5].

The report of this author and the group of authors considered the possible contribution of Canada to AVA, which, made up almost 7.4 thous published and unpublished descriptions from the Canadian Arctic Vegetation Archive (CAVA), made with varying degrees of accuracy and completeness for the tundra areas of Canada.

Fred Daniëls and Helga Bültmann (Münster, Germany) spoke about the process of inclusion of geobotanical descriptions of Greenland into AVA (over 4,000 descriptions). They noted that the main issue is the compatibility of data on the habitat from different territories of the Arctic and the necessity of digitizing the descriptions from unpublished sources (master and PhD thesis) and the literature. The authors emphasize that the nomenclature of syntaxa types should be in the database.

Two reports were made in the format of a syntaxonomic overview of the position single territories of the Arctic: Dietbert Thannheiser (Hamburg, Germany) presented prodromus of the Arctic tundra — the Islands of the Canadian Arctic, analyzed changes in the composition and condition of the communities for two decades (1986 and 2014). D. Thannheiser and Lennart Nilsen (Tromsø, Norway) spoke about the syntaxonomy Arctic tundra of the Svalbard archipelago, including the Bear island and Jan Mayen.

Robert Peet (Chapel Hill, USA) presented his report via Skype. He spoke about the US database of plant communities' descriptions — VegBank (URL: <http://vegbank.org/vegbank/index.jsp>) and the US National classification of the vegetation, which includes 8 levels of hierarchy. As a criterion for selection they use species composition, structure, and appearance (physiognomy) of the community. All the details are set out in the national standard classification of vegetation (URL: <http://usnvc.org/data-standard/>).

The analysis of the current level of geobotanical exploration in the Russian Arctic and potential contribution of Russia in AVA was made by N.V. Matveeva (St. Petersburg, Russia) and 11 co-authors. It showed that the amount of data collected and processed in accordance with the Braun-Blanquet methodology possible to be included in the Arctic database. It is estimated at approximately 5,000 published geobotanical descriptions. N.V. Matveeva presented the history of the geobotanical research in the Russian Arctic (studies made by V.N. Andreeva, V.D. Alexandrova, A.A., Dedov, B.N. Gorodkov and others) also needed to be included in the circumpolar database. Also, she presented the preliminary prodromus of the Arctic vegetation, which includes 130 associations in 35 units, 21 orders and 19 classes. The speaker lamented the fact that a significant part of valuable information about the Arctic vegetation had not been published, was hidden in the field diaries, and the bigger part of the field herbarium of bryophytes and lichens needed descriptions and definitions. All this greatly complicated the inclusion of available information on vegetation in the Russian Arctic in the local, national and circumpolar databases.

Jozef Šibík (Bratislava, Slovakia) reported on the results of the classification of Alaska vegetation, based on descriptions from the AVA-AK, which were processed using the Detrended Correspondence Analysis (DCA), JUICE and PC-Ord for the interpretation of the syntaxa hierarchy.

The report of Olga Khitun (St. Petersburg, Russia) and co-authors included the compilation and analysis of extensive data on local floras in the Russian Arctic and their relations with AVA database. The lists of local floras may not be included in the database of geobotanical descriptions. However, account for all the species composition in the study of local floras and a well-developed methodological analytical apparatus makes the data extremely valuable for study of the zonal structure and biodiversity in the Arctic, monitoring rare species and biologically valuable habitat types.

In addition, the seminar presented poster presentations I. Lavrinenko, “Large-scale geobotanical mapping of the East European tundra”, and O. Lavrinenko et al. “Vegetation of the East European tundra: Classification and Database”.



Figure 1. The organizers of the workshop Skip Walker (Fairbanks, USA) and William MacKenzie (Smithers, Canada) discuss the content of the Arctic vegetation description database.

Perhaps, most of the time of the seminar was taken by the discussions about databases and classification of the Arctic vegetation during the round tables and panel discussions. Because of that, the participants of the seminar made the following decisions:

- 1) Promote the updating, and maintenance of the Panarctic Flora (PAF) and the Arctic lichen, moss, and hepatic checklists as a panarctic standard for plant nomenclature.
- 2) Develop a checklist of existing described Arctic vegetation habitat and vegetation types according the European Vegetation Classification approach (an Arctic prodromus).
- 3) Secure funds for completing the AVA and AVC.

- 4) Develop and use standardized plot-data collection and archiving methods modeled after the European Vegetation Archive and the Alaska Arctic Vegetation Archive.
- 5) Modify the existing vector-based Circumpolar Arctic Vegetation Map to a raster-based format with 12.5-km resolution, and incorporate modifications based on new knowledge.
- 6) Develop a funding strategy to complete the Circumboreal Vegetation Map (CBVM) and link it to the Circumpolar Arctic Vegetation Map (CAVM) with a revised treeline, and a raster format.
- 7) Work with the Arctic Data Center (ADC) to develop data-sharing methods and rules for Arctic vegetation data.
- 8) Facilitate and promote the application of AVA, AVC, CAVM, and CBVM to the Arctic research community, land managers, and policy makers.
- 9) Contribute to training a new generation of young professional Arctic botanists and vegetation scientists through international field courses at the University of the Arctic and the Association of Polar Early Career Scientists (APECS).
- 10) Meet again at Arctic Science Summit Week 2019 in Arkhangelsk, Russia.

