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Our English webpage is located at <http://arcticandnorth.ru/en>
We will be glad to see you among the authors of "Arctic and North"!

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SOCIAL AND ECONOMIC DEVELOPMENT

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Maritime Shipping on the Northern Sea Route: Need for Greater Emphasis on Mutual Cooperation and a Non-Negotiable Safety Culture. Part I*

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Abstract. The opening of the Northern Sea Route (NSR) due to the melting of the Arctic sea ice ushers in many opportunities. The International Maritime Organization has introduced several regulations for shipping and the training of seafarers. The Northern Sea Route has several challenges concerning the infrastructure and the harsh weather conditions. The recent incident on board the Viking Sky cruise liner was a reminder of such challenges. The Norwegian authorities responded admirably, and the Search and Rescue operation was conducted with the necessary coordinated effort in the shortest possible time. Other incidents along the NSR and increasing ship casualties in the Arctic region have been analyzed concerning the adequacy of existing regulations. The author's opinion is that these incidents bring out a need to examine the adequacy of the Polar code, infrastructure along the NSR, and the current state of Search and Rescue (SAR). From a practical point of view, the Norwegian experience would be of interest to all Arctic states and the IMO. The evolution of the Polar Code and the challenges in implementation are discussed. The article puts forth several recommendations for improving cooperation and safety to make the NSR a viable alternative route. This article can be used for educational purposes at universities. It is relevant for civil servants, shipping authorities, search and rescue authorities, and researchers involved in developing the Arctic sea routes and specifically the Northern Sea Route.

Keywords: *Arctic, Arctic routes, Arctic sea ice cover, The Northern sea route (NSR), Russia, Search and Rescue (SAR), vessel traffic patterns, cooperation.*

"All passengers and crew are safe...Throughout all of this; our first priority was for the safety and wellbeing of our passengers and our crew...We would like to thank the Norwegian emergency services for their support and skill displayed in managing the situation in very challenging weather conditions"¹.

(Statement by the company Viking Cruises)

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¹ Quoted in Calder S. Viking Sky: Why Things Went Wrong, What Happened and What's Next. URL: <https://www.independent.co.uk/travel/news-and-advice/viking-sky-what-happened-storm-norway-emergency-evacuation-coast-a8837371.html> (accessed 31 March 2019).

Introduction

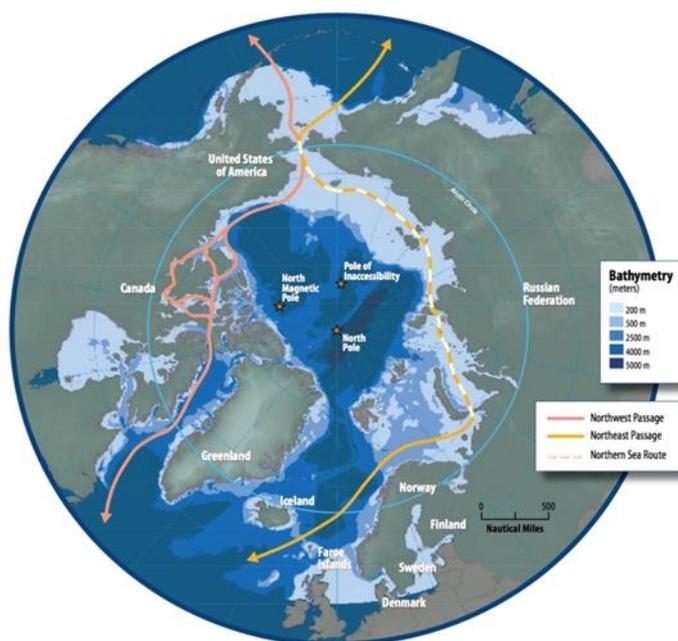


Fig.1. Nations with access to the Arctic sea will be able to shorten their sea transport routes because of the melting ice².

The Arctic is undoubtedly the most rapidly-changing region on the Earth and diminishing levels of sea-ice has exponentially increased opportunities for maritime activities in historically inaccessible areas such as the Northern Sea Route [NSR] and North-West Passage [1, Silber G.K., Adams J.D, p. 1], though the rate of increase in the use of these routes might not be as great as sometimes anticipated in the media.³ By the Federal Law of the Russian Federation “About Internal Sea Waters, Territorial Sea, and Contiguous Zone of the Russian Federation” (Government of the Russian Federation, 1998), the NSR is recognized as a historical national transport route of Russia in the Arctic.

² The Seasonal Variations of Arctic Sea, 2018. URL: <https://www.eco-business.com/news/how-well-development-in-the-arctic-affect-asia/> (accessed 31 March 2020).

³Rourke R. Changes in the Arctic: Background and Issues for Congress. 30.03.2020. URL: <https://fas.org/sgp/crs/misc/R41153.pdf> (accessed 12 April 2020).



Fig. 2. Pictorial representation of the Northern Sea Route vis-à-vis the Suez Canal route ⁴.

This article will focus on the Northern Sea Route [NSR] as shipping through the Arctic Ocean via the NSR could save up to 40% of the sailing distance from Asia (Yokohama) to Europe (Rotterdam) compared to the traditional route via the Suez Canal [2, Liu M., Kronbak J., p. 434]. While traffic volume through the Arctic routes is expected to increase over the next few decades, for several reasons, few observers expect that it will grow to rival established maritime trade routes [3, Verny J., Grigentin C., pp. 107-117]. However, an up to 40% reduction in distance or almost 4000 nautical miles using the NSR does not mean a corresponding 40% cost in savings as shipping companies must factor in higher building costs for ice-classed ships, the costs of Arctic proofing vessels, providing special training for crew members, non-regular and slower speeds, navigation difficulties and greater risks, compulsory icebreaker escort fees, and elevated insurance rates due to severe weather conditions and the lack of SAR assets [2, Liu M., Kronbak J., pp. 434-444].

⁴ Devyatkin P. Russia's Arctic Strategy; Maritime Shipping (Part IV), 27.02.2018. URL: <https://www.thearcticinstitute.org/russias-arctic-strategy-maritime-shipping-part-iv/> (accessed 01 January 2020).

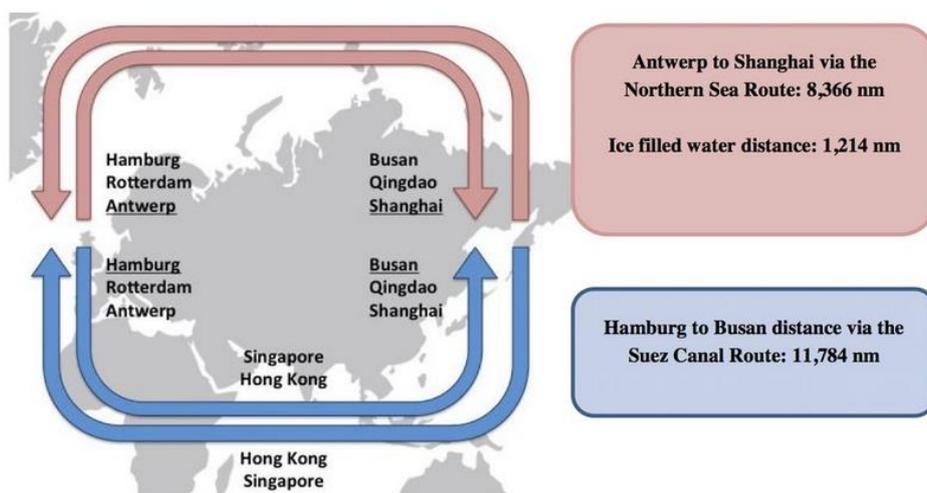


Fig. 3. Distance advantage of the Northern Sea Route vis-à-vis the Suez Canal route⁵.

The Arctic Council's 'Arctic Marine Shipping Assessment 2009 report highlighted, "There is a general lack of marine infrastructure in the Arctic, except for areas along the Norwegian coast and northwest Russia, compared with other marine regions of the world with high concentrations of ship traffic. Gaps in hydrographic data exist for significant portions of primary shipping routes important to support safe navigation. Besides, for safe operations in the Arctic, there is a need for the same suite of meteorological and oceanographic data, products, and services as in other oceans, plus comprehensive information on sea ice and icebergs. Except in limited areas of the Arctic, there is a lack of emergency response capacity for saving lives and for pollution mitigation. There are serious limitations to radio and satellite communications and few systems to monitor and control the movement of ships in ice-covered waters" [4, Arctic Council, p. 6].

Russia needs to upgrade the Northern Sea Route [NSR]'s physical infrastructure (which atrophied after the dissolution of the Soviet Union in 1991) E.g., among Russia's seaports on the Arctic Ocean coast, only Dudinka can receive vessels all year round. All ports need dredging to be able to receive modern large-capacity vessels [5, Tianming G., Erokhin V., p. 2]. The dredging fleet operated in the Russian Arctic consists of only six vessels, incl. five self-propelled and one non-propelled dredger. Their average age is over 40 years. Because of the small number of available vessels and their obsolescence, Russia engages foreign dredgers primarily from the Netherlands and Belgium. Similarly, improving navigational, meteorological, and Search and Rescue (SAR) services will require investment on a substantive scale.

Russia does not have the financial wherewithal to do it alone, and thus far foreign investors except China, incl. from Asia, have shown limited interest [6, Arctic Centre, p. 41]. Second, the Arctic is rich in natural resources, but their scale and commercial viability remain open to question. Developing Arctic resources will be technically challenging and expensive; exploiting energy and mineral resources in other parts of the world such as the Middle East, Africa and South America, is

⁵ Devyatkin P. Russia's Arctic Strategy; Maritime Shipping (Part IV), op.cit.

much cheaper, especially if the price of oil dips below \$50 per barrel, existing shipping lanes that pass through Southeast to Northeast Asia have several advantages.

Third, and perhaps most importantly, from the perspective of Singapore, a major trans-shipment hub, the economics of container shipping on the NSR is sub-optimum. To improve economies of scale, and hence profit margins, shipping lines are investing in ever-larger vessels; the new generation of container ships has a cargo capacity of 18,000-plus TEUs. But due to draft and beam restrictions imposed by shallow waters and narrow straits in parts of the NSR, the largest container ships that can use the route have a maximum capacity of around 4,000 TEUs⁶. Thus, while it may be faster for a container ship to use the NSR than the Suez-Malacca route, the cost per container could be much higher due to the economy of scale limitations [7, Carmel S.M., pp. 38-41]. Also, harsh and unpredictable weather conditions on the NSR affect schedule reliability on which profitable container shipping depends. At the same time, the absence of major ports reduces opportunities to trade along the way.

However, the political instability in the Persian Gulf and the Middle East may also encourage countries of Northeast Asia, incl. possibly North Korea, in the future to cooperate with Russia in the development of the NSR. China has formalized its involvement in the development and exploration of the Arctic by its inclusion of northern maritime routes into a network of blue maritime passages of the Belt and Road Initiative (BRI) [8, Zhang X., pp. 370-395]. A fundamental part of the future Polar Silk Road is the Northern Sea Route (NSR), which runs along Russia's Arctic coast and provides easier access for cross-continental shipping in polar waters [5, Tianming G., Erokhin V., p. 2]. Chinese experts have stated that due to technological, economic, and political reasons, Russia is not able to increase the construction of ships and marine equipment to such an extent as to support the growing volume of cargo transportation in the Arctic [5, Tianming G., Erokhin V., p. 11]. North-East Asia has already developed as a region of significant economic importance. For China mainly, given the present dangerous geopolitical situation, with a declared trade war, the threat to the Oil producing countries of West Asia, the recent use of the "Pandemic COVID-19" as a form of trade and economic warfare, the threat of blockade since sanctions can be arguably considered as blockade; the NSR though it involves a larger financial outlay and creation of the necessary infrastructure, is a safer alternative and strategic route which must be developed along with the land route across Central Asia and Eurasia. It is, therefore, an opportunity for China to contribute its technologies and investment and to benefit from collaboration with Russia in this sphere [5, Tianming G., Erokhin V., p. 11]. Consequently, as sea-ice continues to retreat, the volume of traffic on the NSR will undoubtedly grow, especially to North-East Asia. But, for the reasons identified above, the NSR is unlikely to rival high-traffic maritime routes such as the Suez-Malacca passage in the immediate future.

⁶ Humpert M. The Future of Arctic Shipping: A New Silk Road? 13.11.2013. URL: www.the-arcticinstitute.org/future-arctic-shipping-new-silk-road/ (accessed 15 October 2019).

Realizing this and other impediments, President Vladimir Putin invited foreign investors to assist in the joint construction of Northern sea route hubs at Murmansk and Petropavlovsk-Kamchatka at the International Arctic Forum in Saint Petersburg in April 2019. He also directed the Government to draw up plans for tax relief that would promote the development of the Arctic region⁷. In February 2020, the Russian Prime Minister Mikhail Mishushtin announced a legislative package for the development of the Arctic. Any company or entrepreneur registered in the Arctic region will be given several tax benefits if they invest at least 10 million rubles in any territory of the Arctic zone⁸. The package also includes a zero-rate tax on mineral extraction for 12 years and a preferential tax regime of 5% for 15 years to stimulate oil production on the continental shelf⁹. The package is also envisaged to support the construction of ports, industrial enterprises, and other sectors essential for the development of the Arctic. The policy provides for zero income tax for ten years and for reduction to zero of VAT on services for transportation of export goods and their ice-breaking support, which should support the further development of the Northern Sea Route¹⁰.

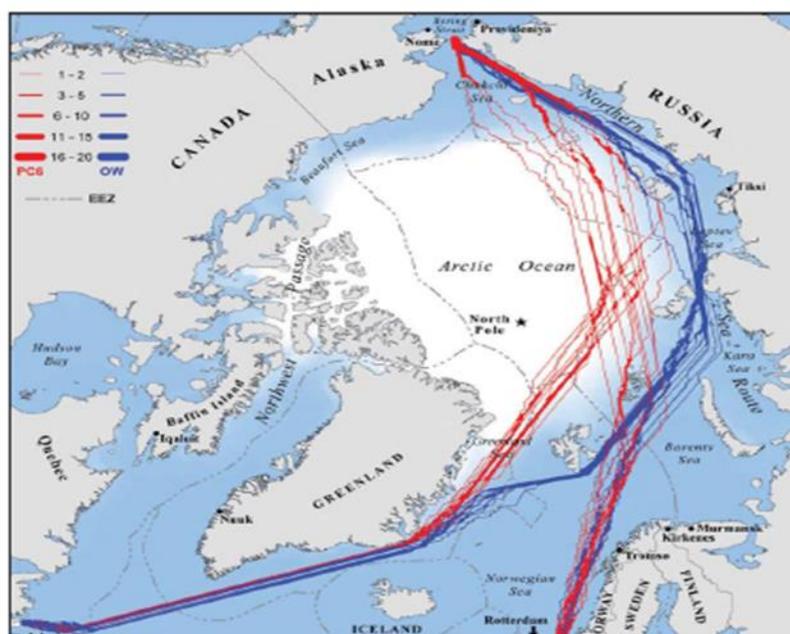


Fig.4. The fastest navigation routes for ships seeking to cross the Atlantic Ocean during September currently favors the NSR along Russia's coastline (Proceedings of the National Academy of Sciences) [9, ABS, p. 2].

It was followed by an even more significant development, which was the release of the document, "Fundamentals of Russian state policy in the Arctic until 2035", signed by President Vladimir Putin¹¹. The document stated that the development of the NSR as a competitive national transport communication of Russia on the world market is one of the main national interests of

⁷ Putin invites foreign investors to help build Northern Sea Route hubs. 09.04.2019. URL: <https://www.arctictoday.com/putin-invites-foreign-investors-to-help-build-northern-sea-route-hubs/> (accessed 10 April 2020).

⁸ Northern Sea Route Information Office, News Review of the Events on the NSR. 01.02.2020. URL: <https://rtic-llo.com/news-review-of-the-events-on-the-nsr1-february-2020> (accessed 15 March 2020).

⁹ Ibid.

¹⁰ Ibid.

¹¹ Putin Endorses Foundations of Government Policy in the Arctic until 2035. The Arctic, 06.03.2020. URL: <https://arctic.ru/infrastructure/20200306/931543.html> (accessed 10 March 2020).

the Russian Federation in the Arctic¹². It also stated that failure to meet the deadlines for the creation of the infrastructure of the NSR, the construction of rescue, and ice-breaking fleets is noted as one of the main threats to national security¹³. The policy also envisages the start of work on the creation of an integrated infrastructure of the NSR, a hydrometeorological, hydrographic and navigation support system for navigation along the NSR¹⁴. The main infrastructure is being created as part of the federal project “Northern Sea Route” with the main goal of achieving an increase in cargo traffic to 80 million tons by the end of 2024¹⁵. The total financing of the project until the end of 2024 is expected to be 735 million rubles¹⁶. The project is undoubtedly impressive in conception, but it remains to be seen if adequate funds would be made available, particularly with low oil prices and the current economic crisis due to COVID-19.

The Government is also examining the concept of the Northern Sea Route Transport Corridor to facilitate integrated work on the infrastructure of the Arctic ports, development of an ice-breaker fleet, and the creation of a network of railways and highways in all regions of the Arctic¹⁷. It includes the construction of the most powerful icebreakers of the world (five vessels of Project 22220), auxiliary and rescue fleet, as well as the construction of the Northern Latitudinal Railway¹⁸. It would also allow Arctic logistics is not limited by the NSR, which begins at the Kara gate in the west and the Bering Strait in the East, as specified by international legislation¹⁹. The Kamchatka Development Corporation (KRKK) and Primorsky Universal Handling Company (Primorsky CPC) signed an initial agreement during the International Arctic Forum in April in Saint Petersburg on 09 April. The accord envisions the construction of a container terminal near Leningrad and another on the Kamchatka Peninsula, to be completed by 2022 and 2024, respectively. Also, one may be built on the Kola Peninsula near Murmansk²⁰. OOO Pribezhny has commenced construction of a transshipment facility in Liinakhamari with a focus on Arctic logistics²¹. The borders of the Murmansk port have been modified by order of the Government of Russia dated March 31, 2020. It is to facilitate a marine transshipment complex for liquefied natural gas (LNG)²². The Norwegian Maritime Authority issued a permit for the transshipment of LNG produced by Novatek under the “side to

¹² Northern Sea Route Information Office, News Review of the Events on the NSR. 01.03.2020. URL: <https://rticlio.com/news-review-of-the-events-on-the-nsr1-march-2020> (accessed 10 March 2020).

¹³ Ibid.

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ Ibid.

¹⁷ Northern Sea Route Information Office, News Review of the Events on the NSR. 01.02.2020. URL: <https://rticlio.com/news-review-of-the-events-on-the-nsr1-february-2020> (accessed 15 March 2020).

¹⁸ Northern Sea Route Information Office, News Review of the Events on the NSR. March 2020, op.cit.

¹⁹ Chernov V. New Port Planned for Russia’s Growing Northern Logistics Chain. 14.03.2020. URL: <https://www.maritime-executive.com/blog/new-port-planned-for-russia--s-growing-northern-logistics-chain> (accessed 15 March 2020).

²⁰ Humpert M. Container Shipping is coming to the Arctic along Russia’s Northern Sea Route. 05.07.2019. URL: <https://www.highnorthnews.com/en/container-shipping-coming-arctic-along-russias-northern-sea-route/> (accessed 06 June 2019).

²¹ Chernov V. New Port Planned for Russia’s Growing Northern Logistics Chain, op.cit.

²² Northern Sea Route Information Office, News Review of the Events on the NSR. 01.04.2020. URL: <https://rticlio.com/news-review-of-the-events-on-the-nsr1-april-2020> (accessed 12 April 2020).

side" (ship to ship) scheme for six years²³. This was supposed to be carried out in the Murmansk region, around Kildin island²⁴. Novatek had reported completion of the construction of anchoring berths for carrying out side-by-side transshipment operations near the Kildin island²⁵. It is also intended to create a transport and logistics hub in Sakhalin, which will include modernization of the Korsakov port and possibility in the future of a modern transshipment port in the Makarovskiy district²⁶.



Fig. 5. Map showing the approximate proposed route and location of the transshipment hubs²⁷.

The first landmark transit voyage along the NSR was during the summer of 2010 of the MV *Nordic Barents*, an ice-class IA bulk carrier flying the flag of Hong Kong and owned by the Norway-based Tschudi Shipping Company [10, Franckx E., Boone L., p. 190]. The ship left the port of Kirkenes, Norway, with a cargo of 41,000 tons of iron ore concentrate to be unloaded just twelve days later in China. This ship did not stop at a Russian port to load or unload [10, Franckx E., Boone L., p. 190]. It, therefore, represented the first instance that an exact transit passage for international commercial purposes took place by a foreign-flagged vessel using the Northern Sea Route. However, *MV Beluga Fraternity* and *MV Beluga Foresight* had technically used the NSR from East to West with the help of the icebreaker *50 Let Pobedy* at the end of August – September 2009²⁸. The *MV Nordic Barents* was escorted by Russian nuclear icebreakers and completed the entire passage of the Northern Sea Route in nine days [11, Ostreng W. et al., pp. 184-185]. Therefore, it is evident that an increase in trans-Arctic shipping along the NSR will benefit ports in Northeast Asia

²³ Ibid.

²⁴ Ibid.

²⁵ Ibid.

²⁶ Northern Sea Route Information Office, News Review of the Events on the NSR. February 2020, op.cit.

²⁷ Ibid.

²⁸ Chernova S., Volkov A. Economic feasibility of the Northern Sea Route container shipping development. Master's thesis. Bodo University, 2010. URL: <https://nordopen.nord.no/nord-xmlui/handle/11250/140636> (accessed 06 June 2020).

and may divert traffic from traditional transshipment hubs such as Singapore. According to preliminary estimates, shipping in the region promises to increase China's trade with European countries from 10.95% to 20% and to contribute to ensuring energy security due to diversifying fuel supply routes [12, Kobzeva M., p. 6]. Japan²⁹ (world's largest LNG buyer) and Germany, though close security partners of the United States, have continued their energy links with Russia despite the threat of US sanctions. In response to President Trump's remark in July 2018, "Germany, as far as I am concerned, is captive to Russia because it's getting so much of its energy from Russia", Chancellor Angela Merkel retorted diplomatically, "we can make our policies and our own decisions"³⁰. Having discussed the broad issues concerning the NSR, it would be relevant to examine with the help of two case studies whether the concerns mentioned above, especially related to the safety of navigation, can be justified with the help of two case studies.

Incident 1. «Viking Sky»

A study of "Arctic Tourism: Realities and Possibilities" published in the Arctic Yearbook 2014 recognized various aspects of incl. possible challenges and solutions. The study defined the Arctic as incl. all of Norway, incl. Tromsø [13, Maher P., p. 6]. There has been an increasing trend of large passenger ships operating in Arctic waters. The basic search and rescue infrastructure and minimal hydrographic data in these areas continue to be a cause for concern for the cruise shipping industry intent on expanding in these waters [14, Brigham L., p. 179]. In 2019 while on a pleasure cruise hundreds of passengers, many of them senior citizens had to be evacuated from the cruise liner "Viking Sky" when off the Norwegian coast. Though the incident happened just outside Arctic waters as defined by the Polar Code, it is considered relevant to discuss the case study with the steady growth of Arctic tourism. The Arctic Shipping Status Report stated that in line with the increase in Arctic marine tourism, 73 cruise ships sailed in the Arctic Polar Code area in 2019 as compared to 65 in 2018³¹. The ship had stormy weather experience and the engines stopped working. The ship was only two years old, with 915 passengers and 458 crew members. The *Viking Sky* was taking passengers on the "In Search of the Northern Lights" voyage starting and ending in Tilbury in Essex. She had sailed from Tromsø on 21 March 2019 and was due to arrive in Tilbury on 26 March despite a shipping forecast for the planned voyage of both heavy winds and rough seas. Finally, "Mayday" was declared at 1400 hours on 23 March after it lost power/propulsion and started drifting towards the land (Hustadvika's offshore rocks). As per the company statement, *Viking Sky* experienced a loss of engine power off the coast of Norway near Molde." An emergency had to be declared, and passengers went to their rescue stations. According to company sources, a

²⁹ Hanafusa R. Japan and Russia set to launch \$9bn LNG project in Far East. Nikkei Asian Review, 20.12.2019. URL: <https://www.asia.nikkei.com/Business/Energy/Japan-and-Russia-set-to-launch-9bn-LNG-project-html> (accessed 06 January 2020).

³⁰ Karasz P. Germany Imports gas From Russia. But Is It a 'Captive', 11.07.2018? URL: <https://www.nytimes.com/2018/07/11/world/europe/trump-germany-russia-gas.html> (accessed 12 January 2018).

³¹ Protection of Arctic Marine Environment. Arctic Shipping Status Report 2013-2019. URL: <https://pame.is/index.php/projects/arctic-marine-shipping/astd> (accessed 16 April 2020).

huge wave came at this time, swept passengers off their feet, and also broke a large window causing injuries³².

Search and Rescue

Passengers were evacuated by helicopter being winched off the ship individually and taken in groups of 15-20 to the town of Molde. 479 passengers were evacuated from the vessel by 1030 hours on 24 March. Approximately 20 people who suffered injuries underwent treatment at medical centers in Norway. It is relevant to mention that at the time of the emergency, the *Viking Sky* was 200 nautical miles south of the Arctic Circle. This fortuitous position aided search and rescue operations. On completion of the Search and Rescue [SAR] operation in addition to thanking the Norwegian administration, which did a commendable job, the company stated that “We would also like to thank the residents who throughout the whole process have been incredibly supportive and hospitable. “In another incident affecting a ship of the same company, passengers of the *Viking Idun* were jolted out of their beds in the early hours of the morning on April 01, 2019, after their vessel collided with an oil tanker. The river cruise from Antwerp to Gent had been carrying 171 passengers on a 10-day itinerary through Belgium. Fortunately, no one was seriously injured, and there was no leak as the damage was above the waterline”³³.

Analysis: Viking Sky Incident

While undoubtedly, the authorities would carry out a detailed investigation into the incident, an engine failure in a two-year-old ship is a serious cause for concern. It could point to either faulty operation of the engine or lack of knowledge by the crew in handling an emergency. On March 25, 2019, Sjøfartsdirektoratet (Norwegian Maritime Authority) started an investigation of why the vessel was navigating in such weather. A technical study about engines’ malfunction and a review of the rescue operation was also conducted. Officially, engines’ failure was caused by low oil pressure. The lubricating oil’s level in the tanks was within set limits, but relatively low during the Hustadvika crossing. The oil tanks are fitted with level alarms, but those did not trigger at the time. The heavy seas in Hustadvika caused significant movements in the tanks, and the supply to the pumps stopped. It triggered an alarm indicating low lubrication oil level, which in turn caused the automatic shutdown of all four engines³⁴. On March 26, Sjøfartsdirektoratet granted Viking Ocean Cruises a permit for *Viking Sky* to sail to Kristiansund for urgent repairs.

All such engines and their control equipment fitted on various ships of the type would need to be checked for seaworthiness. Besides, the decision to sail despite a weather warning of gale-force winds and stormy seas is another area that needs investigation. Though the incident hap-

³²Quoted in S. Calder. *Viking Sky: Why Things Went Wrong, What Happened and What’s Next*, op.cit.

³³ Terror as Viking Cruise Ship wake in Collision with Oil Tanker. 05.04.2019. URL: https://www.nzherald.co.nz/travel/news/article.cfm?c_id=7&objectid=12219543 (accessed 10 April 2019).

³⁴ Viking Sky accidents and incidents. 10.04.2019. URL: <https://www.cruisemapper.com/accidents/Viking-Sky-972> (accessed 15 April 2019).

pened outside the Arctic Circle, its proximity to Arctic waters, the presence of 915 passengers and 458 crew members, and an almost brand new cruise liner brings out a need to examine the adequacy of the Polar code and the current state of Search and Rescue [SAR]. Whilst the Norwegian Maritime Authority has a comprehensive website for seafarers following the Maritime Safety Act, it has not yet put out an investigation report on this incident³⁵.

Investigation of accidents

The image shows a grid of seven icons representing different maritime safety and investigation entities:

- Lessons learned**: The Norwegian Maritime Authority regularly publishes lessons learned from marine incidents and accidents.
- IMO – lessons learned**
- Safety alerts**
- The Norwegian Maritime Authority**: The Norwegian Maritime Authority surveys Norwegian and foreign vessels in Norwegian waters pursuant to the Maritime Safety Act
- The Police**: Upon suspicion of legal offences in connection with marine accident, the investigation will be carried out.
- The Accident Investigation Board Norway (AIBN)**: The AIBN is a public committee of
- Marine Accident Investigators' International Forum**

The screenshot shows the Norwegian Maritime Authority website interface:

- Navigation menu (left):**
 - Investigation of accidents
 - Lessons learned
 - IMO – lessons learned
 - Safety alerts
 - The Norwegian Maritime Authority
 - The Police
 - The Accident Investigation Board Norway (AIBN)
 - Marine Accident Investigators' International Forum (MAIIF)
- Main content area:**
 - Lessons learned** (PUBLISHED: 05/08/2016): The Norwegian Maritime Authority regularly publishes lessons learned from marine incidents and accidents.
 - Lessons learned – laser incident** (06.01.2020 | 13:25): Navigation bridge exposed to powerful green laser light or bright light in the fairway.
 - Lessons Learned - Contamination of Cargo implicating injury of personnel** (26.01.2016 | 14:32): A moored offshore vessel was going to load brine, i.e. Calcium Chloride Brine (CaCl₂) and Sodium Chloride Brine (NaCl), each of 50 m³, into the brine
 - Learning from incidents - Engine increased speed uncontrolled** (07.12.2015 | 11:32): A vessel that should go to a dock had reduced speed by setting the control levers to the neutral position.
- Right sidebar:**
 - E-mail alerts**
 - Register and Activate e-mail alerts for updates
 - Administer my alert settings

Fig. 6. Representation of the Norwegian Maritime Authority website³⁶.

Incident 2. Boris Vilkitsky Incident

These facts are gross violations of the Rules of navigation in the waters of the Northern sea route: on April 09, 2018 Merchant vessel “Boris Vilkitsky” entered the waters of the NSR via point Cape Zhelaniya with the help of the icebreaker “Taimyr” in violation of the ‘rules of navigation’ in the waters of the Northern Sea Route. The Kara Gate located between Vaigach Island and Novaya Zemlya Island is the hardest for navigation because of the ice exchange with the Kara Sea. There is predominantly first-year pack ice with a thickness that reaches 0.12-0.14 m by the end of the win-

³⁵Norwegian Maritime Authority, Norwegian Maritime Authority. 09.04.2020. URL: http://www.nsra.ru/ru/archive_non_compliant_vessels_2018.html (accessed 01 January 2019).

³⁶Northern Sea Route Authority, Srochno Informatsii – Suda Narushiteli, 12 April 2018. URL: http://www.nsra.ru/ru/archive_non_compliant_vessels_2018.html (accessed 01 January 2019)

ter. Ice fields in the Kara Gate are frequently compressed and hammocking, which tremendously aggravates ice-breaking. In that region, ice flows periodically drift with high speed, which may disable even nuclear icebreakers [15, Mayorova et al., pp. 117-128].



Fig. 7. Representation of the Boris Vilkitsky incident by the Northern Sea Route Authority³⁷.

According to a Western source, there was an ongoing feud over control of the Northern Sea Route between the Rosatom and the Russian Ministry of Transport³⁸. However, according to Russian sources, it is rather a feud between NSR Administration (controlled by Ministry of Transport) and Novatek, which experiences a shortage of high ice-classed vessels for the development of its projects on the Yamal peninsula³⁹. However, it is understood that this reportedly escalated in April 2018 when the LNG carrier *Boris Vilkitsky*, operated by Dynagas LNG Partners (Cyprus), a vessel not registered in an Arctic state entered the NSR despite damage to one of its three engines.

The malfunction reduced the vessel's ice capabilities from Arc7 to Arc4 and made it illegal for the vessel to enter the route. A vessel must be at least of Arc5 class⁴⁰ to operate in the Kara Sea during summer and autumn. Arc4 class vessels are allowed independent navigation under easy and moderate ice conditions. During winter and spring – Arc8. Independent operation of Arc5 and Arc6 class vessels are permitted under easy ice conditions only, and Arc7 is permitted under easy and moderate ice conditions [5, Tianming G., Erokhin V., p. 9].

³⁷ Northern Sea Route Authority, Srochno Informatsii – Suda Narushiteli, 12 April 2018. URL: http://www.nsra.ru/ru/archive_non_compliant_vessels_2018.html (accessed 01 January 2019).

³⁸ Malte H. Shipping Safety Violation Escalating Internal Conflict Russia's Northern Sea Route, 04 May 2018. URL: <https://www.arctictoday.com/shipping-safety-violation-escalating-internal-conflict-russias-northern-sea-route/> (accessed 15 April 2019).

³⁹ Gunnarsson B. Ship Traffic Analysis on the Northern Sea Route and Development of Arctic Transportation and Logistics. Lecture to the International Ph.D. School, Northern Arctic Federal University, Arkhangelsk, 05 April 2019.

⁴⁰ Sevморпут Doshel do Kremlya. Kommersant. 03 May 2018. URL: <https://www.kommersant.ru/doc/3619227> (accessed 15 April 2019).

The NSR Administration officials only became aware of the damage when the vessel experienced difficulties navigating in heavy ice en route to Sabetta port while being escorted by the Rosatomflot (Rosatom's subsidiary) icebreaker Taimyr. Following the arrival of the vessel in Sabetta, officials uncovered additional violations, incl. the absence of accurate ice charts and the lack of required ice navigation experience by the captain and crew⁴¹. The *Boris Vilkitsky* remained in port for more than a week before it was permitted to leave upon intervention by the Presidential Administration⁴². The Rosatom presented this case as evidence of the Ministry of Transport's bureaucratic approach to the NSR management while portraying itself as a responsible actor who cared for Russia's commercial interests [16, Sergunin A., Konyshov V., p. 6]. In this situation, President Putin supported the Rosatom and criticized the Ministry of Transport during a meeting with members of the Duma (Russian Parliament). He stated, "Gas carriers are not allowed into the port under far-fetched pretexts, then they do not let them depart. It will be dealt with separately"⁴³.

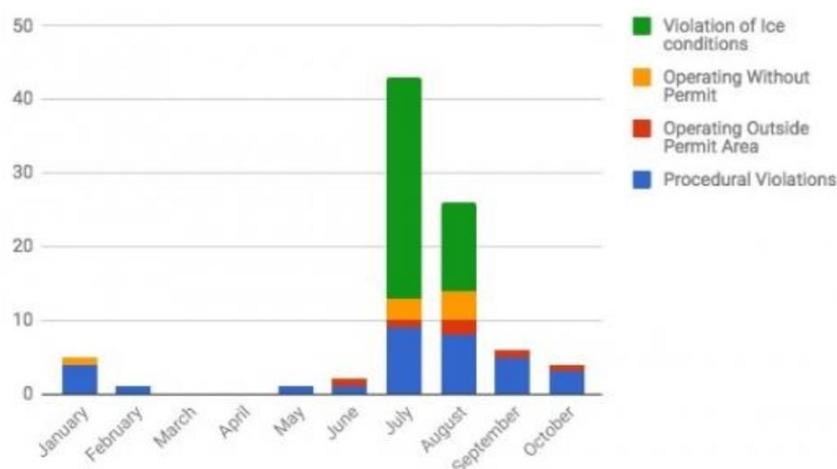


Fig. 8. Violation of Safety Rules along the NSR: January — October 2017⁴⁴.

There have been other safety violations reported and archived on the Northern Sea Route Authority website for the years 2016–2017, which was a welcome development⁴⁵. According to the analyst Malte Humpert these violations showed a sharp increase in 2017, as shown in Fig. 8⁴⁶. But this may also be because of the sharp increase in traffic along the NSR concerning previous years. Cargo traffic in the Arctic seas has been steadily increasing, amounting to 54.3 million tons in 9 months of 2017, to 66.9 million tons in 2018, and 78.6 million tons in 2019 [17, Teslya A., Gutman S., p. 3]. However, the

⁴¹ Malte H. Shipping Safety Violation Escalating Internal Conflict Russia's Northern Sea Route, op.cit.

⁴² Ibid.

⁴³ Sevморпут Doshel do Kremlya. Kommersant. 03 May 2018. URL: <https://www.kommersant.ru/doc/3619227> (accessed 15 April 2019).

⁴⁴ Malte H. Shipping Safety Violation Escalating Internal Conflict Russia's Northern Sea Route, op.cit.

⁴⁵ Northern Sea Route Authority, Srochno Informatsii – Suda Narushiteli, 12 April 2018. URL: http://www.nsra.ru/ru/archive_non_compliant_vessels.html. (accessed 01 January 2019).

⁴⁶ Malte H. Shipping Safety Violation Escalating Internal Conflict Russia's Northern Sea Route, op.cit.

website does not show any entries for 2018 other than the *Boris Vilkitsky* incident and nil for 2019⁴⁷. It is presumed that there were no safety violations observed or reported. However, Western observers have already remarked that the bad publicity post the *Boris Vilkitsky* incident and increased number of safety violations reported in 2017 may have led to a clampdown on putting information on the website⁴⁸. The website also does not indicate any action taken against violations and steps taken to prevent the recurrence of incidents posted earlier on the website⁴⁹.



Fig.9. Map of the NSR [9, ABS, p. 5].

The length of the Northern sea route varies from Kara gate to Dezhnev strait is approximately 2,700 nautical miles (high latitude paths) to about 3,500 nautical miles (littoral paths) depending on the particular route, ice situation, weather conditions, and other factors [5, Tianming G., Erokhin V., p. 6-7]. It is noteworthy that after that incident, the Ministry of Transport developed a bill (still under consideration) suggesting splitting the NSR into 28 sections (instead of 7) of more precise regional ice conditions that would allow for extending navigation through the NSR to vessels with weaker ice-classification. The bill would enable ARC-4 and Arc-5 vessels to enter some of the areas of the NSR (in particular, Kara Sea and Sabetta region — important for Novatek) where they were and are prohibited from entering under current regulations⁵⁰. Current rules of regulation for the NSR which came into force on 17 January 2013 stipulate that there are seven large areas of the NSR with different climate and ice conditions and the rules for ship permission

⁴⁷ Northern Sea Route Authority, *Srochno Informatsii – Suda Narushiteli*, 12 April 2018. URL: http://www.nsra.ru/ru/archive_non_compliant_vessels.html. (accessed 01 January 2019).

⁴⁸ Malte H. Economic interests may trump shipping safety as Russia seeks to reduce ice class requirements. 12.11.2018. URL: <https://www.highnorthnews.com/en/economic-interests-may-trump-shipping-safety-russia-seeks-reduce-ice-class-requirements> (accessed 15 April 2019).

⁴⁹ *Ibid.*

⁵⁰ Malte H. Shipping Safety Violation Escalating Internal Conflict Russia's Northern Sea Route. 04.05.2018. URL: <https://www.arctictoday.com/shipping-safety-violation-escalating-internal-conflict-russias-northern-sea-route/> (accessed 15 April 2019).

to enter each of these areas differ depending on the ice class of the vessel, ice and weather conditions and season⁵¹. The apparent alleviation of the ice situation in the Arctic should not be categorically associated with the improvement of navigation conditions [5, Tianming G., Erokhin V., p. 8]. Dynamic forces that affect the ice, as well as icebergs detached from an ice shelf, pose severe risks for navigation [5, Tianming G., Erokhin V., p. 8]. Thus, in some of the parts of the Arctic Ocean, deformed first-year ice may reach 5-7m in thickness, which aggravates or almost blocks the passage of sea vessels, specifically in narrow straits where the currents press the ice and in such a way increase its thickness [5, Tianming G., Erokhin V., p. 8]. Drifting ice is another danger to navigation. Because of the decreasing thickness of ice cover and the area of the ice shelf, ice becomes more mobile, drift velocity increases, and the behavior of ice becomes more dynamic and less predictable [5, Tianming G., Erokhin V., p. 8]. Thus, many experts believe that there are dynamically changing icing conditions throughout the year [18, Zagorski A., p. 225]. Currently, specialists from the Admiral Makarov State University of Maritime and Inland Shipping in Saint Petersburg are trying to develop a new method for forecasting the ice situation in the Kara Sea that is part of the NSR⁵².

The NSRA gives permission based upon certification provided by the ship. There is no physical inspection [18, Zagorski A., p. 225]. In another incident, on April 3, 2020, the nuclear icebreaker “Vaygach” completed emergency towing of the tanker “Varzuga” (Bunker company, JSC Arkhangelsk) in the north-eastern part of the Barents Sea. This towing started on March 29 in the Ob Bay along with another nuclear icebreaker “50 let Pobedy” as the tanker, which was in ballast had a failure in Azipod steerable thruster. The ship could have drifted ashore due to the ice conditions. Therefore, according to Dmitry Lobusov, captain of the icebreaker “50 let Pobedy”, “it was necessary to get to work quickly”⁵³. Therefore, after carrying out an open-source analysis of the incidents along the NSR and taking into account the views of experts and the paramount need to preserve the fragile Arctic environment, in the considered opinion of the author, it is too premature to consider an amendment based on economic interests. The Russian authorities need to consider an amendment after only ten years of safe operation in the waters of the NSR, i.e., not before 2023. The views of seafarers incl. masters of Arctic nation flagged vessels, would need to be considered.

⁵¹ Northern Sea Route Authority, Rules of Navigation in the water area of the Northern Sea Route. 12.04.2018. URL: http://www.nsra.ru/files/fileslist/120-en5280-120-en-rules_perevod_cniimf-13_05_2015.pdf (accessed 01 April 2020).

⁵² Northern Sea Route Information Office, News Review of the Events on the NSR. March 2020, op.cit.

⁵³ Northern Sea Route Information Office, News Review of the Events on the NSR. April 2020, op.cit.