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Figure 2. The participants of the Second Arctic Vegetation Archive and Classification Workshop 2017:

1 — Inger Greve Alsos (Museum, University of Tromsø, Norway); 2 — Amy Breen (University of Alaska, Fairbanks, USA); 3 — Helga Bültmann (University of Münster, Germany); 4 — Milan Chytrý (Masaryk University, Brno, Czech Republic); 5 — Fred Daniëls (University of Münster, Germany); 6 — Ksenia Ermokhina (Institute of Earth Cryosphere, Moscow); 7 — Shawnee Gowan (University of Alaska, Fairbanks, USA); 8 — Stephan Hennekens (University of Wageningen, the Netherlands); 9 — Maitane Iturrate (University of Zurich, Switzerland); 10 — Olga Khitun (Botanic Institute named after V. L. Komarov, St. Petersburg); 11 — Ilona Knolova (Masaryk University, Brno, Czech Republic); 12 — Natalia Kotoleva (Polar-Alpine Botanical garden-Institute, Kirovsk); 13 — Flavia Landucci (Masaryk University, Brno, Czech Republic); 14 — Olga Lavrinenko and 15 — Igor Lavrinenko (Botanic Institute named after V. L. Komarov, St. Petersburg, Russia); 16 — William MacKenzie (Ministry of forests, lands and natural resources, Smithers, Canada), 17 — Nadezhda Matveeva (Botanic Institute named after V. L. Komarov, St. Petersburg, Russia); 18 — Lennart Nielsen (University of Tromsø, Norway); 19 — Robert Peet (University of North Carolina, Chapel Hill, USA); 20 — Jana Peirce (University of Alaska, Fairbanks, USA); 21 — Tomáš Peterka (Masaryk University, Brno, Czech Republic); 22 — Gabriela Chapman-Strub (University of Zurich, Switzerland); 23 — Joop Schaminée (University of Wageningen, the Netherlands); 24 — Jozef Šibík (Slovak Academy of Sciences, Slovakia); 25 — Dietbert Tannhauser (University of Hamburg, Germany); 26 — Lubomir Tichý (Masaryk University, Brno, Czech Republic); 27 — Marilyn Walker (HOMER Energy, boulder, USA); 28 — Skip Walker (University of Alaska, Fairbanks, USA); 29 — Starri Heiðmarsson (Icelandic Institute of natural history, Akureyri, Iceland).

UDC 327+332+39+91+93/94

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The “Arctic Encyclopedia”: The Paulsen Publishing House has issued a fundamental work



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Abstract. Here we present a review of a two volume scientific work published in April 2017 by the Paulsen Publishing House — the “Arctic Encyclopedia”. The authors — 100 people from different fields of science — enabled the publisher to get a detailed coverage of geography, flora and fauna, climate, indigenous peoples of the Arctic, as well as international cooperation, social, economic and cultural development of the Arctic areas. This work is a fundamental one and deserves close attention from every person interested in the Arctic issues.

Keywords: *Arctic encyclopedia, Northern encyclopedia, the Arctic, North, Paulsen*

At the end of April 2017, the publishing house “Paulsen” issued a fundamental work in two volumes called “Arctic Encyclopedia”. It is redesigned, expanded and renewed “North Encyclopedia”, published in 2004 and which became the first book of the publishing house. For the past 13 years, the relevance of Arctic subjects has only increased.

The work on the “Arctic Encyclopedia” started in 2015. Originally the editors considered the possibility of the publication of articles about the Antarctic, but it was decided to focus on the Arctic only. This enabled more fully to illuminate different aspects of the history and present of the far North and the Polar areas. The ground for the encyclopedia was the “North Encyclopedia”, but there are important differences. So, if the 2004 edition presented the articles in alphabetical order, the new encyclopedia consists of 9 sections. The volume increased significantly with data on climate and international relations, not included in the “North Encyclopedia”. These topics are extremely important for understanding what is currently happening in the Arctic. The list of the sections available in the publication:

Volume I:

- Geographic objects;
- Vegetation, fauna, protection of nature;
- Climate and climate change;
- Nature;
- Indigenous people and minorities.

Volume II:

- Social and economic development;
- International relations and organizations;

- Culture, science, education, religion;
- History of research and development.

The first volume begins with a Preface written by Artur Chilingarov, Hero of Russia, first Vice-President of the Russian Geographical Society, and Frederik Paulsen, a Swedish businessman, adventurer and philanthropist, founder of the “Paulsen” publishing house.

One of the most extensive section of the “Encyclopedia” is the history of research and development of the Arctic. Here lies one of the differences of the edition from 2004: the development of the Arctic is now counted from the time of the Great Novgorod, not Pomors. Much attention is paid to the traditions and culture of Northern people, Arctic nature, environmental issues. Also, the edition includes information about Russian neighbors in the Arctic (“North Encyclopedia” had no information about them).

The new edition contains articles on well-known issues, such as the world's first atomic icebreaker “Lenin”, and some issues difficult to find any literature about. E.g., the volume I has an article with a title “Book publishing in the languages of the peoples of the North”, and in the volume II you can read about trading in the North of Russia, Arctic strategy of China and the Norwegian merchant Bjarni Herjólfsson, one of the first known discoverers of America.