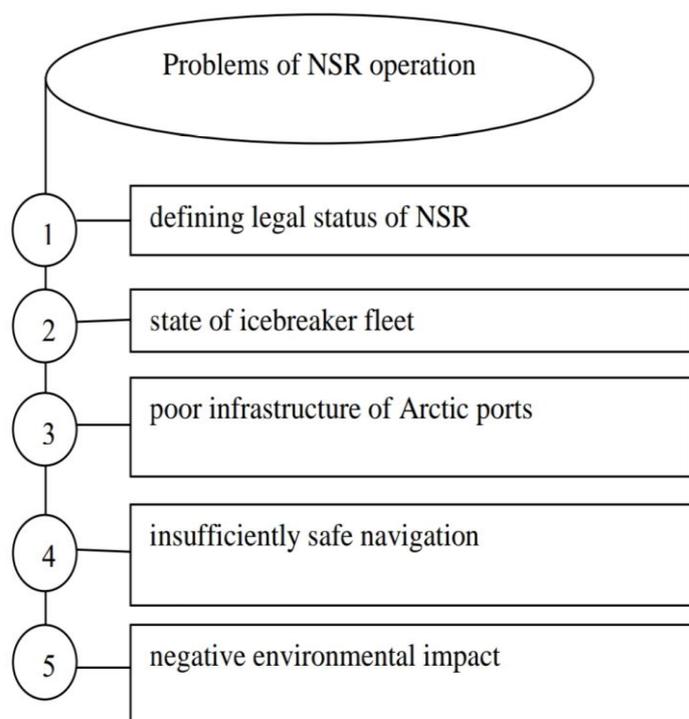


Fig. 10. Problems of NSR operation [11, Teslya A., Gutman S., p. 3].

At the International Scientific Round table conference: “Logistics in the Arctic: problems of international cooperation” held in Saint Petersburg in November 2019, researchers brought out the problems of NSR operation, as indicated in Fig. 10. They also stated that the seaports are the weakest link in the NSR, as their owners do not have sufficient funds for modernization [17, Teslya A., Gutman S., p. 3]. Some of the drawbacks highlighted were:

- Berthing facilities require overhaul and reconstruction.
- Sea bottom must be dredged to receive modern large-capacity ships.
- There are limited services for bunkering of ships or collection of sewage or solid waste.
- There are no facilities for oil spill response and collection and disposal of ship’s waste, or these facilities are in a critical condition.
- Protective structures, signaling, and warning systems have fallen into disrepair due to a lack of proper control. Security for inspection and admission to special facilities are poorly developed [17, Teslya A., Gutman S., p. 3].

Most likely, after careful study of inputs from all stakeholders, on 27 December 2018, President Putin signed a law that established a shared responsibility for the NSR management between the Rosatom and Ministry of Transport⁵⁴. Rosatom’s new powers in the Arctic included development and operational duties for shipping, as well as infrastructure and seaports along the northern Russian coast. The Ministry of Transport retained its powers to issue regulations on shipping (incl. safety and environmental standards), allow or deny ships’ access to the NSR, and develop international cooperation, incl. the Polar Code implementation [16, Sergunin A., Konyshev V., pp.

⁵⁴ Federal Law “O Vnesenii Izmeneniy V Otdel’nye Zakonodatel’nye Akty Rossiyskoi Federatsii” [On Making Changes in Some Legislative Act of the Russian Federation]. URL: <http://docs.cntd.ru/document/552045960> (accessed 15 April 2019).

6-7]. This reform was ostensibly made to help the NSR to fulfill the presidential task to increase annual goods volumes shipped along the Arctic route to as much as 80 million tons by the year 2024, a highly ambitious target [16, Sergunin A., Konyshv V., pp. 6-7].

There is a myriad of agencies coordinating operational support, SAR, and development across the Northern Sea Route. The Federal Service for Hydrometeorology and Environmental Monitoring and the State Space Corporation are responsible for providing the governmental organs and ships with information on meteorological forecasts and ice conditions in the NSR area. The Ministry for Civil Defense, Emergencies and Elimination of Consequences of Natural Disasters is responsible for search and rescue operations and oil spill prevention and response in the Arctic – both on land and sea [16, Sergunin A., Konyshv V., pp. 7-8].

A number of government agencies such as the Defense Ministry, Ministry of Interior, and Federal Security Service (incl. the Border Guard Service and Coast Guard) are charged with providing the AZRF with internal and external security. The Ministry of Transport, together with the Ministry of Foreign Affairs, conducted negotiations with the IMO on the Polar Code. The Russian Coast Guard cooperates with the similar services of other Arctic coastal states, incl. the Coast Guard Arctic Forum established in 2015 [16, Sergunin A., Konyshv V., p. 8].

Analysis – Boris Vilkitsky Incident

The *Boris Vilkitsky* incident brings out that commercial interests will always try to violate safety norms whenever it is expedient to do so. In this case, the signaling in favor of pecuniary gain by the interested company, by the concerned Government authority as reported in the Russian media, is a cause for concern. It will be more relevant in the case of vessels which have flags of convenience. Among the greatest threats to Arctic biological processes are large-scale oil and chemical spills. Effects from spills are particularly acute given that the region is remote, insufficiently charted, and inadequately supported by spill response architecture [19, Nevalainen M., Helle I., Vanhatalo J., p. 90]. Luckily, the debate amongst various organizations involved in the administration of the Arctic resulted in the Ministry of Transport retaining regulatory powers whilst operational powers shifted to Rosatom by the Presidential decree of 27 December 2018⁵⁵. The basic principle of regulation is that the regulator and operator cannot be the same entity. Only time will indicate how Rosatom can handle the additional responsibilities which are not within their previous domain of knowledge. These difficulties and the number of different agencies dealing with various aspects of the NSR delivery increase the difficulty of other countries who may be interested in exploiting the NSR.

⁵⁵ Marinin V., Burmistrova S., Podobedova L. Severny kompromiss: kak “rosatom” i mintrans podelyat Arktiku [The Northern Compromise: How the “Rosatom” and the Ministry of Transport Will Divide the Arctic]. URL: <https://www.rbc.ru/business/26/06/2018/5b2cbcf79a794777ed047268> (accessed 26 June 2018).

Evolution of the Polar Code



Fig. 11. Diminishing Sea Ice 1999-2019⁵⁶.

Ships operating in the Arctic and Antarctic environments are open to several unique risks. Poor weather conditions and the relative lack of good charts, communication systems, and other navigational aids pose challenges for mariners. The remoteness of the areas makes Search and Rescue [SAR] or clean-up operations difficult and expensive. Cold temperatures may reduce the effectiveness of operating ship equipment, ranging from deck machinery and emergency equipment to sea suction inlets. When ice is present, it could force added loads on the hull, propulsion system, and appendages⁵⁷. As brought out in the example of SAR highlighted above, increasing sea and air traffic raised concerns regarding the area's Search and Rescue (SAR) capabilities regarding increasing ship casualties as tabulated below in Table 1.

Consequently, after protracted negotiations with ongoing diminishing sea ice, on May 12, 2011, there was an Arctic Council agreement on SAR. The move to develop a mandatory Code followed the adoption by the IMO Assembly, on December 02, 2009, of Guidelines for ships operating in polar waters [Resolution A.1024(26)], which was intended to address those additional provisions deemed necessary for consideration beyond existing requirements of the SOLAS and MARPOL Conventions, to take into account the climatic conditions of Polar waters and to meet appropriate standards of maritime safety and pollution prevention [20, IMO, p. 1]. The Guidelines were recommendatory.

⁵⁶National Snow and Ice Data Center. United States of America. Diminishing Sea Ice 1999–2019 in Protection of Arctic Marine Environment. Arctic Shipping Status Report 2013–2019. op.cit.

⁵⁷International Maritime Organisation, Shipping in Polar Waters (adoption of a Polar Code). November 2014. URL: <http://www.imo.org/en/MediaCentre/HotTopics/polar/Pages/default.aspx> (accessed 18 March 2019).

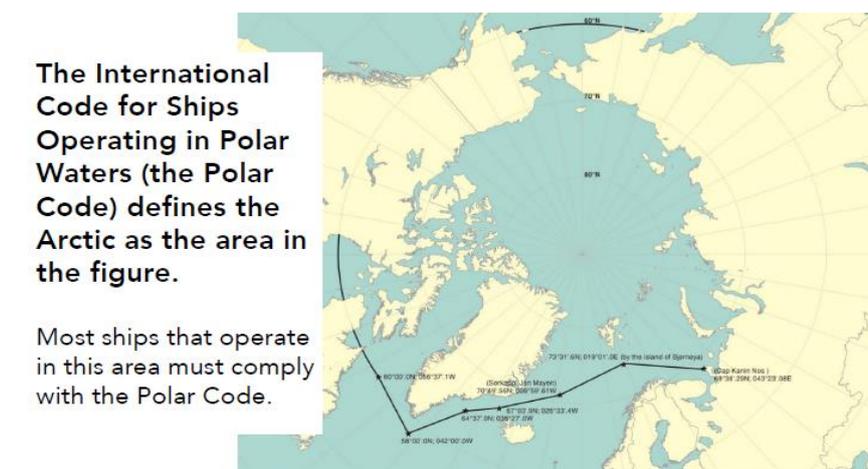


Fig. 12. Area of the Arctic for the Polar Code⁵⁸.

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⁵⁸ Protection of Arctic Marine Environment. Arctic Shipping Status Report 2013-2019. op.cit.

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Arctic Tourism in the Barents Sea Region: Current Situation and Boundaries of the Possible*

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Abstract. The article discusses current trends in the development of the Arctic zone of the Russian Federation (AZRF) and the peculiarities in the Arctic tourism organization. Over the past ten years, the geography of recreational nature management and international tourism in the Russian Arctic has significantly expanded. Among all the northern countries, Russia has the longest coastline in the Arctic and the largest sector of the adjacent shelf and waters of the seas of the Arctic Ocean (AO). So, its current economic and political interests in the polar zone are apparent. However, compared with neighboring Arctic countries, in the Russian Federation, for several reasons, the potential of Arctic tourism is far from being fully utilized. Natural and anthropogenic factors regulate its further development. On the example of actively developing cruise Arctic tourism in the Barents Sea region, the existing problems, and prospects of the possible development of tourism in the Arctic in current conditions are discussed. Based on the analysis of sources available on the modern development of Arctic tourism in general and in the Barents Sea basin, in particular, the author made conclusions about the factors limiting the growth of Arctic tourism in the Russian Federation.

Keywords: *Arctic, tourism, Barents Sea region, recreational nature management, icebreaking fleet, regulatory factors, sustainable development.*

Introduction

The current decade was marked by a significant expansion of the geography of recreational nature management and international tourism in the Russian Arctic. In the polar regions of the Russian Federation, new protected natural areas (SPAs), i.e., reserves and national parks have appeared, ecological and cruise tourism in the polar latitudes has significantly intensified. Russia is the northern country that has the longest coastline in the Arctic seas (more than 20 thous. km) and the largest adjacent shelf and Arctic water area. Therefore, for Russia, the current economic and political interests in the polar zone are apparent. However, compared with neighboring Arctic countries, in the Russian Federation for several reasons, the potential of Arctic tourism is far from being fully utilized. Natural and anthropogenic factors regulate its further development.

AZRF in the strategic territorial development plans of the Russian Federation

In 2014, the Strategy for the Development of the Arctic Zone of the Russian Federation until 2020 was adopted. It sets the tasks for the comprehensive economic, defense, and social development of the Arctic zone of the Russian Federation (AZRF). The strategic plans include “the development of a unified transport system as a national sea route focused on year-round functioning (incl. the Northern Sea Route and river and rail lines running to it, as well as a network of airports)”, “the development of Arctic tourism and the expansion of environmentally friendly tour-

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ism activities in the Arctic, ... promoting regional tourism clusters and Arctic tourism to national and international markets”¹.

Thus, Russia faces a promising task of the integrated use of various natural resources of the Arctic, incl. tourism and recreation, with a view to the sustainable socio-economic development of the most important polar regions and the country as a whole.

The second no less important document was the state program established by the Government in 2014 on the “Socio-economic development of the Arctic zone of the Russian Federation for the period until 2020”. In the framework of the new edition of this state program, (No. 1064 of August 31, 2017), the list of subprograms, their primary tasks, and target indicators have been updated, the membership has been expanded, the state program implementation period has been extended until 2025. According to experts, this will create the conditions for accelerated socio-economic development of the Arctic zone, achieving strategic interests and ensuring Russia’s national security in the Arctic.

As a subprogram, the sphere “Development of Culture and Tourism for 2013–2020” was designated, which provides for the expansion of opportunities for tourists to visit marine areas on the northern coast of Russia and the creation of conditions for the reception of tourists in the island northern territories of the Russian Federation. The federal target programs “Culture of Russia (2012–2018)” and “Development of domestic and inbound tourism in the Russian Federation (2011–2018)” are integrated and extended into this state program.

However, according to experts, the adopted documents and the design of the regulatory framework for the organization of tourism in the Russian Arctic do not reflect a single economic conception of actions. Still, they offer only targeted solutions that, given the regional specifics and strategic position of the region, are insufficient to solve everything complex problems of the Arctic. It should be noted that, in general, there are favorable prospects for solving the tasks posed by the growing importance of the resource potential of the northern and Arctic regions for the Russian economy. It produces 72% of all oil and gas condensate, 93% natural gas, almost all diamonds, 37% of commercial timber, non-ferrous and rare metals, gold, platinum, and many other consequential types of products, which together provide up to 60% of the country’s exports. The North offers 15–20% of the total GRP, which is essential for the federal budget [1, Pavlenko V.I., p. 17].

Under the Arctic climate warming recently observed and the decreasing ice cover of the Arctic Ocean, the NSR modernization plans are slowly but surely being implemented, incl. the reconstruction of the ports of Dudinka, Dikson, Tiksi, Pevek, and Provedeniya along the NSR. This route should connect European and Far Eastern Russian ports, and the mouths of navigable Siberian rivers into a single transport system to give a new impetus to the development of the eastern regions of Russia. Currently, there is a revival of economic activity in the Arctic sector of the Russian Federation and the active “re-development” of marine and coastal Arctic regions, especially in

¹ Strategiya razvitiya Arkticheskoy zony Rossiyskoy Federatsii do 2020 g. [Development Strategy of the Arctic Zone of the Russian Federation until 2020]. URL: <http://government.ru/news/432/> (accessed 25 September 2019).

the western part of the Russian Arctic, where Russia is successfully mastering new technologies for offshore hydrocarbon production. In the course of the development of the Arctic and the territories of the Russian North, new territorial entities are formed: support zones based on the existing spots of the future socio-economic development of the Arctic [2, Andreeva E.N., p. 26]. It is planned for the support zones to function as integrated territorial units by 2025 (Fig. 1).



Fig. 1. Support zones of the Arctic development ².

In the understanding of the President of the Russian Federation, support zones are not only territories but primarily the implementation of mutually complementary projects, as well as state support tools. Their main tasks are the development of mineral resource centers, attracting investments, and the NSR development. In the framework of the zones, other “territories with preferential conditions for conducting entrepreneurial activity” may be created, incl. tourist and recreational facilities.

The increase in oil and gas production at new fields (Shtokmanovskoye, Prirazlomnoye, etc.), the organization of the new port of Sabetta and a plant for the production of liquefied gas, necessitate the further development of not only the NSR transport services but measures to prevent related problems of environmental pollution [3, Dodin D.A., p. 8, 64].

According to the press, to develop the Arctic shipping along the NSR, the construction of 8 large new icebreakers is planned. In 2017, the most significant new nuclear icebreaker Ilya Muromets and the icebreaker Sibir were launched at the shipyards of St. Petersburg. Also, in October 2019, the Ivan Papanin icebreaker, the lead ship of the series for the Russian Navy, descended from the slipway, and the second, Nikolai Zubov, was under construction. These vessels are designed to organize the NSR patrols and to ensure Arctic shipping safety. Outstanding achievement in the energy supply of the eastern Arctic regions was the commissioning of the first Akademik Lomonosov floating nuclear atomic thermal power plant (FNPP) in 2019. It was delivered and in-

² Assotsiatsiya polyarnikov [Association of Polar Explorers]. URL: <http://aspolrf.ru/news/536/> (accessed 04 January 2020).

stalled in the port of Pevek in Chukotka. The plant was designed to produce electrical and thermal energy and to desalinate seawater. Of course, this plant will become a popular tourist destination when organizing cruises on the NSR.

It should be emphasized that the provision of shipping along the NSR and the large rivers of the Russian North opens up the possibility of expanding not only industrial transportation and boosting the economy of the remote regions of the north of Siberia, but also international cruise and ecological tourism in the polar and Arctic latitudes. All this should contribute to the development of related industries, the creation of new jobs, and the consolidation of people in the settlements of the North of the Russian Federation [4, Selin V.S., p. 7].

According to experts, recently, there has been a revival of the socio-economic sphere in some northern regions of Russia. First, this refers to the Barents Sea, the White Sea, and Kara basins of the Arctic Ocean, where the main areas of the existing and planned production of hydrocarbons, metallurgical raw materials, and forests are located. The western sector of the Russian Arctic is not only rich in natural resources. Also, it is the presence of many natural and cultural heritage sites (seids, labyrinths, petroglyphs, and remains of Pomor culture) associated with the ancient and modern stages of the economic development of seacoasts and islands in the Barents Sea region. There, on the northern coast of the Kola Peninsula, the most famous ice-free seaport of Murmansk and various natural, historical, and cultural tourism sites are located [5, 6].

This polar region has the most significant tourist and recreational potential and is becoming increasingly popular as an area of international ecological and cruise tourism. On the Kola Peninsula, one can see traces of prehistoric human exploration of this territory (petroglyphs, seids, labyrinths, megalithic monuments) and heritage monuments of later historical eras [5, Grigoryev A.A. et al., p. 31].

On the border between the Murmansk Oblast, Norway, and Finland, an international transborder national park Paasvik-Inari was organized. In the waters of the Barents Sea, the Svalbard archipelago (Grumant) is located, where the tourist-recreational cluster, combining the Norwegian and Russian parts of the territory, is successfully developing. Annually, the Norwegian part of Svalbard, with the center in Longyearbyen, hosts up to 80 thousand tourists, mainly from Norway and other European countries. The Russian part of Svalbard and its settlements of Barentsburg and Pyramida lag far behind in terms of tourist infrastructure and transportation. However, recently, there has been a noticeable increase in the attendance of Barentsburg in the spring-summer period from April to August during short excursions (2.5–3 thousand people/year. Among them, Russian tourists are only 20–30 people) [6, Korostelev E.M. et al., p. 13].

In the White Sea, on the Solovetsky Islands, the well-known Solovetsky State Historical, Architectural, and Natural Museum-Reserve and the monastery complex are opened for guests. According to the Agency for the Development of the Solovetsky Archipelago, in 2015, the Islands got a special status of "Religious and historical place," which makes them even more attractive to visitors. According to local statistics, annually, this national shrine is visited by an average of 30 thou-

sand tourists and pilgrims. According to the press release of the Solovetsky Museum-Reserve, for the season of 2018, the Solovetsky Museum served 62 325 visitors, incl. 49 259 tourists with excursions. Compared to 2017, revenue from the entrance tickets sale increased by 7.4% due to the growth of the number of visitors. However, environmental experts note that restrictions on visiting the Solovetsky Islands are required, as the limit of the ecological capacity of this protected natural area (SPNA) has been reached³.

Organized in 2013 on the Onega Peninsula of the White Sea, the new National Park "Onezhskoe Pomor'e" has become a branch of the Kenozersky National Park since 2016. There, unique sea dunes and indigenous taiga forests that extend to the shores of the White Sea, rare sea animals, monuments of the coastal culture, and Christian wooden temple architecture are preserved. The expansion of the Kenozersky National Park at the expense of the Pomor territories of the Onega Peninsula will probably contribute to the reconstruction and preservation of northern wooden architecture.

Significant tourist potential can be represented by the island of Kiy in the Onega Bay of the White Sea, located 15 km from the city of Onega. In the summer, the Kiy Holiday House operates on the island. Up to 2,000 tourists annually relax there. On the island, one can see the Kia Cross Monastery, founded in 1656 by Patriarch Nikon and of interest for historical and cultural tourism, but requiring restoration.

Since 2011, at the northern end of Novaya Zemlya, the largest "Russian Arctic" national park has been operating since 2016, incl. Franz Josef Land archipelago (FJL). The islands of the "Russian Arctic" keep traces of the ancient sites of the sea and heroic expeditions associated with their discovery and exploration. The largest bird bazaars in the northern hemisphere are there as well as the numerous herds of walruses and other pinnipeds, large habitats of the polar bear, and other specially protected species of fauna and flora [7, Gavrilov M.V., p. 23].

South of Novaya Zemlya is Vaigach Island with its numerous attractive objects of the Arctic nature and monuments of the ancient culture of the Nenets people. Currently, the administration of the Nenets Autonomous Okrug is developing plans to organize a new National Park on the territory of Vaigach Island. This island is sacred for the peoples of the North. Its picturesque natural landscapes, lakes, canyons, and waterfalls are the unique historical and cultural heritage of the Nenets. The island provides opportunities for observing wild animals; it can become one of the best tourist brands of the Nenets Autonomous Okrug [8].

All the listed tourist and recreational territories of the Arctic, despite their inaccessibility, annually receive hundreds of tourists and become more and more popular among both domestic and foreign travelers. Development of the NSR transport infrastructure will contribute to their ac-

³ Agentstvo po razvitiyu Solovetskogo arkhipelaga Arkhangel'skoy oblasti [Agency for the Development of the Solovetsky Archipelago of the Arkhangelsk Oblast]. URL: <https://regnum.ru/news/2358304.html> (accessed 01 September 2018).

cessibility and help to create new jobs, improve local socio-economic conditions, and to increase the quality of life there.

It should be noted that in the neighboring Arctic countries, i.e., the United States, Canada, Iceland, Norway, and Denmark are developing tourism with significant public sector support, and it brings considerable profit. E.g., according to UNWTO, in 2010–2011, the US state of Alaska earned up to \$ 3.4 billion/year and Canada — \$ 6.5 billion/year. The significant increase in the number of tourists visiting Greenland attracts attention: in the early 1990s, only about 3,500 people arrived there per year, and in 2011 — nearly 65,000 people/year. In general, over the past 20 years, there has been an increase in the flow of tourists to the Arctic by more than 18 times, exceeding the number of residents living here — Inuit and Danes. Among the remaining regions of the Arctic, Iceland showed similar increased dynamics: the number of international visitors has grown by more than four times. Norwegian Svalbard got a three-time increase. In other regions of the foreign Arctic (Alaska and the Canadian Archipelago), tourism growth rates are like the world average and ranged from 42 to 84%. So, in 2015, the number of tourists visited the foreign Arctic and subpolar regions (not Russian) exceeded 700 thousand people [9, 10, 11].

Prospects and limits for the tourism development in the Barents Sea region

It should be noted that because of the Arctic climate warming observed over the past 20 years, an ever-increasing area of polar ice in the summertime disappears and frees up the northern seas for navigation. Not only continental but also island territories become more accessible. The interest of representatives of different countries, especially China, is growing not only in the mineral and other natural resources of the northern polar territories and waters but also in cruises along the northern seas and the North Pole. In groups of tourists participating in cruises to the North Pole and in the Russian Arctic National Park, representatives of China make up 30%.

In recent years, China, and Japan, which have the most significant economic weight in Southeast Asia, have shown an increased interest in polar research, and the development of transport and cruise capabilities of the NSR. The largest Chinese research diesel icebreaker, Xue Long (Snow Dragon), has already completed several flights along the NSR from Shanghai to Svalbard and back. In China, the second, even more powerful, icebreaker “Xue Long-2” was launched for the future escort of transport caravans and cruise ships along the NSR. Currently, the advantages of using the NSR are apparent: this route is almost two times shorter than other sea routes from Europe to the Far East. E.g., the distance between St. Petersburg and Vladivostok is 14,280 km along the NSR, 23,200 km via the Suez Canal, and 29,400 km around the Cape of Good Hope. The sea route along the NSR between Murmansk and the port of Provideniya is about 7,100 km. However, the passage of vessels through the NSR, especially in the eastern sector, even under conditions of modern warming, without the escort of icebreakers, is still problematic [12, Lukin Yu.F.].

In the Barents Sea region, where the ice-free port of Murmansk is located, international marine cruise tourism has been actively developing in recent years. But so far, it has not received broad development and is carried out only by private firms and individual representatives of shipping companies and airlines.

According to the Minister of Economic Development of the Murmansk Oblast Yu. Efremov, cruise ship calls at the seaport of Murmansk have been carried out for the past 12 years. The Murmansk tour operator Nordmorservis Travel has been accepting 3 to 8 medium-sized cruise liners per season at the fishing port. Besides, the Moscow company Special Travel Club provides sea cruises to the Arctic, offering cruises to Greenland, Iceland, Svalbard, and the North Pole, with a visit to Franz Joseph Land. But, unfortunately, still, in the port of Murmansk, there are no special deep-sea berths suitable for receiving large cruise liners, which could provide additional income to the local budget [13, Sevastyanov D.V. et al., p. 485].

Especially popular among foreign tourists are cruises from Murmansk across the Barents Sea on the Russian nuclear icebreaker “50 Let Pobedy” to the North Pole, via Franz Joseph Land Archipelago and the National Park “Russian Arctic”. Indicative is the statistics of cruise tourists visiting this new national park, presented on the site of the NP “Russian Arctic”. In 2011–2018, it was attended by more than 6.5 thous tourists from 70 countries. It is noteworthy that out of the total number of cruise tourists who visited the Russian Arctic during all these years, only about 5–8% were the citizens of the Russian Federation, and about 30% — Chinese tourists. In the summer of 2018, tourists from 41 countries were there. The share of tourists from China amounted to 33% (354 people). The second were tourists from Germany and Switzerland — 13% (144 and 143 people), and third — the US citizens: 12% (136 people). The dynamics of visits is in Table 1.

The tourist season 2019 in the Russian Arctic National Park was an anniversary. The park was ten years old. For the first time in ten years, Russian citizens took first place in terms of the number of visits. In 2019, 1 306 people visited this protected area, incl. 262 Russians⁴.

Table 1

The dynamics of tourists visit the NP “Russian Arctic”

Years	2011	2012	2013	2014	2015	2016	2017	2018	2019
Number of tourists	865	1005	636	738	1225	954	1142	1079	1306

It can be noted that for Russian tourists, cruises to the North Pole and the FJL are not in great demand because of their high cost (up to 1.5–2 million rubles for 7–10 days cruise on a nuclear icebreaker). A slightly cheaper cost will be a sea cruise to Iceland or Svalbard, the price of which will be about 250 thous rubles, which is explained by the more developed infrastructure and the elaboration of these tourist destinations. Thus, for most Russian citizens, Arctic tourism is still difficult to reach.

⁴ Turisticheskiy portal Arkhangel'skoy oblasti [Tourist portal of the Arkhangelsk Oblast]. URL: www.pomorland.travel (accessed 28 December 2019).

Conclusion

Based on the analysis of materials characterizing the modern development of Arctic tourism in general and in the Barents Sea basin, the following conclusions can be drawn. At numerous international forums, where various problems of rational use of natural resources of the Arctic are discussed, it is invariably noted that the Russian Arctic is “a region of promising tourist development”. However, along with some successes in the development of tourism in the polar and Arctic regions of the Russian Federation, several restrictions do not allow us to hope for a significant expansion of the Arctic segment of tourist activity in the foreseeable future outside the Barents Sea.

1. First, the difficulties associated with the harsh climatic conditions of shipping at high latitudes are apparent: long, cold winters and heavy floating ice, which outside the Barents Sea do not entirely disappear even in the warmest months of the year. Existing popular forecasts for continued climate warming in the Arctic are controversial and may not be justified.

2. Passage of transport and cruise ships through the NSR through ice massifs is possible only with the help of icebreakers. The use of the nuclear icebreaker fleet is a complicated and expensive undertaking, which significantly increases transport costs and the cost of cruise tourism, which does not allow making it widespread.

3. According to the deputy head of the Federal Agency for Tourism of the Russian Federation R. Skoroy, not a single concept and strategy for the development of the Arctic zone adequately provides for a stable income from Arctic tourism. Currently, Arctic tourism is not considered an important factor and an integral part of the complex socio-economic development of the northern regions. Tourism exists in the Arctic, contrary to the organizing and regulatory role of the state.

4. With all the diversity and attractiveness of tourism facilities in the Arctic, the difficult accessibility of the Arctic regions and the high cost of travel even within the Barents Sea basin are the main regulatory factors for domestic tourism. The Arctic is entirely inaccessible to people with average incomes. Amid falling purchasing power of the main population of the Russian Federation, the number of tourists who can afford a trip to the Arctic is declining.

5. The attraction of foreign tourists to the Russian Arctic is fraught with several difficulties in the visa regime and border control; therefore, it is still challenging to guarantee constant demand for Arctic tourism and its mass character.

6. The necessary tourist infrastructure is still lacking in the Arctic zone of the Russian Federation. There is always a low level of service and a lack of professional staff, and no possibility of developing mass international cruise tourism, even using the largest port of Murmansk.

7. Despite the adopted “Development Strategy of the Russian Arctic to 2025”, Arctic tourism is still not economically connected with plans and programs for the integrated, targeted socio-economic development of the polar regions. It explains the weak state support and inadequate funding of tourism projects, which limits its development prospects.

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Small Business in the Arctic: Background for Changing the Management Paradigm*

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Abstract. The article is devoted to the analysis and justification of socio-economic background that initiates the need to change the paradigm of management for small and medium-sized businesses in the Arctic zone of the Russian Federation. The key points of this analysis, in addition to the generally accepted estimates of demographic trends, were those indicators of the dynamics and structure of the standard of living which are the link between the population as a consumer of goods and services, and small businesses that create these goods and services. In the almost complete absence of a single content that allows full monitoring of small and medium-sized businesses, the state makes attempts to make adequate management decisions based on the project management methods. It is especially clearly reflected in the adopted and implemented system of national and federal projects and programs. At the same time, even in the current trends in the formation of information and analytical support for these projects and programs that directly or indirectly relate to small businesses, economic aspects often prevail over social ones, which is directly reflected in the formation of the management paradigm. At the same time, a systematic approach and appropriate tools, lead the authors to the conclusion that in the coordinate system of socio-economic development of the Arctic territories, the economic drivers are large corporate structures, while small businesses are assigned the role of a localized “social buffer”. It is one of the main backgrounds for changing the paradigm for small and medium-sized business management in the Arctic areas of Russia. The current economic situation caused by the COVID-2019 pandemic fully confirms our assumptions.

Keywords: *small and medium-sized businesses, Arctic zone of the Russian Federation, socio-economic development of territories, system approach, management paradigm.*

Introduction

Rethinking the management paradigm is one of the main trends, a kind of "mainstream" of management science of the late 20th — early 21st centuries. In the process of transformation, society becomes more and more information open, at the same time, the fundamental update of the understanding of the public administration role is going on, as well as its social conditioning, scale, and effectiveness, and most importantly, the position of a person in public administration [1, Novikova A.V., p. 132]. As part of this trend, today in Russia, albeit with great difficulties, there is a transformation¹ of the business climate that directly affects the seemingly unshakable “patterns” of the behavior of the domestic business community.

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¹ Transformatsiya delovogo klimata [Business Climate Transformation]. URL: https://economy.gov.ru/material/directions/investicionnaya_deyatelnost/investklimat/tdk/ (accessed 28 February 2020).

In today's Russian reality, when it comes to small and medium-sized enterprises (SMEs), we primarily turn our eyes to the federal law with a consonant name², which defines the criteria for referring to this category of business entities. The adjective “housekeeping” is the key there. It reflects the essence of the state’s attitude to SMEs as economic agents. Based on this, we see a reason to argue that the grounds of the state’s managerial paradigm concerning the small business is its economic essence without considering the social role.

Small business: a systematic approach

The totality of small and medium-sized businesses for all the attributes it has with full right can be attributed to socio-economic systems, defined, e.g., following [2, Drohobytsky I.N.]. In this case, the ratio of economic and social components in it should be decisive when choosing a paradigm for controlling system-forming processes. From the role settings point of view, this can be described using the following matrix (Fig. 1). Let us briefly describe its segments.

If both the social and economic components are represented to a rather high degree, then business plays the role of a development driver in the territory of its presence. Such examples exist in Russia, but they are more likely to be the exception than the rule. As examples, one can cite the business practices of such Russian regions as the Permskiy Kray, Kaluzhskaya, Lipetskaya and Moskovskaya Oblasts, the Republic of Tatarstan, which occupy leading positions in various ratings³.

However, much more often in those regions that can even be classified as economically prosperous, big business is aimed at the full-scale exploitation of resources to obtain the maximum economic result for itself, leaving behind “secondary” social problems for it. Indeed, local labor resources, and hence the population itself, are often simply not of interest to corporate structures, which are increasingly using the “shift method” of attracting personnel.

At the same time, in recent years, quite reasoned opinions [3, Imaeva G.R., p. 150; 4, Kuyantsev I.A. et al., p. 40; 5, Murai V.Yu., p. 81; 6, Tutygin A.G. et al.] on the growing social role of entrepreneurship as a public institution. Even the state took care of this issue in its strategic and program documents⁴. However, it should be understood that in this perspective, the government, in reality, not expecting any significant economic return from small and medium-sized businesses, assigns it rather the role of a “social buffer” that removes a certain tension in society. Recent

² Federal'nyy zakon «O razvitii malogo i srednego predprinimatel'stva v Rossiyskoy Federatsii» ot 24.07.2007 № 209-FZ [Federal Law “On the Development of Small and Medium-Sized Enterprises in the Russian Federation” No. 209-FZ of July 24, 2007]. URL: http://www.consultant.ru/document/cons_doc_LAW_52144/ (accessed 26 February 2020).

³ Ofitsial'nyy sayt Fonda razvitiya promyshlennosti [Industrial Development Foundation Webpage]. URL: <https://frprf.ru/press-tsentr/novosti/chislo-sovmestnykh-zaymov-frp-i-frfp-vyroslo-v-1-5-raza-posle-zapuska-reytinga-regionalnykh-fondov/> (accessed 28 February 2020).

⁴ Ukaz Prezidenta RF ot 07.05.2018 № 204 «O natsional'nykh tselyakh i strategicheskikh zadachakh razvitiya Rossiyskoy Federatsii na period do 2024 goda» [Decree of the President of the Russian Federation No. 204 of May 05, 2018 “On National Goals and Strategic Objectives of the Development of the Russian Federation for the Period until 2024”]. URL: http://www.consultant.ru/document/cons_doc_LAW_52144/ (accessed 26 February 2020).

speeches by President of Russia V.V. Putin⁵, decrees and orders of the Government of the Russian Federation⁶, and regional authorities⁷, dedicated to supporting small business in the context of the spread of COVID-2019, are proof of this.

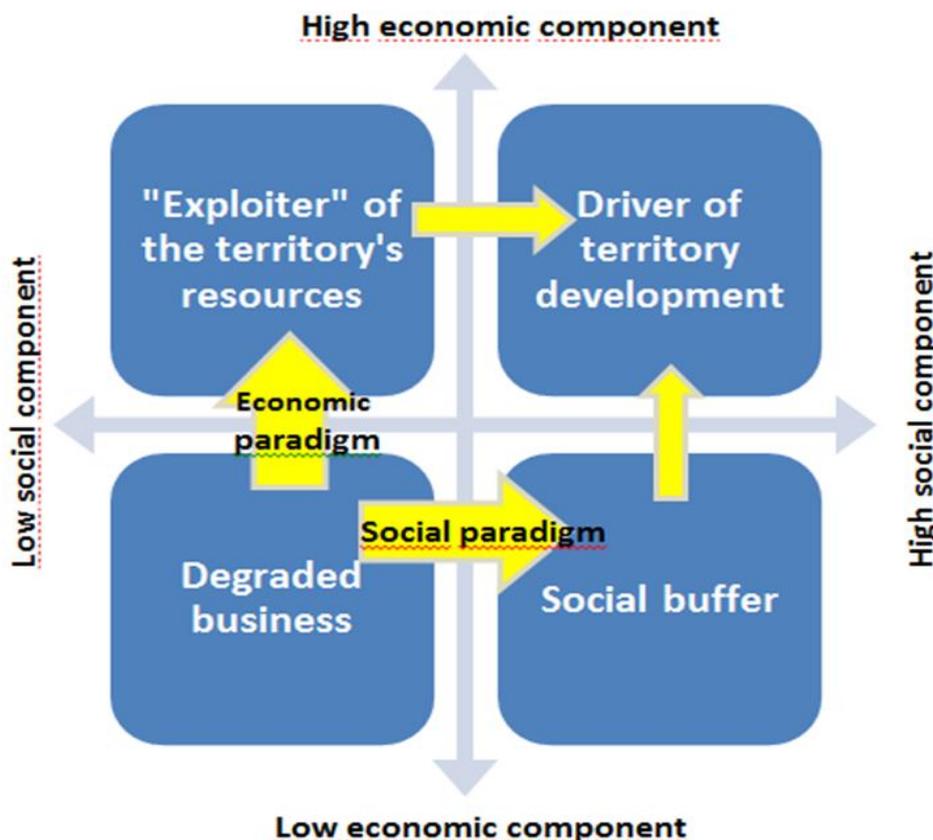


Fig. 1. Small Business Role Matrix.

Given the apparent presence of state interests in the field of SMEs, the corresponding managerial paradigm is also being formed, which becomes the basis of state policy aimed at the

⁵ Ukaz Prezidenta RF ot 11 maya 2020 g. № 316 «Ob opredelenii poryadka prodleniya deystviya mer po obespecheniyu sanitarno-epidemiologicheskogo blagopoluchiya naseleniya v sub"ektakh Rossiyskoy Federatsii v svyazi s rasprostraneniem novoy koronavirusnoy infektsii (COVID-19)» [Decree of the President of the Russian Federation No. 316 of May 11, 2020 "On Determining the Procedure for Extending the Measures to Ensure Sanitary and Epidemiological Welfare of the Population in the Constituent Entities of the Russian Federation In Connection with the Spread of a New Coronavirus Infection (COVID-19)"]. URL: http://www.consultant.ru/document/cons_doc_LAW_352133/ (accessed 12 May 2020).

⁶ Postanovlenie Pravitel'stva RF ot 24.04.2020 g. № 576 «Ob utverzhdenii Pravil predostavleniya v 2020 godu iz federal'nogo byudzheta subsidiy sub"ektam malogo i srednego predprinimatel'stva, vedushchim deyatel'nost' v otraslyakh rossiyskoy ekonomiki, v naibol'shey stepeni postradavshikh v usloviyakh ukhudsheniya situatsii v rezul'tate rasprostraneniya novoy koronavirusnoy infektsii» [Decree of the Government of the Russian Federation No. 576 of April 24, 2020 "On Approval of the Rules for the Provision in 2020 of the Federal Budget for Subsidies to Small and Medium-Sized Enterprises Engaged in Activities in the Sectors of the Russian Economy that were Most Affected by the Deterioration of the Situation as a Result of the Spread of New Coronavirus Infection"]. URL: http://www.consultant.ru/document/cons_doc_LAW_351423/ (accessed 12 May 2020).

⁷ Rasporyazhenie Pravitel'stva Arkhangel'skoy oblasti ot 7 aprelya 2020 g. № 120-rp «Ob utverzhdenii plana pervoocherednykh meropriyatiy po obespecheniyu ustoychivogo razvitiya ekonomiki i sotsial'noy stabil'nosti v Arkhangel'skoy oblasti na 2020 god v usloviyakh ukhudsheniya situatsii v svyazi s rasprostraneniem novoy koronavirusnoy infektsii (COVID-2019)» [Order of the Government of the Arkhangel'sk Region No. 120-gr of April 7, 2020 "On Approval of the Priority Plan for Ensuring Sustainable Economic Development and Social Stability in the Arkhangel'sk Region for 2020 in the Worsening Situation due to the Spread of a New Coronary Virus Infection (COVID- 2019)"]. URL: https://portal.dvinaland.ru/upload/iblock/aed/120rp_07042020.pdf (accessed 12 May 2020).

development of entrepreneurship. The main features of this policy are visible today in five federal projects (“Improving the conditions for doing business”, “Enhancing access for SMEs to financial resources, incl. preferential financing”, “Accelerating SMEs”, “Building a support system for farmers and the development of rural cooperation”, “Promotion of entrepreneurship”), which are a single national project “Small and medium enterprises and support of individual entrepreneurial initiative”⁸. In the development of the national project at the level of constituent entities of the Russian Federation, the relevant regional and municipal programs have been adopted and are being implemented. So, in the Arkhangelsk Oblast, this is subprogramme No. 2 “Development of small and medium-sized enterprises” of the state program “Economic Development and Investment Activity in the Arkhangelsk Oblast”⁹. Similar programs have been adopted in other Arctic regions of Russia.

Territorial conditions and living standards in the Arctic regions

Small business, unlike large corporate structures, has a significant dependence on territorial affinity. Indeed, for almost any SME entity, the scope of its activity rarely goes beyond the boundaries of one region or even a municipality. This fact primarily applies to entrepreneurs engaged in the production of goods, agriculture, the implementation of various works, the provision of those types of services to the population that requires direct personal interaction with the consumer. Thus, often belonging to a particular territory forms the primary set of factors that significantly affect the business. It is especially evident in those territories whose conditions are unfavorable for the development of entrepreneurship. Such territories include, first, Arctic municipalities.