In sum, the book consists of approximately 4,000 articles, about 1,400 pages with color tabs, maps, photographs and drawings. It contains over 200 black and white illustrations, as well as three blocks of color ones, dedicated to geography (maps), nature, clothing of indigenous peoples of the North. Each volume has an alphabetical index for easy search of articles and references.

More than 100 specialists from different institutes, branch research institutes, universities, museums, artists and photographers were involved in writing articles, editing and making photos and illustrations. Each section had its own scientific editor. The managing editor of the publication was Y.F. Lukin, Doctor of Historical Sciences, Professor, Founder and Editor-in-Chief (2010–2016) of the “Arctic and North” journal. The project leader — R.I. Neyaglova-Kolosova, General Director of the “Paulsen” publishing house.

The informational support of the “Arctic Encyclopedia” was provided by the Russian Geographical Society (RGS). During the RGS Board of Trustees Meeting in Saint-Petersburg on April 24, 2017 Mr. Paulsen gave two copies of the “Arctic Encyclopedia” to the President of the Russian Federation Vladimir Putin and President of the RGS Sergei Shoigu.

Examples of pages can be found on the website of the publisher.

Output:

Arctic Encyclopedia: in 2 volumes — supplemented and revised edition of the “North encyclopedia” / ed. by Y.F. Lukin. — M.: Publishing House “Paulsen”, 2017. V. 1 — 688 p., V. 2 — 664 p.: Illustrations, maps.

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КОНВЕНЦИЯ ООН ПО МОРСКОМУ ПРАВУ

К

ресам арктич. пятёрки. В этой связи Пекин надеется, что прибрежные страны СЛО при определении границ своего континентального шельфа будут принимать решения с учетом интересов междунар. сообщества и согласно основам междунар. морского права.

Концепция интернационализации Арктики в Китае стала одной из ведущих теоретических и стратегических разработок китайских ученых. Еще в 2010 г. китайский контр-адмирал Инь Чжо заявил, что «Арктика принадлежит всему миру, так что ни у одного народа нет над ней единоличной власти». Науч. сотрудник Шанхайского ин-та междунар. исслед-ний Чэном Баочжи: «Не могу представить, чтобы неарктич. гос-ва оставались пользователями арктич. морских маршрутов и потребителями энергоресурсов Арктики без возможности участия в процессе принятия решений, так что конец монополии циркумполярных держав в арктич. вопросах становится абсолютной необходимостью». Наряду с концепцией интернационализации, арктич. тема рассматривается китайскими учеными в рамках т.н. концепции геогр. близости Китая к арктич. зоне. Третья концепция, лежащая в основе соврем. внешней политики Китая в Арктике — концепция Сев. шелкового пути, к-рая подразумевает, что контроль над Арктикой автоматически представляет собой в условиях глобального мирового переустройства и смещения мировых геополитических центров контроль над всей мировой экономикой и над нов. подходами к мировым рынкам. По словам известного китайского ученого Ли Чжэньфу, тот, кто будет контролировать арктич. маршруты, будет контролировать и «нов. направление мировых экон. и междунар. стратегий...»

В Китае эффективно реализуются серьезные стратегические проекты, особенно в сфере науч. исслед-ий. Создана нац. служба Арктики и Антарктики. В 2015 г. в КНР вышел в свет первый в стране Атлас арктич. навигации, к-рый содержит сведения и справочную инф-цию относительно навигации в Арктике. Создан «Китайско-североевроп. центр арктич. исслед-ий» в Шанхае, где намерены сотрудничать специалисты и ученые из 10 арктич. исслед. учреждений Исландии, Дании, Финляндии, Норвегии, Швеции. Ведутся НИР транспортного потенциала Арктики. КНР рассчитывает обзавестись спец. авиацией, способной приземляться на Сев. полюсе, создать первую в своей истории постоянную дрейфующую станцию в СЛО, осуществить др. проекты.

КОНВЕНЦИЯ ООН ПО МОРСКОМУ ПРАВУ (UNCLOS), подписана 10 дек. 1982 г. в г. Монте-Бэй (Ямайка), вступила в действие 16 нояб. 1994 г. Конвенция ратифицирована более чем 165 гос-вами и является первым всеобъемлющим договором, охватывающим практически все аспекты освоения и использования пространств и природных ресурсов Мирового океана. Россия присоединилась к конвенции в 1997 г. Среди арктич. гос-в только США не ратифицировали конвенцию.