According to the Decree of the President of the Russian Federation of May 02, 2014 No. 296, the land territories of the Arctic zone of the Russian Federation (AZRF) as a new macro-region are fully or partially the territories of nine constituent entities of the Russian Federation, as well as land and islands in the Arctic Ocean¹⁰. At the same time, several Arctic regions periodically come forward with initiatives to expand the borders of the Russian Arctic by incl. individual municipal entities in it. So, following the Decree of the President of the Russian Federation of June 27, 2017 No. 287, the Belomorsky, Loukhsky and Kemsy municipal regions of the Republic of Karelia have

⁸ Paspport natsional'nogo proekta «Maloe i srednee predprinimatel'stvo i podderzhka individual'noy predprinimatel'skoy initsiativy» [Passport of the National Project “Small and Medium-Sized Enterprises and Support of Individual Entrepreneurial Initiative”]. URL: <http://government.ru/info/35563/> (accessed 26 February 2020).

⁹ Postanovlenie Pravitel'stva Arkhangel'skoy oblasti ot 10.10.2019 N 547-pp (red. ot 24.12.2019) «Ob utverzhdenii gosudarstvennoy programmy Arkhangel'skoy oblasti «Ekonomicheskoe razvitie i investitsionnaya deyatel'nost' v Arkhangel'skoy oblasti» [Decree of the Government of the Arkhangelsk Oblast No 547-rr of October 10, 2019 (as amended on December 24, 2019) “On Approval of the State Program of the Arkhangelsk Region “Economic Development and Investment Activity in the Arkhangelsk Region”]. URL: <http://docs.cntd.ru/document/462645472> (accessed 12 May 2020).

¹⁰ Ukaz Prezidenta RF ot 02.05.2014 g. № 296 «O sukhoputnykh territoriyakh Arkticheskoy zony Rossiyskoy federatsii» (red. ot 13.05.2019 g.) [Decree of the President of the Russian Federation No. 296 of May 02, 2014 “On Land Territories of the Arctic Zone of the Russian Federation” (as amended on May 13, 2019)]. URL: http://www.consultant.ru/document/cons_doc_LAW_162553/ (accessed 26 February 2020).

already been included in the territory of the Russian Arctic. The initiative to include the Leshukonsky and Pinezhsky districts of the Arkhangelsk Oblast is currently under discussion.

Despite the system-wide problems typical for the Russian Arctic and the North, all the Russian Arctic territories have several individual characteristics. Firstly, the regions of the Russian Arctic differ from each other in natural resource and territorial conditions. Secondly, they have a different level of socio-economic development. Thirdly, these regions are distinguished by a set of strategic and program documents that determine their development [7, Tutygin A.G., Chizhova L.A., p. 194].

Let us consider some indicators that clearly illustrate the socio-economic situation in the Arctic regions of Russia.

Between 2005 and 2018, the population of the Russian Federation increased by 2.31%. At the same time, in the Arctic regions, it changed in different directions. In only two of them, in the Nenets and Yamal-Nenets Autonomous Okrugs, growth rates were higher than the national ones, in the Republic of Sakha (Yakutia), the increase was 1.25%. In other regions, as compared to 2005, population decline is observed, and the Republic of Komi, Murmansk, and Arkhangelsk Oblasts are among the three demographic “outsiders” (Fig. 2).

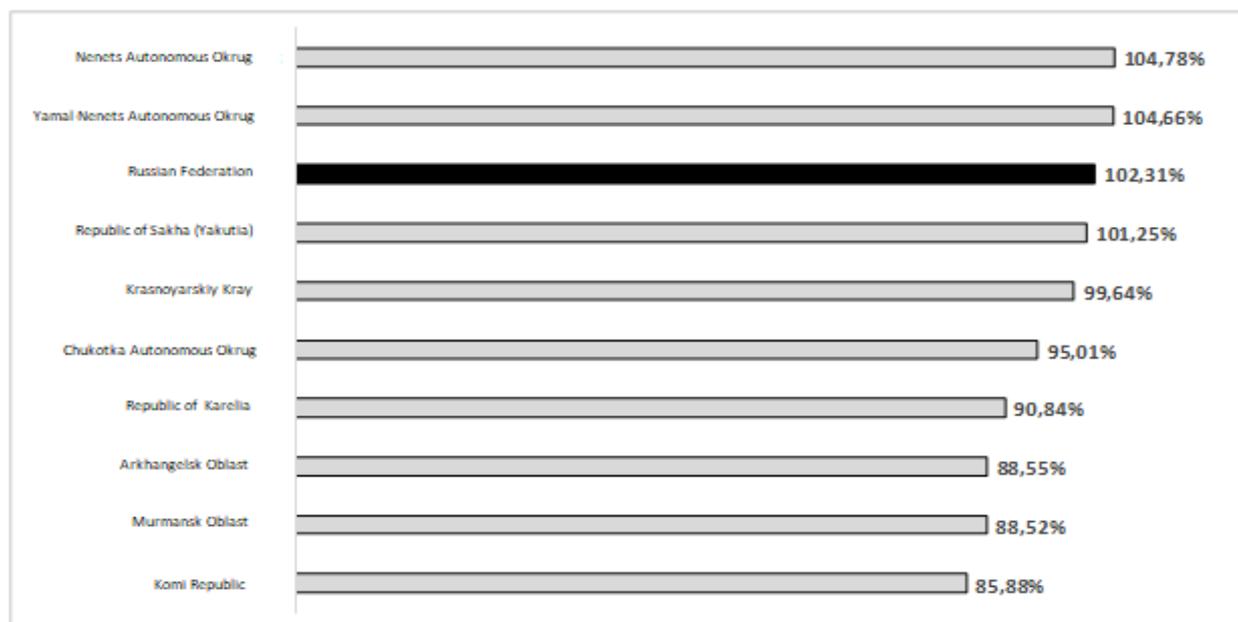


Fig. 2. The population growth rate in the regions of the Russian Arctic (in 2018, compared to 2005), %.

In general, the population decline in the group of regions that are fully or partially part of the Russian Arctic, in 2018 amounted to – 4.64% compared to 2005.

Among the main demographic problems of the Arctic territories of Russia, in addition to reducing the population, researchers also highlight aging of the population (reduction in the working-age population); birth rate reduction; lower life expectancy in comparison with the all-Russian level; a high level of infant mortality (mainly among indigenous peoples); high incidence rate; mi-

gration outflow of the able-bodied population with a high level of professional qualification [8, Gubina O.V., Provorova A.A., p. 386] and others.

The standard of living of the population is mostly determined by the ratio of its income and expenses, incl. the cost of goods and services of prime necessity. In two regions of the Russian Arctic, in the Republic of Karelia and the Arkhangelsk Oblast, the share of expenditures in the average per capita income of the population exceeds the average Russian level (75.76%), which is in Fig. 3. At the same time, a sharp difference in this indicator is observed in three subjects — the Chukotka, Nenets, and Yamal-Nenets Autonomous Okrugs, where it is about 36–42%. We note that in our analysis of the standard of living we do not consciously use the average per capita income indicator in isolation from population expenditures due to the presence of significant interregional price differences in local markets for goods and services.

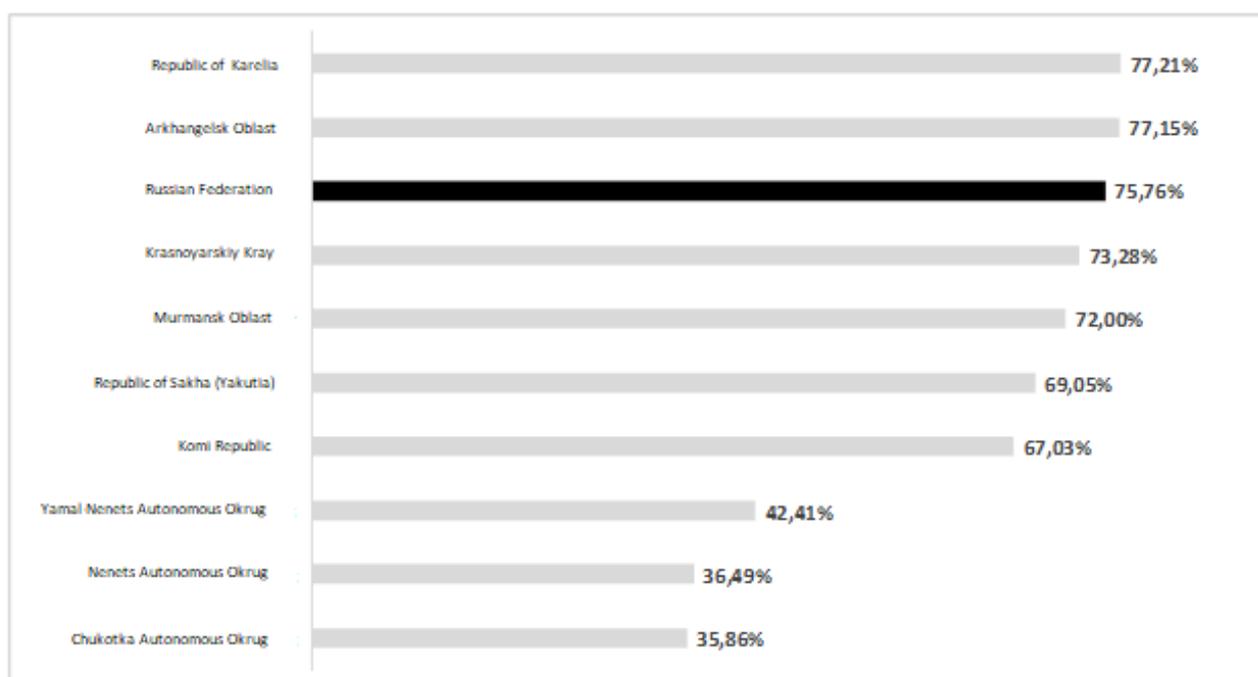


Fig. 3. The share of household expenditures, per capita incomes in 2017, %.

According to experts of the Institute of Economics of the Ural Branch of the Russian Academy of Sciences, this phenomenon is explained by the fact that the population of the Arctic zone of the Russian Federation does not use 40% of income in their territories, preferring to spend earned money in other regions of the country. It is due to several reasons: from the “shift method of work” to the underdeveloped local markets for goods and services in the Arctic territories. Moreover, for the municipal entities of the Russian Arctic, there is a relationship between the development of infrastructure and cash outflows [9, Zakharchuk E.A., Pasyukov A.F., Nekrasov A.A.].

An essential factor for analyzing the living standards of the population is not only the ratio of income and expenses but also the structure of the costs themselves, that is, what part of the population spends on food, the purchase of non-food products (clothing, household appliances, furniture, vehicles, etc.) and payment for services. Relevant for the northern territories is also an indicator of the share of expenses associated with the use of alcoholic beverages.

Data in the Table1 allows ranking the Russian Arctic area by the structure of expenditures of the population by groups of goods and services.

Table 1

The structure of the expenditure of the AZRF population in 2017, %

Subject of the Russian Federation	Food	Non-food products	Alcohol	Payment for services
Russian Federation	34.3	37.1	1.6	27.0
Republic of Karelia	37.9	35.1	2.2	24.8
Komi Republic	35.5	32.7	2.2	29.6
Nenets Autonomous Okrug	34.0	27.7	2.7	35.6
Arhangelsk Oblast	30.8	43.1	1.2	24.9
Murmansk Oblast	29.3	37.9	2.3	30.5
Yamal-Nenets Autonomous Okrug	32.2	30.7	2.9	34.2
Krasnoyarsk Kray	30.9	37.7	1.9	29.5
The Republic of Sakha (Yakutia)	35.2	32.0	1.3	31.5
Chukotka Autonomous Okrug	40.0	28.4	2.1	29.5

This ranking is especially evident in comparison with the average Russian indicators (Fig. 4).

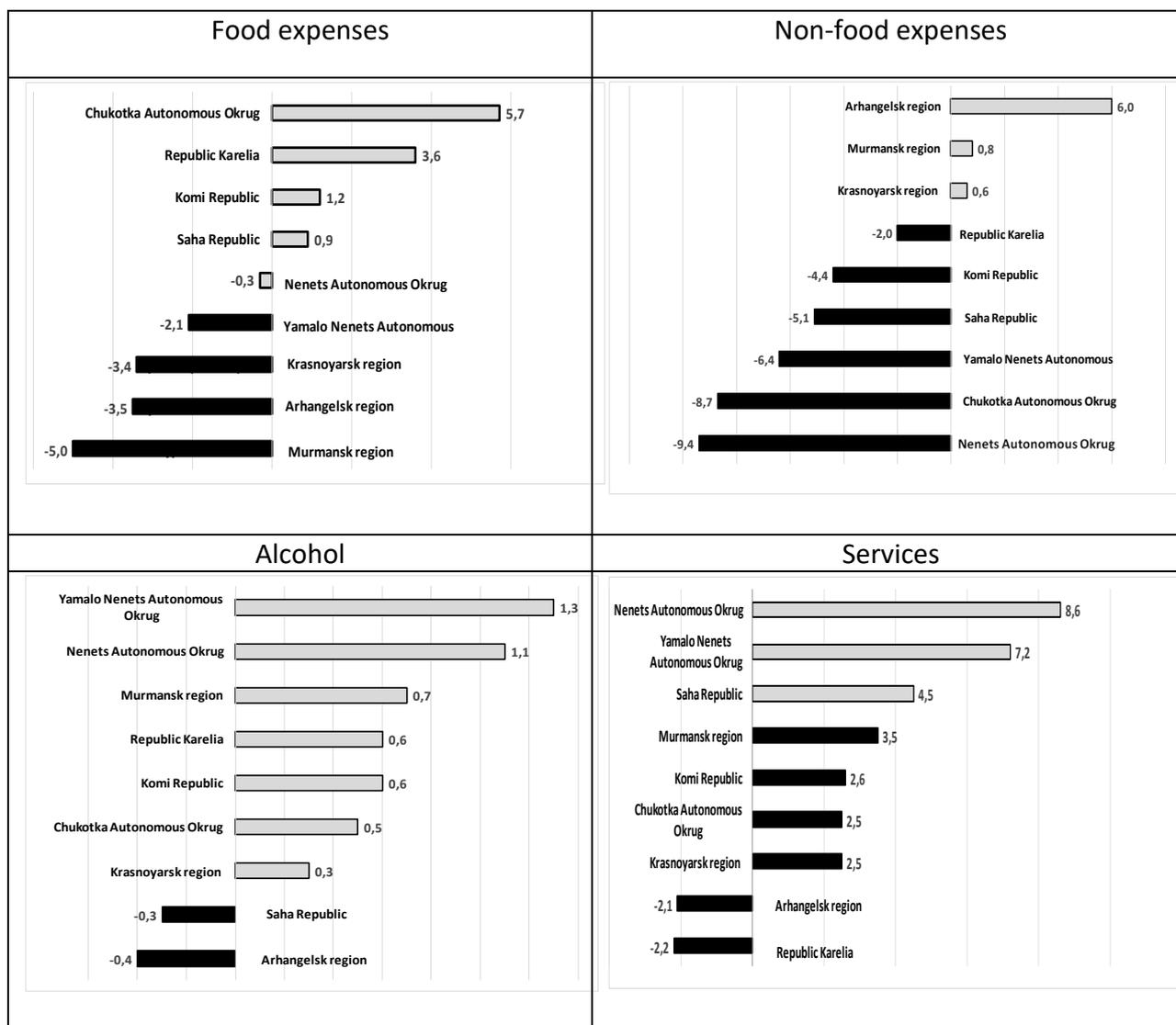


Fig. 4. Ranking of regions of the Russian Arctic by indicators of deviations in the structure of the expenditure of the population from the average Russian level by groups of goods and services (percentage points).

Compared with the average Russian level among the regions of the Russian Arctic, the share of food purchase costs in the structure of population costs is highest in the Chukotka Autonomous Okrug (+5.7 p.p.) and the Republic of Karelia (+3.6 p.p.). Below the national average, this indicator is in the Murmansk Oblast (-5.0 p.p.), the Arkhangelsk Oblast (-3.5 p.p.), and the Krasnoyarsky Krai (-3.4 p.p.). In terms of the share of expenses for the purchase of non-food goods, the Arkhangelsk Oblast (+6 p.p.), the Nenets, Chukotsky and Yamal-Nenets Autonomous Okrugs (-9.4 p.p., -8.7% p.p. and -6.4 p.p., respectively) significantly deviate from the average for Russia and), as well as the Republic of Sakha (Yakutia) and Komi (-5.1 p.p. and -4.4 p.p.).

If you look at the share of the population's expenses related to payment for services, then in almost all Arctic regions, it is higher than the average Russian level — from +8.6 p.p. in the Nenets Autonomous Okrug up to +2.5 p.p. in the Krasnoyarsky Krai. The only exceptions are Arkhangelsk Oblast and Karelia, where this indicator is 2 pp below the average Russian. So, except for the Arkhangelsk Oblast and Yakutia, the average Russian bar in the structure of expenditures of the population is higher than the costs of acquiring alcoholic beverages. It is especially noticeable in the Yamal-Nenets and Nenets Autonomous Okrugs.

If we consider the dynamics of the cost structure of the population of the Arctic regions, then over the past few years it is quite predictable, basically changed insignificantly, as evidenced by the values of the structural differences index V.M. Ryabtsev (table. 2). On a scale for assessing the significance of structural differences, most of the values of the index V.M. Ryabtsev fell into the ranges 0.000–0.030 (the identity of structures), 0.031–0.070 (very low level of difference in structures) or 0.071–0.150 (low level of difference in structures) [10, Ryabtsev V.M., Chudilin G.I.].

Table 2

The values of the V.M. Ryabtsev's index for population spending structure (2014–2017)

Subject of the Russian Federation	Food	Non-food products	Alcohol	Payment for services
Russian Federation	0.036	0.039	0.030	0.013
Republic of Karelia	0.065	0.046	0.048	0.026
Komi Republic	0.061	0.074	0.073	0.012
Nenets Autonomous Okrug	0.054	0.163	0.286	0.094
Arkhangelsk Oblast	0.017	0.024	0.200	0.033
Murmansk Oblast	0.017	0.005	0.021	0.021
Yamal-Nenets Autonomous Okrug	0.120	0.163	0.160	0.069
Krasnoyarsk Krai	0.049	0.043	0.050	0.012
The Republic of Sakha (Yakutia)	0.030	0.032	0.000	0.073
Chukotka Autonomous Okrug	0.061	0.016	0.235	0.071

However, it should be noted that the index values for the Nenets and Yamal-Nenets Autonomous Okrugs are distinguished from the general picture — for the positions “Non-Food Products” and “Alcohol”, structural changes fall in the range of 0.151–0.300, that is, they have a significant level. The Arkhangelsk Oblast falls into the same interval for the position “Alcohol”. Indeed, in the structure of population expenditures, the share attributable to the purchase of non-food items in just three years in the Nenets Autonomous Okrug decreased from 38.5% to 27.7%, and in the

Yamal-Nenets Autonomous Okrug — from 42.7% to 30.7%. The share of expenses on the purchase of alcohol in the population of the Nenets Autonomous Okrug increased from 1.5% to 2.7% in the Yamal-Nenets Autonomous Okrug — from 2.1% to 2.9%. At the same time, the share of alcohol in the structure of expenditures of the population of the Arkhangelsk Oblast for the same period decreased from 1.8% to 1.2%.

The above once again confirms the conclusions that the social problems of the Arctic zone of the Russian Federation are reduced mainly to a high degree of differentiation of wages, inequality in the redistribution of monetary incomes of the population (the problem of poverty of the population), as well as social tension in regional labor markets and rhetorical differentiation of unemployment [11, Korchak E.A., p. 609; 12, Zlenko E.G., p. 69].

The role and place of small business in the Arctic

Against the background of the picture described above, which gives some idea of the living standards of the population in the northern territories, let us now try to determine the role and place of small and medium-sized businesses. The society and the state have certain hopes on it. However, they do not always have a realistic basis. To confirm what has been said, let us turn only to some facts. At the same time, we immediately make a reservation that the actual absence of municipal statistics bodies in Russia today makes it practically impossible to conduct comprehensive monitoring of the socio-economic situation in such a macro-region as the Russian Arctic in the same methodological vein by existing means. The problems arising in connection with this were already discussed in detail by the authors in our work [13, Pavlenko V.I., Melamed I.I., Kutsenko S.Yu., Tutygin A.G., Avdeev M.A., Chizhova L.I.].

An analysis of the sphere of small and medium-sized businesses in the regions of the Russian Arctic shows that over the past three years, the number of SMEs in them has generally decreased by 3.55%. The Republic of Komi (-11.19%), the Murmansk (-7.93%), and Arkhangelsk (-6.77%) Oblasts, as well as the Yamal-Nenets Autonomous Okrug (-4.64%), turned out to be below the average level (Fig. 5). Moreover, in two of the three regions of the Russian Arctic, in which the growth rate of the number of SMEs exceeded 100%, namely, in the Nenets and Chukotka Autonomous Okrugs, their number does not exceed 1.5 thousand units in each. And starting in March 2020, the number of SMEs in many regions began to decline sharply due to the coronavirus pandemic. According to some operational estimates, in the number of areas of activity, such as tourism, catering, household and transportation services, revenue from the sale of goods, works and services decreased by 80–90% compared to the “pre-epidemic” level. It was especially true for those regions in which the solvent demand of the population was relatively low until this time.

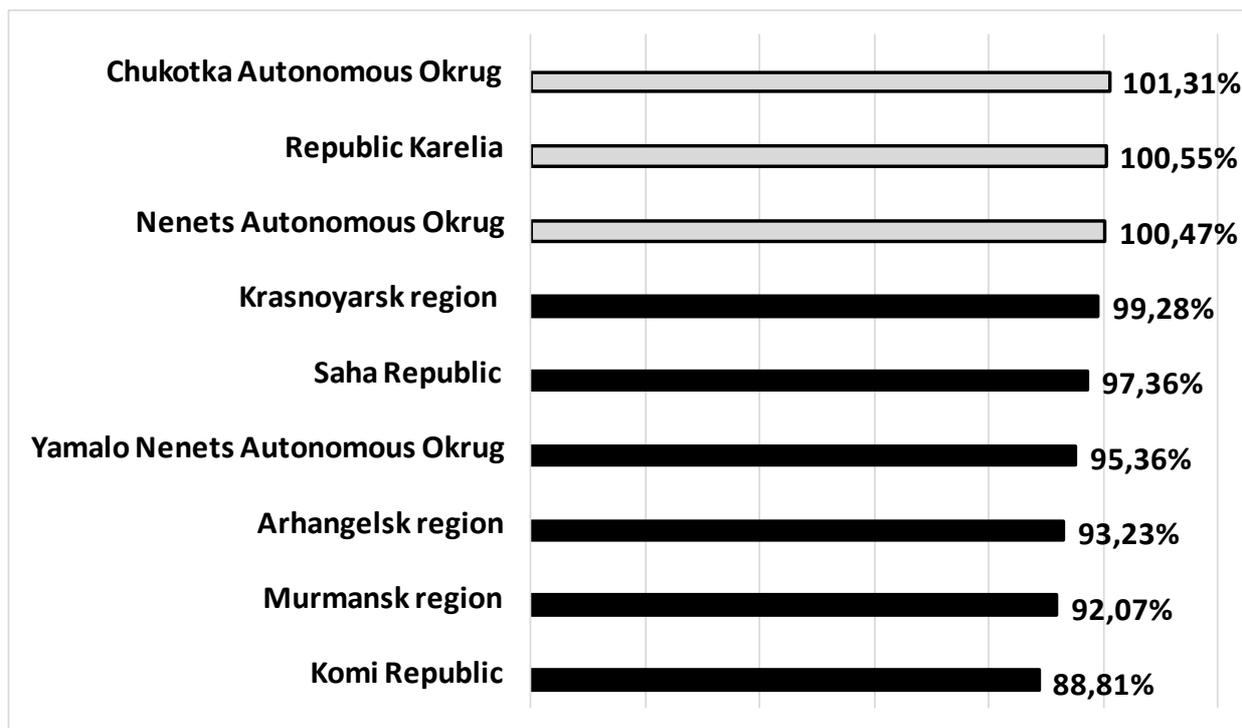


Fig. 5. The growth rate of the number of SMEs in the Arctic regions in 2017–2019,% (according to the Federal Tax Service of Russia ¹¹).

According to several authors [14, Skufina T.P., Bazhutova E.A., Samarina V.P., pp. 63–64], in most regions of the Russian Arctic, entrepreneurial activity (EA) of the state predominates, and EA business prevails only in the Murmansk Oblast and Yamal-Nenets Autonomous Okrug, and the population EA in Krasnoyarsky Kray. As an explanation for this, an argument is given about the participation of the state in large business structures, which, as a rule, carry out activities in the main sectors of the economy of these regions. The prevailing influence of the EA of business and the state corresponds to the modern development of the Russian Arctic, which consists in a high degree of the corporatization of the Arctic economy and the active participation of the state, which has deep historical roots in the formation and development of the economy of the northern territories.

A certain paradox of the socio-economic development of the Russian Arctic is that, despite the significant contribution of this macro-region to the Russian economy, primarily due to extractive industries, and a high share of attracted investments, the social situation in its territories remains tense (population decline, high poverty, and unemployment rates, etc.) [15, Gladysheva Yu.V.].

We note that from the point of view of the complex socio-economic development (SED) of the territories of the Russian Arctic, which involves both individualizing the scenarios of the SED of the Arctic subjects of the Russian Federation and the use of generalized SED models of the territories to consider the similarity of such regions, our colleagues divided the regions of the Russian

¹¹ Federal'naya nalogovaya sluzhba RF [Federal Tax Service of Russia]. URL: <https://ofd.nalog.ru/statistics.html?level=2&fo&ssrf> (accessed 26 February 2020).

Arctic into three groups [16, Smirennikova E.V., Ukhanova A.V., Voronina L.V., pp. 144–145] (Table 3).

Table 3

Classification of the Russian Arctic regions according to the SER characteristics

Groups	AZRF subjects	Characteristics of territories
1	NAO, YaNAO, Chukotka	high level of economic development and the life of the population; low economic development and transport accessibility
2	Republic of Sakha (Yakutia), Krasnoyarsky Krai	high level of economic development, negative demographic trends, low level of economic development and transport accessibility, relatively low living standards of the population
3	Arkhangelsk and Murmansk Oblasts, the Republics of Komi and Karelia	the average level of economic development with developed manufacturing, negative demographic trends, inadequate economic and transport development, low living standards

This classification as a whole gives a certain idea of the features of the SED of the Arctic regions, however, from our point of view, it has several discussion points that we will leave outside the scope of this article. We only note that it does not adequately consider some of today's requirements imposed by the state and large corporations in the implementation of large-scale and costly design decisions.

In general, with the active implementation of the principles of project management in the system of authorities, a qualitatively new approach was required, and new requirements for a system of integrated monitoring of indicators appeared. So, within the framework of the implementation of the “May” Decree of the President of the Russian Federation, Rosstat is preparing methods for calculating indicators of national and federal projects (programs)¹². It should be noted that today of the 13 existing national projects, a significant part of them is far from fully provided with the developed statistical indicators. At the same time, the information base for predicting the development of northern territories with their problems today does not represent a single system content. It cannot be limited only to official and departmental statistics. We need an adequate methodology that will allow us to reproduce possible scenarios of their development [17, Tutygin A.G., Korobov V.B., Chizhova L.A., p. 115]. All this fully applies to the sphere of SMEs. For this today, in principle, there is no full-fledged system of indicators that allows for the systematic monitoring of this socio-economic category of entities for the development and implementation of an adequate management paradigm. Let us once again draw attention to the fact that in the system of socio-economic coordinates in the conditions of the Russian Arctic territories, the “economic vector” is the prerogative of large corporate structures. At the same time, small businesses are

¹² Sbornik «Metodiki rascheta pokazateley natsional'nykh i federal'nykh proektov (programm), realizuemykh v ramkakh ispolneniya Ukaza Prezidenta Rossiyskoy Federatsii ot 7 maya 2018 g. № 204 “O natsional'nykh tselyakh i strategicheskikh zadachakh razvitiya Rossiyskoy Federatsii na period do 2024 goda”» [Collection “Methods for calculating indicators of national and federal projects (programs) implemented within the framework of the implementation of the Decree of the President of the Russian Federation of May 7, 2018 No. 204 “On national goals and strategic objectives of the development of the Russian Federation for the period until 2024”]. URL: <https://www.gks.ru/metod/proekt.htm> (accessed 27 February 2020).

given the role, first, of a “social buffer” localized within municipalities. Today, for state interests, the main task of small and medium-sized businesses is the preservation of jobs and employment.

Conclusion

The economic development of the Arctic territories almost wholly depends on the presence of large corporate structures on them. At the same time, the social role of corporate business, focused mainly on the extraction and exploitation of natural resources of the Arctic territories, consists, firstly, of ensuring an acceptable level of income for the population, and secondly, of creating and maintaining elements in a healthy state infrastructure (roads, communications, etc.).

Small and medium-sized businesses cannot, in principle, have any significant impact on the economic aspects of the development of the Arctic territories. At the same time, its social purpose here is the role of a “social buffer”, a kind of “airbag” for the population living in these territories. Contrary to, it would seem, sound economic logic, small business, under certain conditions, manifests itself as a phenomenon, namely, formally being a commercial category, it essentially becomes a social category.

Thus, conceptually defining one or another paradigm of managing the sphere of entrepreneurship in territories with complex Arctic conditions, one should proceed from the critical role of small and medium-sized enterprises as a “social buffer”.

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Integrated Security Issues in the Basic Principles of Russian Federation State Policy in the Arctic to 2035: Experience and Prospects for Implementation *

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Abstract. March 5, 2020, President of Russia V.V. Putin approved the Basic Principles of Russian Federation State Policy in the Arctic to 2035. It is a strategic planning document aimed at ensuring the national security of the Russian Federation and designed to protect Russia's interests in the Arctic. It defines goals, directions, tasks, as well as mechanisms for implementing Russian policy in the Arctic for the next 15 years. The authors analyzed the implementation results of the Basic Principles of Russia's State Policy in the Arctic until 2020 and further perspectives. The article provides a general outline of the Basic Principles of Russian Federation State Policy in the Arctic to 2035. The authors focus on the analysis of the leading national security challenges in the Arctic and enhancing integrated security of the fuel and energy complex, as well as the main directions of the implementation of the state policy of the Russian Federation in the Arctic. They are the protection of the population and territories of the Arctic zone from natural and human-made emergencies, enhancing national security in the Arctic zone, ensuring the military security of the Russian Federation, and protection of the state border of the Russian Federation. It is emphasized that the comprehensive implementation of the Basic Principles will contribute to improving the quality of life of people in the Arctic zone, socio-economic development of the country, and increasing its defense capability in the Arctic.

Keywords: *Russia, Arctic, Basic Principles of Russian Federation State Policy in the Arctic to 2035, threats.*

Introduction

Global warming, the melting of the Arctic ice, the growing availability of valuable energy and marine resources, the vast unexplored world reserves of oil, gas, and freshwater began to have a serious impact on security issues in the Arctic region.

A thorough analysis of international challenges in the field of ensuring national security in the Arctic, the problems of ensuring the defense and security of the Russian Arctic in current conditions is given in the Basic Principles of Russian Federation State Policy in the Arctic to 2035 [1] (the Basic Principles).

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General characteristics of the Basic Principles of state policy in the Russian Federation for the next 15 years, the results of the Russian Arctic development in 2008 – 2020

March 5, 2020. President of Russia V.V. Putin, in a decree No. 164, approved the Basic Principles of State Policy of the Russian Federation in the Arctic Zone to 2035. The Ministry for the Development of the Russian Far East and the Arctic prepared the draft decree. On December 27, 2019, it was approved by the Security Council of the Russian Federation. The Basic Principles determine the goals, directions, tasks, and the mechanisms for implementing the policy of Russia in the Arctic, which has always been in the focus of the country's leadership. For decades, step by step, Russia has been increasing its presence in this region. At each stage, tasks for its development were determined.

According to this Document, six main national interests of Russia in the Arctic are identified. They can be divided into three blocks: international and military issues (ensuring the sovereignty and territorial integrity of Russia, preserving the Arctic as a territory of the peace, stable and mutually beneficial partnership); economic problems (ensuring a high quality of life and well-being of the population, the development of the Arctic zone as a strategic resource base and its rational use to accelerate the country's economic growth, the development of the NSR as a competitive national transport communication of the Russian Federation on the world market) and the problems of ecology and life of indigenous peoples (environmental protection in the Arctic, protection of the indigenous areas and traditional way of life of indigenous peoples of the Russian Arctic).

Based on national interests, the Document defines eight directions for the implementation of the state policy of the Russian Federation in the Arctic. Their characteristics are the following: the social and economic development of the Russian Arctic, as well as the development of its infrastructure; use of advanced science and technology in the interests of the Arctic development; environmental protection and safety; broader international cooperation; ensuring the protection of the population and territories from natural and human-made emergencies; ensuring public safety in the Russian Arctic; ensuring military security; and protection of the state border of the Russian Federation. It is necessary to complete 63 tasks to reach the goals. Only 17 of them are related to defense and security issues, but they guarantee socio-economic problems solution¹.

Besides, the Basic Principles define several tasks that contribute to the human potential growth in the development of the Russian Arctic, improving the living conditions of the permanent Arctic population. Particular attention is paid to the provision of state support to the economically active people of Russia, ready to move to the Russian Arctic to carry out labor activities. Earlier, this idea was spoken out by the RAS corresponding member V.P. Fedorov, who proposed to provide the Arctic with organized mass resettlement. He called it his Russian megaproject, "Give us the Arctic!" [2].

¹ Authors' calculations grounded on the Basic Principles.

The Basic Principles outline the results of the state policy of the Russian Federation in the Arctic in 2008–2020. A lot has been done over the past 12 years. A new Arctic legal framework was approved, the land territories of the Arctic zone of the Russian Federation (AZRF) were determined, the necessary organizational measures were taken to protect the interests of the Russian Federation in the region. The State Commission for the Development of the Arctic, formed in February 2015, plays an important role in the analysis of Arctic problems. For the past five years, it identified priorities and main tasks for the coming years from a strategic planning perspective and pointed out shortcomings in various areas of life.

In the Arctic, the volume of traffic along the Northern Sea Route (NSR) gradually increased. According to the Ministry of Transport of the Russian Federation, in 2013, less than 4 million tons of cargo were transported, and in 2019 – already 30 million tons². In the same period, conditions were created for large economic projects on the territory of the Russian Arctic: nickel production in Norilsk, commissioning of the Yamal LNG plant and the port of Sabetta, expansion of the infrastructure of the Varandey terminal, etc. Russia can rightfully be proud of these projects. But most of the planning to improve the NSR infrastructure, the construction of icebreaking, rescue and auxiliary fleets, the creation of land vehicles and aircraft to work in the severe climatic conditions of the Arctic could not be fully completed. The timing of their commissioning was postponed to the mid-2020s. The reasons for this situation are the underfunding of projects or its complete absence, as well as sanctions against Russian and foreign oil and gas companies operating in the Arctic. Most of the effective management decisions on the development of the Arctic were made only in 2018–2019, i.e., only at the final stage of implementation of the Basic Principles adopted in 2008.

As part of the NSR development, Rosatom has become its only infrastructure operator. For the LNG and gas condensate export from Yamal LNG and Arctic LNG-2, the possibility of using 28 foreign gas carriers has been established. The order of the Government of the Russian Federation of December 21, 2019, approved a plan for the development of the NSR infrastructure until 2035.

In 2010, the Northern (Arctic) Federal University named after M.V. Lomonosov was created in Arkhangelsk. It aims at training personnel for the Arctic. Currently, it trains more than 22 thousand students. It is the leading training center for young Arctic specialists.

Significantly increased the state's attention to the search, exploration, and production of hydrocarbon-related resources. The mineral resource base remains the key driver for the development of the Arctic macroregion.

During this period, the use of proper environmental management and environmental protection regimes in the Russian Arctic significantly expanded. So, if in 2014, in the Russian part of the Arctic, there were 24 specially protected natural territories of federal significance [3], then at

² Ob'em perevozok gruzov po Sevmorputi dostig 30 mln tonn [The Volume of Cargo Transportation along the Northern Sea Route Reached 30 Million Tons]. 13.01.2020. URL: <https://sudostroenie.info/novosti/29125.html> (accessed 15 January 2020).

the beginning of 2019, there were 35³. During this period, national parks formed: Russian Arctic (2009), Onezhskoe Pomor'ye, and Berengiya (2013), Khibiny (2018).

It should be noted that cooperation between Russia and the Arctic states actively developed until 2014. Then, due to the US and EU sanctions against Russia, it was curtailed in almost all directions, except for activities within the Arctic Council. The sanctions have limited the time for strategic projects for the exploration and production of hydrocarbons on the Arctic shelf of Russia. The analysis shows the targeted sanctions demonstrate a real rivalry between states in this region for the development of its resources. In our opinion, the US and European countries are not interested in strengthening the position of our country in the Arctic region. They are leading and will continue to pursue this policy, even if their companies incur losses and exit profitable Arctic projects in Russia. In these conditions, it is important to create proprietary competitive technologies to reduce dependence on other countries in the future Arctic development.

The primary and visible achievement in the prior period in the Arctic was the strengthening of the country's defense capabilities, which contributed to maintaining the balance of forces and ensuring the necessary level of military security.

The document indicates the main internal threats to national security in the Arctic territories of Russia. These are, first, the causes and consequences of the continuing reduction in the population of the Arctic zone of Russia [4]. Also, it is the low development level of the social, transport, information, and communication infrastructure of the land areas of the Russian Arctic, incl. places of traditional residence of small indigenous peoples. The transition to a market economy, the closure of thousands of enterprises, a sharp reduction in funding for Arctic projects, low wages without considering regional payments adversely affected the quality of life of the population. It led to an increased outflow from most Arctic territories and led to their desolation. Attention is drawn to the low pace of geological exploration of promising mineral resource centers [5, 6] and the lack of a state support system for business entities providing cost and risk reduction in the implementation of economic projects, as well as to the weak development of necessary domestic technologies, and the lack of readiness of the monitoring system for environmental challenges.

An analysis of the results of the Arctic development over the past years is vital for understanding the relevance, features, and prospects for the development of the Russian Arctic for the next 15 years, considering the main challenges and threats to Russian national security in the face of growing tension with the US and Western countries.

Main challenges for the national security in the Arctic

New challenges and threats pose a task for experts to rethink the place and role of the Arctic zone of Russia in ensuring national interests, economic, social, and strategic defense development of the country, methods of state regulation of the development of the macroregion. In cur-

³ Gosudarstvennyy doklad «O sostoyanii i ob okhrane okruzhayushchey sredy Rossiyskoy Federatsii v 2018 godu» [State Report "On the State and Environmental Protection of the Russian Federation in 2018"]. URL: <http://gosdoklad-ecology.ru/2018/arkticheskaya-zona-rossiyskoy-federatsii/sostoyanieokruzhayushchey-sredy/> (accessed 10 March 2020).

rent conditions, the success of Russia's policy in the Arctic depends not only on the implementation of the already outlined strategic goals but also on the refinement of specific plans and programs, considering the rapidly changing geopolitical situation in the world and the Arctic region.

The main challenges of ensuring national security in the Arctic are manifested in the attempts of some foreign states to revise the basic provisions of international treaties regulating economic and other activities in the Arctic. It is also an attempt to create national legal regulation systems without such agreements and regional formats of cooperation. Some countries (USA, China, Japan, and Finland) seek to change the NSR navigation regime striving for its internationalization in the future, which may ultimately reduce Russia's influence in the region [7]. Senior US officials are proposing to extend the Freedom of Navigation Operation to the Northern Sea Route. On the other hand, the NSR control issue, according to A. Bartosh, is of critical importance for our country, since it is so far the only transport route capable of integrating remote areas of the High North and their resource potential into the national economy of the country⁴. The challenge is to incorporate the NSR into the world transit system as an effective Euro-Asian transport corridor while maintaining its sovereignty in the Russian Arctic. It is necessary to improve its infrastructure, create development conditions for container transportation, and attract the largest international shipowners and cargo owners. Pressure on Russia has intensified on issues such as determining the external borders of the continental shelf, dividing offshore areas, developing oil and gas resources in the context of environmental safety, exploiting biological resources, and access of foreign states to the NSR.

The national security challenge in the Arctic means the incompleteness of the international legal maritime delimitation regime. Non-Arctic states are trying to take advantage of the situation without the necessary rights to develop the Arctic shelf. It is so since they do not have direct access to the Arctic Ocean, but they are making political and expert efforts to weaken the already adopted legal norms in the Arctic. Such states strive to reinforce their ambitions for access to the rich natural resources of the Arctic region and its transport communications with an appropriate financial, economic, scientific, and technological capacity.

Attempts are being made to prevent the Russian Federation from carrying out legitimate economic or other activities in the Arctic by foreign states and (or) international organizations. It is especially indicative of the actions of Norway against Russia on the Spitsbergen archipelago [8]. In the message of the Minister of Foreign Affairs of the Russian Federation S.V. Lavrov to the Foreign Minister of Norway I.M. Eriksen Sjøreide of February 4, 2020, in connection with the 100th anniversary of the Treaty of Svalbard, signed on February 9, 1920, in Paris, in terms of ensuring "equal free access" to the archipelago and the possibility of conducting economic and economic activities there "under full of equality", noted concerns about the restrictions on the use of the Russian helicopter, the procedure for deporting Russian citizens from Svalbard, the illegal establishment of

⁴ Bartosh A.A. *Gibridnye ugrozy voznikli v Arktike* [Hybrid Threats Arose in the Arctic]. 02.12.2016. URL: http://nvo.ng.ru/gpolit/2016-12-02/1_928_arctic.html (accessed 16 March 2020).

the so-called “fish protection zone” by Norway, the artificial expansion of nature protection zones to limit economic activity in the archipelago, and some other issues⁵. According to A. Todorov, matters of the legal status and regime of Svalbard’s marine spaces “can be attributed to the category of protracted disputes that do not cause, at least for now, a sharp aggravation of the situation in the region. However, this does not mean that such a situation will necessarily persist in the future. When building scenarios of events, one cannot completely exclude the possibility that some kind of “sleeping” problem will “shoot” and completely turn the tide in the Arctic”⁶.

The threat to national security is the military presence build-up by foreign states in the Arctic, which increases the conflict potential of the region [9]. So, in a report at an expanded meeting of the board of the Ministry of Defense of Russia in December 2018, Minister of Defense S.K. Shoigu identified the following trends in the military-political situation affecting the Arctic region⁷: since 2018, the second operational fleet of the U.S. Navy is being recreated; to ensure the transfer of troops from the US for their deployment in Europe, it was decided to form two new commands of the joint NATO command — the Atlantic and the joint rear command by 2022; in Norway, construction of a new radar station is underway 60 km from the Russian border; in its territory in 2018, the number of deployed units of the US Marine Corps was doubled; the number of exercises is increasing, more and more non-NATO countries, in particular Sweden and Finland, are taking part in them; the number of reconnaissance flights near the borders of Russia is growing. The US military activity in the Arctic and other areas intensified [10, 11].

In April — May 2020, NATO Defender Europe 2020 exercises took place on the territory of European countries along the western border of Russia, in which, in addition to European NATO troops, more than 20 thousand US troops and tens of thousands of military equipment were participating. The exercises have become the largest since the end of the Cold War and, notably, coincide in time with the celebration of the 75th anniversary of Victory in the Great Patriotic War. In the first decade of May 2020, maneuvers of the combined Navy forces of the NATO countries took place in the Barents Sea and included the American destroyers Porter, Donald Cook, and Franklin

⁵ O poslanii Ministra inostrannykh del Rossii S.V. Lavrova Ministru inostrannykh del Norvegii I.M. Eriksen Sereyde po sluchayu 100-letiya podpisaniya Dogovora o Shpitsbergene [On the Message of the Minister of Foreign Affairs of Russia Sergey V. Lavrov to Minister of Foreign Affairs of Norway I.M. Eriksen Søreide on the Occasion of the 100th Anniversary of the Signing of the Svalbard Treaty]. 04.02.2020. URL: https://www.mid.ru/ru/foreign_policy/news/-/asset_publisher/cKNonkJE02Bw/content/id/4019093 (accessed 27 February 2020).

⁶ Todorov A. Dogovor o Shpitsbergene: yarkaya mozaika intepretatsiy [Svalbard Treaty: A Vivid Mosaic of Interpretations]. 14.02.2020. URL: https://russiancouncil.ru/analytics-and-comments/analytics/dogovor-o-shpitsbergene-yarkaya-mozaika-interpretatsiy/?fbclid=IwAR2CpKLP24Jd0Re0p4IVI_Ui2WdqOCXCBs8w9UyLpDb8cc4mOw-bHZOD0Tg (accessed 27 February 2020).

⁷ Zasedanie kollegii Ministerstva oborony. Vladimir Putin prinyal uchastie v rasshirennom zasedanii kollegii Ministerstva oborony [Board Meeting of the Ministry of Defense. Vladimir Putin Took Part in an Expanded Meeting of the Board of the Ministry of Defense]. 18.12.2018. URL: <http://www.kremlin.ru/events/president/transcripts/59431> (accessed 25 January 2019).

Roosevelt, and the British frigate Kent, some of which was equipped with Tomahawk cruise missiles and the Aegis anti-missile defense system⁸.

All this is reinforced by the next attempts to discredit Russian activities in the Arctic by our geopolitical opponents. This work is carried out regularly. At different stages, it weakened, then intensified. The relevance of this problem lies in the fact that it affects the issues of the sovereignty of the Russian Federation [12]. Russia is still accused of militarizing the Arctic. Currently, special attention is paid to the facts of violation of environmental rules, pollution of its territory when using old equipment for hydrocarbon production, and other types of economic activity [13]. There is a tendency to accuse the Russian Federation of oppressing the indigenous peoples of the North. Western countries periodically remind about the radioactive loading of the Russian Arctic territories during the period of military and economic activity of the USSR. These are radioactive fallout during testing of nuclear weapons, the removal of radioactivity by the northern rivers of Russia, the operation of the USSR/Russia atomic fleet, flooded and sunken radioactive objects, etc. Currently, about 18 thousand of them were flooded in the Arctic waters of the USSR/Russia. Now, 119 out of 121 nuclear submarines that have served their life in the Arctic have passed through utilization⁹. Given these problems, according to the RAS academician A.A. Sarkisov, the country's leadership is making significant efforts to complete the radioecological rehabilitation of the Russian Arctic and develop a set of government acts necessary to solve this problem [14].

An analysis of the main challenges in ensuring national security in the Arctic shows that Russia needs to take adequate, timely measures aimed at maintaining parity and creating favorable conditions for protecting national interests in this important region.

Russian army in the Arctic

Russia has done a lot to strengthen security and explore the region. On December 1, 2014, a new military structure began to operate — the Joint Strategic Command “North”. The purpose of the Arctic grouping is the reliable protection of the natural resources of this region and ensuring the safety of the Northern Sea Route. Its composition included the Northern Fleet in full force, the 45th Army of the Air Force and Air Defense. At the same time, several formations and units of the Central and Eastern military districts, as well as other power structures, were transferred to the new command. The ground component of the command was a marine brigade and two Arctic motorized rifle brigades in the Murmansk Oblast. Annually, constant exercises, measures to optimize groupings of troops and military formations are held, the process of arming units with new types of weapons and military equipment is ongoing. So, for the Arctic units of the Northern Fleet recently transferred new unique radar stations “Podlet”, which at extremely low temperatures up to

⁸ Severnyy flot sledit za korablyami NATO v Barentsevom more [Northern Fleet monitors NATO ships in the Barents Sea]. 04.05.2020. URL: https://rg.ru/2020/05/04/severnyj-flot-sledit-za-korablami-nato-v-barencevom-more.html?utm_source=yxnews&utm_medium=desktop&utm_referrer=https%3A%2F%2Fyandex.ru%2Fnews (accessed 07 May 2020).

⁹ Prezidium RAN: ochistit' Arktiku ot posledstviy «kholodnoy vojny» [Presidium of the Russian Academy of Sciences: to Cleanse the Arctic from the Consequences of the Cold War]. 02.12.2015. URL: <http://scientificrussia.ru> (accessed 07 May 2020).

minus 50 C simultaneously accompany up to 200 air targets. The military base “Arctic Trilistnik” created on the Alexandra Island of the Franz Josef Land Archipelago can continuously work for 18 months with 150 people. It includes two runways and is equipped with Bastion coastal missile systems. And based on the “Northern Klever” (Kotelny Island in the Laptev Sea), 250 people serve, a radar station for monitoring aircraft is operating, and the Pantsir-C1 complex for air defense¹⁰.

The Basic Principles [1, par. 19] define the main tasks in ensuring the military security of the Russian Federation in the Arctic. The main is the implementation of a set of measures aimed at preventing the use of military force against Russia, protecting its sovereignty and territorial integrity. In total, in the Arctic, it is planned to build 13 airfields, one ground aviation training ground, as well as ten radar departments and aviation guidance points. Currently, six military bases have been deployed in northern Russia: on the islands of Kotelny (Novosibirsk Islands), Alexandra Land (Franz Josef Land archipelago), Sredny (Severnaya Zemlya), as well as in the village of Rogachevo (Novaya Zemlya), Cape Schmidt and Wrangel Island (the Chukotka Autonomous Okrug). At airfields located beyond the Arctic Circle, the Su-24 bombers, Su-34 fighter-bombers, Su-25 attack aircraft, MiG-31 fighter-interceptors, and helicopters of various types will be housed. It is expected that the Tu-22, Tu-95 and Tu-160 strategic bombers will use the restored runways for refueling. All this infrastructure operates year-round¹¹.

The task is to increase further the combat capabilities of general-purpose forces of the Armed Forces of the Russian Federation, other troops, military units and bodies in the Arctic zone of the Russian Federation and to maintain their combat potential at a level that guarantees the solution of tasks to repel aggression against the Russian Federation and her allies.

In the grouping of troops, the role of the Northern Fleet in protecting the Arctic is growing [15, 16, 17]. It will be replenished in the next two years with three new submarines of the last, 4th generation. Already in the coming year, they will go into operation and take up the battle watch of the cruiser “Knyaz” Vladimir” and “Kazan”. And next year, the Navy is ready to put into operation a diesel-electric submarine with missiles of the caliber type on board. At the same time, submarines already in service are being modernized to continue the combat shift¹². Units of the new anti-aircraft missile regiment of the Northern Fleet Air Defense Association took up combat duty in the Arctic in April 2020. S-300 complexes protect the airspace of Yakutia and the NSR¹³.

¹⁰ Nikanorov S. *Armiya Rossii kak arkticheskaya tsivilizatsiya* [The Army of Russia as an Arctic Civilization]. 17.03.2020. URL: http://www.ng.ru/armies/2020-03-17/100_arctic170320.html (accessed 07 April 2020).

¹¹ *Arkticheskii «Bastion»: Rossiya zakryla Sevmorput'* [Arctic Bastion: Russia has Closed the Northern Sea Route]. 03.12.2019. URL: https://news.rambler.ru/army/43277422/?utm_content=news_media&utm_medium=read_more&utm_source=copylink (accessed 01 February 2020).

¹² *Severnnyy flot popolnitsya tremya novymi podlodkami* [The Northern Fleet will Replenish with Three New Submarines]. 19.03.2020. URL: <https://sm-news.ru/severnnyj-flot-popolnitsya-tremya-novymi-podlodkami-58568/> (accessed 27 April 2020).

¹³ *Raschety S-300 Severnogo flota zastupili na boevoe dezhurstvo v Arktike* [The S-300 Complexes of the Northern Fleet Took Up Combat Duty in the Arctic]. 03.04.2020. URL: https://rg.ru/2020/04/03/reg-szfo/raschety-s-300-severnogo-flota-zastupili-na-boevoe-dezhurstvo-v-arktike.html?utm_source=yxnews&utm_medium=desktop&utm_referrer=https%3A%2F%2Fyandex.ru%2Fnews/ (accessed 27 April 2020).

According to the commander of the Northern Fleet, Admiral Alexander Moiseev, modernizing the bases of new submarines is actively ongoing. According to him, the multipurpose nuclear submarine Severodvinsk is already based in Zaozersk, the infrastructure for submarines of the Yasen' project has been prepared. New moorings and other coastal facilities were built in Gadzhievo to "ensure the basing of ships of modern and promising projects". Admiral noted that the fleet is simultaneously mastering new sub-boats and developing a basing system¹⁴.

An important task in ensuring military security is the improvement of the system of comprehensive control over the air, surface, and underwater conditions in the Arctic zone of the Russian Federation. It is a responsible and challenging task. It is solved in collaboration with other power structures in Russia. The need to increase control is increasing due to the intensification of economic activity in the Arctic, especially shipping along the NSR.

Attention is drawn to the continuation of work on the creation and modernization of military infrastructure facilities, the provision of vital functions for general forces of the Armed Forces of the Russian Federation, other troops, military formations, and bodies [18]. The military infrastructure of the Russian Arctic is being created and strengthened through the restoration of several polar airfields and military bases, which are planned to be used as dual-use facilities.

New infrastructure is being built for military units and garrisons in the High North, Siberia, and the Far East, capable of providing more than 20 thousand military personnel, their families, and civilians working at defense facilities¹⁵.

Speaking about the role of the army in the Arctic, it should be noted that at present, the level of militarization of the region does not go beyond reasonable sufficiency. However, the geopolitical situation cannot remain stable for a long time amid the aggravation of international relations in the world. The revitalization of NATO in the Arctic region could lead to a reconfiguration of security relations. The termination of contacts between the chiefs of the General Staffs of the armies of the Arctic Council member states since 2014 greatly hinders the constructive and timely resolution of military issues in this region. In the medium and long term, international risks in the Arctic, according to experts, may increase if political tension in relations between Russia and the West continues [19]. In these conditions, our state makes a lot of efforts to weaken it and increase confidence-building measures between countries.

Protection and security of the state border of the Russian Federation

The Basic Principles [1, par. 20] define the main tasks in the protection of the state border of the Russian Federation.

¹⁴ Rossiya moderniziruet bazu dlya podlodok v Arktike [Russia Modernizes a Base for Submarines in the Arctic]. 18.03.2020. URL: <https://lenta.ru/news/2020/03/18/base/> (accessed 27 April 2020).

¹⁵ Stroitel'stvo voennykh gorodkov v Arktike prodolzhitsya do 2020 goda [The Construction of Military Camps in the Arctic will Continue until 2020]. 18.08.2016. URL: <http://www.arctic-info.ru/news/18-08-2016/stroitelstvo-voennyh-gorodkov-v-arktike-prodolzhitsya-do-2020-goda/> (accessed 27 September 2016).

Particular attention is paid to improving the quality of state management of border activities based on the development of information technology, which allows monitoring the situation in the sea spaces and on the sea coast, its situational analysis, and the development of agreed decisions.

Currently, the Border Service of the FSB of Russia (the Coast Guard) protects the state border of the Russian Federation in the Russian Arctic through the activities of the FSB Border Directorate for the Western Arctic Region and the FSB Border Management for the Eastern Arctic Region with centers in Murmansk and Petropavlovsk-Kamchatsky¹⁶.

The tasks of the Russian Coast Guard in the Arctic region are the protection of the state border of the Russian Federation, the length of which is about 20 thousand km; protection of economic interests; monitoring of the surface situation in the waters of the Arctic seas; monitoring compliance with laws and international treaties; saving life at sea; ensuring the safety of the NSR shipping; environmental protection; implementation of radar and radio-technical surveillance in areas of industrial activity; patrolling by ships and aviation of the waters of the Arctic seas, the fishing zone of the Svalbard archipelago; ensuring sovereignty and Russian presence in the most remote territories of the Arctic (islands of the archipelagos Franz Josef Land and Severnaya Zemlya) [20].

In recent years, the number of Coast Guard units has been optimized, their technical equipment has been improved, and the border management system has been updated. Work is underway to create an automated system for monitoring the surface situation in the Arctic. To expand the capabilities of the border authorities and the development of border infrastructure in May 2017, a new base station for border patrol ships began to function in Arkhangelsk.

In areas of intensive fishing under the jurisdiction of Russia, the systematic presence of ships of the Russian border service is ensured. In recent years, border guards have significantly stepped up their efforts to counter contemporary challenges and threats to security, especially terrorism and illegal migration [21, 22].

The activity of checkpoints across the state border of the Russian Federation has been strengthened. There are currently about 20 of them in the Arctic zone of the Russian Federation. Of these, three are automobile points (one on the border with Norway, two on the border with Finland), twelve sea, and five air ones. Most of them are in the Northwestern Federal District — twelve, in the Far Eastern Federal District — six (all in the Chukotka Autonomous Okrug) and one each in the Ural and Siberian Federal Districts¹⁷. In connection with the strengthening of economic activity and the development of tourism in the region, their number, in our opinion, will continuously increase.

¹⁶ Perechen' pogranychnykh upravleniy FSB Rossii. Sayt Pogranychnoy sluzhby FSB Rossii [The List of Border Departments of the FSB of Russia. Site of the Border Service of the FSB of Russia]. URL: <http://ps.fsb.ru/departament.htm> (accessed 10 August 2018).

¹⁷ Authors' Calculations Based on the Open Sources.

The formation of the Coast Guard ship structure is ongoing. At the end of 2016, it included 34 ships, incl. ten border patrol ships, fourteen border patrol boats, one border support ship, one border patrol ship, two border patrol vessels, and six border support boats¹⁸. In January 2017, the FSB Border Service of Russia received the leading border patrol ship of the 1st rank of project 22100 — *Polyarnaya Zvezda*¹⁹. No doubt, these funds are not enough for such a long Russian border.

In the section devoted to the protection and protection of the state border of Russia, attention is drawn to the development of cooperation with the border agencies (coast guards) of foreign states, incl. the delimitation of northern sea spaces. On the website of the FSB Border Service of Russia, in the section “Activities of Border Representatives in the International Legal Formation of Borders”, it is noted in this plan that “the Agreement between the former USSR and the USA on the line for delimiting sea spaces has not yet been ratified. The issue of delimiting the continental shelf and the exclusive economic zone with Norway in the Barents Sea has not been completely resolved”²⁰. It should be borne in mind that the delimitation of the territorial sea in international law with Norway is framed. However, after the decisions of the Commission on the Limits of the Continental Shelf expected shortly at the request of Russia, Denmark, and Canada, the question may arise about the border of the continental shelf between the three countries.

In recent years, Russia has been actively expanding its work with official representatives of departments performing the functions of the coast guards of the Arctic Council member states. So, on October 31, 2015, in the city of New London (USA), a Joint Statement was signed with them on the intention to develop multilateral cooperation in the format of the Arctic Coast Guard Forum²¹. It was attended by Russia, Denmark, Iceland, Canada, Norway, the USA, Finland, Sweden. Participants discussed existing security risks and threats in the Arctic. It was noted that the development of offshore deposits, the development of scientific research, tourism, and maritime traffic entails the violation of borders, illegal migration, smuggling, and the possibility of members of terrorist organizations entering the region.

Between October 17 and 21, 2016, a delegation of the FSB of Russia took part in the 17th Forum of Border Agencies / Coast Guard of the North Pacific States, held in Victoria (Canada)²².

¹⁸ Beregovaya okhrana Pogranichnoy sluzhby FSB Rossii – 2016 [Coast Guard of the FSB of Russia — 2016]. Russian-Ships.info. 2016. 15.12.2016. URL: <http://russianships.info/bohr/> (accessed 27 February 2017).

¹⁹ Pogranichniki poluchili «Polyarnuyu zvezdu» [Border Guards Received “Polyarnaya Zvezda”]. 24.01.2017. URL: <http://www.arctic-info.ru/news/24-01-2017/pogranichniki-poluchili---polyarnuyu-zvezdu/> (accessed 27 February 2017).

²⁰ Deyatel'nost' pogranichnykh predstaviteley v mezhdunarodnom pravovom oformlenii granits. Sayt Pogranichnoy sluzhby FSB Rossii [Activities of Border Representatives in the International Legal Design of Borders. Site of the Border Service of the FSB of Russia]. URL: <http://ps.fsb.ru/international.htm> (accessed 10 August 2018).

²¹ Itogi vstrechi rukovoditeley vedomstv, vypolnyayushchikh funktsii beregovykh okhran gosudarstv-chlenov Arkticheskogo soveta, po voprosu sozdaniya AFBO [Results of the Meeting of Heads of Departments Performing the Functions of the Coast Guards of the Arctic Council Member States on the Creation of the AFB]. 09.12.2015. URL: <http://ps.fsb.ru/smi/news/more.htm%21id%3D10321138%40fsbMessage.html> (accessed 21 May 2017).

²² Itogi uchastiya v 17-m Forume pogranichnykh vedomstv/beregovykh okhran gosudarstv severnoy chasti Tikhogo okeana [Results of Participation in the 17th Forum of Border Agencies / Coast Guard of the North Pacific]. 25.10.2016. URL: <http://ps.fsb.ru/smi/news/more.htm%21id%3D10321169%40fsbMessage.html> (accessed 21 May 2017).

The Border Guard has an actual practice of interacting with colleagues from the Arctic states [23], especially with the Norwegian Coast Guard units, as well as with the US 17th Coast Guard area.

It should be noted that the Arctic Coast Guard Forum, despite some differences in the functions of departments at the national level, has enormous potential for jointly addressing regional security issues. Combining efforts will increase the level of maritime security and the safety of every person located in the Arctic.

Russia is actively studying and taking measures to possibly, exacerbate new security threats in the Arctic marine areas. Thus, following Decree of the President of the Russian Federation of December 26, 2015 No. 664, "On measures to improve public administration in the field of countering terrorism," several operational headquarters were created in the country, incl. in Murmansk and Petropavlovsk-Kamchatsky. Currently, measures are being taken to ensure the safety and counter-terrorism protection of economic activity objects in the marine Arctic space of the Russian Federation.

The Fundamentals also focus on improving border infrastructure, equipping checkpoints across the state border of the Russian Federation in terms corresponding to the deadlines for implementing investment projects. Today, this question is the most acute and relevant. It is implemented through federal targeted, state, departmental, and other programs.

Ahead is a lot of work on the technical re-equipment of the border authorities, the construction of modern ice-class ships with an aviation complex, and the updating of the aircraft fleet. It is important to increase the capabilities of the federal system of intelligence and control of the airspace of Russia. The task is to complete the work on updating the system of baselines, used to measure the width of the territorial sea of the Russian Federation and the exclusive economic zone of the Russian Federation in the Arctic.

To solve these problems, the Coast Guard of the FSB of the Russian Federation should have the most exceptional opportunities to prevent, suppress and eliminate the consequences of adverse factors and phenomena that can cause material and moral damage to the country. All of this will require appropriate funding.

It must be recognized that at present, only a constant border presence in the Arctic sector of the Russian Federation allows maintaining the status quo of maritime borders until the final international recognition of Russian jurisdiction over the waters and the continental shelf.

Protection of the population and territories of the Russian Arctic to emergencies of natural and technogenic nature

Following the Basic Principles of the state policy of the Russian Federation in the Arctic for the next 15 years [1, par. 17], the main tasks for the protection of the population and territories of the Arctic zone of the Russian Federation from natural and human-made emergencies are

- scientific, technical, regulatory, and methodological support of activities to protect the population and territories from natural and human-made emergencies, to ensure fire safety and safety at water bodies in arctic conditions;

- development of the Arctic integrated emergency rescue centers and fire rescue units for the elimination of accidents and emergencies in the water and mainland space, improving their structure, composition, logistics, and base infrastructure, picking up new types of equipment, considering the solved tasks in the arctic conditions;

- aviation support of measures to protect the population and territories from natural and human-made emergencies in arctic conditions.

As in 2008, in 2020, the use of the AZRF as a strategic resource base of the Russian Federation, ensuring the solution to the problems of the country's socio-economic development, remains a significant priority.

In this regard, special attention is paid to ensuring the protection of the fuel and energy complex in the Arctic from hybrid, multi-vector threats (political and economic sanctions, "technological isolation", initiating cyber-attacks, etc.). A characteristic feature of such risks is that they arise in one area and are implemented in another or several areas of security [24].

On the territory of the Arctic zone, there are more than 500 potentially dangerous industrial and infrastructure facilities that can become sources of technological emergencies, which, according to the Ministry of Emergencies, occur on average more than 100 per year. Transport accidents dominate (30%), explosions, and fires of technological equipment (24%). The High North is subject to meteorological phenomena, snowdrifts, flooding, the formation of the ravine, and river erosion.

The Ministry of Emergencies of the Russian Federation has accumulated considerable experience in preventing and eliminating emergencies in the Arctic. The EMERCOM of Russia forces is organizing the system of integrated security for the population and territories in the Arctic zone by creating 11 Arctic complex emergency rescue centers. The main goal is to increase the level of protection of the people and areas of the Arctic zone by creating an effective monitoring system, growing efficiency for actions during search and rescue, emergency rescue and other urgent operations.

As of 2016, the number of forces and means of the EMERCOM to cover the Arctic zone, considering the powers of the executive authorities of the constituent entities of the Russian Federation and municipal entities, amounted to more than 18,000 people and 1 845 technical units. Of these, the forces and means of EMERCOM of Russia – more than 7,000 people and 597 technical units. The Arctic zone hosts six Arctic complex emergency rescue centers (Naryan-Mar, Arkhangelsk, Dudinka, Murmansk, Vorkuta, and Vytegra) [25].

Unfortunately, after 2016, the EMERCOM of Russia does not submit the State report "On the State of the Protection of the Population and Territories of the Russian Federation from Natural and Technogenic Emergencies" to its website. It offers only methodological recommendations for preparing materials for the state report, which is an interdepartmental document. Therefore, it is complicated to determine the EMERCOM's for 2017–2019, incl. the change in leadership of the ministry.

Underestimation of this factor, in our opinion, negatively affects not only the prestige of the department but also negatively affects the development and development of the Arctic. There is no doubt that the security system of the Arctic zone is an essential factor in increasing the investment attractiveness of the NSR, increasing transit traffic, and turning it into a global transport artery. It also affects the development of domestic and foreign Arctic tourism. It is the ground for a modern information and communication system for emergency calls 112 and the "Bezopasniy Gorod" automated complex, as well as for improving interaction with the State Corporation Roskosmos, the Ministry of Health of Russia, Roshydromet, the Russian Academy of Sciences and other departments and organizations.

In modern conditions, in connection with the spread of COVID-19, one should not forget about the ongoing degradation of permafrost, which poses a real threat to the safety of the population and territories of the High North. It was the thawing of the soil and deer touching in the pestilence zone of previous years, according to experts, that led to the emergence of anthrax in August 2016 in the Yamal-Nenets Autonomous Okrug. With the assistance of federal structures, within six days from the moment of diagnosis, it was possible to stop the mass death of deer and the spread of the disease among the residents of the district. In this regard, the EMERCOM of Russia faces severe tasks for the scientific forecasting and prevention of possible new natural-climatic and technogenic challenges and accidents.

Ministry of Internal Affairs of Russia and the Russian Guard in ensuring public safety in the Arctic

Following the Basic Principles of the state policy of the Russian Federation in the Arctic until 2035 [1, par. 18], the main tasks in ensuring public safety in the Russian Arctic are

- bringing the structure of the internal affairs bodies of the Russian Federation and the troops of the national guard of the Russian Federation in the Arctic zone of the Russian Federation and the number of their employees in line with the tasks in the field of ensuring public safety, creating and modernizing the appropriate infrastructure, incl. providing housing construction;
- increasing the participation of citizens in the protection of public order, the promotion of voluntary participation of citizens in measures to protect public order, the expansion of the activities of public associations of a law enforcement orientation, primarily in remote areas where there is no law enforcement or is required their presence;
- development of measures aimed at preventing and combating crimes related to the theft of budget funds allocated for the development of the Arctic zone of the Russian Federation;
- reduction in the number of road traffic accidents involving harm to the life and health of citizens, reduction in the severity of their consequences.

In the Arctic zone, the bodies of the Ministry of Internal Affairs solve important tasks [26, 27] in protecting the life, health, rights and freedoms of citizens of the Russian Federation, foreign citizens, and stateless persons, directing their primary efforts to combat crime, protecting public order, property to ensure public safety.

Particular attention is paid to issues of migration, drug trafficking, weapons, road safety. Countering the illegal extraction of biological resources, ensuring public order in regional cities, ports, airports, fuel and energy facilities, fishing cooperatives, oil, and gas production areas, developing solid minerals, and indigenous communities of the North is in the field of their attention.

However, it should be recognized that the Ministry of Internal Affairs in the Arctic zone, in comparison with other regions of the Russian Federation, is insufficiently staffed. Their infrastructure is sometimes outdated and needs to be updated and improved. Given the severe climatic conditions and vast distances, a new model of road traffic based on information technology is required.

The task of increasing the participation of citizens in the protection of public order is also relevant and necessary for the Ministry of Internal Affairs. In the interests of security, the police need to develop cooperation and interaction with local public organizations.

Important tasks in the Arctic are being addressed by the recently created Federal National Guard Service of the Russian Federation (Rosguard)²³. Its main tasks are participation in the protection of public order, ensuring public safety; protection of important state facilities, special cargoes, facilities on communications; participation in the fight against terrorism and extremism.

The territorial bodies of the Russian Guard are in all subjects of the Russian Arctic. Its servicemen and employees are guarding the Bilibino Nuclear Power Plant, as well as the icebreakers of the Atomflot at their main base. They carry out a large amount of work to monitor compliance with Russian legislation in the field of arms trafficking, especially among representatives of the indigenous peoples of the North²⁴.

The Russian Guard is involved in fulfilling the tasks established by the state program "Socio-Economic Development of the Arctic Zone of the Russian Federation". It allowed the Guard to maintain the pace of the formation and modernization of a non-stationary system for protecting the seaports of the Northern Sea Route in the last three years.

At a meeting with President of the Russian Federation V.V. Putin, on May 6, 2020, the commander in chief of the Russian Guard, Army General V.V. Zolotov reported that in 2019 the troops had adopted the first floating nuclear power plant, Akademik Lomonosov, in the water area of the Pevek seaport in Chukotka²⁵.

²³Ukaz Prezidenta RF ot 05.04.2016 № 157 «Voprosy Federal'noy sluzhby voysk natsional'noy gvardii Rossiyskoy Federatsii» [Decree of the President of the Russian Federation of April 05, 2016 No. 157 "Issues of the Federal National Guard Service of the Russian Federation"]. *Sobranie zakonodatel'stva RF* [Collection of the Legislation of the Russian Federation], April 11, 2016. no. 15, Art. 2072; Federal'nyy zakon ot 03.07.2016 g. № 226-FZ «O voyskakh natsional'noy gvardii Rossiyskoy Federatsii» [Federal Law no. 226-FZ of July 03, 2016, "On the Forces of the National Guard Service of the Russian Federation"].

²⁴Informatsiya s sayta Federal'noy sluzhby voysk natsional'noy gvardii Rossiyskoy Federatsii [Information from the Website of the Federal National Guard Service of the Russian Federation]. URL: <http://rosguard.ru/> (accessed 15 April 2020).

²⁵Vstrecha s direktorom Federal'noy sluzhby voysk natsional'noy gvardii Viktorom Zolotovym [Meeting with the Director of the Federal National Guard Service Viktor Zolotov]. 06.05.2020. <http://www.kremlin.ru/events/president/news/63302> (accessed: 11 May.2020).

In 2020, it is planned to complete the re-equipment of the Sabetta port with a mobile complex, reinforced, among other things, by the marine and amphibious components. By the end of 2020, nine marine Arctic ports will be under the protection of the Russian Guard²⁶.

The problems of activity in the Arctic for the Ministry of Internal Affairs and the Russian Guard require in-depth analytical support and the necessary financial support.

Conclusion

The current Basic Principles specify the state policy of Russia in the Arctic for the next 15 years, confirm the leading role of the Russian Federation in the Arctic as a mega-region. This document can serve a reasonable basis for preparing the program for the RF presidency of the Arctic Council in 2021–2023. The text is comprehensive and innovative. Its implementation will contribute to improving the quality of life of people in the Arctic zone of the Russian Federation, and the socio-economic development of the country, increasing its defense capabilities, military and law enforcement activities in the Arctic direction. However, it is not clear why there was no place for hydrometeorological safety in the Basic Principles, which is an essential factor in the uninterrupted functioning of the Northern Sea Route.

Fifteen years of implementation of the provisions of the Basic Principles are ahead. It is fundamentally vital to regulating the issues embodied in them for the strategic national interests in the Arctic. It should be fully considered in the Implementation Plan for the Basic Principles, the Development Strategy of the Russian Arctic and national security, in the State Program for the socio-economic development of the Arctic zone, as well as in legislative acts. The above documents must combine activities of national projects and state programs, investment plans of infrastructure companies, development programs for the Arctic regions, cities, and regions with a compact arrangement of forces and means of power structures. Only in this case, they can become a truly working legal and operational tool for the country's leadership, primarily in terms of coordinating the activities of federal executive bodies and state-owned companies to achieve Russia's strategic national priorities in the Arctic. It is crucial that the development and protection of the Arctic also consider the consequences of the current economic crisis caused by falling oil prices and the coronavirus pandemic.

Poor knowledge of the Arctic ecology, global warming processes should, in our opinion, stimulate the leadership of ministries and departments of the Arctic regions to search for environmentally-friendly technologies, effective solutions for identifying and launching large economic projects for the development of the Arctic region [28], ensuring environmental safety at the facilities of power structures [29], the further development of international cooperation on the Arctic track [30].

²⁶ Direktor Rosgvardii general armii Viktor Zolotov otkryl rasshirenoe zasedanie kollegii vedomstva [Director of the National Guard Service Army General Viktor Zolotov opened an extended enrollment collegium of the service]. 11.03.2020. URL: <https://rosgvard.ru/ru/news/article/direktor-rosgvardii-general-armii-viktor-zolotov-otkryl-rasshirenoe-zasedanie-kollegii-vedomstva> (accessed 15 April 2020).

All the activities of Russia in the Arctic are incredibly open. The armed forces, together with the EMERCOM, the border agencies of the FSB, the Ministry of Internal Affairs and the Russian Guard, help to maintain the balance of power in the region, firmly uphold the country's national interests, counteract new challenges and threats to security, and fulfill the tasks of protecting the state border, continue to restore their military infrastructure, support the activities of economic entities in the exploration and production of hydrocarbons and the protection of deposits.

An analysis of the problems of integrated security in the Arctic, according to some experts, requires a rethinking of some aspects [31, 32]. Recognizing and considering the aggressiveness and strengthening of the NATO military presence in the Arctic, as well as the systematic multinational military exercises and the displacement of combat training areas in the Arctic zone, in our opinion, it should be assumed that many threats are still of demonstrative potential. It is not necessary to allow such a situation for the Russian Federation to provoke the strengthening of NATO's position in the region. Today, the Arctic is a territory of low political tension, and the successful development of multilateral international cooperation, the level of its militarization, does not go beyond reasonable sufficiency. All the problems that arise here can and should be solved based on collaboration, and the region itself can and should develop as a space for constructive interaction and security.

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Organizational Mechanisms for Implementing Russia's Arctic Strategy in the 21st Century*

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Abstract. The Arctic in the 21st century remains a popular topic in the natural-scientific, economic, socio-humanitarian, and political spheres. The relevance of studying the Arctic is determined by the fact that in recent decades, deep and irreversible transformations have taken place in this region, and a full understanding of the causes and consequences of which for the economy and environmental management has not yet developed. As a result of climate change and globalization, there is a growing interest in the Arctic macro-region on the part of many foreign countries that developed strategies and programs for the development of national Arctic zones at the beginning of the XXI century. Against the background of global competition for resources and transport communications, it seems relevant to analyze the features of the development of Russia's state policy for managing the Arctic zone of the Russian Federation in the XXI century. The article analyzes the mechanisms of implementation of Russian state policy in the Arctic based on the strategic planning system and reveals the bottlenecks in the system of state management of the Arctic region. It is concluded that the core of Russia's policy in the Arctic is innovative modernization that can ensure sustainable socio-economic development, infrastructure development, rational use of natural resources, protection of local ecosystems and development of indigenous communities.

Keywords: *Arctic zone of the Russian Federation, state policy, strategic planning, program-target approach, support zones of development, innovations.*

Introduction

The Arctic is a high-latitude region of the High North, except for the dry part, incl. the continental shelf and the exclusive economic zone of the seas of the Arctic Ocean, as well as the outlying territories of North America and Eurasia.

The deep interest of Russia in the development of the High North and the Arctic has existed for centuries. Changing forms and priorities, it reached a level when the Arctic territories become one of the means of ensuring national security and sustainable socio-economic development of the state. The formation and scientific justification of the development priorities of the

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circumpolar territories of the Russian Federation is one of the critical tasks in the development and modernization of the economy. The role of science is increasing not only due to the influence of the natural-geographical factor in the Arctic region but also due to the differentiation of the natural and economic conditions of economic activity existing in this zone. Such distinction necessitates the development of specific Arctic-oriented regulatory legal documents to manage the development of the vast and non-standard Arctic zone of the Russian Federation (the Russian Arctic, the Arctic zone).

A study of the directions and problems of the development of the Russian Arctic shows the significant role of geographical science in the development and solution of national economic issues. The geographic approach creates the opportunity to justify the sustainable socio-economic development of not only the Russian Arctic but the entire state. It formulates strategic benefits for Russia both within the circumpolar zone and the Eurasian continent, and in the global economic space.

The contribution to the study of the nature, population and socio-economic sphere of the High North and the Arctic was made by domestic and foreign scientists, public and politicians: S.O. Makarov, V.A. Rusanov, A.P. Karpinsky, S.I. Chelyuskin, N.N. Urvantsev, A.E. Fersman, N. Norden-skiöld, R. Amundsen, and F. Nansen. Features and trends of the geo-ecological, socio-economic and geopolitical location of the northern and Arctic territories are highlighted in G.A. Agranata, V.I. Epiphany, V.N. Bulatov, A.G. Granberg, D.A. Dodin, I.F. Kefeli, V.M. Kotlyakov, T.M. Krasovsky, V.N. Lazhentseva, G.P. Luzin, Yu.F. Lukin, P.A. Minakir, V.I. Pavlenko, A.N. Pilyasov, V.S. Selin, S.V. Slav-in, and A.I. Chistobaev. Their studies describe the experience of developing natural resources of the High North and the Arctic, analyze the trends and problems of socio-economic and infrastruc-tural development of the peripheral northern territories under the conditions of continuing natu-ral, economic, and geopolitical risks. Extensive geographic studies of the seas of the Arctic Ocean were carried out during the North-East expedition (1785–1792), the expeditions of F. Wrangel (1821–1824), and J. De Long (1879–1881) [1], and contemporary history.

Factors determining the development of state policy in the Arctic zone of the Russian Federation at the beginning of the 21st century

Several circumstances determine the specifics of the development of natural resources of the Russian Arctic, the slow integration of this region into the economic and socio-cultural life of the state. Firstly, the need to adapt to the economy, population, and a training system for working in the High North and the Arctic to extremely harsh climatic conditions, incl. constant ice cover and drifting ice in the seas of the Arctic Ocean. Secondly, the need to overcome vast distances, linking the space with energy, transport, and information and communication infrastructure (in-frastructure). Thirdly, low population density and population density. Fourth, the remoteness of the subjects of the Arctic zone from industrial centers, the dependence of economic activity and livelihoods of the population on the supply of fuel, food, and essential goods from other regions of

Russia. Fifth, the low stability of ecological systems that determine the biological equilibrium and climate of the Earth, and their dependence even on minor anthropogenic impacts.

After ratification of the UN Convention on the Law of the Sea (1982), the Russian Arctic occupies more than 9 million square km, of which about 7 million km² falls on the water body, which is 45% of the Arctic Ocean. It is the largest indicator among countries with access to the Arctic Ocean. Within the Russian Arctic zone, the continental shelf reaches 6 million km², constantly under the ice 5 million km² (70% of the area of the sector), of which 1.5 million km² under pack ice. km (23%) [2]. In the Russian Arctic, one finds significantly developed territories beyond the Arctic Circle and near it, incl. areas of traditional nature management of the indigenous peoples of the North (indigenous peoples); tourist and recreational resources and natural reserves of wildlife are concentrated. "The Russian Arctic has huge natural gas resources; the share is about 30% of the world reserves. Resource provision is based on large and unique reserves of fuel minerals in Western Siberia and the Timan-Pechora oil and gas province" (TPOGP) [2, p. 118]. The total value of the explored reserves of minerals in the Arctic region of Russia is over 150 trillion rubles. The first place in the structure of the economy of the Russian Arctic is occupied by the gas complex (over 80% of Russian gas is produced in the Nenets and Yamal-Nenets Autonomous Okrugs), and the second is mining. Less than 1% of the country's population lives in the Russian Arctic. About 5% of GDP and over 20% of all-Russian exports are produced there¹.

The formation of state policy in the Russian Arctic is characterized by historical continuity and can be considered in the context of international activity in different periods. Conditionally dividing it into stages, one can distinguish the pre-Soviet (before the beginning of the 20th century), Soviet (1924–1991), and modern (Russian) stages of development of the Arctic zone [3].

The sources of purposeful state efforts for the socio-economic, transport and logistics, scientific, educational, cultural, and humanitarian development of the Russian Arctic should be sought at the beginning of the 20th century. Without making a detailed historical excursion, we note that before the beginning of the 20th century. Russia, Canada, the USA, Norway, and Denmark mastered only the coast of the Arctic Ocean without claiming their rights to its water area and seabed. In 1909, Canada became the first country to legally secure the territory from the coast (the easternmost and westernmost points of the country's coast) to the North Pole. The country declared all lands and islands to be its property: both already opened and opened in the future and lying west of Greenland between Canada and the North Pole. Thus, the beginning of the Arctic division into polar sectors was laid. This concept existed until 1982, when the UN Convention on the Law of the Sea (Montego Bay) was adopted.

In the 20th century, in Russia, the establishment of a list of municipalities related to the Arctic was the result of a political process and often had no scientific justification.

¹Federal'naya sluzhba gosudarstvennoy statistiki [Federal State Statistics Service]. URL: https://www.gks.ru/free_doc/new_site/region_stat/calendar1-2019.htm (accessed 07 January 2019).

In 1916, the Ministry of Foreign Affairs of Russia published a Note on the Russian property of all open lands and islands, “located north of the Asian coast of the Russian Empire.” It was the first attempt to consolidate Russia's sovereignty over the Arctic territories. The spatial limitation of this document is that it fixes the ownership of lands and islands, which are a direct continuation of the areas in the Asian part of the mainland.

The decree of the Council of People's Commissars (CPC) “On the protection of fish and animal lands in the Arctic Ocean and the White Sea” in 1921 confirmed the right of the RSFSR to the exclusive exploitation of fish and animal lands in the White Sea — south of the direct the line connecting the capes of Svyatoy Nos and Kanin Nos, in the Chessky (Czech) Bay and the Arctic Ocean along the coast from the state border with Finland to the northern tip of Novaya Zemlya, and inland — at a distance of 12 nautical miles from the tidal line along the mainland coast and the coast of the islands.

In 1925, the CPC of the USSR by the decision of April 17, No. 331-12 declared the Kara Gates, Ugra Shar, Matochkin Shar, Vilkitsky, Shokalsky, and Krasnoy Armii straits as territorial waters of the USSR, and the Laptev and Sannikov straits historically owned by the USSR.