Конвенция состоит из 320 статей, содержащих нормы и принципы, определяющие правовой режим и пределы морских пространств, и приложений. Суверенитет прибрежного гос-ва распространяется за пределы его сухопутной терр. и внутр. вод, а в случае гос-ва-архипелага — его архипелажных вод (разделяющих группы о-вов), на примыкающий морской пояс, называемый **территориальным морем**. Каждое гос-во имеет право устанавливать ширину своего террит. моря до предела, не превышающего 12 морских миль, отмеряемых от исходных линий. Внешней границей террит. моря является линия, каждая точка к-рой находится от ближайшей точки исходной линии на расстоянии, равном ширине террит. моря. Ширина террит. моря, прилегающей зоны, исключительной экон. зоны и континентального шельфа отмеряется от архипелажных исходных линий, проведенных в соответствии со ст. 47. Воды, расположенные в сторону берега от исходной линии террит. моря, составляют часть внутр. вод гос-ва. За пределами террит. вод все страны имеют право свободного торг. и военного судоходства, свободного пролета над морем, а также право ловить рыбу и заниматься др. хозяйств. деят-тью. Ст. 17 Конвенции ООН по морскому праву устанавливает право мирного прохода через террит. море при условии соблюдения настоящей конвенции судами всех гос-в, как прибрежных, так и не имеющих выхода к морю. За пределами террит. моря осуществляется принцип свободы открытого моря и принцип свободы судоходства.

В зоне, прилегающей к его террит. морю и называемой **прилегающей зоной**, прибрежное гос-во может осуществлять контроль, необходимый для предотвращения нарушений таможен., фискальных, иммиграционных или санитарных законов и правил в пределах его терр. или террит. моря (ст. 33).

Отдельный статус имеет т.н. **исключительная экон. зона (ИЭЗ)** шириной не более 200 морских миль (ст. 57), к-рая, как и континентальный шельф, не входит в состав гос. терр. Прибрежное гос-во имеет здесь лишь суверенные права и юрисдикцию в строго определенных целях и пределах. В ИЭЗ нет таможенной юрисдикции прибрежного гос-ва, сохраняется свобода судоходства и связанная с этой деят-тью эксплуатация судов (ст. 56). В пределах ИЭЗ прибрежному гос-ву предоставляются суверенные права в отношении разведки, разработки и сохранения естеств. ресурсов, находящихся на дне, в его недрах и в покрывающих водах, и управления ими, а также в отношении др. видов деят-ти в целях экон. разведки и разработки зоны, таких как производство энергии путем использования воды, течения и ветра. Прибрежное гос-во определяет допустимый улов живых ресурсов в своей ИЭЗ (ст. 61). Делимитация ИЭЗ между гос-вами с противоположными или смежными побережьями осуществляется путем соглашения на основе междунар. права, как это указывается в ст. 38 Статута

Международные отношения и организации

Figure 1. An example of a page of the encyclopedia.

Source: fragment of publication, available on the website of the publisher.

URL: http://store.paulsen.ru/upload/iblock/37c/Arctic_Encyclopedia_1.pdf

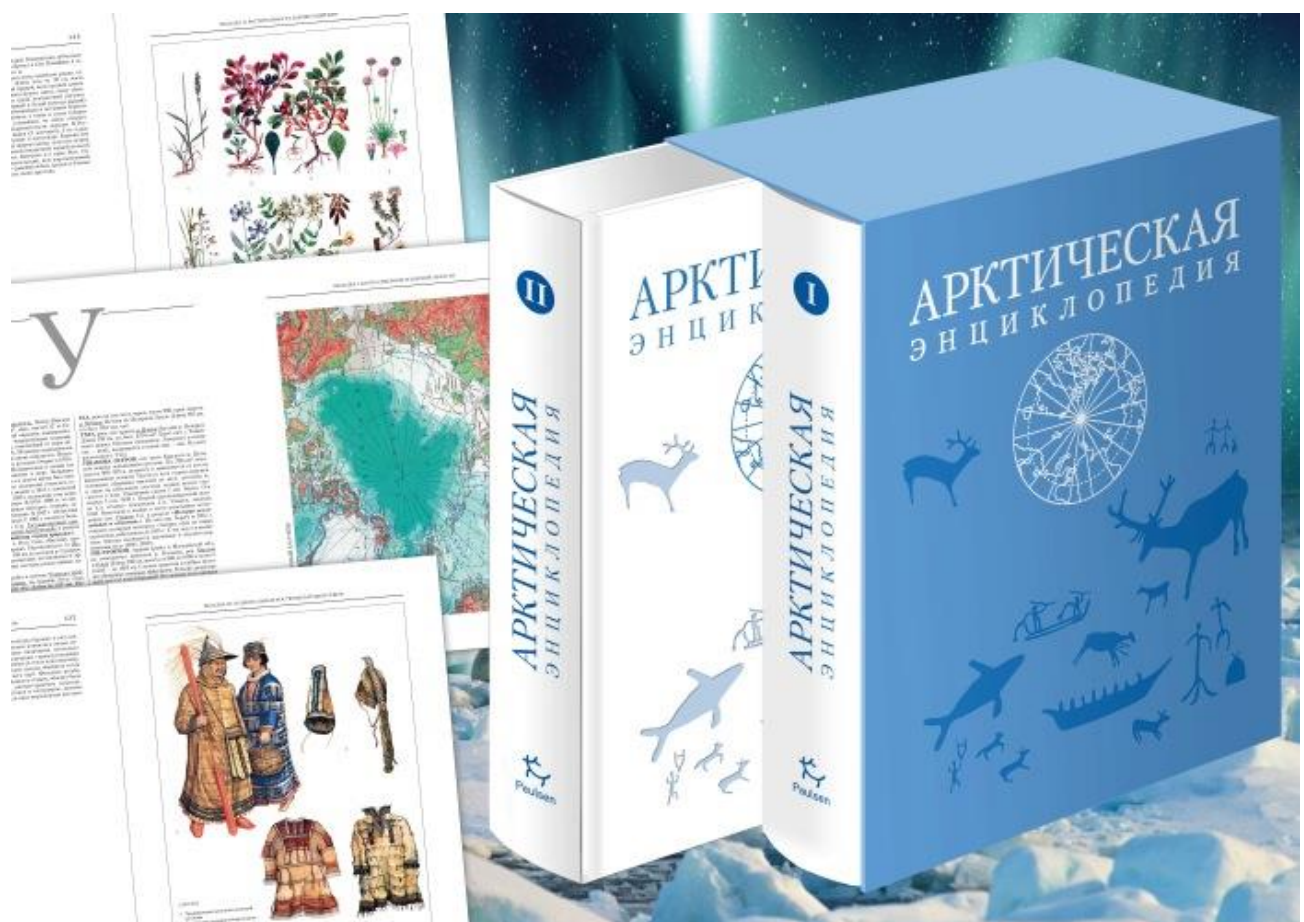


Figure 2. A gift variant of the “Arctic encyclopedia”

SUMMARY

Authors, abstracts, keywords

ECONOMICS AND POLITICAL SCIENCE, SOCIETY AND CULTURE

Дранникова Н.В. «Патракеевка — поморское село»: особенности локальной идентичности жителей с. Патракеевки Приморского района Архангельской области

Natalya V. Drannikova "Patrakeevka — a Pomor village": local identity features of the Patrakeevka village residents, Primorsky district, the Arkhangelsk Oblast

Аннотация. Статья посвящена исследованию локальной идентичности жителей села Патракеевки Приморского района Архангельской области. Исследование проводится на основе полевых материалов, полученных за время фольклорно-этнографической экспедиции Северного Арктического федерального университета в Патракеевку в 2015 г. В период глобализации изучение идентичности местных сообществ позволяет глубже раскрыть особенности традиционной культуры. Село находится на берегу Белого моря и имеет промысловый тип хозяйствования и культуры. Местные жители относятся к локальной группе поморов Зимнего берега Белого моря. С целью изучения локальной идентичности местного сообщества в статье рассматриваются ритуальные и символические промысловые практики, функционирование локально-групповых прозвищ, особенности историко-культурной памяти, устанавливаются границы микроареала, центром которого является Патракеевка.

Ключевые слова: локальная идентификация, Патракеевка, Белое море, поморы, промысловая культура

Abstract. The article presents the research of local identity of Patrakeevka villagers (Primorsky district, Arkhangelsk Oblast). The study grounds on the fieldwork materials collected during the folklore-ethnographic expedition of the Northern (Arctic) Federal University to Patrakeevka village in 2015. In the period of globalization, a study of local communities and their identity allows to reveal traditional culture peculiarities. The village is located on the shore of the White Sea. Therefore, it has a fishing type of economy and culture. The indigenous people there belong to the local group of Pomors from the Northern Coast of the White Sea. In order to study local identity of the indigenous community, the author deals with traditional and trade practices, functioning of local-group nicknames and peculiarities of historical and cultural memory. The study also defines boundaries of the micro-area with Patrakeevka being its center.

Keywords: local identification, Patrakeevka village, the White Sea, Pomors, fishing and sea-hunting culture

Журавель В.П. Арктический совет: переход председательства от США к Финляндии, дальнейшее укрепление российско-финляндского сотрудничества

Valeriy P. Zhuravel The Arctic Council: transition of chairmanship from the US to Finland, further strengthening of Russian-Finnish cooperation

Аннотация. В статье подводятся итоги председательства США в Арктическом совете (АС) за прошедшие два года, отмечаются позитивные результаты и обращается внимание на слабые стороны арктической политики государства. Отмечается, что своё председательство США использовали для решения собственных внутренних арктических проблем. Анализируются результаты встречи на уровне министров иностранных дел в американском Фэрбанксе (штат Аляска), раскрывается позиция России в Арктике на современном этапе. На базе концептуальных основ финской арктической политики, анализа первых заявлений политиков и экспертов авторами принимается попытка спрогнозировать програм-

Abstract. The article deals with the results of the 2 years of the US chairmanship of the Arctic Council, notes positive results and draws attention to the weak points of the US Arctic policy. It reveals that the US has chaired the AC to solve its own problems related to the Arctic. The authors also analyze the ministerial meeting in Fairbanks (Alaska) and describe the current Russian position in the Arctic. The foundations of the Finnish Arctic policy and the analysis of the first statements of politicians and experts helps the author to predict the Finland's plans for the chairmanship in the Arctic Council 2017–2019, and its possible impact on settling differences in Russian-American and Russian-Western European relations. In addition, it is important to

му председательства Финляндии в Арктическом совете в 2017–2019 гг., а также её возможное влияние на ослабление нынешней напряжённости в российско-американских и западноевропейских отношениях и укрепление российско-финляндского сотрудничества в канун 100-летия финской государственности (декабрь 2017 г.). Краткие выводы: авторы установили, что США, в отличие от Канады, не перенесли существующие противоречия между США и Россией в работу самого АС, что во многом способствовало позитивным результатам их председательства, особенно по вопросам развития многостороннего сотрудничества береговых охран, международного рыболовства в Северном Ледовитом океане, состояния и проблем коммуникационных сетей в Арктическом регионе.