The 1926 Decree “On the Declaration of the Territory of the USSR as Lands and Islands Located in the Arctic Ocean” establishes the USSR's ownership of the space between the 32⁰4' longitude meridians and 168⁰49'W, passing in the middle of the strait separating the islands of Ratmanov and Kruzenshtern in the Bering Strait. By the Decree of the Presidium of the Supreme Soviet of the USSR of February 21, 1979 No. 8908-IX, the eastern border of the polar possessions of the USSR was specified, it began to pass along 168⁰58.5 'W Later, the USA went along a similar path.

Signing the Paris Treaty in 1920 under the Norwegian sovereignty over the Svalbard archipelago was of great importance in shaping the policy of the USSR in the Arctic, but with the caveat: all interested countries that have ratified this treaty can participate in the development and use of Svalbard resources. Since then, this document has been repeatedly violated by Norway unilaterally, which in principle does not suit the Russian Federation [3].

Over the past 40 years, Russia has attempted to resolve the maritime state border with Norway in the Barents Sea. In 1976, countries unilaterally fixed boundaries in the Barents Sea. A controversial area has formed (according to Norwegian terminology — the “gray zone”). It contains reserves of aquatic biological resources, and the Fedynsky uplift, according to preliminary calculations, is promising for hydrocarbon production. As an alternative to the forceful mastery of space, its resources, and communications, the principle of “soft power” is used. It is expressed in the ability to achieve what is desired from negotiating partners using non-military tools. Probably, this approach was used in the conclusion of the Agreement on the delimitation of maritime spaces and cooperation in the Barents Sea and the Arctic Ocean in 2010. The delimitation of the Russian-Norwegian border, i.e., disengaged area of 175 thousand km² or about 12% of the Barents Sea. It is formed by the western border of the Arctic sector of Russia (Russian version) and the middle line (Norwegian version), drawn at an equal distance from the archipelagos Novaya Zemlya, Sval-

bard, and Franz Josef Land. Despite the apparent merit — the resolution of the territorial dispute, this document is ambiguously perceived in the public, expert, and scientific environment [4].

The pre-Soviet and Soviet features of the development of the space of the Soviet (Russian) Arctic and the High North in the historical aspect of archival materials are described in detail in the publications of Doctor of Historical Sciences, Professor V.N. Bulatov (Arkhangelsk). His work has not lost relevance. However, it should be adjusted for the ideologization of the Soviet period [5].

In developing state policy concerning the Arctic in the USSR, military and geopolitical aspirations dominated economic, humanitarian, and even more ecological ones. In the Soviet period, accumulated environmental damage began to form on the islands and archipelagos of the Arctic Ocean, which Russia started to eliminate only at the beginning of the 21st century on the personal initiative of the President of the Russian Federation V.V. Putin.

One of the prerequisites of state policy in the Russian Arctic is that several decades transformations are taking place in the Arctic, a complete understanding of which has not developed. They are due to the influence of two interrelated factors — climate change and globalization, which, for their part, are followed by technological, geopolitical, organizational, and institutional changes. The meaning of the latter lies in the development of directions and the selection of public policy instruments in the Arctic region.

The Arctic is a region with dynamic and unstable climatic processes, the imbalance of which leads to climatic shifts throughout the northern hemisphere. The climatic doctrine of the Russian Federation states that climate change is one of the global problems of the 21st century, which should be considered from an interdisciplinary perspective, covering the environmental, economic, and social aspects of sustainable development².

It should be noted that the increase in air temperature in the Arctic region occurs at rates exceeding the world average [6]. A significant contribution to the formation of public consciousness is made by the media, creating visual images of the effects of increasing temperature, reducing the area and power of ice in the Arctic Ocean, the destruction of sea coasts, and threats to biodiversity. These processes are developing against the background of a lack of knowledge about them, which is due to an insignificant period of regular weather observations, a rare network of weather stations (especially in Russia after the collapse of the USSR), and fragmentation of data.

The Fifth Report of the International Panel on Climate Change (IPCC) states: changes in the climate system in modern times are an undeniable fact. With a “high probability” (over 90%), an increase in anthropogenic greenhouse gas concentrations is responsible for much of global warming, starting in the middle of the 20th century [7]. The report of the Arctic Council notes that during the 21st century, the average global temperature may increase by 2.8⁰ C (currently about 0.4-

² Klimaticheskaya doktrina Rossiyskoy Federatsii (utverzhdena rasporyazheniem Prezidenta Rossii ot 17.12.2009. № 861) [Climate Doctrine of the Russian Federation (approved by decree of the President of Russia of December 17, 2009. No. 861)]. URL: <http://www.kremlin.ru/events/president/news/6365> (accessed 17 June 2018).

0.6⁰ C), while in most of the land — by 3.5⁰ C, and the Arctic — by 7⁰ C [8]. According to the Federal Service for Hydrometeorology and Environmental Monitoring of the Russian Federation, an absolute minimum of ice has been recorded over 30 years, their area has decreased from 7.3 in 1979 to 5 million km² in 2007 (5.1 million km² in 2013)³ [6].

The relevance of “climate issues” is also since, in the Arctic, there is a transformation of natural and climatic problems into political ones. Such calls can become a factor in the destabilization of maritime (incl. naval) activities in this region.

In the 21st century, some foreign countries and their associations located both in the Arctic zone (Denmark⁴, Iceland, Canada⁵, Norway⁶, Finland⁷, Sweden⁸, USA⁹, European Union, Arctic council, Council of the Barents Euro-Arctic region), and outside it (China, India, Republic of Korea, Japan, Germany, Great Britain) have developed strategies and programs for the development of national Arctic zones. India and China, several European states, incl. Iceland, do not have clearly defined program documents regarding the development of the Arctic and its natural resources. However, it would be a mistake to ignore their interests in the Arctic. China and India are states with global economic, political, technological, and cultural influence. Asian countries should be considered as equal partners, full-fledged participants in the development of natural resources, and the use of Arctic spaces outside the national exclusive economic zones.

The interest of foreign countries is since the Arctic region is becoming a key at the global level. The economic development of the Arctic territories, the positioning of states, and their corporations are associated with the natural competitive advantages of the Arctic territories. It is especially noticeable in the strategies of Norway (which undoubtedly enters the Arctic compared with the continental neighbors Sweden and Finland with no access to the Arctic Ocean) and Canada (where the concept of “Arctic territories” is replaced by “northern territories”, i.e., more than 40% of the country's area or the second largest Arctic area after Russia). It is due to the availability of natural resources that are promising for development in the next 30-50 years, considering climate change, the development of innovative technologies, and international cooperation, as well as the passage of transport communications.

³ Global climate change. URL: <https://climate.jpl.nasa.gov/> (accessed 12 August 2018).

⁴ Denmark, Greenland, and the Faroe Islands: Kingdom of Denmark Strategy for the Arctic 2011–2020. 58 p.

⁵ Canada's Northern Strategy. Our North, Our Heritage, Our Future / Government of Canada, Ottawa, 2009, 48 p.

⁶ The Norwegian Government High North Strategy / Norwegian Ministry of Foreign Affairs, 76 p. URL: <https://www.regjeringen.no/en/dokumenter/> (accessed 10 September 2018).

⁷ Finland's Strategy for the Arctic Region. Government resolution on 2013 / Prime Minister Office, 2013 70 p. Finland to Increase Its Input in Arctic Region Cooperation. URL: <http://www.hs.fi/english/article/Finland> (accessed 10 October 2018).

⁸ Sweden's Strategy for the Arctic region / Government Offices of Sweden. Ministry for Foreign Affairs. Department for Eastern Europe and Central Asia. Arctic Secretariat, Stockholm, Sweden. 2011. 52 p.

⁹ National Strategy for the Arctic Region. May 2013. USA, Washington D.C. 13 p. United States Coast Guard. Arctic Strategy. May 2013. USA, Washington D.C. 48 p.

The content of the state policy of Russia in the Arctic zone

In the first quarter of the 21st century, the policy concerning the Russian Arctic is formed by state authorities. They prepare documents that allow strategic planning of the development of the Russian Arctic and ensure national security in the water and land of the macroregion, contribute to improving the living standard, and strengthening the role of the Arctic in the Russian economy. In the interests of sustainable socio-economic development, it is advisable to focus on the key elements that provide a multiplier effect in realizing the development priorities of the Russian Arctic.

The solution to the institutional problem takes priority in the complex of measures for the development of the Russian Arctic. The modernization of the economy considers the threats associated with Russia's lagging on the path of innovative development from leading foreign countries, the impact of sanctions on the economic and technological development of the country, puts forward the need to develop specialized approaches for managing the development of the Arctic zone. The Arctic, as shown by A.N. Pilyasov [9, 10] and other economic geographers and economists, needs to develop Arctic-oriented management models. One of the forms (according to international experience in the development of the Arctic territories) could be Arctic partnerships. In state-corporate and other varieties, there is an opportunity to build a consensus of the state, regional authorities, local governments, corporations, entrepreneurs, representatives of indigenous communities, educational and research organizations, civil society on the development and implementation of programs development of the Russian Arctic, to ensure access for the population and commercial consumers to information on the state of the environment.

The implementation of the state policy of Russia in the Arctic involves the solution of socio-economic problems. It is possible as part of the modernization of the economy, ensuring its diversification, rational nature management, the preservation of unique ecological systems, and the development of indigenous communities. When implementing investment projects for mining and developing transport infrastructure in the Russian Arctic (megaprojects), territorial-production complexes (TPC) will be created, as well as infrastructure facilities, united in clusters oriented towards commercialization and implementation in production of advanced research and development projects.

The *critical task* of ensuring sustainable socio-economic development of the Russian Arctic is to overcome the weakness of infrastructure. The key link in the emerging Arctic transport system is the Northern Sea Route (the NSR). It is explained by the fact that sea transport is a non-alternative means of transportation of the population and the delivery of goods to remote regions of the Arctic and a way of linking space. Often it is supplemented by air traffic (it is a non-alternative year-round action way of moving people in the Nenets Autonomous Okrug). The functioning of the NSR and the associated land transport network ensures the safety of the population living in the Russian Arctic, contributes to economic activity, and the development of cooperation with foreign countries (since the 1980s).

The scientific and innovative task is to organize and conduct fundamental and applied scientific research on the accumulation of knowledge and the creation of modern (incl. geoinformation) fundamentals of managing the Arctic territories, as well as the reliable functioning of the life support systems of the population in the Arctic, the development of new materials, technologies and equipment for the development of mineral deposits and aquatic biological resources, incl. in ice-covered areas. The urgent task of studying climate change and the impact of these processes on human economic activity. The introduction of advanced resource and energy-saving technologies in the energy sector, the housing and communal sector, the processing, and recycling of municipal waste will reduce fuel delivery costs and improve the quality of life of the population in the Russian Arctic.

The socio-cultural task involves the development of measures aimed at solving demographic problems in the subjects of the Russian Arctic, revitalizing the Arctic single-industry towns, developing entrepreneurship, creating high-tech jobs, maintaining social guarantees for people permanently residing in the Russian Arctic, coordinating the use of natural resources with the indigenous peoples' resources in areas of their traditional nature use, the development of targeted educational programs, the provision of medical, domestic and cultural services to the population.

The environmental task is to strike a balance between the need to use natural resources and the need to preserve the natural environment in the interests of present and future generations (Sustainable Development Concept, 1992). Ways to solve this problem are the use of a precautionary approach in the Arctic nature use, the prompt resolution of environmental issues, the development of protected natural areas, the elimination of accumulated environmental damage, land reclamation, the introduction of a separate collection of industrial and municipal waste, the development of ecological tourism, and the improvement of international security systems against natural and human-made threats.

The solution to *the geopolitical task* should proceed from the recognition of the special status of the Arctic territories. The Arctic zone is key to maintaining the defense capabilities of our state: the forces and assets of the Northern Fleet are deployed here, and enterprises of the military-industrial complex are based. The length of the Arctic coast of the Russian Federation is 22 thousand km. It is the maximum figure among countries with access to the Arctic Ocean. The Arctic theater of operations is specific; the icy surface soldered to the shore is regarded as a continuation of the land territory of the state. In the interest of ensuring national security, Russia is working with foreign countries to improve existing standards and proactively develop new agreements within the framework of the Arctic Council, the Barents Euro-Arctic Region, the European Union, and the North Atlantic Treaty Organization (NATO).

The development of the system of state planning and development management of the Russian Arctic is based on Federal Law No. 172-FZ of June 25, 2014 "On Strategic Planning in the

Russian Federation”¹⁰, as well as the “Basic Principles of the State Policy of Regional Development of the Russian Federation to 2025”, approved by Decree of the President of the Russian Federation on January 16, 2017¹¹.

The objectives of regional development are to improve the quality of life of the population, scientific and technological progress and increase the competitiveness of the Russian economy based on a balanced and sustainable socio-economic development of the constituent entities of the Russian Federation, as well as involving civil society in solving regional and local tasks of territorial development. It is necessary to provide infrastructural support for the spatial development of the economy and the social sphere, attracting investment in the non-state sector of the economy, improving mechanisms for regulating internal and external migration, and developing mechanisms (incl. financial) to stimulate the subjects of the Russian Federation to build their economic potential, as well as to clarify the powers of federal bodies of state power, bodies of state power of subjects of the Russian Federation and local authorities.

The institutional basis for managing the Arctic region as an integral object with boundaries, composition, goals, and objectives of development, methods for their achievement, participants, characterized by a set of statistical indicators that allow controlling the dynamics of development, generates several documents.

The President approved the fundamentals of Russia's state policy in the Arctic for the period up to 2020 and a longer perspective in 2008. National interests have determined the use of the Russian Arctic as a resource base that provides solutions to the country's socio-economic development; preservation of the Arctic as a zone of peace and cooperation; conservation of ecological systems; use of the NSR as the national transport communication of Russia in the Arctic¹².

In the Basic Principles of State Policy of Russia in the Arctic until 2035, the Russian Arctic is “... land territory as defined by the Decree of the President of the Russian Federation of May 2, 2014 No. 296 “On land territories of the Arctic zone of the Russian Federation”, as well as inland marine areas adjacent to these territories waters, territorial sea, exclusive economic zone and the continental shelf of the Russian Federation”¹³.

¹⁰ Federal'nyy zakon «O strategicheskoy planirovaniy v Rossiyskoy Federatsii» [Federal Law “On Strategic Planning in the Russian Federation”]. URL: http://www.consultant.ru/document/cons_doc_LAW_164841/ (accessed 12 December 2017).

¹¹ Osnovy gosudarstvennoy politiki regional'nogo razvitiya Rossiyskoy Federatsii na period do 2025 goda. Utverzhdeny Ukazom Prezidentom RF 16 yanvarya 2017 g. [Basic Principles of the State Policy of Regional Development of the Russian Federation to 2025. Approved by Decree of the President of the Russian Federation on January 16, 2017]. URL: http://www.consultant.ru/document/cons_doc_LAW_210967/f938e46a4000bf25f99c70c69823278591395d7d/ (accessed 12 December 2017).

¹² Osnovy gosudarstvennoy politiki Rossiyskoy Federatsii v Arktike na period do 2020 goda i dal'neyshuyu perspektivu (utverzhdeny Prezidentom Rossii v 2008 g.) [The Basic Principles of the State Policy of the Russian Federation in the Arctic to 2020 and beyond (approved by the President of Russia in 2008)]. URL: <http://government.ru/info/> (accessed 22 February 2018).

¹³ Osnovy gosudarstvennoy politiki Rossiyskoy Federatsii v Arktike na period do 2035 goda (utverzhdeny Ukazom Prezidentom Rossii 5 marta 2020 g. № 164) [The Basic Principles of Russian Federation State Policy of in the Arctic to 2035. (approved by Decree of the President of Russia on March 5, 2020 No. 164)]. URL: <http://government.ru/info/> (accessed 22 March 2020).

In the Basic Principles of State Policy of Russia in the Arctic to 2035, the objectives of the state policy of the Russian Federation in the Arctic are the following:

- improving the quality of life of the population of the Russian Arctic, incl. indigenous peoples;
- accelerating the economic development of the territories of the Russian Arctic and increasing their contribution to the economic growth of the country;
- environmental protection in the Arctic, the security of the indigenous lands and traditional lifestyle;
- mutually beneficial cooperation and peaceful resolution of all disputes in the Arctic based on international law;
- protection of the national interests of the Russian Federation in the Arctic, incl. economic ones.

It should be noted that, unlike the Basic principles of Russia's policy in the Arctic to 2020, the document to 2035 got no stages, periods, and indicators to evaluate the effectiveness of its implementation.

The composition of the Russian Arctic is defined in the Decree of the President of the Russian Federation of May 2, 2014 No. 296 "On land territories of the Arctic zone of the Russian Federation"¹⁴. It should be noted that the lands and islands in the Arctic Ocean, indicated in the Decree of the Presidium of the Central Executive Committee of the USSR of April 15, 1926 "On the Declaration of the Territory of the USSR as Lands and Islands in the Arctic Ocean" and other acts of the USSR, are administratively a part of the Arctic regions. By the Decree of the President of Russia of June 27, 2017 No. 287, the Loukhsky, Kemsy and Belomorsky municipalities of the Republic of Karelia became assigned to the Russian Arctic¹⁵.

In 2015, the Government of the Russian Federation created the State Commission for the Development of the Arctic¹⁶. Its authority includes

- coordination of the activities of federal, territorial, and local authorities in solving the problems of socio-economic development and ensuring national security in the Russian Arctic;
- clarification of the goals of the policy of the Russian Federation in the Arctic following changes in the external economic and foreign political situation;
- increasing the efficiency of the development of sustainable development programs in the Russian Arctic and others.

Among the tasks of the Commission are:

¹⁴ «O sukhoputnykh territoriyakh Arkticheskoy zony Rossiyskoy Federatsii». Ukaz Prezidenta Rossii ot 2 maya 2014 g. № 296 ["On Land Territories of the Arctic Zone of the Russian Federation". Decree of the President of Russia No. 296 of May 2, 2014] URL: <http://www.kremlin.ru/acts/bank/38377> (accessed 22 July 2018).

¹⁵ Ukaz Prezidenta Rossii № 287 ot 27.06.2017 «O vnesenii izmeneniy v Ukaz Prezidenta Rossiyskoy Federatsii ot 2 maya 2014 goda «O sukhoputnykh territoriyakh Arkticheskoy zony Rossiyskoy Federatsii»» [Decree of the President of Russia No. 287 of June 27, 2017 "On Amending the Decree of the President of the Russian Federation dated May 2, 2014 "On Land Territories of the Arctic Zone of the Russian Federation"]. URL: <http://www.kremlin.ru/acts/bank/39411> (accessed 22 September 2018).

¹⁶ «Polozhenie o Gosudarstvennoy komissii po voprosam razvitiya Arktiki» (utverzhdeno Postanovleniem Pravitel'stva Rossii ot 14 marta 2015 goda № 228) ["Regulation on the State Commission for the Development of the Arctic" (approved by Decree of the Government of Russia No. 228 of March 14, 2015)]. URL: <https://arctic.gov.ru/info/> (accessed 22 August 2018).

- study and development of the Arctic, considering the needs of the country and global trends, ensuring fundamental and applied research;
- improving the training system, developing the system of vocational education;
- development and implementation of priority investment projects and programs providing the development of the Russian Arctic, the protection of its environment and population;
- creation of a comprehensive security system to protect the environment and the people from threats of emergencies of a natural and technogenic nature;
- improving the quality of life of the population, preserving economic activity and cultural heritage sites;
- use of political, diplomatic, economic, information, and other mechanisms to ensure Russia's national interests in the Arctic;
- coordination of strategies for the socio-economic development of the subjects of the Russian Arctic.

The creation of the Commission on the development of the Arctic in the Russian Federation seems timely and justified. Its work within the framework of working groups and a scientific and expert council has allowed involving experts on an interdisciplinary basis in discussing the development trends of the Arctic. It also allowed reducing the blurring of government functions in the Russian Arctic between ministries and departments, between the Government and the structures of the Federal Assembly of the Russian Federation. The coordination of efforts between different levels and branches of government in Russia has increased.

The Commission reflects state attention to the urgent problems of the development of the Arctic macro-region

- redistribution of excess revenues from hydrocarbon production in the interests of all subjects of the Russian Arctic,
- reduction of imbalances in the socio-economic development of the subjects of land territories of the Russian Arctic,
- rational spending of funds on megaprojects,
- creation of single Arctic-oriented information space to promote and protect Russian national interests in the Arctic. The priority of Russian policy is to preserve the Arctic as a territory of the world, stability, and constructive cooperation,
- implementation of initiative proposals of the Russian Federation in the framework of international cooperation in the Arctic,
- supporting traditional nature management of the indigenous peoples of the North and the Arctic.

Thus, the commission concluded that the federal budget funds provided to the regions to support the socio-economic development of the indigenous peoples had decreased three times — from 600 million rubles in 2009 to 205 million in 2015.¹⁷

- solving urgent environmental problems in the subjects of the Russian Arctic, the development of nature conservation, and tourism promotion.

¹⁷ Kompleksnaya informatsionnaya podderzhka interesov Rossii v Arktike [Comprehensive Informational Support for Russia's Interests in the Arctic]. URL: <http://www.arctic-info.ru/news/05-10-2015/dmitrii-rogozin—neobhodima-kompleksnaa-informacionnaa-podderjka-interesov-rossii-v-arktike> (accessed 10 January 2019).

The structure of the Federal Assembly of the Russian Federation includes the Committee on Regional Policy and Problems of the North and the Far East and the Expert Council on the Arctic and Antarctic. Their powers consist of the development of conceptual approaches of the Arctic policy, the preparation of documents specifying its goals, objectives, methods, and stages of implementation. Attention is paid to the development of mechanisms to increase the investment attractiveness of the Arctic region, the modernization of the tax base in the interests of corporations and entrepreneurs operating in the Arctic region, the development of the regulatory legal framework for the development of its natural resources, the modernization of the infrastructure, and the formation of the knowledge-based structure of the economy.

To increase the efficiency of state management of the development of the Russian Arctic, in 2019, the powers of the Ministry for the Development of the Far East were expanded. Based on considerations of budgetary funds for the functioning of the state apparatus, this decision of the President of the Russian Federation looks deliberate. The competence of the Ministry for the Development of the Far East and the Arctic includes the functions of state and legal regulation of the development of the Russian Arctic, which is of systemic importance for the development of the macro-region¹⁸. At the regional level, Decree of the Head of the Republic of Sakha (Yakutia) of December 30, 2018 No. 313, ensured an integrated approach to the development of the Arctic zone of the Republic of Sakha (Yakutia), sustainable development of indigenous peoples. Also, the Ministry for the Development of the Arctic and the Affairs of the Peoples of the North was formed. In the structure of the Administration of the Governor of the Arkhangelsk Oblast, the position of the representative of the Governor for the development of the Arctic has been introduced.

The development strategy of the Arctic zone of the Russian Federation until 2020 and features of its implementation

Strategy for Development of the Russian Federation's Arctic zone and Ensuring National Security until 2020¹⁹ was worked out to develop the Basic Principles of Russian Policy in the Arctic until 2020, approved by the President of the Russian Federation in 2013, and it is currently updating (expected at the end of 2020)²⁰. The plan for its implementation includes more than 80 measures aimed at the socio-economic development of the Arctic zone, the development of sci-

¹⁸ Postanovlenie Pravitel'stva RF ot 30 iyunya 2012 g. № 664 «O Ministerstve Rossiyskoy Federatsii po razvitiyu Dal'nego Vostoka i Arktiki» (s izmeneniyami i dopolneniyami) [Decree of the Government of the Russian Federation No. 664 of June 30, 2012 "On the Ministry of the Russian Federation for the Development of the Far East and the Arctic" (as amended)]. URL: <https://base.garant.ru/70196982/> (accessed 10 October 2019).

¹⁹ Strategiya razvitiya Arkticheskoy zony Rossiyskoy Federatsii i obespecheniya natsional'noy bezopasnosti na period do 2020 goda (utverzhdena Prezidentom Rossii v 2013 g.). [Strategy for Development of the Russian Federation's Arctic zone and Ensuring National Security until 2020 (approved by the President of Russia in 2013)]. URL: <http://government.ru/info/> (accessed 22 February 2018).

²⁰ The new Arctic strategy of the Russian Federation is being prepared with the participation of the authorities of the Arctic regions, the scientific community, and experts. In 2019, a special portal was launched to help any Russian citizen to make proposals to the strategy. In-person discussions of the document took place in each region of the Russian Arctic. The official presentation of the strategy was expected in June 2020 at the St. Petersburg International Economic Forum.

ence, technology and innovation, the information and telecommunication environment, infrastructure, environmental protection and environmental safety, the development of international cooperation, military security, stability and protection of the state border of Russia in the Arctic²¹.

The Strategy sets the procedure for addressing priority tasks in using the material, financial, personnel, scientific, technological, informational potential of Russia in the Arctic. Also, it is about the efficient use of natural resources, outstripping the development of infrastructure. Solving these issues will ensure the integrated development of the Arctic territories, their social sphere, education, science, will contribute to the preservation of unique natural complexes, and improving the quality of life of the indigenous population.

The content of the Arctic strategy is consistent with federal laws that govern the socio-economic development of the Russian North, e.g., Law of the Russian Federation of February 19, 1993 No. 4520-1 "On State Guarantees and Compensations for People Working and Living in the High North and Localities Equated to Them", "On Housing Subsidies to Citizens Leaving the High North and Equated Localities", "On Guarantees of the Rights of Indigenous Peoples of the Russian Federation" of June 19, 1996, No. 78 "On the Grounds of State Regulation of Social-economic Development of the North of the Russian Federation", of April 30, 1999 No. 82 "On Guarantees of the Rights of the Indigenous Peoples of the Russian Federation", of May 07, 2001 No. 49 "On the Territories of Traditional Nature Management of the Indigenous Peoples of the North, Siberia and the Far East of the Russian Federation" and several other legal acts. The Arctic strategy considers forecasts for the development of the TPC in mechanical engineering, energy, and mining. It is consistent with the priority provisions of the demographic and information policy of Russia, focuses on the concepts and development programs of the subjects of the European North, Siberia, and the Far East for the long term.

Alternative ways of socio-economic development of the Russian Arctic in the strategy are revealed in two scenarios. They differ like the hypotheses adopted in the formation of socio-economic trends, external and internal factors, as well as limitations, incl. random and difficult to predict. When developing them, the programmatic scenarios of the relevant ministries and departments of the Russian Federation, Arctic Council working groups, and foreign Arctic strategies were considered.

The *inertial scenario* reflects the conflict of interests of the circumpolar countries and the intensification of the struggle between them for natural resources, incl. increased pressure on the presence of Russian enterprises on the Spitsbergen archipelago. The conjuncture of world prices for the main groups of natural resources mined in the Arctic will be favorable, but unstable. The scenario reflects the extension of current trends in key sectors of the Arctic economy and is based on conservative estimates of the forecast growth of key indicators. For reasons of delayed imple-

²¹Strategiya razvitiya Arkticheskoy zony Rossiyskoy Federatsii i obespecheniya natsional'noy bezopasnosti na period do 2020 goda (utverzhdena Prezidentom Rossii v 2013 g.) [Strategy for Development of the Russian Federation's Arctic zone and Ensuring National Security until 2020 (approved by the President of Russia in 2013)]. URL: <http://government.ru/info/> (accessed 22 February 2018).

mentation deadlines, mega-projects have little effect on the economical parameters of the development of the region. It is assumed that the growth rate of the GRP included in the Russian Arctic, the per capita income of the population and budget revenues, the growth of labor productivity will be lower than the Russian average, and the expected structural changes in the Arctic economy and investment growth will occur slowly; the resource orientation of the Russian Arctic in the system of the international geographical division of labor will continue. Contrasts between the development of the dynamic western and depressed eastern sectors of the Russian Arctic will intensify²².

The *innovative scenario* is aimed at the broader cooperation between the polar countries in the development of Arctic shelf deposits and, therefore, at a much faster pace of growth than inertial scenario predicts. The innovative scenario grounds on optimistic assessments of the development of critical sectors and sectors of the Arctic economy, considering the implementation of megaprojects and the influx of investments, incl. foreign. As practice shows, the northern countries form regional GDP not only on the exploration and production of mineral raw materials but also on services, knowledge-intensive developments. They contribute to improving the energy and environmental safety of oil and gas production facilities.

The characteristic features of the innovation scenario will be, on the one hand, the consistent implementation of competitive advantages based on the rational use of the natural resource potential of the Arctic territories, on the other hand, the manifestation of a new quality of economic growth based on the influence of new technologies in various sectors of the economy and the accelerated development of the information and communication complex and subsector of Arctic intellectual services. The pace of development of the Russian Arctic will be higher than the national average due to the implementation of megaprojects: development of the Shtokman and Prirazlomnoye fields, Pomorskoe, Dolginskoe, Varandey-more, and Medynskoe-more sites; Bovanenkovo field, modernization of the NSR and increase of its cargo turnover up to 60 million tons per year due to the transportation of resource from offshore areas and the development of transit traffic with the participation of Europe and the Asia-Pacific region (APR) states. Megaprojects will continue in the Yamal Peninsula (development of the Sabetta port, the Northern Latitudinal Railway, etc.), the Urals (Ural Industrial — Ural Polar), the European North (Belkomur), etc. Innovation scenario grounds on the vocational education system training, institutional and scientific-technical environment adapted to extreme Arctic conditions, renovation of infrastructure, creation of production facilities for the deep processing of natural resources aimed at producing high value-added products, active implementation organizational innovation. Their implementation will be equally effective both in the civilian and in the military-industrial sectors of the economy.

²² Strategiya razvitiya Arkticheskoy zony Rossiyskoy Federatsii i obespecheniya natsional'noy bezopasnosti na period do 2020 goda (utverzhdena Prezidentom Rossii v 2013 g.) [Strategy for Development of the Russian Federation's Arctic zone and Ensuring National Security until 2020 (approved by the President of Russia in 2013)]. URL: <http://government.ru/info/> (accessed 22 February 2018).

An instrument for implementing the strategy and state policy in the Russian Arctic is the State program “Socio-economic development of the Arctic zone of the Russian Federation until 2020” (updated in 2017 and extended until 2025)²³. The state program is expected to be completed in three stages: I stage — 2015–2017, II stage — 2018–2020, III stage — 2021–2025. The amount of funding is approximately 190 billion rubles. The state program includes three subprograms: “Formation of support zones and ensuring their functioning, creation of conditions for advanced socio-economic development of the Arctic zone of the Russian Federation”, “Development of the Northern Sea Route and provision of shipping in the Arctic”, “Creation of equipment and technologies oil and gas and industrial engineering, necessary for the development of mineral resources of the Arctic zone of the Russian Federation”²⁴. In the previous edition, there was one subprogram — “Coordination of the activities of state authorities in the field of socio-economic development of the Arctic zone of the Russian Federation”.

Goals of the State program:

- improving the quality of life and social protection of the population in the subjects of the Russian Arctic;
- development of the NSR as the national transport route of Russia in the Arctic and the development of a hydrometeorological support system for navigation in its water area;
- development of science, technology and improving the efficiency of using the resource base of the Arctic zone and the continental shelf of the Russian Federation in the Arctic;
- improving the efficiency of public administration of the socio-economic development of the Russian Arctic.

The 2020 Concept for the Long-Term Socio-Economic Development of the Russian Federation defines priority areas for the development of our country: establishing a competitive knowledge-based economy, increasing the rate of innovative growth based on human capital, improving the welfare of the population²⁵. The critical points of the Arctic Strategy of the Russian Federation cover such categories as **knowledge, presence, growth**. The development of the Arctic region is based on the principle of building up and concentrating competitive scientific knowledge, investments, and production potential in the most promising areas in centers that form “centers of social and economic efficiency” in the Arctic zone. The State program provides several mechanisms for the sustainable socio-economic development of the Russian Arctic.

²³ О новов редакции государственной программы «Социально-экономическое развитие Арктической зоны Российской Федерации» [“On the New Edition of the State Program “Socio-Economic Development of the Arctic Zone of the Russian Federation”]. URL: <http://government.ru/docs/29164/> (accessed 22 February 2018).

²⁴ О новов редакции государственной программы «Социально-экономическое развитие Арктической зоны Российской Федерации» [“On the New Edition of the State Program “Socio-Economic Development of the Arctic Zone of the Russian Federation”]. URL: <http://government.ru/docs/29164/>, <http://gov.garant.ru/SESSION/PILOT/main.htm> (accessed 22 February 2018).

²⁵ Концепция долгосрочного социально-экономического развития Российской Федерации до 2020 года (утверждена распоряжением Правительства России от 17 ноября 2008 г. № 1662) [The Concept of Long-Term Socio-Economic Development of the Russian Federation Until 2020 (approved by Order of the Government of Russia of November 17, 2008 No. 1662)]. URL: <http://docs.cntd.ru/document/902130343> (accessed 12 July 2018).

1. The creation of advanced development zones, aimed at shifting the productive forces system in the High North . Such zones may appear in the areas of the Polar Urals, TPOGP, Kola, and the Belkomur (to be formed in uncertain future) industrial zones.

2. *The frame-cluster approach* involves the restructuring of industrial enterprises, creating modern processing industries, expanding the range of finished products, increasing the competitiveness of products through involvement in the development of new deposits, introducing energy-saving technologies, using a closed production cycle with minimal environmental impact.

3. *Selective state support* means particular approaches in tax and social policy, as well as the improvement of mixed (state-corporate) participation in the development of the Arctic territories, the creation and functioning of special economic zones (also in ports), attracting and using investments (incl. foreign).

4. *The creation of support zones* of advanced development means an integrated project of the socio-economic development of territories. It involves the simultaneous use of territorial and sectoral planning tools, as well as mechanisms for the implementation of megaprojects, incl. the ones based on state-corporate and other types of partnerships. Let us discuss this mechanism in detail.

Supporting zones of advanced development are not mentioned in the Basic Principles of State Policy of Russia in the Arctic to 2020 and the future perspective and in the Basic Principles of Russia State Policy in the Arctic to 2035. Meanwhile, the formation of support zones is a response to the development of peripheral Northern territories. The development of the Russian Arctic is based on the ideology of integrated industrial and transport development, rather than isolated deposits, using the program-targeted method, relying on innovation, and considering climate change trends.

In the industrial era, a set of strategies for the economic and social development of the northern periphery was based on the theory of exogenous growth. It meant the transformation of space on technological and organizational solutions of the old-developed areas, with the emphasis being on the injection of capital, material and technical and human resources, the dominance of the interests of the whole country over the economic and especially the ecological interests of the region. The advantages of this model were reduced to an ultrafast start of development and reaching peak production rates of strategically essential types of natural resources for the country [9].

In the 1990s, in the regions of the North, a transition was made from administrative-command to market principles of economic activity. Restructuring of the plants was carried out in the direction of reducing their size, increasing environmental friendliness. These processes are understood as an integral part of the trend of the transition from the dominance of employment in the extractive industry to the growth of employment in the service sector, environmental management sectors responsible for environmental safety.

Since the early 1990s, the concept of competitiveness of regions based on the theory of endogenous growth has been approved [9, 10]. The emphasis is placed on the development opportunities of the area itself. It seems it must be actively looking for points of competitive advantage in the context of climate change, globalization, interaction with neighbors, focusing on the needs of dynamically developing markets, encourages entrepreneurship, and stimulates officials to flexible economic behavior. In such a region, tools of state-corporate and other partnerships are used to solve socio-economic and environmental problems, encourage rational use of natural resources, seek the replacement of imported energy, develop services, tourism, and take comprehensive measures to develop human capital. International cooperation allows the exchange of knowledge, technologies, competencies to determine the most effective way of managing the extreme climatic conditions of the Arctic.

A key task in the field of socio-economic development of Russia is the transition from resource-based to an innovative model, considered from the perspective of import substitution. The most suitable is the model of a diversified economy, which combines non-renewable natural resources and reproducible human capital, which implies the use of both the raw materials and the intellectual capabilities of the region and the state. For this, scientific studies of the Arctic seas, the continental shelf, and the mainland of the Russian Arctic are regularly conducted, aimed at expanding knowledge about the region. The result of the research is the development and implementation of materials and technologies adapted to the Arctic conditions, incl. the development of independent sources of energy supply, development of alternative energy. Technical and technological innovations should be implemented in the industries on which the competitiveness of the Arctic region and the whole country depends.

The need to overcome the specific factors of the northern price growth necessitates fixing at the level of planning and programming measures of economic regulation. Also, it requires incentives that consider the peculiarities of extreme economic conditions, strategic national priorities of socio-economic policies, as well as restrictions imposed on climatic, social, and socio-cultural, environmental, technological, international legal and other foundations [11].

A new model of spatial socio-economic development and economic management should form the framework of regional (republic, oblast, krai, okrug) and territorial (city, district) centers of concentration of economic growth, capable of transmitting innovative impulses of economic development to adjacent subjects. This model should be able to manage these processes using market institutions and mechanisms, bringing to the trajectory of accelerated growth the deep and marginal regions and territories [12].

Due to the focal nature of economic activity in the Arctic, maintaining, developing and modernizing the existing centers of economic activity, as well as creating new ones and enhancing their integration among themselves, is of particular importance. Under the conditions of sanctions and budgetary constraints, this principle can be implemented by implementing large state, regional and corporate projects based on the principles of public-private partnership [13].

Thus, the support zone can be understood as a part of the territory of a constituent entity of the Russian Federation located in the Russian Arctic, where one or several megaprojects are implemented, requiring the creation of a common energy and transport infrastructure, and the attraction of highly qualified labor resources. In creating support zones, the state sees the paramount task in the formation of the infrastructure and energy framework of the Arctic territories, which will have a multiplier effect and will give impetus to the development of the entire Arctic zone. Support zones are formed around the centers of economic development based on administrative divisions, which allows focusing on megaprojects even in those regions that are not fully part of the Russian Arctic. The orientation of the support zones to the NSR will allow intensifying activities in remote and inaccessible areas, hinterlands of both the Russian Arctic and other regions of the Russian Federation, incl. shipbuilding and ship repair enterprises.

The following can be mentioned as priority areas of activity of the development support zones in the Russian Arctic

- Creation and development of the Arctic transport system, which includes the NSR and the transport routes and means of the sea and river fleet, aviation, pipeline, rail, road transport, seaports, and coastal infrastructure.
- Development of mining and processing facilities. Based on the goals of the state policy of using the Russian Arctic “as a strategic resource base of Russia, providing the solution to the problems of socio-economic development of the country”²⁶, priority is given to projects aimed at the development and development of hydrocarbon deposits, the development of the mining complex, the modernization of the fishing and fish processing industries, the development of aquaculture, and the development of tourism
- Development of energy infrastructure facilities, incl. alternative energetics. Almost all of the land territories of the Russian Arctic are energy-deficient, which inhibits their economic development. Initiatives aimed at reducing costs can be considered as a stimulating factor in the intensification of economic activity in the region. Such projects will contribute to improving the energy security of the population. Much attention is paid to the development of information and telecommunication services, incl. high-speed Internet and digital television in the municipal formations of the Russian Arctic.
- Reconstruction of the housing stock and housing and communal services and the social sphere. It is advisable to consider projects whose implementation will improve the quality of life as well as contribute to the formation of human resources for the needs of the region’s economy when forming support zones [11, 12] to overcome the outflow of the able-bodied population. In conditions of remoteness and climatic extremes, the provision of high-tech medical care to the people is relevant.
- AZRF is of strategic importance in terms of national security. One of the goals of state policy is to ensure a favorable operational regime, maintain the combat potential of the Armed Forces of the Russian Federation in the Arctic, as well as protect and protect the state border of Russia in the Arctic²⁷. The development and modernization of the Armed

²⁶ Osnovy gosudarstvennoy politiki Rossiyskoy Federatsii v Arktike na period do 2020 goda i dal'neyshuyu perspektivu (utverzhdeny Prezidentom Rossii v 2008 g.) [The Basic Principles of the State Policy of the Russian Federation in the Arctic to 2020 and Beyond (approved by the President of Russia in 2008)]. URL: <http://government.ru/info/> (accessed 22 February 2018).

²⁷ Osnovy gosudarstvennoy politiki Rossiyskoy Federatsii v Arktike na period do 2020 goda i dal'neyshuyu perspektivu (utverzhdeny Prezidentom Rossii v 2008 g.) [The Basic Principles of the State Policy of the Russian Federation in the

Forces facilities and the growth of industries of a dual-purpose use may become an incentive for the development of civilian sectors of the economy of the Arctic regions of Russia.

Support zones of development are diverse and include:

- territories of industrial development with the prospects of transition to post-industrial development, based on developed territories (Arkhangelsk and Murmansk Oblasts);
- territories of active development, relying on open fields and infrastructure, incl. ports, oil and gas pipelines (Yamal-Nenets and Nenets Autonomous Okrugs);
- territories of prospective development based on the studied deposits, developed transport routes (Chukotka Autonomous Okrug);
- wildlife territories are forming the environment for the conservation of natural space with a particular nature management regime.

The Kola support zone is formed on the territory of the Murmansk Oblast. This entity is developing an infrastructure for servicing hydrocarbon exploration and production offshore in the Barents and Kara Seas, as well as for the extraction and processing of aquatic biological resources and the development of tourism. Novatek plans to build large-capacity platforms and floating plants for the Arctic LNG-2 project. The Murmansk transport hub provides for the development of the Murmansk port, the construction of terminals, and the expansion of railway entrances (e.g., the Lavna coal transshipment complex and the Vykhodnoy — Lavna railway).

The goal of **the Yamal-Nenets support zone** is the development of hydrocarbon deposits on the Yamal and Gydan peninsulas and the shelf of the Kara Sea, as well as the creation of a port (Sabetta) and transport (“Bovanenkovo-Sabetta”, “Northern latitudinal railway”) infrastructure for liquefied natural gas (LNG) supplies for export.

In the Komi Republic, **the Vorkuta support zone** was formed. Its territory host deposits TPOGP and Pechora coal basin. Among the promising projects are the development of railway (Belkomur), automobile and air transport, and the solution of the Vorkuta single-industry town problems.