Ключевые слова: Арктический Совет, Арктика, Россия, Канада, Конвенция ООН по морскому праву, Северный морской путь, ледокольный флот, научное исследование, национальная безопасность

take a closer look at the role of the Finland's chairmanship in strengthening the Russian-Finnish cooperation in the run-up of the 100 anniversary of the independent Finnish state (December 2017). It is found that in contrast to Canada, the United States did not transfer the existing contradictions between the US and Russia to the work of the Arctic Council. It largely contributed to the positive results of the US chairmanship, especially on the development of multilateral cooperation of the coast guards, international fisheries in the Arctic Ocean and the problems of communication networks in the Arctic.

Keywords: The Arctic Council, the Arctic, Russia, Canada, UN Convention on the Law of the Sea, Northern Sea Route, ice-breaker fleet, scientific research, national security

Залывский Н.П. Экспортно-импортная экономика северных регионов России на перекрёстке международных санкций: практика прошлого и настоящего, геополитика компромисса

Nikolai P. Zalyvsky Export-import economics of the northern regions of Russia at the crossroad of international sanctions: past and present, geopolitics of compromise

Аннотация. В данной статье затронуты исторические предпосылки включения Севера в мировую экономику, анализируется практика участия арктических регионов РФ в международной торговле 2000–2016 гг. При её диагностике автор оценивает влияние санкционной политики Запада на динамику и структуру их внешней торговли. Также концентрируется внимание на политэкономических положениях, позволяющих преодолеть негативный характер международных экономических отношений РФ и западных стран. Автор доказывает целесообразность изменения геополитических позиций Запада и России в целях перехода к компромиссной модели экономического сотрудничества Севера России с Евросоюзом и иными странами.

Ключевые слова: евроарктические регионы России, Архангельск в истории торговли, внешняя торговля, экспорт, импорт, новые технологии производства, геополитика, международные санкции

Abstract. In this article, the author discussed historical prerequisites for the inclusion of the North in the world economy and analyzed the participation of the Arctic territories of the Russian Federation in international trade 2000–2016. The impact of the Western sanctions and their influence on the dynamics and structure of foreign trade is also in a focus of the present article as well as the political economy provisions that allow overcoming the negative nature of international economic relations between the Russian Federation and Western countries. The author proves the expediency of changing the geopolitical positions of the West and Russia with a view to moving towards a compromise model of economic cooperation between the North of Russia and the EU and other countries.

Keywords: Euro-Arctic territories of Russia, Arkhangelsk in history of trade, foreign trade, export, import, new technologies in production, geopolitics, international sanctions

Кудряшова Е.В., Зайков К.С., Сабуров А.А. Состояние и перспективы развития российского и зарубежного арктического научного флота

Elena V. Kudryashova, Konstantin S. Zaikov, Aleksander A. Saburov Conditions and perspectives of the Russian and foreign Arctic research fleet

Аннотация. В данной обзорной статье проанализировано состояние российского и зарубежного научного флота, приспособленного по своим техническим характеристикам к работе в арктических водах. Проведённое исследование выявило, что общей современной тенденцией его развития является строительство многофункциональных научно-экспедиционных судов, которые способны не только проводить исследовательские работы, но и выступать в качестве ледоколов, носителей летательных аппаратов, а также осуществлять транспортировку грузов. Авторами сделан вывод о том, что Россия на сегодняшний день обладает самым многочисленным научно-исследовательским флотом, приспособленным для работы в условиях Арктики. Вместе с тем подчёркивается необходимость его обновления, обусловленная тем, что большинство судов были построены в 1970-е и 1980-е гг.

Ключевые слова: Арктика, научно-исследовательская деятельность, флот, научно-исследовательские суда, научно-экспедиционные суда, ледовый класс

Abstract. The article is devoted to the conditions of the Russian and foreign research fleet able to work in the Arctic waters according to its technical specifications. The study has revealed that a modern common trend is construction of multi-functional research and expedition vessels, able not only to conduct research, but to transport cargoes and to serve as icebreakers or carriers of aircrafts. The authors conclude that the Russian Arctic research fleet is the most numerous. However it needs to be modernized because the most of the vessels were constructed in 1970s and 1980s.

Keywords: the Arctic, research activities, fleet, research vessels, research and expedition vessels, ice class

Патоня А. Критический анализ воздействия ВЭС в Роане (проект ВЭС Фосен) на социум и окружающую среду

Aliaksei I. Patonia Critical evaluation of the Roan wind farm (part of the Fosen wind project) from an impact assessment standpoint