The Arkhangelsk support zone is considered as a transport corridor connecting industrial centers of the Urals, Siberia, and the European North with the NSR. There, one of the first territorial clusters in the Russian Arctic is developing (timber and shipbuilding), the creation of a fishing cluster is discussed, which corresponds to the industry specialization of the region. Promising projects are the construction of Belkomur, the deep-water area of the port of Arkhangelsk, the development of the Pavlovsky deposit of polymetallic ores in Novaya Zemlya and the creation of a mining and processing plant.

The main challenge for the Nenets support zone, which in the long term may become an advantage, is the development of TPOGP deposits on the shelf of the Barents and Kara Seas. Since the Nenets Autonomous Okrug has only aviation year-round communication with other constituent entities of the Russian Federation, the priority is the construction of ports along the NSR, their

Arctic to 2020 and Beyond (approved by the President of Russia in 2008)]. URL: <http://government.ru/info/> (accessed 22 February 2018).

connection to railways. E.g., the construction of the Indiga port, the final destination of the Barentskomur, the construction of the Indiga-Sosnogorsk railway, the Syktyvkar — Naryan-Mar road, which can be considered as an alternative to railway projects.

The Taimyr-Turukhansk support zone is developing based on the Norilsk mining region. One of the implemented investment projects was the opening of the Skalistaya mine and the development of the Syradasai coal deposit. It is planned to build a terminal in the port of Dikson to ship coal (about 3 million tons per year). Also, it is expected to develop oil and gas cluster deposits (Ust-Yenisei and Khatanga centers).

One of the strategic goals of **the North-Yakutsk support zone** is the creation of a logistics system that ensures the communication of the river system (Lena and Kolyma) with the NSR. It can be achieved by updating the infrastructure of the Tiksi port, building a Zhaithaiskaya shipyard, replenishing the fleet of river-sea vessels, and developing hydrocarbon deposits, incl. on the shelf of the Arctic Ocean (Ust-Oleneksky, Ust-Lensky, Anisino-Novosibirsk sections). The advantage of the Chukotka support zone is its location on the NSR. One of the main problems is remoteness from the federal center and persistent depopulation processes. Promising areas will be the improvement of logistics (incl. the reconstruction of airports and seaports), mining, and development of energy. The main projects are implemented within the Chaun-Bilibino and Anadyr industrial zones.

Features of the development of the Northern Sea Route as a national transport communication of Russia in the Arctic

The development of the NSR occurred during the 20th century, as the development of mineral, fuel, energy, and forest resources of the Soviet North. With the participation of the NSR, the mineral resources of the land part of the Russian Arctic, the shelf of the Barents and Kara Seas are being developed, the mining, chemical and metallurgical complexes of the Kola Peninsula, Norilsk, Yakutia, Chukotka, the timber industry complex of the Arkhangelsk Oblast and the Krasnoyarsk Krai are functioning. After the collapse of the USSR, the conditions of the NSR worsened. It is especially noticeable in decline in cargo turnover²⁸ (Table 1).

Table 1

Cargo transportation along the NSR, 1933–2020.

Year	Turnover, thousand tons	Year	Turnover, thousand tons	Year	Turnover, thousand tons	Year	Turnover, thousand tons
The initial period of the NSR development		The last period of the socialist state		The current stage of the NSR development			
1933	130	1980	4952	2003	1700	2015	5400
1934	134	1981	5005	2004	1718	2016	7200
1935	176	1982	5110	2005	2023	2017	9900
1936	201	1983	5445	2006	1956	2018	19800
1937	187	1984	5835	2007	2150	2019	28000
1938	194	1985	6181	2008	2219	2020	-
1939	237	1986	6455	2009	1801	2021	-

²⁸ EMISS. Gosudarstvennaya statistika. Ob'єм perevozok gruzov v akvatorii Severnogo morskogo puti [EMISS. State statistics. Volume of Cargo Transportation in the Waters of the Northern Sea Route]. URL: <https://www.fedstat.ru/> (accessed 10 March 2020).

1940	350	1987	6579	2010	2050	2022	-
1941	165	1988	6295	2011	3111	2023	-
1942	177	1989	5823	2012	3752	2024	-
1943	300	1990	4804	2013	3930	2025	-
1944	350	1991	3115	2014	3982	2026	-

For Russia, it seems vital to consolidate the legal regime of the NSR, which has a peculiarity due to climatic and hydrological factors: it does not have a fixed route.

Federal Law of July 28, 2012 No. 132 contains a definition of the NSR. The adoption of the law is associated with the ratification of the UN Convention on the Law of the Sea, and, consequently, the jurisdiction of Russia in the Arctic, with claims made by other countries regarding shipping on the NSR. Russia's position on the NSR is identical to that of Canada concerning most of the Northwest Passage. The NSR is the national transport communication of Russia in the Arctic. The NSR is defined as "... a water area adjacent to the northern coast of the Russian Federation, covering inland sea waters, the territorial sea, the adjacent zone and the exclusive economic zone of the Russian Federation and limited from the east by the line of delimitation of sea spaces with the United States of America and parallel I pour Cape Dezhnev in the Bering Strait, from the west the meridian of Cape Zhelaniya to the Novaya Zemlya archipelago, the eastern coastline of the Novaya Zemlya archipelago and the western borders of the Matochkin Shar, Kara Gate, Ugra Shar straits"²⁹. The White and Barents Seas are not assigned to the NSR water area, which is not justified from the organizational-economic point of view since the ports of these seas have the largest NSR ports in terms of cargo turnover.

By Decree of the Council of People's Commissars of the USSR of December 17, 1932 No. 1873, the Main Directorate of the NSR was formed, which functioned until 1969 and contributed to the transformation of the NSR into a single economic mechanism³⁰. The 2013 law provides for the establishment of the NSR Administration with functions for navigation and hydrometeorological support of shipping monitoring of the ice situation, prevention, and participation in the elimination of marine pollution, determination of the tariff policy.

The state task for the long term is the growth and diversification of cargo transportation through the NSR, incl. due to the construction of high-tech and competitive products, multifunctional civilian equipment for the domestic market, replenishment of the icebreaking, transport, fishing, emergency rescue fleets, as well as the development of hydro-technical, navigational-hydrographic, rescue support for maritime activities. Atomflot is the customer for the construction

²⁹ Federal'nyy zakon RF ot 28 iyulya 2012 g. № 132 «O vnesenii izmeneniy v otdel'nye zakonodatel'nye akty Rossiyskoy Federatsii v chasti gosudarstvennogo regulirovaniya torgovogo moreplavaniya v akvatorii SMP» [Federal Law of the Russian Federation No. 132 of July 28, 2012 "On Amending Certain Legislative Acts of the Russian Federation Regarding State Regulation of Merchant Shipping in the NSR"]. URL: <http://government.ru/docs> (accessed 22 August 2018).

³⁰ Since 1930s, the NSR administration was responsible for organization of marine, river and air communications in the Arctic, building and managing sea and river vessels, ports, shipyards, aerodromes, and developing navigation, meteorological and hydrographic support for navigation, radio communications, scientific research, and productive forces, ensuring the economic development of the indigenous peoples.

of icebreakers, as provided for by the Decree of the Government of Russia of August 19, 2013³¹. The relevance of the decision is also dictated by the steps to develop the Arctic fleet undertaken by foreign countries and their corporations.

In 2018, Rosatom was identified as a single infrastructure operator for the use of the NSR. Its powers are divided between the Ministry of Transport and the Ministry of Development of the Far East and the Arctic. Rosatom will be responsible for shaping the state policy on the development and sustainable functioning of the NSR, navigation, hydrographic and icebreaking support for shipping, as well as the preparedness of emergency rescue services and weather tracking services for navigation³². The authority of the Ministry of Transport is to create and modernize the regulatory framework for the use of the NSR and regulate its use. The Ministry for the Development of the Far East and the Arctic is engaged in the development of land territories of the Russian Arctic and deposits, and the provision of a cargo base for the NSR.

The Government of the Russian Federation adopted Decree No. 3120-r of December 21, 2019, to create infrastructural conditions for the NSR and coastal areas development³³. Until 2035, the development of coastal infrastructure and ports, construction of LNG transshipment terminals, and improvement of the regulatory framework for Arctic shipping are envisaged. The NSR development plan (the Plan) is formed based on the forecast of existing and promising groups of cargo flows, incl. cargo of raw materials projects implemented by PJSC Gazprom Neft, PJSC NOVATEK, PJSC MMC Norilsk Nickel, and projects planned by MC LLC VostokUgol, Independent Oil Company JSC, Baimskaya State Oil Company LLC, Vostok Engineering LLC, Severnaya Zvezda LLC, transported by the NSR for export and within the country; goods imported through the NSR for the needs of these commodity projects; life support supplies for the Arctic territories of the Republic of Sakha (Yakutia), the Nenets and Chukotka Autonomous Okrugs and the Krasnoyarskiy Krai using the NSR sections for transportation; cargo of export-import and transit cargo flows passing through the seaports of Murmansk and Arkhangelsk in the direction of the Asia-Pacific Region, incl. the ones redirected from southern routes to the NSR (84 events in total).

Following the Decree of the President of Russia of May 7, 2018 No. 204 "On National Goals and Strategic Tasks of the Development of the Russian Federation to 2024", by 2024, cargo flows through the NSR should increase to 80 million tons³⁴. Rosatom's forecasts are more ambitious,

³¹ «Ob osushchestvlenii byudzhetykh investitsiy v stroitel'stvo dvukh seriynykh universal'nykh atomnykh ledokolov». Postanovlenie Pravitel'stva Rossii ot 19 avgusta 2013 g. № 715 ["On Budget Investments in the Construction of Two Serial Universal Nuclear Icebreakers." Decree of the Government of Russia No. 715 of August 19, 2013]. URL: <http://government.ru/docs> (accessed 22 August 2018).

³² Podpisan zakon o nadelenii «Rosatoma» polnomochiyami v oblasti razvitiya SMP [A Law Was Signed on Empowering Rosatom In Developing the NSR]. URL: <http://www.kremlin.ru/acts/news/copy/59539> (accessed 02 April 2020).

³³ Plan razvitiya infrastruktury Severnogo morskogo puti do 2035 goda [Infrastructure Plan for the Northern Sea Route until 2035]. URL: <http://government.ru/docs/38714/> (accessed 22 February 2019).

³⁴ O deystviyakh po realizatsii Ukaza Prezidenta Rossii ot 7 maya 2018 goda № 204 «O natsional'nykh tselyakh i strategicheskikh zadachakh razvitiya Rossiyskoy Federatsii na period do 2024 goda» [On Actions to Implement the Decree of the President of Russia dated May 7, 2018 No. 204 "On National Goals and Strategic Objectives of the Development of the Russian Federation until 2024"]. URL: <http://government.ru/news/32567/> (accessed 22 February 2019).

reaching 93-100 million tons by 2024. Implementation of projects for the development of the NSR will cost approximately 735 billion rubles³⁵.

It is planned to build in 2022–2024. put into operation 16 rescue, 13 hydrographic vessels, dredging vessels, four nuclear icebreakers of the Arctic Project 2220 (2022–2026). In 2027–2032, Three nuclear-powered ships should be built, incl. the leading icebreaker of the “Lider” project with a capacity of 120 MW.

According to the Plan, by the end of 2020, reconstruction of facilities in the Pevek seaport (Chukotka Autonomous Okrug) will be completed. By the end of 2021, the sea channel of the Sabetta port will be reconstructed. The complex development of the Murmansk transport hub, reconstruction of airport complexes in Amderma (Nenets Autonomous Okrug), Pevek (Chukotka Autonomous Okrug), Cherskiy (Republic of Sakha (Yakutia), Keperveem (Chukotka Autonomous Okrug) are envisaged.

The plan provides for the development of the Arctic integrated emergency rescue centers of the Ministry of Emergencies of Russia and their equipping with modern rescue equipment. It is planned to create ten such centers; they will be deployed in the settlements of the Russian Arctic, on land and on the islands of the Arctic Ocean, which have transport, information and telecommunications infrastructure, human resources, taking into account the risks of emergencies and the development of emergencies of a natural and technogenic nature in the Arctic. Such centers are being created in Murmansk, Arkhangelsk, Naryan-Mar, Vorkuta, Nadym, Dudinka, Tiksi, Pevek, Provideniya, and Anadyr.

We can add that in the structure of the Ministry of Defense based on the Northern Fleet since 2014, a military structure has been operating — the Joint Strategic Command “Sever”. The Armed Forces create a permanent base for the Northern Fleet in the Novosibirsk Islands. Spetsstroy of Russia completed the reconstruction of the military camp of the first Arctic motorized rifle brigade, which was formed in the village of Alakurtti, Murmansk Oblast. Work is underway on the construction of facilities on the islands of Kotelnny, Wrangel, Aleksandra Land, Novaya Zemlya, and Cape Schmidt. The restoration of airfields on the Novosibirsk Islands and Franz Josef Land has begun, the airfields of Tiksi, Naryan-Mar, Alykel, Vorkuta, Anadyr, and Rogachevo are being reconstructed. Until 2020, more than ten airfields and radar departments should be built and restored in the Russian Arctic.

In 2020, proposals on a state order for training personnel, considering the need for the development of transportation in the NSR for 2020–2021 and subsequent years are expected to be formed [14, 15].

In 2020, it is necessary to develop and approve a program for geological exploration of the subsoil sections of the Russian Arctic, which will form a promising cargo base for the NSR for the

³⁵ Plan razvitiya infrastruktury Severnogo morskogo puti do 2035 goda [Infrastructure Plan for the Northern Sea Route until 2035]. URL: <http://government.ru/docs/38714/> (accessed 22 February 2019).

period until 2035. The program will include the creation of an international transport operator using ice-class container ships operating on nuclear fuel or using LNG.

Another public policy decision at the final stage of the implementation of the Basic Principles of Russia's policy in the Arctic to 2020 and the Arctic Strategy of Russia to 2020 was the Order of the Government of the Russian Federation in 2019, which established the possibility of using 28 foreign vessels until December 30, 2043. (Earlier, the Russian Federation made decisions on restricting the movement of ships flying foreign flags across the NSR). It was done to meet the need for gas carriers for the export of LNG and gas condensate from the projects of PJSC NOVATEK Yamal LNG (from the port of Sabetta and using sea transshipment complexes of year-round operation in the Murmansk Oblast and Kamchatka) and Arctic LNG – 2 (based on the Ytrennee Field on the Gydan peninsula)³⁶.

Particular points of the Plan are devoted to the development of information and communication infrastructure at the NSR. By 2024, uninterrupted satellite communications should be provided in territories located north of 700 N. By the end of 2025. And it is necessary to solve the problem of obtaining hydrometeorological data using the highly elliptical hydrometeorological satellite system “Arktika-M”. As part of the constellation, four spacecraft will be used, six satellites of the Resource-PM and Condor-FKA class, based on which automatic identification of objects in the NSR water areas and a remote sensing system will operate.

Problems and prospects for Russian policy in the Arctic

At the beginning of the 21st century, institutional challenges for the development of the Russian Arctic appeared. So far, federal law has not been adopted, and we got no concept and boundaries of the Russian Arctic. It makes it challenging to develop a regulatory framework governing nature management in the Arctic.

In 1998–2019 in the Federal Assembly of the Russian Federation, the draft law “On the development of the Arctic zone of the Russian Federation” (working title) was introduced. The law creates the legal basis for managing the Arctic space, updates the mechanisms for their implementation. The main goal of the bill is to establish the features of legal regulation of economic, social, cultural, educational, environmental, and other activities in the Russian Arctic. This “scope” partially explains why this law has not yet been adopted. In the law, the AZRF was first defined as an independent object of state administration with particular forms of statistical accounting.

The primary tool for implementing Russian state policy in the Arctic are state programs. In these documents, the AZRF is not identified as an independent object of state administration; it does not contain measures aimed at the development and considering the specific conditions for

³⁶ Ob ispol'zovanii inostrannykh sudov dlya realizatsii proektov po proizvodstvu szhizhennogo prirodnogo gaza. Rasporyazhenie Pravitel'stva RF ot 14 marta 2019 goda №435-r [On the Use of Foreign Ships for Liquefied Natural Gas Production Projects. Decree of the Government of the Russian Federation of March 14, 2019 No. 435-r]. URL: <http://government.ru/docs/36073/> (accessed 21 April 2020).

carrying out economic activities in the Arctic. An analysis of sectoral programs (incl. state programs of the Russian Federation and subjects of the Russian Federation implemented on the territory of the Russian Arctic) showed that the problems of the socio-economic development of the macroregion are currently being solved at the level of program-target planning in fragmented and non-systemic ways. It can be stated that the Russian Arctic is not a self-sufficient regional unit of the country, the center of a well-coordinated development process of dozens of municipalities. Activities of state programs and strategies do not cover the entire spectrum of tasks defined by the Development Strategy of the Russian Arctic, as well as the Fundamentals of State Policy of the Russian Federation in the Arctic. Often, sectoral and regional development programs overlap, which leads to inefficiencies in spending budget funds. The degree of knowledge and development of the Arctic territories depends not only and not so much on the amount of funding but the coherence, consistency, and interconnectedness of activities.

Ensuring the territorial unity of the Russian Arctic, the implementation of an agreed policy on its development is complicated by the fact that in the administrative plan, the Arctic zone is composed of entities belonging to different federal districts. In addition to state and municipal governments, the interests of state corporations are represented in the Arctic zone. Areas of traditional nature management are adjacent to the centers of industry.

In this regard, it can be considered justified to introduce changes in the structure of documents aimed at the development of the Arctic region. It is advisable to reflect in them sources of financing and activities specific to the Arctic territories. Such measures should be aimed at developing sustainable models of socio-economic development of areas that will ensure the development of production in extreme climatic conditions, high quality of life for Arctic residents, and minimize environmental threats. Particular attention should be paid to the preservation of the traditional way of life of indigenous peoples as examples of adaptation to the conditions of the High North. For this, it is necessary to expand the infrastructural support of the spatial development of the economy and the social sphere.

The practice accumulated over 30 years convincingly testifies to the inefficiency of assigning powers to manage the Arctic zone to individual federal government bodies — non-standard, with complex processes for developing resources, characterized by a specific geographical location, and the indigenous peoples living here. After 1991, the created structures did not have a positive impact on the development of the Arctic region, the formation of the right-field associated with it, the statistical accounting system (being formed now), and the implementation of mega-projects. A coordinating structure adequate to the tasks of modernization of the northern economy was not created. The actions of the federal departments on the development of the Arctic zone were not coordinated; the mechanisms of interregional interaction were not sufficiently developed. The result was underfunding of development programs, a lack of specialists, and the weakness of their competencies. As a result, the implementation of the provisions formulated in state programs for the development of the Arctic is delayed [16].

A feature of the national political culture is the presence in key areas of economic development of a particular body with coordinating functions that can solve the problems of promoting institutional transformations.

After the creation of the Ministry for the Development of the Far East and the Arctic, a platform for state-corporate partnerships appeared. Within its framework, the development strategy of the Russian Arctic and the integration of megaprojects into the national development strategy will be ensured, considering global trends and regional development features of the Arctic regions of the Russian Federation. At the proposal of the Ministry for the Development of the Far East and the Arctic, several additions will be made to the updated Arctic strategy of Russia:

- development of the Murmansk seaport as a backbone in organizing transportation along the NSR;
- formation of a cluster of shipbuilding technologies in the Murmansk Oblast;
- the establishment of centers for the extraction and enrichment of solid minerals in the Murmansk Oblast;
- creation of priority development territories in the Murmansk Oblast. It will include projects that can change the structure of the region's economy but do not fall under the provisions of the laws of the Russian Federation on state support for entrepreneurial activity in the Arctic. Thanks to these projects, about 15 thousand jobs will be created for not only residents of the Murmansk Oblast. It is necessary to analyze the challenges in the economic and geographical area, justify the adjustment of taxes, and the modernization of legislation that hinders the spread of multiplier effects in the Arctic economy and the service sector. It is a complex and painstaking work. It requires an answer to the questions: which territories will be subject to preferential regimes, how will privileged conditions vary depending on the characteristics of the Arctic territories. It can be assumed that the implementation of the proposed approach will help stimulate the socio-economic development of the Arctic territories of Russia, increase the economic connectivity of the subjects of the Russian Arctic;
- development in the Nenets Autonomous Okrug, in addition to the traditional oil and mineral resource centers, additional: Pechora LNG and Port Indiga;
- development of the ports of Pevek and Provideniya, as well as the development of the Baimsky gold-copper deposit in the Chukotka Autonomous Okrug, which will contribute to the development of infrastructure in the okrug;
- development of the construction industry, the formation of mineral resource centers based on the East Karelian copper-gold ore zone, aquaculture and forestry in the municipalities of the Republic of Karelia;
- finding ways to solve the problem of the "shrinking" city of Vorkuta, one of several single-industry towns of the Russian Arctic;
- updating the development directions of the Arctic uluses of the Republic of Sakha (Yakutia) when using the possibilities of the Anabar, Yana, Lena, Kolyma, and Indigirka rivers for navigation, the formation of trade and logistics centers based on the mineral resource centers of the Arctic part of Yakutia to ensure "northern delivery".

Most of the planned NSR development, the construction of icebreaking, emergency rescue, and auxiliary fleets, the creation of advanced vehicles, and aviation equipment for work in the Arctic have not yet been implemented. The reasons for this situation are underfunding or its complete absence, as well as sanctions against Russian industrial and transport companies operating in

the Arctic. The capacity of the new icebreakers should be concerning climate change and, consequently, the ice situation, as well as the likely long-term production of hydrocarbons in the eastern sector of the Arctic, which may require fundamentally different types of ice-class vessels in comparison with existing samples.

In the Arctic regions of the Russian Federation, it is planned to develop a scientific and educational space, which so far looks dispersed, does not fully cover all subjects of the Russian Arctic. In the Arkhangelsk Oblast and the Republic of Sakha (Yakutia) — based on existing federal universities, research centers for the study of the Arctic (Arkhangelsk) and seven institutions of secondary vocational education, in the Murmansk Oblast — based on existing educational organizations of secondary and higher professional education, federal research centers. Particular attention should be paid to improving the educational level of the indigenous population, as well as to the Nenets Autonomous Okrug, where there is not a single higher educational institution [14, 15]. In Chukotka, it is planned to create an Arctic University. Training there will be carried out using distance educational technologies and the Internet³⁷.

In 2016, based on the Northern (Arctic) Federal University named after M.V. Lomonosov, Association “National Arctic Scientific and Educational Consortium” (NASEC) was created. The purpose of his activity is the consolidation of public and private resources (incl. scientific initiatives) in the field of personnel and scientific support for sustainable socio-economic development and development of the northern and Arctic territories of the Russian Federation. NASEC is focused on the creation of a joint scientific and educational space that provides information and analytical support for the development of the Russian Arctic, incl. the coordination of scientific and educational activities. NASEC is an association of universities, scientific organizations, and enterprises that implement training programs for the Russian Arctic, conducting research, economic and economic activities in the Arctic territories and on Arctic topics. Among the participants are the NASEC, Autonomous Non-Profit Organization Scientific and Information Center “Polar Initiative”, the Association of Oil and Gas Industry Suppliers “Sozvezdie”, the Institute of Informatics and Mathematical Modeling of Technological Processes of the Kola Science Center of the Russian Academy of Natural Sciences, the Institute for Advanced Training of Executive Workers and Specialists of the Fuel and Energy Commission, Russian Arctic National Park, Far Eastern Federal University, National Research Tomsk State University, Northeast Federal University named after M.K. Ammosov, Siberian Federal University, Tyumen State University, Ural Federal University named after the first President of Russia B.N. Yeltsin, Murmansk Arctic State University, State University of the Sea and River Fleet named after Admiral S.O. Makarova and other educational, research, and production organizations³⁸.

³⁷ Minvostokrazvitiya oboznachilo priority razvitiya kazhdogo regiona Arktiki [The Ministry for the Development of the East has outlined the development priorities of each region of the Arctic] URL: https://minvr.ru/press-center/news/24381/?sphrase_id=1245639 (accessed 20 February 2019).

³⁸ Assotsiatsiya «Natsional'nyy arkticheskiy nauchno-obrazovatel'nyy konsortsiy» [Association “National Arctic Scientific and Educational Consortium”]. URL: <http://arctic-union.ru/contacts/> (accessed 28 March 2020).

In 2020, a package of draft laws on state support for private investment and entrepreneurial activity in the Russian Arctic should be prepared by the Ministry for the Development of the Far East and the Arctic. Investors who are ready to invest at least 10 million rubles in commercial projects in the Russian Arctic will receive tax and other preferences. After the adoption of these laws, the Development Corporation and the Agency for Attracting Investments and Export Support in the Far East and the Arctic zone should earn money. Tax revenues from residents of commercial project activities in the Arctic zone can be used to improve the quality of life of the local population.

In 2020, the Agency for the Development of Human Capital will begin its activities. The tasks of this structure subordinate to the Ministry for the Development of the Far East and the Arctic will be the comprehensive provision of AZRF personnel and support of the economic activities of the indigenous peoples. According to preliminary estimates, by 2035, at least 200 thousand jobs will be created in the Russian Arctic. In 2020, the agency will analyze the staffing requirements in each Arctic region. Together with educational institutions of higher and secondary vocational education, it will create career development centers for students and schoolchildren. Also, it will work to improve the numbers for labor market conditions and will facilitate the opening of new specialties, targeted training for work in the Arctic [14, 15]. Since 2020, medical workers moving to the Arctic zone, following the instructions of the President of the Russian Federation, the so-called "lifting payments" have been doubled up to 2 million rubles for doctors and up to 1 million rubles for paramedics.

Since January 1, 2020, the Far East Development Fund has begun work in the subjects of the Russian Arctic. It is already considering investment projects in the field of tourism and increasing transport accessibility to remote areas with a total value of 87 billion rubles with potential participation of the fund for 27.5 billion rubles. In 2020, up to 15 billion rubles can be allocated for financing Arctic projects³⁹.

According to international experience in developing sites located in areas with extreme climatic conditions, it can be argued that almost all work begins within a few decades from the start of exploration, and not by single companies, but by their consortiums. A feature of the organizational structure of the global oil and gas sector is the significant role of small companies in the initial and final stages of development and development of raw material provinces. However, the Russian reality rejects this rather general and obvious regularity. In Russia, the idea of admitting private companies to work on the shelf in the interests of multi-client research funded by large companies is being discussed. In Russia, such an approach lacks a legislative framework (in the field of creating and supporting small companies in the oil and gas sector), which does not con-

³⁹ Ministerstvo po razvitiyu Dal'nego Vostoka i Arktiki. 2020: chto zhdet Araktiku v novom godu [Ministry for the Development of the Far East and the Arctic. 2020: what awaits the Araktic in the new year]. URL: <https://minvr.ru/press-center/news/24175/> (accessed 10 January 2020).

tribute to intensifying the study and development of the shelf. In 2020, it is planned to complete the preparation of a bill to expand companies' access to unallocated sections of the Arctic shelf⁴⁰.

Conclusion

Currently, the Arctic from the world periphery is turning into a zone of close attention to many countries. In the 21st century, in Russia, the development of the state policy for managing the Arctic zone continues non-standard, extensive, with vast distances, with extreme climatic and socio-economic conditions of management.

The regulation system for the development of the Russian Arctic is characterized by historical continuity, and now it fits into the federal system of strategic planning. According to Decree of the Government of Russia dated December 26, 2015 No. 1449, action plans for the development of the Russian Arctic are reflected in the activity plans of the federal executive bodies, which should include a schedule of activities for the implementation of strategic planning documents⁴¹. Decree of the Government of the Russian Federation "On the organization of project activities in the Government of Russia"⁴². In conjunction with the order of the Ministry of Economic Development of the Russian Federation dated April 14, 2014 No. 26R-AU "On the Approval of Methodological Recommendations for the Implementation of Project Management in Executive Bodies", they allow managing the development of the Russian Arctic on the principles of project management, incl. the formation and implementation of support development zones in the Arctic.

In current conditions, the task of adapting to the global economic trends in the economies of the Arctic regions of the Russian Federation, and state support for private and state projects for the development of the Arctic space is of particular importance. Currently, unified approaches to providing such support for projects implemented in the Russian Arctic are not developed. The solution to the problem may be the formation of support zones of development, which should ensure the establishment of a multiplicative effect not only for the Arctic but also for nearby territories. Thanks to measures of state and corporate support, the core of Russia's policy in the Arctic is knowledge, innovative modernization in the name of national security interests, sustainable nature management, conservation of unique ecosystems, and the viability of local communities.

The basis of state policy aimed at sustainable socio-economic development of the Arctic region should be based on the following approaches:

⁴⁰ Ibid.

⁴¹ Postanovlenie Pravitel'stva RF «O poryadke razrabotki, korrektyrovki, osushchestvleniya monitoringa i kontrolya realizatsii planov deyatel'nosti federal'nykh organov ispolnitel'noy vlasti, rukovodstvo deyatel'nost'yu kotorykh osushchestvlyayet Pravitel'stvo Rossiyskoy Federatsii» ot 26 dekabrya 2015 g. № 1449 [Decree of the Government of the Russian Federation "On the Procedure for the Development, Adjustment, Monitoring and Control of the Implementation of Plans for the Activities of Federal Executive Bodies, which are Managed by the Government of the Russian Federation" dated December 26, 2015 No. 1449]. URL: <http://www.garant.ru/products/ipo/prime/doc/71196062/#ixzz4d8HPyoCG> (accessed 10 February 2019).

⁴² Postanovlenie Pravitel'stva RF «Ob organizatsii proektnoy deyatel'nosti v Pravitel'stve Rossiyskoy Federatsii» ot 15 oktyabrya 2016 goda № 1050 [Decree of the Government of the Russian Federation "On the Organization of Project Activities in the Government of the Russian Federation" dated October 15, 2016 No. 1050]. URL: <http://government.ru/docs/24918/> (accessed 10 February 2019).

- development of research activities, i.e., accumulation of knowledge about climate change, the impact of these processes on the socio-economic systems of the Arctic;
- resource efficiency, i.e., integrated extraction and use of fuel and energy, mineral and raw materials, aquatic biological and tourist and recreational resources;
- environmental conservation: the use of Arctic-oriented ecological standards and technologies, incl. international standards for assessing the environmental impact of ongoing and planned business activities;
- human orientation: provision to the public, incl. indigenous people, opportunities to meet social and cultural needs, the involvement of indigenous representatives in the process of making managerial decisions in the field of nature management and socio-economic development of their territories;
- innovation: creative solutions and innovative technologies based on international experience, interdisciplinary research, and education will ensure the safety of the population. Research superiority, the pace of creating new knowledge, and introducing innovative products into production are critical factors in ensuring the competitiveness and sustainable development of the Russian Arctic.

It seems appropriate to develop further Arctic-oriented approaches to the development of programs, regulatory legal, tax, financial, economic and administrative-organizational mechanisms to ensure the effective development of the Arctic spaces, attract investment, protect national interests, create new highly qualified jobs, and develop infrastructure, ecological safety of the population and the environment in the Arctic macro-region.

At the same time, the prevailing trends in the socio-economic development of the Russian Arctic, the need to diversify the region's economy, and attract investments against the backdrop of sanctions and budgetary constraints determine the need to find new effective approaches to managing the region.

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Relevant Aspects of International Legal Regulation of the Arctic Shipping*

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Abstract. The critical aspects of the international legal regulation of shipping in the Arctic discussed on the international Arctic agenda are analyzed. The authors examine the specifics of the Northern Sea Route legal status from the perspective of the leading role of the Arctic coastal states and the possibilities for countries to specify at the national and regional levels the universal norms of international maritime law at the national and regional levels. The authors devoted much attention to the study of the UNCLOS 1982, Art. 234, which gives coastal states the right to adopt national laws and regulations to control pollution of the marine environment in ice-covered areas within exclusive economic zones. The article is one of the leading international legal grounds for the Russia's establishment of control over the NSR shipping. The Polar Code, entered into force in 2017, is examined separately. The article also presents expert opinions on navigation forecasts in the Arctic region.

Keywords: *Arctic, climate change, shipping in the Arctic, Northern Sea Route, security, Polar Code.*

Introduction

In his speech at the plenary meeting of the 70th session of the UN General Assembly, President of the Russian Federation V.V. Putin called the problem of global climate change a challenge that affects the future of all humanity¹. It relates to the Arctic ecosystem, which is undergoing rapid change.

A description of the main consequences is given in the Arctic Monitoring and Assessment Program (AMAP): "Among the key changes that could lead to severe consequences for the environment and the population of the Barents region shortly (period until 2030), the following: faster warming; reduction in the duration and area of seasonal ice cover; trade intensification and increased investment in the transport sector ... In the near and medium-term (2030–2080), a year-round non-freezing condition of the seas is likely to be established; a significant increase in the acidity of ocean waters; changes in ocean currents and hydrographic conditions; a significant reduction in the duration of snow cover; active thawing of permafrost"².

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¹Vystuplenie Prezidenta Rossiyskoy Federatsii V.V. Putina na plenarnom zasedanii 70-y sessii General'noy Assamblei OON, N'yu-York, 28 sentyabrya 2015 goda [Speech by the President of the Russian Federation V.V. Putin at the Plenary Meeting of the 70th Session of the UN General Assembly, New York, September 28, 2015]. URL: http://www.mid.ru/general_assembly/-/asset_publisher/lrzZMhfoyrUj/content/id/1802254 (date accessed: 24.11.2019).

²AMAP, 2017. Adaptation Actions for a Changing Arctic: Perspectives from the Barents Area. Arctic Monitoring and Assessment Programme (AMAP), Oslo, Norway. URL: <http://www.amap.no/documents/doc/adaptation-actions-for-a-changing-arctic-perspectives-from-the-barents-area/1604> (accessed 24 November 2019).

The issue of globalization and climate change is also presented in the document “Assessment of Arctic Maritime Navigation”³, prepared by the Arctic Council in 2009, as the main reason that had a significant impact on the intensification of shipping in the Arctic Ocean related to servicing the development of oil and gas fields, as well as the development of cruise tourism.

In particular, this refers to the thickness of the ice cover of the Arctic Ocean, which undergoes profound changes in size, depth, and character (there is a tendency for the transition of long-term ice to annual ice prevail). “The Arctic is becoming integrated into the global economy, thanks to the development of vast natural resources, incl. not only oil and gas but also a complex of solid minerals such as copper, nickel, palladium, zinc, and much more”⁴ [13, Hildebrand L.P., Brigham L.W., p. 2].

Soon, the relevance of these issues will only increase in connection with the growth of cargo traffic along the Northern Sea Route. In the report at the conference “High North Dialogue” (organized on April 3-4, 2019 in Bodø, Norway), section “Arctic Transport and Infrastructure”, Kjell Stokvik, Managing Director of the Centre for High North Logistics, provided information on the current situation, the potential of maritime shipping and the infrastructure of the Northern Sea Route. Statistics on the dynamics of the sea transportation volume over the past century, and especially over the past five years, indicate a rapid increase in cargo transportation over the past few years (an increase of five times in the period since 2014, and almost twice much in 2018 compared with 2017). The critical factor of this phenomenon is the rapid development of the Russian energy sector of the economy, in particular, associated with the production of liquefied natural gas.

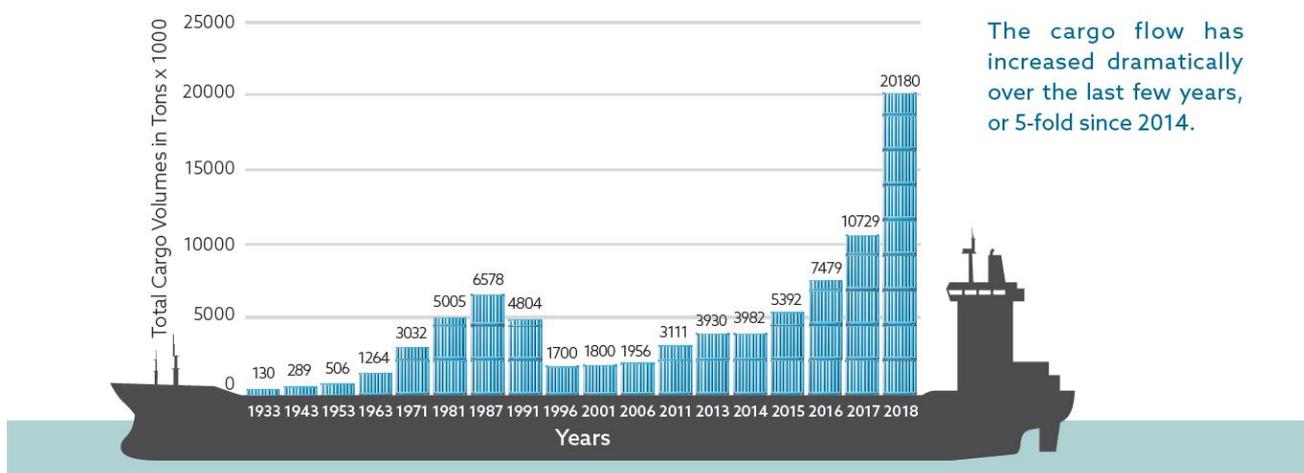


Fig. 1. Statistics of the cargo transportation volume along the Northern Sea Route.

Note. “Crucial changes with the strongest impact on nature and society in the near-term (present day to 2030) in the Barents area include: more rapid warming; a shift to seasonal ice cover and substantial reduction of sea ice cover in winter; an intensification of trade and investment in transportation.... For the near-to-mid future (2030 to 2080) a plausible picture will be: an ice-free sea all year round; a substantial increase in ocean acidification; change in ocean currents and hydrographic conditions; a substantial reduction in snow-cover season; a substantial degradation of permafrost”

³ AMSA, 2209. Arctic Marine Shipping Assessment. URL: <http://www.pame.is/index.php/projects/arctic-marine-shipment/amsa> (accessed 24 November 2019).

⁴ Note. The Arctic is becoming more integrated with the global economy through development of its vast natural resources incl. not only oil and gas, but also a suite of hard minerals such as copper, nickel, palladium, zinc and more.

Such economic development requires new solutions for marine transport systems that can work safely and efficiently in ice-covered areas.

The Strategy for the Development of the Marine Activities of the Russian Federation until 2030⁵ sets as its main priority “the improvement of international legal support for marine activities and the development of international cooperation in the field of marine activities”. As a result, issues of international regulation and adaptation of the legal regime of shipping in the Arctic go to a new level.

The purpose of the study is to analyze topical issues of international legal regulation of shipping in the Arctic.

The objectives of the study are to study and present the positions of Russian and foreign scientists on shipping in the Arctic, which are on the Arctic international agenda. The novelty of the work lies in the use of materials from international conferences of recent years and the presentation of the content of foreign authors.

Relevant issues of the legal regime of shipping in the Arctic

An analysis of scientific literature and publications highlights the following critical issues in the regulation of shipping in the Arctic:

- *Internationalization of the national transport artery of Russia — the Northern Sea Route, as well as the issuance of permits for vessels to pass along the Russian Arctic coast*

International law provides the coastal state — the Russian Federation — with substantive rights to regulate shipping on the Northern Sea Route (the NSR). The water areas of the NSR include the inland sea, territorial waters, and exclusive economic zones. Special rights are provided for in regions covered by ice within the exclusive economic zone.

Shipping of the NSR waters is regulated by the relevant legislation of the Government of the Russian Federation and the authorized state body — the Ministry of Transport of the Russian Federation.

Russian Foreign Minister Sergey Lavrov, in his speech, notes that more than 20 countries navigated the NSR in 2018 following the uniform rules for both Russian and foreign ships. The Russian Federation is responsible for ensuring security and the most careful attitude to the fragile ecosystem of the Arctic region. The rules for navigation in the NSR are comparable to traffic rules. “You come to some country, use these rules, and are obliged to observe them. Not because someone wants to impose something, but because otherwise, it would be unsafe to go through the route that is becoming increasingly popular for many countries”⁶.

⁵ Rasporyazhenie Pravitel'stva RF ot 30 avgusta 2019 g. № 1930-r «O Strategii razvitiya morskoy deyatel'nosti RF do 2030 goda», Sobranie zakonodatel'stva RF, 02.09.2019, N 35, st. 5013 [Order of the Government of the Russian Federation of August 30, 2019 No. 1930-r "On the Strategy for the Development of Maritime Activities RF until 2030". Collected Legislation of the Russian Federation, 02.09.2019, No. 35, Art. 5013. URL: <http://www.pravo.gov.ru> (accessed 11.24.2019).

⁶ Lavrov S.V. Vystuplenie i otvety na voprosy Ministra inostrannykh del Rossii na otkrytii ministerskoy sessii V Mezhdunarodnogo arkticheskogo foruma «Arktika — territoriya dialoga», Sankt-Peterburg, 9 aprelya 2019 goda [Speech and

At the state level, the supervision of the issues of ensuring the safety of sea navigation and the protection of the marine environment from pollution from ships in the NSR and the permissive procedure for navigation of vessels is assigned to the Federal State Budgetary Institution “Administration of the Northern Sea Route”. Monitoring of data on issuing permits to courts indicates 16 refusals to issue licenses in 2018 (a total of 808 applications were received), two refusals to issue licenses in 2019 (a total of 801 applications), and all of them are justified (e.g., due to the reasons for the lack of evidence from the vessels of the polar sailing vessel, incorrect documentation, etc.)⁷.

The primary opponent of the licensing procedure for the NSR is the United States. They defend the position that in the 12-mile territorial sea, the right of peaceful passage would be in effect, and the exclusive economic zone (according to UNCLOS), three freedoms of the high seas would operate, incl. freedom of navigation.

The essence of the discussion is supposed to be a broad interpretation by Russia of the provisions of Article 234 “Ice-covered Areas” of the 1982 Convention, which applies super-restrictive measures without coordination with the International Maritime Organization.

- *New challenges related to security and climate change*

At the opening of the ministerial session of the V International Arctic Forum (April 2019), Arctic: Territory of Dialogue,” Russian Foreign Minister Sergey Lavrov made an official speech emphasizing the need to deepen interstate cooperation in the region on a serious common challenge — the issue of climate change. On the one hand, this remains a challenge. On the other, it provides new opportunities, e.g., in expanding the use of the NSR for shipping and developing maritime activities in the Arctic, incl. cruise tourism. “Of particular importance are the tasks of strengthening the capacity to respond quickly to possible emergencies”⁸.

In turn, on the eve of the Norwegian Prime Minister Erna Solberg in her report at the conference “High North Dialogue” (organized April 3–4, 2019 in Bodø, Norway) announced information about upcoming changes in the Arctic strategy of Norway. In particular, the strategy will be aimed at developing cooperation in the field of prevention and response to emergencies. Natural human-made factors and shipping risks also cause it. The prime minister focused on the recent incident — the accident and the rescue operation of passengers on the Viking Sky cruise ship off the coast of Norway. Ms. Erna Solberg also highlighted the factors of climate change that have a

Answers to the Questions of the Minister of Foreign Affairs of Russia at the Opening of the Ministerial Session of the V International Arctic Forum “Arctic — Territory of Dialogue”, St. Petersburg, April 9, 2019]. URL: https://russiancouncil.ru/analytics-and-comments/comments/vystuplenie-i-otvety-na-voprosy-na-otkrytii-ministerskoy-sessii-v-mezhdunarodnogo-arkticheskogo-foru/?sphrase_id=29725865 (accessed 08 June 2019).

⁷ Federal'noe gosudarstvennoe kazennoe uchrezhdenie «Administratsiya Severnogo morskogo puti» [Federal State Treasury Institution “Administration of the Northern Sea Route”]. URL: <http://www.nsra.ru> (accessed 08 June 2019).

⁸ Vystuplenie i otvety na voprosy na otkrytii ministerskoy sessii V Mezhdunarodnogo arkticheskogo foruma «Arktika – territoriya dialoga» [Speech and Answers to Questions at the Opening of the Ministerial Session of the V International Arctic Forum “The Arctic — Territory of Dialogue”]. URL: https://russiancouncil.ru/analytics-and-comments/comments/vystuplenie-i-otvety-na-voprosy-na-otkrytii-ministerskoy-sessii-v-mezhdunarodnogo-arkticheskogo-foru/?sphrase_id=29725865 (accessed 08 June 2019).

direct impact on the security of the Arctic territories, the complete responsibility of the shipowner and captain for ensuring safety on the ship and the importance of cross-border cooperation. The main message of the speech was that meteorological forecasts and awareness of threats in the Arctic are essential both in everyday life and in preparedness for responding to emergencies, which necessitates cooperation with each other at the state level. “Norway and Russia have broad and longstanding cooperation in the Arctic. This cooperation continues despite our differences on other issues.”⁹.

The solidarity of the top officials of these states on these key aspects is the foundation for further collaboration on working with security challenges and climate change.

- *Changes in the safety of shipping in the Arctic related to the adoption and implementation of the provisions of the International Code for Ships Operating in the Polar Waters (Polar Code) in the marine practice of shipowners.*

Difficulties in harmonizing shipping legislation in polar waters are associated with the regulation of safety of navigation by many international and regional agreements, and by national norms of coastal states. The adoption of the Polar Code marked a new stage in the development of legislation and the practical regulation of shipping in ice conditions.

For more than 20 years, work continued this document under the leadership of the International Maritime Organization. During its development, international experts faced difficulties in developing common standards for shipping in polar waters and harmonizing national norms of the coastal states of the Arctic. The result was the adoption of a package of amendments to the International Convention for the Safety of Life at Sea (SOLAS)¹⁰ and the International Convention for the Prevention of Pollution from Ships (MARPOL)¹¹.

The effective date of the document is January 1, 2017. The purpose of the Code is to “provide for safe ship operation and the protection of the polar environment by addressing risks present in polar waters and not adequately mitigated by other instruments of the International Maritime Organization”¹².

The Code provisions are relevant to vessels operating in the Arctic and Antarctic waters.

⁹ Solberg E. Speech by Prime Minister Erna Solberg at the High North Dialogue-conference in Bodø, 3 April 2019. Statsminister Kontor. Regjeringen. URL: <https://www.regjeringen.no/no/aktuelt/high-north-dialogue/id2640058/?fbclid=IwAR0rHQDIYmnoUIDFfo7Jn2Te6PksnpIYaxi2OrB4dOMBx4DSD0k3qCmPay4/> (accessed 08 June 2019).

¹⁰ Mezhdunarodnaya konventsia po okhrane chelovecheskoy zhizni na more 1974 goda, tekst, izmenennyy Protokolom 1988 goda k ney, s popravkami (SOLAS-74) ot 01.11.1974 [International Convention for the Safety of Life at Sea, 1974, text as amended by its 1988 Protocol, as amended (SOLAS-74) of 01 November 1974]. URL: docs.cntd.ru/document/901765675 (accessed 08 June 2019).

¹¹ Mezhdunarodnaya konventsia po predotvrashcheniyu zagryazneniya s sudov 1973 goda, izmenennaya Protokolom 1978 goda k ney ot 02.11.1973. Sayt «Elektronnyy fond pravovoy i normativno-tekhnicheskoy dokumentatsii» [The International Convention for the Prevention of Pollution from Ships, 1973, as amended by the Protocol of 1978 to it of 02.11.1973. Website “Electronic Fund of Legal and Technical Documentation”]. URL: docs.cntd.ru/document/901764502 (accessed 08 June 2019).

¹² Mezhdunarodnyy kodeks dlya sudov, ekspluatiruyushchikhsya v polyarnykh vodakh (Polyarnyy kodeks) ot 15.05.2015. Sayt «Elektronnyy fond pravovoy i normativno-tekhnicheskoy dokumentatsii» [International Code for Ships Operating in Polar Waters (Polar Code) of 15 May 2015. Website “Electronic Foundation for Legal and Technical Documentation”]. URL: docs.cntd.ru/document/420376046 (accessed 08 June 2019).

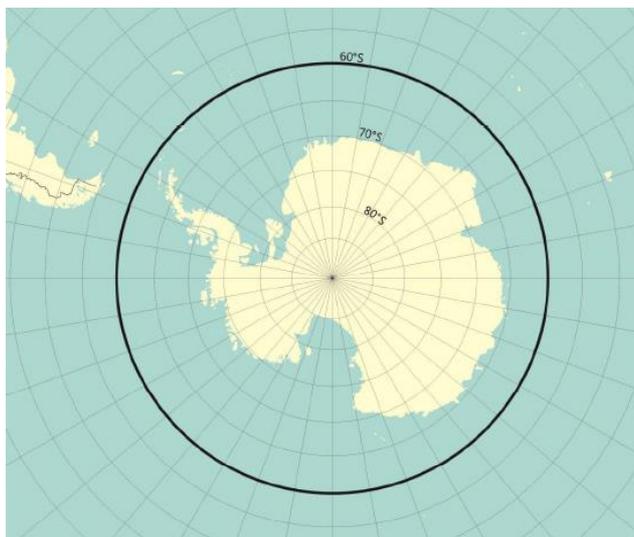


Fig. 2. The area of the Polar Code in the Antarctic waters.



Fig. 3. The area of the Polar Code in Arctic waters.

The first part of the Polar Code describes the sources of danger, requirements for the equipment of vessels, materials suitable for operation at operating polar temperature, fire safety, etc. The vessel itself must have a certificate for a polar sailing vessel and a ship's manual for operation in polar waters.

The second part of the Code describes measures to protect the environment (prohibition of any discharge of oil or oil-containing mixtures into the sea, harmful liquid substances, restrictions on the discharge of wastewater, etc.). Particular attention is paid to the training and education of personnel.

Researchers note that the provisions of the Polar Code are the first step towards an inclusive international legal regime for polar navigation. The code was not able to resolve all pressing issues. These "unresolved issues" include the following items: noise level, heavy diesel fuel (HFO), and invasive species, and it can be assumed that in this connection, even the concepts of domestic

and wastewater will be revised. The Code also does not cover the protection of the habitat and marine protected areas¹³ [11, Bartenstein K., p. 21].

The difficulties in developing common standards for shipping in polar waters are primarily associated with fundamental differences in approaches to determine the class and categories of ships by classification societies. The Code allows the operation of single-sided vessels without an ice-class, and the concepts of the categories of vessels “A, B, C” are vague. Category C vessels can receive a Polar Ship Certificate even without actual certification.

It creates additional risks. The temperature and ice limits provided by the Polar Ship Certificate and the Polar Water Operational Manual are not harsh, and the Arctic conditions are harsh compared to the usual shipping conditions, unpredictable and difficult to predict. The approval procedure for each vessel’s Polar Water Operational Manual is not established, which raises questions of practical application.

Regarding the implementation of the Polar Code, Sidorova T.Yu. quite rightly notes that the issuance of the Polar Certificate for a certain class of vessels without inspection can lead to failure to achieve the main goal of the document — to ensure the safety of navigation in polar ice and environmental safety. “In the best case (for shipowners), the Arctic states will establish additional rules, since the Convention norm of Art. 234 The Polar Code cannot be changed, at worst — the conditions will be tightened so much that the implementation of this right by the flag state will simply be impossible” [4, Sidorova T.Yu., pp. 135-139].

As a result, this will lead to disputes between shipowners and authorized bodies of the Arctic states.

It refers to the Convention, i.e., UNCLOS¹⁴ Art. 234 “Ice-covered areas”¹⁵. In the event of a conflict between the rules of the Polar Code and the national law of the coastal Arctic state, the latter will prevail. In other words, coastal states have the opportunity to establish their own special rules within their exclusive economic zone, which should not be milder than the standards set by universal international conventions.

Researchers note that for the Arctic states, “the provisions of the Polar Code should be considered as a new basis for the application of Art. 234. It gives riparian states the right to raise

¹³Note. There is broad agreement that the Polar Code requirements are but a first step toward an all-encompassing international regime for polar navigation. A significant number of issues were not addressed. This “unfinished business” includes noise, heavy fuel oil (HFO) and invasive species, but even sewage and gray water can be expected to be reconsidered. The Polar Code does not address issues such as habitat protection and marine protected areas.

¹⁴ Konventsiya Organizatsii Ob"edinennykh Natsiy po morskomu pravu ot 10.12.1982 g. Sayt «Elektronnyy fond pravovoy i normativno-tehnicheskoy dokumentatsii» [United Nations Convention on the Law of the Sea of December 10, 1982 Website “Electronic Fund of Legal and Technical Documentation”]. URL: <http://docs.cntd.ru/document/1900747> (accessed 08 June 2019).

¹⁵ Note. “Coastal states have the right to adopt and enforce non-discriminatory laws and regulations to prevent, reduce and control pollution of the marine environment from ships in ice-covered areas within the exclusive economic zone, where especially severe climatic conditions and the presence of ice cover such areas for most of the year, they create obstacles or an increased danger to shipping, and pollution of the marine environment could seriously harm the ecological balance or irreversibly disrupt it”.

further the standards they set so long as the exercise of their authority in this regard satisfies the criteria provided for in this article” [7, Chircop A., p. 283].

It is necessary to dwell in more detail on this norm, which defines the “leading role of the Arctic coastal states in clarifying the legal regime of the Arctic maritime regions” [1, Vylegzhanin A.N., p. 6]. Its action significantly affects the development of the Arctic shipping as a whole and is the primary international legal basis for the establishment by Russia of control over navigation along the Northern Sea Route.

Analysis of the UNCLOS norm “Ice-covered areas” (Art. 234)

The history of the article in the text of the Convention is associated with the initiative of Canada, which unilaterally adopted in 1970 Arctic Waters Pollution Prevention Act (PPA)¹⁶ and sought to justify this from the international law perspective. The act gave the Canadian authorities the right to exercise control over the navigation of ships of any country.

Experts note that first in Canadian law, restrictions on international shipping in the Arctic waters took the form of a general ban on dumping. In the Arctic Water Pollution Prevention Act, the concept of “zero discharge” (part 4 of the Law) has been a key one since 1970. Given the Canadian history of the standard-setting practice, as well as the country’s experience in securing an international base to represent its interests as a coastal state, it is not surprising that its internal rules regarding pollution from ships have not changed in favor of an international compromise. Moreover, Canada stated that it has sufficient jurisdiction to maintain the previously enshrined ban on dumping and to adjust reservations to that selectively¹⁷ [11, Bartenstein K., p. 19].

That is why, during the negotiations on the UNCLOS development, Canada actively promoted the idea of creating a special legal regime in ice-covered areas. There, due to the high risk of harm to the marine environment due to the unique features of this region, stricter national rules and standards may apply compared with those that exist in this area at the international level [9, Dremluga R., pp. 128–129].

Despite the lack of a definition of “ice-covered areas” in the article, the point of view is that they should be understood throughout the Arctic [15, Tanaka Y., p. 305].

It should be noted that the interpretation of this concept causes debate in the international community.

The event “The New Arctic: Navigating the Realities, Possibilities, and Challenges” was organized by the Wilson Center on March 19, 2019, to discuss Arctic diplomatic issues. David Balton,

¹⁶ Arctic Waters Pollution Prevention Act, R. S. C. 1985, c. A-12.

¹⁷ Note. Canada’s first legislative initiative restrictions respecting international navigation in Arctic waters took the form of a general discharge prohibition. This “zero discharge” approach in section 4 of the AWPPA has been the core component of Canada’s AWPPA since 1970. Given this domestic standard-setting history, as well as Canada’s efforts to secure an international basis for coastal State action, it is not surprising that Canada decided not to subordinate its long-standing domestic regime regarding vessel source pollution to an international compromise. Instead, Canada asserted that it has the required jurisdiction to maintain and selectively adjust the preexisting general discharge prohibition and its various exceptions.

Wilson Center Research Fellow, The former US Ambassador for Oceanology and Fisheries at the US Department of State, also noted rapid climate change in the Arctic, which further questions the use of article 234 by Russia and Canada.

“In a place like the Arctic where there’s less and less ice, will Article 234 still be a valid justification for what Russia and Canada are trying to do, with respect to their portions of the Arctic? The answer is probably no. Article 234 requires that an area be ice-covered for at least most of the year,” the expert commented¹⁸.

Another question of the interpretation of Article 234 “ice-covered areas” is related to the word “where”, which can be used in both broad and narrow terms.

For a broad interpretation, the word “where” means the following: the geographic area covered by the extended jurisdiction of coastal states, as specified in article 234. In a narrow interpretation, the word “where” takes on the meaning of the word “when”. The result of this interpretation is that in this case, article 234 will only be applicable in situations where the conditions listed in this article exist, namely in areas “*where there are particularly severe climatic conditions and the presence of ice covering throughout most of the year, such areas create obstacles or an increased danger to navigation, and pollution of the marine environment could seriously harm the ecological balance or irreversibly disrupt it*”¹⁹ [14, McRae & Goundrey, p. 216].

There are arguments in support of both interpretations [14, McRae & Goundrey, p. 216 (ff)].

Researchers note that a narrow interpretation will be difficult to apply in practice, since in this case, coastal states may have to adopt one set of rules for ice-free periods and another set of rules for the remainder of the year. It would be difficult, in particular, because the ice conditions are not equally predictable at a certain point in time annually, but change constantly and gradually²⁰ [12, Bartenstein K., p. 31].

¹⁸ Russia and Canada may lose their legal claim to Arctic seaways as ice melts, experts say. URL: <https://www.arctictoday.com/russia-and-canada-may-lose-their-legal-claim-to-arctic-seaways-as-ice-melts-experts-say/> (accessed 20 November 2019).

¹⁹ Note. Another question of interpretation of Article 234 relates to the wording “ice-covered areas” in general and the word “where” in particular, which is followed by certain conditions listed in the article. The word “where” could be given either a broad or a narrow interpretation. By adhering to the broad interpretation, the word “where” would merely define the geographical area where the extended jurisdiction of coastal states given in Article 234 is applicable. In a narrow interpretation, on the other hand, the word “where” would simply be given the meaning of the word “when”. The outcome of such an interpretation would thus be that Article 234 would only be applicable in situations where the conditions listed in the article actually exist, namely in areas when “particularly severe climatic conditions and the presence of ice covering such areas for most of the year create obstructions or exceptional hazards to navigation, and pollution of the marine environment could cause major harm to or irreversible disturbance of the ecological balance”.

²⁰ Note. However, the narrow interpretation would be difficult to apply in practice since coastal states then might have to adopt one set of rules for periods that are ice-free, and another set of rules for the remaining time of the year. This would be complicated, in particular because the ice conditions do not change abruptly at a certain point in time each year but shift constantly and gradually.

The objective is the fact that at the time of the adoption of the Convention to determine the territorial scope of its operation, there was no reason to assume that the ice cover would be so sharply reduced.

The critical question is: can this fact be considered a sufficient legal basis to cast doubt on the possibility for the coastal Arctic states to exercise their rights to issue normative legal acts in new climatic conditions?

Experts turn to the interpretation of the Convention on the Law of the Sea, which, following paragraph 1 of Art. 31 of the Vienna Convention on the Law of Treaties of 1969 should be carried out “in good faith following the usual meaning that should be given to the terms of the treaty in their context, as well as in the light of the object and purpose of the treaty” [3, Dudykina I.P., pp. 178–188].

Irina Dudykina, Ph.D. (Law), expert of the Department of Economics of the Analytical Center under the Government of the Russian Federation, notes that the literal interpretation of Art. 234 of the Convention should not be applied since the converse will also be considered correct when sea spaces are free of ice for more than six months a year, a different legal regime should apply to them. In understanding the meaning of the Vienna Convention, it is necessary to take into account not the literal interpretation of its terms, but their usual meaning in the context of the intentions that guided the states — developers of the Convention on the Law of the Sea. This meaning is that the term “ice-covered areas” is considered as a synonym for the sea spaces of the Arctic as a whole [3, Dudykina I.P., p. 178–188].

Foreign researchers emphasize “certain freedom” in the interpretation of Article 234, despite the inclusion in Clause XIV of the SOLAS Convention of the clause that none of the provisions of the chapter can be interpreted as infringing on the rights and obligations of the State Parties assigned to them following international law and she, like the clause on conflicts in the MARPOL convention, is called upon to “reconcile” the provisions of the Polar Code with the provisions of article 234. It creates the basis for controversial reflection based on general principles of conflict of contracts, namely the norms of *lex anterior* (previous law) and *lex specialis* (special law), or on the conflict of provisions of the UN Convention on the Law of the Sea (namely, Articles 311 (2) and 237) establishing relations between treaties. Moreover, considering the vagueness of the wording of the clause clauses themselves, the conclusion that the jurisdiction of the coastal state remains in force of article 234 is not automatic²¹ [11, Bartenstein K., p. 17].

Summarizing, we can conclude that UNCLO Art. 234 regulates relations without any connection with the change in the ice cover of the Arctic, and its primary purpose is to preserve the

²¹ Note. Despite the fact that the clause according to which “nothing in this chapter shall prejudice the rights or obligations of States under international law” was included in the SOLAS Chapter XIV and seems, together with the general conflict clause of MARPOL, to solve the issue of the relationship between the Polar Code and Article 234, there is room for interpretation. The conflict clauses make moot arguments that are based on general conflict of treaty rules, namely, the *lex anterior* and *lex specialis* rules, or on the conflict rules provided in the LOSC—that is, Article 311(2) and Article 237—governing relationships between treaties. However, given the indeterminacy of the wording of the conflict clauses, the conclusion that coastal state jurisdiction under Article 234 is preserved might not be automatic.

fragile marine environment of the Arctic Ocean. Melting of Arctic ice does not cancel this task, but makes it even more relevant, since, according to scientific research, this process only increases the vulnerability of the Arctic region [10, Ho J., pp. 713–715].

Thus, the reduction in the ice area of the Arctic Ocean does not create legal grounds for changing the legal regime of Arctic coastal waters, defined by Art. 234 Convention on the Law of the Sea.

Arctic Navigation Development Forecasts

Leading Researcher, IMEMO RAS named after E.M. Primakov, RSMD expert Pavel Gudev, expressed the view that “global climate warming could lead to a significant part of the Arctic freeing itself from ice and becoming accessible for navigation no less, but most of the year.” He also raises the question of further application of Article 234 of the Convention and how its wording — “the presence of ice covering such areas for most of the year” — will be consistent with the current situation in the region, as well as its legitimacy of other countries on the NSR route, in connection with the liberation of the water spaces of Russia from ice conditions [2, Gudev P.A., p. 1].

The General Secretary of the World Meteorological Organization, Petteri Taalas, notes new opportunities for navigation in the Arctic region in the future, as “the temperature rise in the Arctic will continue and much faster than in the rest of the world ... Arctic shipping will expand ... At the end of the century – since the 2070s. — the amount of rainfall will increase. And in the northern regions — snowfall. So, despite the discovery of new routes, navigation in the Arctic will not necessarily become easier”²².

Foreign researchers note that in the distant future, ample opportunities for navigation along the North-West and North-East passages can become a reality; such a development of events will require the development of new international legal and safety rules. “This may deprive Canada and Russia of the ability to regulate shipping, as well as additional “sources of income” [5, Atland K., p. 213].

An increase in traffic intensity is expected for the Arctic routes, despite the current conditions, which do not favor large-scale activities. Such a development of events can radically affect some of the current global shipping centers (e.g., Singapore), gradually bringing the Arctic to the leading position of commercial shipping. Trade relations between Asia and Europe are growing, as are competition and congestion. The interest of non-Arctic players is apparent: China, India, South Korea, Japan, and Singapore take part in discussions, scientific expeditions, and debates on the Arctic sea routes²³ [8, Dalaklis D., Baxevani E., p. 383].

²² Source: TASS. Navigatsiya v Arktike: ministr transporta RF vyskazalsya o «Polyarnom kodekse» [TASS. Navigation in the Arctic: the Minister of Transport of the Russian Federation spoke about the Polar Code]. URL: https://www.korabel.ru/news/comments/navigaciya_v_arktike_ministr_transporta_rf_vyskazalsya_o_polyarnom_kodekse.html (accessed 08 June 2019).

²³ Dalaklis D., Baxevani E. Maritime Transport in the Arctic After the Introduction of the Polar Code: A Discussion of the New Training Needs.

Note. In case there is no dramatic shift regarding the retreat of ice, more traffic is clearly expected for the Arctic routes, despite the current conditions that it is obvious that they do not favor large scale activities. This development

In foreign scientific publications, scientists express a position on the need to combine the efforts of the United States and the European Union in the development of maritime infrastructure in the framework of the International Maritime Organization. In particular, it is proposed to establish an exchange of data from NASA and ESA on the monitoring of maritime navigation, and also, together with other Arctic states, to put forward a proposal to give the entire Arctic Ocean or part of it the status of a “particularly sensitive marine area”, and to establish more stringent environmental standards for ships and a clearer definition of navigation routes [6, Cavalieri S., Kraemer R.A., p. 290].

Conclusion

The conditions of the Arctic are harsh compared to the usual terms of navigation, which is why polar shipping is a separate type of activity in world shipping.

The authors of the study analyzed several topical issues of international legal regulation of shipping in the Arctic (of course, their range is full), presented the positions of Russian and foreign researchers on the Arctic international agenda: the need to deepen interstate cooperation in the Arctic region, internationalization of the Northern Sea Route, security, international legal regulation of territories, climate change, paying particular attention to the study of foreign publications.

The adoption of the Polar Code marked a new stage in the development of legislation and the practical regulation of shipping in ice conditions. The time has come when researchers need to evaluate the results of the introduction of the Polar Code, incl. the questions of personnel training, the implementation of the Code requirements for the design of ships intended for navigation in the Arctic, the difficulties for putting into practice the requirements of the Code for Environmental Protection, etc.

Russia has legal grounds to control navigation along the Northern Sea Route. This fact raises debate abroad regarding the justification for the application of the UNCLOS Art. 234 to the Arctic Territories or on the need for its new interpretation against the background of a rapid decrease in the ice cover. In this work, the authors presented the positions of experts and arguments that the reduction in the ice area of the Arctic Ocean does not create legal grounds for changing the legal regime of Arctic coastal waters, as defined by Art. 234 of the Convention. On the interpretation of the wording “the presence of ice covering such areas for most of the year” the authors conclude that a narrow interpretation contains significant practical problems, and a wider interpretation is supported by practice, has sufficient legal grounds at the state level, and all these are arguments in favor of a broader interpretation.

Continued implementation of Art. 234 as a special legal mechanism for the protection of the Arctic marine spaces is in the common interest of all countries of the world, given that the

could radically influence certain current global shipping hubs (e.g. Singapore), gradually bringing the Arctic to the forefront of commercial shipping. Trade relations between Asia and Europe are increasing and so will competition and congestion. The interest of non-Arctic actors is explicit with China, India, South Korea, Japan, and Singapore participating discussions, scientific expeditions and debates about arctic maritime routes.

natural environment of the Arctic today has become more vulnerable and exposed to more threats than during the development of the above Convention.

The Arctic is one of the last places on Earth, where climatic conditions constrain the development of natural resources. But this situation is changing rapidly. The main issue is the actions of states to ensure sustainable development. There are new opportunities for maritime operations and shipping in the Arctic, but at the same time, they highlight several problems: effective enforcement of the IMO Polar Code; lack of marine infrastructure; strengthening monitoring and observation of Arctic waters; the challenge of creating a complex of protected marine areas; additional measures provided for by the Polar Code for the circumpolar region; the need for broad public and private investments, as well as potential public-private partnerships in the Arctic. Collaboration between Arctic states and the global maritime community will be crucial²⁴ [13, Hildebrand L.P., Brigham L.W., p. 434].

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²⁴ Hildebrand L.P., Brigham L.W. Navigating the Future: Towards Sustainable Arctic Marine Operations and Shipping in a Changing Arctic.

Note. New opportunities for Arctic marine operations and shipping are emerging, but significant challenges remain. These include: the effective implementation and enforcement of the IMO Polar Code; a huge gap in Arctic marine infrastructure; enhancing the monitoring and surveillance of Arctic waters; the challenge of developing a set of marine protected areas; additional Polar Code measures for the circumpolar region; and the need for large public and private investments, as well as potential public-private partnerships in the Arctic.

Cooperation among the Arctic state, and the global maritime enterprise, will be critical to effective protection of Arctic people and the marine environment. It is only through ongoing and sustained cooperation among all concerned stakeholders and actors, incl. the central role of the shipping industry and interests, that the sustainable development of the Arctic can be achieved.

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Svalbard in the Context of Arctic Security *

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Abstract. The article studies Svalbard's role in the Arctic security agenda, the history of the implementation of the Paris Treaty 1920 with the emphasis on its security provisions, as well as the risks of engaging Svalbard in a military conflict in the region. Despite the demilitarized status of Svalbard, the evaluation of its role in the hard security situation in the Arctic is hampered by several factors. First, Norway sticks to a narrow interpretation of the Treaty 1920 provision that bans any use of the archipelago for warlike purposes. Norway does not consider such actions as the entry of military ships in Svalbard's ports, overfly of military aircraft, and some other, contradicting with the Russian position, a violation of the Treaty. Second, the development of technologies, particularly of "dual" use, has posed the question of whether the application of some objects situated on Svalbard by the militaries — primarily the stations of space monitoring — are legitimate. Third, as the political uncertainty in the Arctic rises, Svalbard has been more often involved in the worst-case scenarios for the region — as a place vitally important for Russia and simultaneously representing potential vulnerability for NATO. At the same time, the author argues that the threat of a military conflict over Svalbard is minimal. The international Svalbard agenda is dominated by economic issues, whereas the stakeholders stay aware of the significant risks in case of a military conflict on Svalbard.

Keywords: Svalbard, Arctic, Russia, Norway, Arctic security, Svalbard Treaty, NATO, armed forces.

Introduction

In recent years, the military-political situation in the Arctic has undergone significant changes. States still consider the conflict potential of the region as low and do not see problems in the Far North that may require a forceful solution [1, Zagorsky A.V., p. 9]. At the same time, the Arctic is increasingly subjected to the influence of the general deterioration of relations between Russia and the West. Against the background of the winding down of the dialogue on the military line, the rhetoric of the official representatives of some Arctic states authorities acquires aggressive. Mutual distrust concerning the military activity of the parties in the region is growing. The voices of those experts who perceive the Arctic as an arena of confrontation between leading world powers and a place for the development of a new arms race, returning the region to the conditions of the Cold War [e.g., 2, Huebert R.], are getting louder. In the framework of such a vision (somewhat distorted and incomplete), the High North is viewed more likely not as a distinct region with its specifics and problems, but primarily as an essential component of the global rivalry of the US, Russia, and China for expanding its global influence.

In these conditions, Svalbard occupies a special place. This year marks the one-hundredth anniversary of the Svalbard Treaty, which consolidated the unique legal status of the archipelago. One of its key provisions is the ban on the use of Svalbard for military purposes. It would seem,

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this provision should extract the archipelago from discussions of regional military security. However, this assumption appears to be an oversimplification of the situation. Over the hundred years of the Treaty 1920, several questions have caused mutual accusation of violating the provisions on the demilitarization of Svalbard between Russia and Norway. As a result, a certain tension between the countries exists. Also, one should not forget that Svalbard, being the sovereign territory of a NATO member state, is located close to the strategic nuclear deterrence forces of Russia based on the Kola Peninsula and the Northern Fleet covering them. Additional uncertainty is caused by the dissatisfaction of some other states (besides Russia) with Norway's narrow interpretation of the Treaty 1920 in terms of economic activity in the waters of the archipelago. Do these factors mean that Svalbard should be involved in assessing the military-political situation in the Arctic on a common basis, or does its special legal status serve a reliable guarantee that the archipelago is immune from any escalation? The author of the article offers his answer to this question.

Svalbard Treaty and its historical background

Svalbard is a group of islands located between mainland Norway and the North Pole. The location of the archipelago, of course, is of strategic military importance. Washed by ice-free waters, the archipelago "lies" near important communications routes used by warships and submarines to navigate between the Atlantic and Arctic oceans, as well as from the location of the Russian nuclear deterrence forces.

Despite this, the history of the Svalbard and the evolution of its legal status was associated not with strategic considerations, but primarily with the economic opportunities of the archipelago. There are hypotheses that Russian Pomors hunted sea animals and furs on Svalbard already in the 10th – 11th centuries. [3, Adrov N.M., p. 107]. In the 17th century, Svalbard, rich in resources, attracted merchants from England, the Netherlands, and other countries and was the subject of conflicts between them. Hunting whales and walrus fell into decline by the end of the 18th century due to the almost complete extermination of their populations. Since the second half of the 19th century, coal companies of various states began to show interest in Svalbard. It led to the permanent settlements on the islands. Coal mining became the main economic activity in the archipelago. Still, it turned into unprofitable in the late 1920s because of the post-war economic recession and falling coal prices [4, Numminen L., pp. 7-8]. Since the 1930s, USSR/Russia and Norway — the only countries that maintain a constant economic presence on Svalbard [5, Kasiyan A.S., p. 20].

The legal status of Svalbard has not been documented for a long time. Due to the severe local climate, it was difficult for countries claiming sovereignty over the islands (e.g., the British and Danish-Norwegian kingdoms) to support their claims with an "effective occupation" [6, Vleglejanin A.N., Zilanov V.K., p. 15]. By the 19th century, Svalbard acquired the status of *terra nullius* ("nobody's land") [7, Churchill R., Ulfstein G, p. 552]. This provision assumed no state had sovereignty over it. Still, at the same time, any country had the right to access it and carry out economic

activities there. However, the interests of coal industries, established on the archipelago that time, demanded a way out of the existing “legal vacuum”. Under these conditions, Norway, having gained independence from Sweden in 1905, proposed to other interested countries to establish a new legal regime for Svalbard, based on its status of “nobody’s land”¹. Negotiations on this issue after several unsuccessful attempts were held in 1919 at the Paris Peace Conference and culminated in the conclusion of the Paris Treaty of Svalbard [7, Churchill R., Ulfstein G., p. 553].

With no goal to describe all the features of the Paris Treaty, we will note its key provisions². Under the Treaty, the parties recognize the “full and absolute sovereignty” of Norway over the Svalbard archipelago (Art. 1). At the same time, the document lays down several important conditions. The main one is that the parties have *equal access to economic* activities on the islands and in their territorial waters (Art. 2, 3). As regards military security issues, the Treaty contains only one provision related to them. According to article 9, *Norway is obliged not to create or prevent the creation of any naval base or fortifications* in the area under the Treaty; any use of the archipelago for military purposes is prohibited.

Despite the conciseness of the Treaty regarding the military-strategic aspects of the legal status of the archipelago, the participants in the Paris Conference, of course, recognized the importance of preventing any possibility of using Svalbard for non-peaceful purposes. In particular, the representative of Norway, Fritz Jarlsberg, emphasized the need to prevent Germany from creating a naval base on the islands [8, Koivurova T., Holiencin F., p. 133]. However, Svalbard was not a battleground during the First World War. At the negotiations in Paris, France, Great Britain, and the US were also determined to take measures to curb the possible expansion of Germany and other countries on the archipelago [8, Koivurova T., Holiencin F., p. 133].

Article 9 of the Paris Treaty and the demilitarized status of Svalbard (or “almost” demilitarized — see the next section) remained unchallenged. It was not violated until the Second World War and the German occupation of Norway in 1940 [9, Porzel A.K., p. 79]. With the outbreak of war, each of the belligerents tried to use the advantageous strategic location of the archipelago for their purposes. By August 1941, after negotiations between the allies, it was decided to evacuate the Svalbard population by the efforts of the English squadron [9, Porzel A.K., p. 83]. After the evacuation in Barentsburg, an English landing party was stationed. In 1941, the Germans sent their troops to the archipelago, built temporary alternate aerodromes. German submarines took refuge in the Svalbard fjords [9, Porzel A.K., p. 83]. Germany used the archipelago as a support base for blocking important sea lanes and attacking regular Allied convoys heading to Arkhangelsk and Murmansk [9, Porzel A.K., p. 84]. Since 1942, the Allied forces made several attempts to drive the Germans out of Svalbard. In July 1942, the German garrison in Longyearbyen was attacked by the

¹ The claims of Sweden-Norway on sovereignty over Svalbard were officially fixed in the Agreement between Russia and Sweden — Norway of 1872. For more details, see [6, Vylegzhanin A.N., Zilanov V.K].

² Dogovor o Shpitsbergene ot 9 fevralya 1920 g. [Treaty of 9 February 1920 Relating to Spitsbergen]. URL: https://www.mid.ru/foreign_policy/international_contracts/multilateral_contract/-/storage-viewer/multilateral/page-202/51519 (accessed 07 May 2020).

Norwegian landing force. In October 1942, the British installed three naval guns on the archipelago at Barentsburg and Longyearbyen. In 1943, German ships destroyed the villages of Longyearbyen, Barentsburg, and Grumant with the fire of naval artillery. At the end of the war, small military groups of Norway and the USSR were stationed on Svalbard [8, Koivurova T., Holiencin F., p. 136].

The course of the Great Patriotic War demonstrated the military-strategic importance of Svalbard to the USSR leadership. As the People's Commissar for Foreign Affairs V. M. Molotov noted at the end of the war, "for the Soviet Union and its security in the North, the exit to the ocean in the west that goes past Svalbard is of the utmost importance" [9, Porzel A.K., p. 86]. The Soviet authorities attached particular importance to Bear island³ — the southernmost island of the archipelago, according to Article 1 of the Paris Treaty. Since 1944, the USSR intended to negotiate with Norway to provide our country with the opportunity to build a naval base on the island to ensure the safety of navigation of the Northern Fleet [9, Porzel A.K., p. 86]. In the same year, Molotov proposed Norway to establish a joint Soviet-Norwegian condominium over Svalbard and outlined the USSR's claims on Bear Island [6, Vleglejanin A.N., Zilanov V.K., p. 45]. It meant an invitation to revise the Paris Treaty. However, the Soviet Union acceded to it in 1935, and even earlier in 1924, it recognized Norwegian sovereignty over the archipelago [11, Zaretskaya O.V., p. 104]. In response, the Norwegians gently referred to the fact that changing the status of the archipelago requires consultations with all countries participating in the 1920 Treaty of Svalbard [11, Zaretskaya O.V., p. 105].

However, with the end of the war and the subsequent change in the military-political situation, the discussion of the change in the status of the archipelago proposed by the USSR "stalled". Norway's decision to join NATO in April 1949 put an end to this issue. In 1951, Svalbard was included in NATO's command area, to which the USSR responded with a diplomatic note of protest about the violation of Article 9 of the Paris Treaty [8, Koivurova T., Holiencin F., p. 137]. In response, Norway assured Moscow that it did not intend to build military bases on Svalbard or use it for military purposes. It would not allow similar actions from other countries [8, Koivurova T., Holiencin F., p. 137]. It was the first of a series of subsequent cases that became the reason for various interpretations of the provisions of the Paris Treaty on the demilitarized status of Svalbard.

Applying the Svalbard Treaty to modern military-political realities

It can be argued with certain reservations that the sovereignty of Norway over the archipelago today is widely recognized and not disputed by anyone [12, Pedersen T., p. 149]. At the same time, it is evident, over the hundred years since the signing of the Svalbard Treaty, the situation in the world has undergone significant changes. Most of all, the case of Svalbard was affected by shifts in the global economy and the provisions of international law serving it. For objective reasons, the Treaty 1920 could not resolve some critical issues of economic activity of states in the

³ The special strategic importance of Medvezhiy Island for Russia was emphasized by the pre-revolutionary leadership of the country. See [10, Dekanozov R.V., p. 183].

coastal waters of Svalbard that arose in a later period. It led to the fact that since the 1970s, there had been significant contradictions between Norway and other interested countries on the legal nature of the maritime areas outside the territorial waters washing the archipelago, and how the economic system implemented there should be regulated. Norway asserts that the Treaty shall not be applied to the areas beyond territorial waters of Svalbard. The country considers it legal to exercise its sovereign rights and jurisdiction in the maritime areas of the archipelago based on contemporary international maritime law without regard to the restrictions stipulated by the Paris Treaty.

In contrast to the Norwegian position, other states have developed a complex mosaic of different, somewhat mutually exclusive interpretations. Some states recognize the applicability of the legal institutions that were developed after 1920 to marine areas off Svalbard (primarily provisions on the exclusive economic zone and the continental shelf). The others do not (or partially do not). At the same time, some countries believe that the Treaty 1920, with its provisions on non-discriminatory access of all states and their right to carry out economic activities, applies to marine areas outside the territorial waters, while others do not⁴. As a result of the presence of contradictions, in the waters of Svalbard, the Norwegian Coast Guard often arrested fishing vessels from Russia, Iceland, and Spain [6, Vylegzhanin A.N., Zilanov V.K., p. 55].

Also, in recent years, relations between the European Union and Norway have intensified over the issuance of quotas for catching snow crab in the Svalbard area [for more see 13, Østhaugen A., Raspotnik A.]. The status and regime of the marine areas of Svalbard have not yet been resolved.

Although to a lesser extent than the economic ones, the military-strategic provisions of the Svalbard Treaty are also subject to the test of time. Since the 1920s, significant transformations occurred in the military-strategic situation, military technologies, methods, and tactics of warfare developed, the operational environment that the armed forces encounter in the process of their functioning changed as a whole. The provisions of the Paris Treaty can no longer fully reflect modern military-political realities. It is the reason for different opinions among states regarding the application of Art. 9 of the Svalbard Treaty to some difficult current situations. The problem is aggravated by the absence of any legal mechanisms to verify the activities of states as non-violating the peaceful nature of the use of the archipelago in the Treaty.

First, it should be noted that there are different points of view on the issue of the demilitarization of Svalbard. In particular, the Norwegians consider it incorrect to interpret Article 9 of the Paris Treaty as the complete demilitarization of Svalbard. It is so since this provision only prohibits the implementation of specific actions: the deployment of naval bases or fortifications, the use of the archipelago for military purposes. Therefore, anything that is not covered by these actions

⁴ See: Todorov A. Dogovor o Shpitsbergene: yarkaya mozaika interpretatsiy. RSMD [The Treaty of Svalbard: a bright mosaic of interpretations. RIAC]. <https://russiancouncil.ru/analytics-and-comments/analytics/dogovor-o-shpitsbergene-yarkaya-mozaika-interpretatsiy/> (accessed 07 May 2020).

must be allowed [14, Ulfstein, G.]⁵. E.g., as noted above, the inclusion of Svalbard in the competence of NATO is not considered by Norway as a violation of the Treaty. Norway reserves the right to conduct defensive operations within the NATO framework, incl. the implementation of Art. 5 of the North Atlantic Collective Defense Treaty in the event of an armed attack on the archipelago⁶. Besides, the Norwegians do not consider violating the Paris Agreement the entry of ships of the Navy and the Coast Guard of Norway into the ports of Svalbard, as well as visits of Norwegian military personnel to the archipelago⁷.

On the contrary, Russia, like the USSR, considers Svalbard to be completely demilitarized [10, Dekanozov R.V.]. In 1958–1959, the USSR protested Norway's plans to build military airfields on the archipelago under the guise of "civilian" [10, Dekanozov R.V., p. 187]. In 1965, the USSR was seriously concerned about Norway's intention to establish a telemetry station for observing space objects, which, according to the Soviet Union, could be used for military purposes [10, Dekanozov R.V., p. 187]. After this, the USSR and other countries could inspect the station until its closure in 1974 [8, Koivurova T., Holiencin F., p. 137].