Аннотация. Настоящая статья посвящена ветряной электростанции в Роане, которая является частью проекта ВЭС Фосен — в перспективе крупнейшего ВЭС в Европе — с точки зрения анализа её воздействия на окружающую среду и общество. Используя традиционные стадии оценки воздействия (скрининг, обзор и идентификация основных условий и решающих воздействий), исследование представляет собой «систему светофора» для оценки величины основных эффектов проекта в разных масштабах, т.е. для общества и окружающей среды. Несмотря на то, что избранный нами проект уже был изучен и оценен как чрезвычайно успешный и имеющий огромный потенциал, текущий анализ показывает наличие существенных недостатков. Среди них социальные и экологические аспекты. Стройплощадка проекта расположена на саамских территориях, используемых для летнего выпаса оленей, а высота и количество турбин ВЭС может привести к масштабной миграции птиц в регионе. Таким образом, экономически привлекательный проект становится довольно спорным, особенно если рассматривать его через призму социума и окружающей среды. Кроме того, в

Abstract. The paper views the Roan wind farm, which is a part of the Fosen Vind Project — the biggest planned onshore wind farm in Europe — from an impact assessment standpoint. Using the traditional stages of the impact assessment (such as screening, scoping and identification of the baseline conditions and crucial impacts), the research implements the ‘traffic light system’ to assess the magnitude of the core effects of the project on different dimensions — i.e. society and nature. Even though the previously conducted assessment describes the project as an extremely successful one with huge potential of generating sustainable energy, the current analysis reveals some of its greatest shortcomings. In particular, social and wildlife aspects are its major drawbacks: the construction site is on the grounds used for the summer grazing by the Saami reindeers and the height and number of turbines significantly threatens migrating birds. Thus, even though the project happens to be economically attractive, it is a rather controversial undertaking when viewed from social and natural perspectives. The paper thus presents a number of solutions for the minimization of these negative impacts.

настоящей статье представлены варианты нескольких практических решений для минимизации негативного воздействия ВЭС.

Ключевые слова: ВЭС в Роане, Проект ВЭС Фосен, оценка воздействия, оленеводство

Keywords: Roan wind farm, Fosen Vind Project, impact assessment, reindeer herding

Санникова Я.М. Традиционное хозяйство коренных народов Севера Якутии в условиях трансформаций постсоветского периода: некоторые результаты исследования

Yana M. Sannikova Traditional economy of the indigenous people of the North Yakutia in the post-Soviet period: some research results

Аннотация. На основе архивных документов и социологических полевых материалов рассмотрены некоторые результаты изучения развития традиционного хозяйства арктических и северных территорий Якутии в постсоветские 1990-е — 2000-е гг.: вопросы природно-хозяйственного районирования региона, исторический дискурс развития традиционного хозяйства в контексте аграрной политики 1990-х гг., некоторые теоретические подходы к изучению феномена традиционного образа жизни и хозяйства коренных народов Севера. В первое постсоветское десятилетие произошел процесс последовательного снижения численности поголовья северного животноводства, наиболее уязвимой стала северо-западно-прибрежная группа районов с преобладающим оленеводческим хозяйством. Социологические данные по второму постсоветскому десятилетию позволяют выделить три направления в предварительной типологии традиционного хозяйства коренных народов Севера Якутии.

Ключевые слова: традиционное хозяйство, коренные народы, Якутия, Арктика, Север

Abstract. Archival documents and sociological field materials lead to some study results on the development of the traditional economy on the Arctic and North territories of Yakutia in the post-Soviet period — 1990s-2000s. The author considered the following issues: environmental and economic zoning, the historical discourse of the traditional economy in the context of agrarian policy in 1990s and some theoretical approaches to studying the phenomenon of the traditional way of life and the economy of the indigenous peoples of the North. In the first post-Soviet decade, we see a gradual decrease in the number of the northern livestock. The most vulnerable were the northwestern coastal areas with predominant reindeer herding. Sociological data on the second post-Soviet decade enabled us to identify three directions in the preliminary typology of the traditional economy of the indigenous peoples of the North Yakutia.

Keywords: traditional economy, indigenous peoples, Yakutia, the Arctic, North

Хакназаров С.Х. Исследование общественного мнения в Нefтеюганском районе Югры о промышленной разработке полезных ископаемых

Said Kh. Khaknazarov The study of public opinion on industrial mining in the Nefteyugansk district of YUgra

Аннотация. В данной статье рассмотрены взгляды респондентов на промышленные разработки месторождений полезных ископаемых и их результаты на примере Нefтеюганского района Югры в контексте социологических исследований. Анализируется точка зрения жителей Нefтеюганского района касательно результатов разработки месторождений полезных ископаемых в сравнительном аспекте социологических исследований. В частности, обобщаются результаты социологического опроса, проведенного в 2015 г. на территории Нefтеюганского района. Данная работа опирается также на наши предыдущие исследования, которые проводились в 2008 и 2012 гг. В целом результаты социологиче-

Abstract. In this article, we consider the views of respondents on the industrial development of mineral deposits on the example of the Nefteyugansky district, YUgra. The analysis of views regarding the development of mineral deposits represents a comparative sociological study. It summarizes the results of a poll conducted in 2015 on the territory of Nefteyugansk district and earlier studies done in 2008 and 2012. The results of polls showed that the majority of respondents had positive sentiments to the industrial mining. On the other hand, in contrast to 2008, in 2015, the proportion of people, who opposed the commercial development of mineral resources, got bigger. At the same time, the vast majority of respondents believed that industrial mining

ских опросов показывают, что большинство респондентов Нефтеюганского района к процессу промышленной разработки полезных ископаемых относится положительно. С другой стороны, в отличие от 2008 г., в 2015 г. увеличилась доля лиц, которые отрицательно относятся к промышленной разработке недр. В то же время, абсолютное большинство респондентов считает, что в результате промышленных разработок происходит ухудшение экологического состояния их региона (района) проживания.

Ключевые слова: промышленная разработка недр, общественное мнение, опрос, экологическое состояние, респонденты, коренные малочисленные народы Севера, эксперты, результаты промышленных разработок

resulted in environmental degradation of the area (district) of their residence.

Keywords: industrial mining, public opinion, poll, environmental condition, respondents, small-numbered indigenous peoples of the North, experts, results of industrial mining

REVIEWS

Карху Я., Осипов А.Ю. Туризм в северном измерении (некоторые итоги IX Международного конгресса арктических социальных наук)

Jani Karhu, Aleksandr Yu. Osipov Tourism in the northern dimension (some results of the Ninth International Congress of Arctic Social Sciences)

Аннотация. В статье представлен обзор IX Международного конгресса арктических социальных наук. Авторы рассматривают ключевые проблемы развития туризма в Арктике и Субарктике, такие как устойчивость, вовлечённость местного населения, изменения климата. Конференция продемонстрировала, как исследования в области туризма основываются на междисциплинарном подходе, сочетая экономику и социологию, историю и метеорологию. Вторая часть обзора посвящена определениям и характеру экотуризма, а также его развитию и истории в национальных парках Финляндии и Карелии. В качестве примеров были взяты национальные парки Коли и Паанаярви.

Ключевые слова: экотуризм, Коли, Паанаярви, Ханнукайнен, Шпицберген, устойчивое развитие, национальный парк

Abstract. The article presents the summary of the Ninth International Congress of Arctic Social Sciences. The authors focus on the key issues of tourism development in the Arctic and Subarctic regions, such as sustainability, involvement of local people and climate change. The conference reveals how research in the field of tourism is based on multidisciplinary approaches combining economics, sociology, history and meteorology. Another part of this review is dedicated to the definitions and nature of ecotourism, its development and history in the national parks of Finland and the Republic of Karelia. National parks Koli and Paanajarvi were taken as case studies of ecotourism development.

Keywords: ecotourism, Koli, Paanajarvi, Hannukainen, Svalbard, sustainable development, national park

Королёва Н.Е. О работе второго международного семинара по базам данных растительности Арктики, Прага, Чешская Республика, 30–31 марта 2017 г.

Natalia E. Koroleva The Second International Arctic Vegetation Archive and Classification Workshop, Prague, Czech Republic, 30–31 March, 2017

Аннотация. Приводится краткий обзор событий и докладов на втором семинаре по базам данных растительности Арктики, который прошёл в Праге, столице Чешской Республики, 30–31 марта 2017 г. Основная цель семинара — сбор и обработка данных о растительности Арктики в стандартном формате для последующей классификации и анализа. В семинаре приняли участие 29

Abstract. Here we present a brief overview of events and presentations at the International Arctic Vegetation Archive and Classification Workshop, held in Prague, the capital of the Czech Republic, on 30–31 March 2017. The purpose of the workshop was to collect and process data about the Arctic vegetation. The data supposed to be presented in a standard format for subsequent classification and

учёных из большинства арктических государств. Они представили обзор существующих баз данных о растительности, обсудили возможности обмена и объединения данных, а также возможные пути создания классификации пан-Арктической растительности.

Ключевые слова: Арктика, базы данных, классификация, конференции, растительность

analysis. Twenty-nine scientists from most of the Arctic states were among the participants of the workshop. They presented an overview of existing databases on vegetation, discussed the possibility of sharing and pooling of data as well as possible ways of classification for the pan-Arctic vegetation.

Keywords: the Arctic, conference, classifications, databases, vegetation

Максимов А.М. «Арктическая энциклопедия» в двух томах: издательство «Паулсен» опубликовало фундаментальный труд

Anton M. Maximov The “Arctic Encyclopedia”: The Paulsen Publishing House has issued a fundamental work

Аннотация. В данном обзоре освещён двухтомный научный труд, опубликованный в апреле 2017 г. издательством «Паулсен», — «Арктическая энциклопедия». Над энциклопедией работали более 100 человек, представляющих различные области науки, что позволило детально осветить географию, растительный и животный мир, климат Арктики, показать особенности её коренных народов, рассмотреть вопросы социально-экономического и культурного развития, международного сотрудничества. Данный фундаментальный труд заслуживает пристального внимания любого человека, интересующегося Арктикой.

Ключевые слова: Арктическая энциклопедия, Северная энциклопедия, Арктика, Север, Паулсен

Abstract. Here we present a review of a two volume scientific work published in April 2017 by the Paulsen Publishing House — the “Arctic Encyclopedia”. The authors — 100 people from different fields of science — enabled the publisher to get a detailed coverage of geography, flora and fauna, climate, indigenous peoples of the Arctic, as well as international cooperation, social, economic and cultural development of the Arctic areas. This work is a fundamental one and deserves close attention from every person interested in the Arctic issues.

Keywords: Arctic encyclopedia, Northern encyclopedia, the Arctic, North, Paulsen

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