Due to its location, Svalbard is convenient for space research and launching commercial satellite projects. Under these conditions, the question of the possibility of the double use of the radars and space observation stations located on Svalbard arose more than once. So, in the late 1990s and early 2000s, discussions broke out regarding the purpose and use of the EISCAT Svalbard Radar (an object located near Longyearbyen and designed to study the upper atmosphere and the interaction of the Sun with the Earth), a SvalRak range for meteorological rockets (Ny-Ålesund), et al. [8, Koivurova T., Holiencin F., p. 137]. Some Russian media claimed that these objects could be used for military purposes, e.g., to measure the flight path of intercontinental ballistic missiles launched from warships of the Northern Fleet, track the movements of Russian satellites, etc.⁸. The same concerns were expressed in 2000 in an article by Vice Admiral M.V. Motsak, who, at the time of publication of the article, was the chief of staff of the Northern Fleet [15, Motsak M.V.]. There has also been discussion in the Western media about what should be considered military use of the SvalSat satellite station on Svalbard. E.g., in 2010, the press expressed suspicions that the sandstorm images in Iraq taken with SvalSat were used by the US Army to plan a military operation in the country [4, Numminen L., p. 16]. The Norwegian Foreign Ministry de-

⁵ See: Ulfstein G. *The Svalbard Treaty: from terra nullius to Norwegian Sovereignty*. Oslo, Scandinavian University Press, 1995.

⁶ Norwegian Ministry of Justice and Public Security, 'Svalbard', Report to the Storting (White Paper), Meld. St. 32 (2015–2016), May 2016, pp. 21. URL: <https://www.regjeringen.no/en/dokumenter/meld.-st.-32-20152016/id2499962/sec1> (accessed 07 May 2020).

⁷ Norwegian Ministry of Justice and Public Security, 'Svalbard', Report to the Storting (White Paper), Meld. St. 32 (2015–2016), May 2016, pp. 21–22. URL: <https://www.regjeringen.no/en/dokumenter/meld.-st.-32-20152016/id2499962/sec1> (accessed 07 May 2020).

⁸ Rivetov P. Shpitsbergen — forpost NATO pod nosom Rossii. Kuda smotrit Putin? Pravda.ru ot 19.04.2003 [Svalbard — NATO Outpost Under the Nose of Russia. Where is Putin Looking? Pravda.ru April 19, 2003]. URL: https://www.pravda.ru/politics/838627-shpicbergen_forpost_nato_pod_nosom_rossii_kuda_smotrit_putin/ (accessed 07 May 2020).

nied violating the Treaty 1920, arguing that the use of weather data, even if the military headquarters uses it, does not contradict the provisions of the Treaty [4, Numminen L., p. 16].

In general, it seems that complex issues regarding the double use potential of certain types of activities on Svalbard will also arise in the future — technologies and military thinking will continue to move further away from the realities of the Paris Treaty era. Perhaps mitigation of such problems would be facilitated by the establishment of a multilateral mechanism for inspecting the activities of states in the archipelago and dialogue with a view to its compliance with the provisions of the Treaty on the demilitarized status of Svalbard (e.g., the creation of a special commission of representatives of the countries participating in the Treaty 1920).

It remains to add that Svalbard, unfortunately, could not avoid the consequences of the Ukrainian crisis of 2014. The scandal surrounded the visit of the Russian Deputy Prime Minister Dmitry Rogozin to Barentsburg in 2015 during his voyage to Svalbard when going to the “Severniy Polus-2015” drifting polar station. Since D. Rogozin was on the sanctions lists of Norway and his arrival took place against the backdrop of a sharp deterioration in relations between the West and Russia, the Norwegian authorities reacted rather painfully. Norwegian Foreign Ministry considered Rogozin’s visit a provocation and called the Russian ambassador to Norway for an explanation⁹. Shortly afterward, in August 2015, Norway tightened its national rules regarding the procedure for deporting citizens from Svalbard. The Governor of Svalbard must deport persons with respect to whom international measures restricting movement have been taken, and which Norway has supported (Russia called this innovation discriminatory)¹⁰. Two years later, in 2017, Russia responded with a protest to Norway’s plans to host the NATO event Parliamentary Assembly on the Svalbard archipelago¹¹, although the Kingdom has held similar events (similar session took place, e.g., in 2004¹²), without causing claims from Russia.

The role of Svalbard in the development of the military-political situation in the Arctic

Today, we can confidently state that the Ukrainian crisis of 2014 and the subsequent deterioration of relations between Russia and the West, unfortunately, had a particularly negative impact on the security situation in the Arctic. One of the clear evidence of this was that after the events of 2014, the process of forming an inclusive regional architecture for cooperation on secu-

⁹ Trellevik A. Russia has Always Challenged Norway on Svalbard. This Time, Parts of Its Criticism is Different. High-northnews, 10 February 2020. URL: <https://www.highnorthnews.com/en/russia-has-always-challenged-norway-svalbard-time-parts-its-criticism-different> (accessed 07 May 2020).

¹⁰ Interv'y u s General'nym konsulom Rossii na Shpitsbergene V.G. Nikolaevym [Interview with the Consul General of Russia on Spitsbergen V.G. Nikolaev]. Russkiy vestnik Shpitsbergena [Russian Bulletin of Spitsbergen], 2016, no. 2 (22), p. 8. URL: https://www.arcticugol.ru/files/rvsh/2016/rvsh_N2_22_2016.pdf (accessed 07 May 2020).

¹¹ Kommentariy Departamenta informatsii i pechati MID Rossii v svyazi s planiruemyim provedeniem na Shpits-bergene meropriyatiya po linii Parlamentskoy assamblei NATO? 19 aprelya 2017 g. [Comment by the Information and Press Department of the Russian Ministry of Foreign Affairs in Connection with the Planned Spitz-Bergen Event of the NATO Parliamentary Assembly? April 19, 2017]. URL: https://www.mid.ru/ru/foreign_policy/news/-/asset_publisher/cKNonkJE02Bw/content/id/2732562?p_p_id=101_INSTANCE_cKNonkJE02Bw&_101_INSTANCE_cKNonkJE02Bw_languageId=ru_RU (accessed 07 May 2020).

¹² Informatsiya na sayte PIR-Tsentra ot 10 avgusta 2004 g. [Information on the PIR Center Website. August 10, 2004]. URL: <http://пир-центр.рф/index.php?id=1248&news=752> (accessed 07 May 2020).

urity in the region was interrupted [1, Zagorsky A.V., p. 11]. So, Russia's participation in the meetings of the chiefs of the general staffs of the Arctic countries, the Arctic Security Roundtable issues at the level of senior officers of the Navy and the Coast Guard of the Arctic states was suspended. NATO also suspended military contacts with Russia [16, Zagorsky A.V., p. 99]. Of all the security platforms in the Arctic, only the Arctic Coast Guard Forum continues to function in its entirety. However, it does not deal with "hard" security issues [17, Todorov A.].

Even though the likelihood of military conflict in the Arctic is still assessed by the states of the region as low, and the military-political situation is stable [1, Zagorsky A.V., p. 113], the suspension of the military dialogue led to an increase in aggressive rhetoric between representatives of states and subjective evaluations of experts related to the escalation of conflict potential in the region. The situation in the Arctic and the modernization of the military infrastructure of Russia are increasingly being considered primarily in context of our country's ability to project military force from the region onto neighboring countries and its ability to take retaliatory measures. Despite the defensive nature of the ongoing military program declared by Russia, the West concerned with the offensive potential of some military facilities and calculates the worst scenarios for the development of the military-political situation in the Arctic¹³.

A significant contribution to this vision of the Arctic was made by the US Presidential Administration. With the coming of Donald Trump to power, Washington changed emphasis in its vision of the military-political situation in the region. This is reflected in the recently adopted Arctic strategies of the Ministry of Defense¹⁴ and the US Coast Guard¹⁵, in which the main threats to the country in the Arctic are those arising from US rivalry with Russia and China. Secretary of State M. Pompeo openly spoke about this at the ministerial meeting of the Arctic Council member states in Rovaniemi in May 2019¹⁶. It must be admitted that the Russian leadership was not indebted and in the updated foundations of state policy in the Arctic recorded "the buildup by for-

¹³ See, e.g., Melino M., Conley H.A. The Ice Curtain: Russia's Arctic Military Presence. Center for Strategic and International Studies. URL: <https://www.csis.org/features/ice-curtain-russias-arctic-military-presence>; Episkopos M. "How Russia Is Getting Ready for War in the Arctic; Or, At the Very Least, Increasing Its Military Capabilities," *National Interest*, December 1, 2018. URL: <https://nationalinterest.org/blog/buzz/how-russia-getting-ready-war-arctic-37667>; O'Connor T. "Russia Gets New Missiles Designed for War in Arctic as U.S. Military Looks North". *Newsweek*, 2018, November 26. URL: <https://www.newsweek.com/russia-new-missiles-war-arctic-us-looks-north-1231985> (accessed 07 May 2020).

¹⁴ Report to Congress. Department of Defense Arctic Strategy. Washington, Department of Defense, 2019. P. 2. URL: <https://media.defense.gov/2019/Jun/06/2002141657/-1/-1/1/2019-DOD-ARCTIC-STRATEGY.PDF> (accessed 07 May 2020).

¹⁵ United States Coast Guard Arctic Strategic Outlook. Washington, United States Coast Guard, 2019. 45 p. 4. URL: https://safety4sea.com/wp-content/uploads/2019/04/USCG-Arctic-Strategic-Outlook-2019_04.pdf (accessed 07 May 2020).

¹⁶ Trellevik A. USA Launches Head-On Verbal Attack on Russia and China. High North News, 2019, May 7. URL: <https://www.highnorthnews.com/en/usa-launches-head-verbal-attack-russia-and-china> (accessed 07 May 2020).

eign states of a military presence in the Arctic and an increase in the conflict potential in the region” as one of the threats to national security¹⁷.

Despite the special legal status of Svalbard as demilitarized (albeit with different interpretations of this status), it is not immune from the negative trends described above. In the West, the expert community has been increasingly discussing the worst-case scenarios of the development of the military-political situation in the Arctic with the involvement of the archipelago are increasingly being discussed. One of these scenarios suggests that Russia may want to take advantage of the fact that Svalbard is on the periphery of NATO's attention and that many members of the Alliance do not want to be drawn into a major conflict over the archipelago. In this case, Russia can seize the islands to ensure greater freedom to maneuver for the Northern Fleet and block its access to the region by NATO forces [18, Wither J.K., p. 28]. According to another scenario, the occupation of the archipelago by Russian troops occurs as one of the possible consequences of the conflict in the Baltic region. The study that described this story¹⁸ identified Norway's potential difficulties in responding to such development of events and suggested that the Kingdom's only chance to prevent it would be to significantly increase the capabilities of the submarine fleet and air defense arming submarines and combat aircraft with long-range cruise missiles. According to the author, thereby Norway will increase the risks for Moscow when planning for its possible attack on Svalbard.

As other Western researchers have noted, more realistic scenarios are those that involve covert or hybrid operations on Svalbard¹⁹. Such options include the theoretical power invasion of Russia on the archipelago under the pretext of the need to protect its fishing fleet or the legitimate interests of Russian entities working on the islands [18, Wither J.K., p. 35]. Such an invasion could have occurred under the guise of sending a large consignment of “scientists” and “civilian” goods hiding military equipment and technology²⁰. By the way, in the fall of 2019, some media outlets reported events resembling such a scenario: according to these allegations, Russian special forces in civilian clothes landed on Svalbard as part of the Northern Fleet exercises²¹. However,

¹⁷ Ukaz Prezidenta RF ot 5 marta 2020 g. № 164 «Ob Osnovakh gosudarstvennoy politiki Rossiyskoy Federatsii v Arktike na period do 2035 goda» [Decree of the President of the Russian Federation No. 164 of March 5, 2020 “On the Basic Principles of State Policy of the Russian Federation in the Arctic to 2035”].

¹⁸ Keyser-Amundsen C. Kampen om Svalbard, 2030: Norsk eller russik dominans? [Battle for Svalbard, 2030: Norwegian or Russian Dominance?]. *Militære Studier* [Military Studies], 2016, no. 1. URL: <https://fhs.brage.unit.no/fhs-xmlui/handle/11250/2380941> (accessed 07 May 2020).

¹⁹ See, e.g., Baev P. The Arctic Superpower: Factors Shaping Russia's Arctic Policy', Remarks on Conference Panel 1 at Center for Strategic and International Studies (CSIS), 9 May 2018. URL: <https://www.csis.org/analysis/arctic-future-strategic-pursuit-or-great-power-miscalculation-panel-i> (accessed 07 May 2020).

²⁰ Keyser-Amundsen C. Kampen om Svalbard, 2030: Norsk eller russik dominans? [Battle for Svalbard, 2030: Norwegian or Russian Dominance?], *Militære Studier* [Military Studies], 2016, No. 1. p. 69, URL: https://mcr.libguides.com/ld.php?content_id=32739145 (accessed 07 May 2020).

²¹ Britskaya T. «Po rabote ezdili» [“We Went to Work”]. *Novaya Gazeta*, October 2, 2019. URL: <https://novayagazeta.ru/articles/2019/10/02/82194-po-rabote-ezdili> (accessed 07 May 2020).

information was not officially confirmed. The Russian Embassy in Oslo called this message “fake and brute provocation”²².

Another scenario is the attempt of Russia to revive the idea of the Great Patriotic War about the creation of a “military condominium” on Svalbard. An element common to all such scenarios is the possible intention of Russia to provoke a political crisis among NATO members, to sow seeds of discord between them regarding the need for a collective response to such actions under Art. 5 of the North Atlantic Treaty and thereby strengthen its geopolitical position [18, Wither J.K., p. 35].

However, if we discard the subjective sentiments regarding Svalbard, which have become noticeably pessimistic in recent years, how likely is a military conflict on the archipelago? At the same time, we make a reservation that this is not about a large-scale confrontation between Russia and Western countries, in which the Arctic and Svalbard will be, will be only one of many theaters of war, though a very important one, but only one of many theaters of war. As history shows, in such cases, no international treaty is safe from gross violations, and Svalbard can very likely be used by the parties to the conflict for their own purposes to the same extent as it was used during the Second World War. *However, if we talk about conflicts directly provoked by the contradictions between the states over Svalbard and that could result in larger clashes, the probability of this, in our opinion, is extremely low.* The following arguments can be supportive of this thesis.

Although Norway received Svalbard through an international treaty, the archipelago is a sovereign territory of the Kingdom. It means the country's foreign policy applies to the archipelago as well. Despite the difficult times in relations between the West and Russia, Norway continues to be a key partner of our state in the High North. In its policy, the Kingdom seeks to balance between the need to ensure national security through its participation in NATO and the desire to develop stable and mutually beneficial relations with Russia in the critical Barents Sea region on issues such as fisheries, mining of mineral resources, border emergency response and control, incl. the Svalbard area²³. Norway's official position — Russia is not perceived as a threat today²⁴. It is not surprising, therefore, that Norway remains the only NATO country that has maintained a hotline with Russia on military issues between its Joint Headquarters in Bodø and the command of the Northern Fleet of Russia [18, Wither J.K., p. 33].

²² Ekspert prokomentiroval feyk o rossiyskom spetsnazе v Norvegii [The Expert Commented on a Fake about Russian Special Forces in Norway]. RIA Novosti. September 30, 2019. URL: <https://ria.ru/20190930/1559271978.html> (accessed 07 May 2020).

²³ “Local Cooperation with Russia is Underestimated, says Ine Eriksen Søreide”. Highnorthnews, March 1, 2019. URL: <https://www.highbnorthnews.com/en/local-cooperation-russia-underestimated-says-ine-eriksen-soreide> (accessed 07 May 2020).

²⁴ Eriksen Søreide I. NATO and the North Atlantic. PRISM, vol. 6, no. 2. URL: <https://cco.ndu.edu/PRISM/PRISM-Volume-6-no-2/Article/835074/nato-and-the-north-atlantic-revitalizing-collective-defense-and-the-maritime-do/> (accessed 07 May 2020).

Svalbard is not mentioned in Norway's official documents when describing threats to military security in the Arctic²⁵. There is also no official evidence that the possibility of a Russian invasion, traditional or hybrid, on Svalbard or its military use, is seriously considered in NATO [18, Wither J.K., p. 36]. One apparent reason for this is a sober assessment by Norway and its NATO partners of the risks and consequences for Russia of an attack on the territory of a NATO member country.

Like Norway and NATO, Russia does not consider Svalbard a cause for concern in the context of assessing the military-political risks in the region. As emphasized in the new Basic Principles of Russia's policy in the Arctic, ensuring a Russian presence on the archipelago based on equal and mutually beneficial cooperation with Norway and other states is one of the leading foreign policy tasks in the Arctic²⁶. True, one cannot ignore the fact that in the report of the Ministry of Defense "On a comprehensive assessment of the national security of the Russian Federation in the field of maritime activities in 2016", Norway's desire to establish "absolute national jurisdiction over the Svalbard archipelago and the adjacent 200-mile water area was cited as a threat to national interests"²⁷. However, in this case, we are talking more about the economic and legal aspects of Russia's activities in the archipelago, which traditionally dominate the Svalbard agenda, and not about military security issues.

The prevalence of economic issues over military security issues in the bilateral relations between Norway and Russia regarding Svalbard is also clearly visible in the diplomatic message of the Russian Foreign Ministry addressed to Oslo on the 100th anniversary of the Paris Treaty²⁸. The brief review of Russia's disagreements with Norway in the document refers exclusively to Norwegian measures affecting the economic activities of Russian entities in the archipelago. These include the introduction by Norway of restrictions on the use of the *Arktikugol* helicopter (Norwegian law does not allow the use of helicopters on the archipelago for tourism purposes²⁹), discrim-

²⁵ See, e.g., the latest Norwegian intelligence agency report FOCUS-2019. URL: https://forsvaret.no/fakta_/Forsvaret/Documents/focus2019_english_web.pdf (accessed 07.05.2020); also Norway's Arctic Strategy — between geopolitics and social development. Oslo, Norwegian Ministries, 2017. URL: <https://www.regjeringen.no/contentassets/fad46f0404e14b2a9b551ca7359c1000/arctic-strategy.pdf> (accessed 07 May 2020); Norwegian Armed Forces in transition. Strategic defence review by the Norwegian Chief of Defence. Abridged version. Norwegian Armed Forces, 2015. P. 5. URL: http://isbirligi.ssm.gov.tr/Lists/Duyurular/Attachments/103/Norway%20Strategic_Defence_Review_2015_abridged.pdf (accessed 07 May 2020).

²⁶ Osnovy gosudarstvennoy politiki Rossiyskoy Federatsii v Arktike na period do 2035 goda, utv. Ukazom Prezidenta RF ot 5 marta 2020 g. № 164 [Basic Principles of Russian Federation State Policy in the Arctic to 2035, approved by Decree of the President of the Russian Federation of March 5, 2020 No. 164].

²⁷ Dzhordzhevich A., Safronov I., Kozlov D. Geopolitika v pomoshch' snabzheniyu [Geopolitics to Help Supply Service]. Kommersant. September 3, 2017. URL: <https://www.kommersant.ru/doc/3428044> (accessed 07 May 2020).

²⁸ O poslanii Ministra inostrannykh del Rossii S.V. Lavrova Ministru inostrannykh del Norveгии I.M. Eriksen Sereyde po sluchayu 100-letiya podpisaniya Dogovora o Shpitsbergene. MID Rossii [On the Message of the Minister of Foreign Affairs of Russia Sergey V. Lavrov to Minister of Foreign Affairs of Norway I.M. Eriksen Søråide on the 100th Anniversary of the Signing of the Svalbard Treaty. Russian Foreign Ministry]. February 4, 2020. URL: https://www.mid.ru/foreign_policy/news/-/asset_publisher/cKNonkJE02Bw/content/id/4019093 (accessed 07 May 2020).

²⁹ Interv'yu s General'nym konsulom Rossii na Shpitsbergene S.S. Gushinim [Interview with the Consul General of Russia in Spitsbergen V.G. Nikolaev]. Russkiy vestnik Shpitsbergena [Russian Bulletin of Spitsbergen], 2019, no. 1 (39). p. 7. URL: https://www.arcticugol.ru/files/rvsh/2019/rvsh_N1_39_2019.pdf (accessed 07 May 2020).

inatory, in Russia's opinion, procedure for deporting citizens from Svalbard, the "artificial" expansion of reserves and protected areas, as well as the "illegality of the establishment of the so-called "Fisheries Protection Zone" by Norway and other problems.

As regards the possible contradictions between the countries regarding the interpretation of the Paris Treaty in relation to economic activity in the waters of Svalbard, the likelihood of such scenario is minimal³⁰. For Norway and Russia, as well as other countries, the development of cooperation in managing transboundary fish stocks, exploration and mining, preventing threats to non-military security (search and rescue, responding to oil spills, and suppressing illegal activities) seems too much value to sacrifice for the sake of obtaining dubious advantages in the event of open military conflict.

Illustrative examples of the parties' desire to manage disagreements in the diplomatic dimension are the incidents of the second half of the 1990s and early 2000s, i.e., the detention of Russian vessels by the Norwegian Coast Guard (Chernihiv, Novokuybyshevsk, etc.) [6, Vylegzhanin A.N., Zilanov V.K., p. 79], incl. the resonance case of *Electron*, which "escaped" into Russian waters with a Norwegian inspector on board [21, Pedersen T., p. 252]. The degree of tension at that time was so high that at some point, Russia resorted to the help of warships of the Northern Fleet to protect the interests of its fishermen [6, Vlegleghanin A.N., Zilanov V.K., p. 79]. However, countries were able to prevent the escalation of the conflict. Without giving up his position regarding the 200-mile Fisheries Protection Zone around Svalbard, Oslo nevertheless met Russia's desire for bilateral regulation of fishing in the waters of the archipelago, in particular within the framework of the Joint Russian-Norwegian Commission [6, Vlegleghanin A.N., Zilanov V.K., p. 87]. And although Russian fishermen still have claims against Norway [22, Zilanov V.K., p. 41], countries manage to keep the dialogue constructively. An essential role in this is played by the constant contact between the coast guards and the fishing departments of states [See 23, Østhagen A.].

Conclusion

Apart from the inevitable involvement of Svalbard in the most significant world war in history, it can be stated that the Svalbard Treaty has stood the test of time. Its demilitarized status remained unchallenged during the difficult times of the Cold War and the confrontation of world powers that unfolded in those years.

At the same time, now, several puzzling questions have accumulated regarding the application of the provisions of the Treaty prohibiting the use of Svalbard for military purposes. Unlike Russia, Norway believes that the entry of warships into the ports of the archipelago and the overfly of military aircraft over the territory does not violate the Treaty. Besides, there are discussions among states and experts about how the use of modern "dual" space technologies deployed on Svalbard fits into the legal framework established in 1920. It seems, given the likely increase in the number of such controversial issues in the future, the elimination or at least mitigation of contra-

³⁰ Western experts agree with this statement. See [19, Bailes A., p. 35; 20, Jensen, Ø., Rottem S.V., p. 80].

dictions between the parties could be facilitated by the creation of a multilateral mechanism for verifying the activities of states on the archipelago with a view to its compliance with the provisions of the Svalbard Treaty on the demilitarized status and establishing a regular dialogue between interested countries.

Even though after 2014, the military-political situation in the Arctic became subject to the negative impact of the general deterioration of relations between Russia and the West, we estimate the likelihood of a military conflict over Svalbard as minimal. The main reason for this statement is a sober assessment by the NATO countries and Russia, of the significant risks of a military conflict on Svalbard, as well as the clearly expressed prevalence of economic issues over military security problems in relations between states over the archipelago. For many years, Russia and Norway have been, and remain interested in the mutually beneficial joint use of the natural resources of Svalbard and its waters, as well as other advantages provided by the archipelago. However, there are contradictions between the states regarding the interpretation of the Paris Treaty when it comes to economic activity in the waters of Svalbard. So far, the disputes have been managed and settled by diplomatic means. It seems that such desire will dominate in the future.

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Oral Stories about the Mezen Churches as a Subject of Interdisciplinary Research*

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Abstract. The article analyzes oral narratives about the destruction of Orthodox religious buildings. Sources of the research are tests recorded during the folklore-anthropological expeditions of the Northern (Arctic) Federal University in the Mezen district of the Arkhangelsk Oblast (2009–2018). By the beginning of the 1930s, in Russia, the concept of “militant atheism” took shape and was approved, based on the idea of the counter-revolutionary meaning of religion and the anti-Soviet activities of believers. The object of our research is interdisciplinary. It is the subject of the study for oral history, folklore, social and cultural anthropology, and sociology. The sacrilege narratives are considered not so much as folklore or historical source, but as “a component of a local text ... whose function is not to “reflect”, but to “create” urban history, mythology, set the parameters for local identity.” A metanarrative is represented by the memories of the Mezen residents about the destruction of churches and the persecution of people for religious beliefs. It includes stories with the motives of dropping bells, punishment for the destruction of a church; desecration of cemeteries, the destruction of icons, the salvation of church property by the villagers, the conversion of churches to schools, granaries, clubs or stables, and repression against priests and parishioners. The research allows tracing the dynamics of mass representations. There was a gap in the cultural memory of the Mezen residents. The Mezen religious stories testify that, in the cultural memory of the Mezen, they were supplanted to the periphery and replaced by the Soviet period values.

Keywords: *religious stories, destruction, churches, punishment, sacrilege, interdisciplinary research, cultural memory.*

The history of the church includes the stages of its construction, the life of the parish, the destruction, the hidden existence, and restoration. The aim of our study is to analyze oral narratives about the destruction of the Mezen churches and the ideas of the local community associated with these events. To collect material, we developed a questionnaire, which included questions about the different periods of the churches’ existence and the religious life of the village, conducted a continuous survey when it was difficult to find respondents, using the “snowball” method. The work considered the borders of the Mezensky district of the Arkhangelsk Oblast in various historical periods. Mezensky district is the northernmost and largest area of the Arkhangelsk Oblast. It is located on the Winter coast of the White Sea¹. We chose it as a research area for several reasons. Firstly, it is of interest to an anthropologist because of its remoteness and inaccessibility.

Secondly, in the 19th — early 20th centuries, it demonstrated a high degree of stability and richness of the folk tradition. Thirdly, historically, the population of the region was engaged in ma-

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¹ Winter coast — the White Sea coast on the eastern coast of the Dvina Bay and the throat of the White Sea (from the mouth of the Northern Dvina River to Cape Voronov).

rine hunting and fishing, in which the church played an important role (blessing before fishing, prayers for success in fishing, donations after returning from fishing to God's share, buying icons for the church with funds received from the extraction of sea animals, the obligatory installation of vow crosses after returning from the sea, etc.). The applied methods of our research are observation, interviewing, conversation, recording oral statements, document analysis, photo, and video recordings, etc. During the collection of the material, in-depth interviews were conducted with residents of various settlements of the Mezen district. They were the primary sources of information collected. During the study, 60 people aged 40-90 years were interviewed. All respondents are divided into groups on the grounds related to the place of their residence and age. It is possible to conditionally divide respondents into three groups depending on their age. The first group consists of respondents born in the 1930s, the second in the 1940s-1980s, and the third in the 1990s and 2000s.

The sources of our research are field and archival material (folklore-speech data, archival documents², publications in scientific and local history literature, periodicals, and the Internet).

Oral stories about the ruin of shrines and places of worship are associated with specific historical events and loci. After October 1917, a radical reassessment of the religion's place in society occurred. In 1918, a decree "On the Separation of the Church from the State and the School from the Church" was adopted by the Council of People's Commissars³. In 1929, a circular letter "On Measures to Strengthen Anti-Religious Work" from the Central Committee of the All-Union Communist Party of Bolsheviks appeared⁴. As a result, by the beginning of the 1930s, in Russia, the concept of "militant atheism" took shape and was approved, based on the idea of the counter-revolutionary essence of religion and the anti-Soviet activities of believers.

The object of our research is interdisciplinary. The history of each church (the erection, the hidden life of the parish, the life paths of those who devoted themselves to church construction, its destruction, repressions of church attendants, and clergy) is studied by the local history. Local history is the practice of historiography, with the goal of constructing local historical memory.

This view is called by historians "microhistorical". The studies of folklorists devoted to the study of oral stories about the punishment of sacrileges were completed by V.E. Dobrovolskaya, Yu.M. Shevarenkova, S.N. Shtyrkova, L.V. Fadeeva, A.B. Moroz, I.V. Vlasova, A.A. Panchenko, N.V. Drannikova et al. [1, Dobrovolskaya V.E.; 2, Dobrovolskaya V.E.; 3, Nizhny Novgorod Christian legends; 4, Shtyrkov S.N.; 5, Shtyrkov S.N.; 6, Fadeeva L.V.; 7, Fadeeva L.V.; 8, Shevarenkova Y.M.; 9,

² The archival sources of our research were folklore materials and documents stored in the archives of the Center for the Study of Traditional Culture of the European North of the Northern (Arctic) Federal University (fund 38), the archives of the Arkhangelsk Museum of Local Lore, the State Archives of the Arkhangelsk Oblast, the files of the Regional Office of the Federal Security Service of the Russian Federation for the Arkhangelsk Oblast Mezensky Municipal Archive.

³ Ob otdelenii tserkvi ot gosudarstva i shkoly ot tserkvi [On the separation of the church from the state and the school from the church]. *Sobranie zakonenyi i rasporyazheniy pravitel'stva za 1917–1918 gg.* [Collection of Legalizations and Government Orders for 1917-1918]. Moscow. Upravlenie delami Sovnarkoma SSSR [Management of Affairs of the Council of People's Commissars of the USSR], 1942, pp. 286–287.

⁴ RGASPI. F. 17. Op. 3. D. 723. L. 9–11.

Moroz A.B.; 10, Moroz A.B.; 11, Vlasova I.V.; 12, Panchenko A.A., 13, Drannikova N.V.; 14, Drannikova N.V.]

In modern humanities, anthropological and sociological research methods are actively used. Folklore is moving closer to anthropology, historical, and social (cultural), for which people in history and culture are important. Social anthropology involves looking at one's culture through the eyes of "others" and others through their own eyes. It is aimed at understanding the "other" person in gender, social, cultural, ethnic, national, estate, regional diversity. Since the objectives of the study were to clarify the knowledge and ideas of different population groups about the history of churches, the primary method was oral history. Portelli A. wrote that the main feature of oral sources was that they "brought us information not that much about the events of the past but about the meaning of these events" [15, Portelli A., p. 39]. Oral history testifies to people's perceptions of historical facts and circumstances, assessment from the standpoint of the present. The collection and study of oral sources made it possible to clarify the attitude to the destruction of the churches of residents, to reveal the level and content of their knowledge about the history of local churches. Respondents' knowledge and perceptions vary. The memories of the Mezen old-timers did not become the subject of separate scientific considerations. However, we can highlight several research areas with similar problems.

When completing research, one cannot but turn to the experience of historical and anthropological research by representatives of the French school "Annals" and its followers [16, Block M.; 17, Ginzburg K.].

The study of Soviet everyday life was carried out by I.V. Narsky, N.N. Kozlova and others [18, Narsky I.V.; 19, Kozlova N.N.]. The departure "into a small history" allows you to move from generalizing official schemes to small details and the specifics of collective memory.

The study of Soviet mass consciousness (the problem of "public sentiment") was devoted to his work A.Ya. Livshin, L. Viola, Sh. Fitzpatrick and others [20, Livshin A.Ya.; 21, Viola L.; 22, Viola L.; 23, Fitzpatrick Sh.]. Scholars engaged in the study of Soviet mythology because of ideology: A.A. Panchenko, N. Tumarkin, and others [24, Panchenko A.A.; 25, Tumarkin N.].

In the article, we use the terms "oral narrative", religious narrative, oral narrative, and the legend of God's punishment, the story of sacrilege [14, Drannikova N.V.; 26, Theoretical Milestones].

Religious stories are part of the local historical memory, the knowledge of which, in turn, testifies to the developed or undeveloped local identity of the communities. The material at our disposal is heterogeneous. It represents both "brief testimonies" and structurally organized narratives. The blasphemy narratives are considered not so much as a folklore source, but as "a component of a local text ... whose function is not to "reflect", but to "create" urban history, mythology, set the parameters of local identity" [27, Akhmetova M.V., Lurie M.L., pp. 146 — 147].

The cycles of stories about the destruction of churches and the destruction of church property are united by the theme of sacrilege, sin, and punishment for it. The pronounced didactic ori-

entation of these stories is expressed in the reproach addressed not to time or era, but the person himself. The leading motive of these stories is punishment or God's punishment. The narrator recognizes the destruction of the church as a terrible sin. He not only reproduces the situation of that time but also matches it with subsequent times and the future of generations [8, Shevarenkova Yu.M., pp. 67 — 69].

A bonded tax policy in relation to the church preceded the closure of the churches. Churches were taxed heavily, by land rents. The struggle with the church became part of the policy of the Bolsheviks. Immediately after 1917, the arrests and executions of priests began, churches and monasteries were routed and plundered, icons were burned. In the twentieth century, the history of religion is characterized by the categories of “survival” and “resistance”, caused by the extreme cruelty and repressiveness of the entire Soviet modernist project. “Forced” secularization undermined the traditional foundations of religion. The churches in Mezen began to close in 1929. The last baptisms and weddings, according to the memoirs of old-timers, took place in 1930. One of the first to be closed, in 1931, was the Holy Epiphany Cathedral, located in the district center of Mezen. Its last pastor was Father Alexander Petrovsky. The closure of the church met with considerable resistance from residents⁵. The archive documents say: “A group of kulaks led by a priest is systematically campaigning”. In 1935 the churches in the village of Kimzhe and Dorogorsky were closed. In 1933 — in the village of Dolgoshelie and others⁶.

To collect the material, we used a questionnaire with open questions. Speech behavior initiates the presence or absence of religious consciousness in the narrator. The answers of the Mezenites demonstrate a rupture of tradition that arose because faith in the Soviet period of history acquired a secret character. Some of our respondents denied the existence of the institution of the church in the pre-revolutionary Mezen and its role in it. They said that the inhabitants of the Mezen district did not go to churches, that they were *unbelievers*, and *enlightened* people, thereby demonstrating the values of the Soviet period of history.

“Our people were enlightened”;

“In our time, they did not say anything. We had Soviet reality there; we lived in that. We joined the pioneers, the Komsomol, then went to work at the party. We thought that this should be done.”

(Record of A.K. Mitkina, b. 1951, the village of Zherd, Mezen district, Arkhangelsk Oblast; collected by N.V. Drannikova, T.N. Morozova, A.S. Mysova, 2018) [FA NArFU, P. 641]

In her answer, the performer reproduces the sequence of the Soviet life cycle, using for this the features of the Soviet discourse (*Soviet reality; they believed that this should be done*).

Religious narratives are microhistories. Respondents aged 40 to 70 years, talking about the destruction of churches, often talk about this inappreciably and only state a fait accompli. The di-

⁵ Archive of the FSB RU in the Arkhangelsk Oblast. P – 15303, 13258.

⁶ Archive of the FSB RU in the Arkhangelsk Oblast. P – 5314, P – 6206, P – 1048.

dactic orientation, which is a distinctive feature of the stories of the older generation who witnessed the destruction of churches, disappeared from their stories.

<Did you have a church in the village?>

Yes, we did.

<What was it called?>

I do not know. In our time, it was already a club. But they told me how they dropped bells from the church.

<Did someone protest the closure of the church?>

I do not know — it was not my time.

(Record of A.K. Mitkina, b. 1951, the village of Zherd, Mezen district, Arkhangelsk Oblast; collected by N.V. Drannikova, T.N. Morozova, A.S. Mysova, 2018) [FA NArFU. P. 641]

Often, our respondents during the conversation broadcast only incomplete information about the destruction/desecration of the church. Among them, women predominated. They all received information from their older relatives or fellow villagers who witnessed these events (grandmothers, aunts). Respondents said that before they did not understand the tragedy of what had happened. Destroyed or turned into clubs, churches, and desecrated cemeteries throughout their lives were the norm for them. Reevaluation of these events for some of them took place in the post-perestroika period when archives were opened, and many publications appeared on the “white spots” of Russian history.

Forced secularization undermined the traditional foundations of religion. Schools replaced the church in the Soviet period. In the churches, huts, reading rooms, and clubs were opened, warehouses and granaries were made. Most of the older generation, despite secularization, remained a believer. Believers in the village believed that in holy places, the devil seeks to do more harm to a man than in any other site, and he tries with all his might to “lead a man into temptation”. In their opinion, in a holy place, a person should be strict towards himself; otherwise, he will not be saved by the intercession of saints [28, Tarabukina A.V.]. For believers, the activities of the Communists began to correlate with the activities of the Antichrist, and the church buildings converted by the new government became “unclean”. The place, which was a saint for the older generation, turns after its desecration into the habitat of the Antichrist — a “holy” place for young people.

<Did you have an Old Believer church here?>

Yes. Then it became the club. “Holy” place for young people.

(Nore of Yu.P. Malygina, A.D. Malygin, the village of Koida, Mezen district, Arkhangelsk Oblast; collected by N.V. Drannikova, N.M. Aseeva, N.N. Yankovskaya, 2010 .) [FA NArFU. P. 605]

Respondents whose memories date back to the 1940s — 1950s were able to recall the formulas of prohibitions and beliefs about churches that existed in their villages after their closure, e.g.: in the village of Longevity for schoolchildren were told that they could not attend a club built on the site of the church, because it will fall underground; that water rises at night in the churches

of Mezen and the village of Pogorelts; that the Mezen Komsomol members, turning the Holy Epiphany Church into a club, “danced on the bones”, representatives of the older generation refused to go to clubs and cinemas that used to be churches, etc. There was a ban in popular culture on constructing a new building on the site of churches and cemeteries. In the Soviet period, all these prohibitions were violated, therefore, according to locals, the builders could not establish a carousel in the territory of the former necropolis (Mezen), and the foreman who supervised the construction of the club on the site of the burnt church fell into the pit and died. [Edush T.V., 1969].

The information received by us is incomplete. We can distinguish settlements where the tradition of the religious narrative is better preserved than in other settlements of Mezen, e.g., in the village of Koida and Kimzha. It can be explained by the fact that Koida was the center of hunting and fishing marine industries. Its inhabitants were the organizers of the Ustinsky fishing related to the catch of seals⁷. The standard of living in this village was higher than that of villages located in the agricultural part of Mezen. The number of Koida residents repressed for their faith was much higher than in other Mezen villages [29, Za veru Khristovu]. Also, in the Mezen district, Koida is the most inaccessible village, there were two faiths in it — Nikonians and Old Believers, with separate churches. In Kimzha, the church was closed later than in the other Mezen district villages, and, like in Koida, there were Old Believers and Nikonian churches, and for many years there was secrecy, which was the most passionate kind of Old Believers. The village was somewhat isolated from local authorities, as it was located across the river, unlike other Mezen villages.

Stories about the destruction of churches and the persecution of believers in the folklore and speech practice of the older generation form a metanarrative. Still, the degree of its destruction is so high that it makes one think. It includes stories with motives: dropping bells, punishment for the destruction of the church; the desecration of cemeteries, the destruction of icons and their use on collective farms or as household items, the salvation of church property by villagers, the conversion of churches to schools, granaries, clubs, stables, and repression of priests and parishioners. We recorded one of the most detailed stories about the destruction of the church in the village Koida from P.E. Malyginoy in 2010:

<The heroes felt like icons, you know how many were there, they threw them away, chopped them for firewood, such scoundrels. It was not scary to cut the icon in halves. They watched, watched, it was what they said about the old time. The severity was it. So many icons were broken, so many values! They broke everything, took off the domes! The bells were so big; we were sitting on zvoz⁸ and watched how these bells were lowered from above.

How not to punish! Nobody died with his death. Who drowned ...? The Lord is not an ordinary man — he will order, not today, so tomorrow, he will find him. Why did the churches go bank-

⁷ Ustinsky (Ustinsky) fishing — fishing on a section of the sea between the mouths of the Mezen and Kuloy rivers.

⁸ (B) Zvoz — a sloping floor made of logs, which makes it possible to drive a horse-drawn cart to the second floor of the house.

rupt, and now you need to build? We must get everything in the village. Where to get these icons? They broke the same; they broke themselves. The word could not be said against the authorities. We had a man on Kanin, in the evening a ditty, joking like this: "With Tsar Nikolashka, you are not lying on the blood. And now, under socialism, you have to sleep, like everyone else." So the next day, a boat came in an instant and was taken away with an end, no one had heard. They sold their own; there were no strangers here; their skins were corrupt. And now you think a little corrupt? Same. You are caressed, stroked, and left; right there, they are pressed to the nail. It was and is>.

(Record of P.E. Malygina, b. 1927, the village of Koida, Mezen district, Arkhangelsk Oblast; collected by N.V. Drannikova, N.M. Aseeva, N.N. Yankovskaya, 2010.) [FA NArFU. P. 605].

The respondent remembered details of the ruin of the church, which demonstrates her emotional and tragic perception of the event she witnessed. She negatively assesses what happened. The behavior of the local patriarchs violated traditional behavioral norms and prohibitions. Talking about the destruction of the church, the performer uses an invective (there were *such scoundrels*). Story of P.E. Malyginoy contains several motives: incl. the denunciation motif, which is realized with the help of graduation: *"They watched, guarded, what they say about the old time ..."* The text has the genre features of the legend of God's punishment, which ends with an aphorism: *"The Lord — not just a man — will order not today — so he will find tomorrow."* The performer uses repetitions of *"(the bells) so huge," "no one died with her death,"* which reinforces her emotionally-tragic perception of the ruin of the church. Respect for faith and its religiosity is manifested in the use of augmentations: *bells are huge, zvoz are so huge*. A conversation with us is for her a continuation of her inner monologue. She uses rhetorical questions and exclamations: *"Why the churches have been ravaged, and now it is necessary to build? Where to get these icons?"* Repetitions reinforce her indignation by blasphemy: *"They broke the same, they themselves broke"*.

Answering our question about whether there were icons in their house, the respondents recall that they rode them from the mountains, that they used them as tabletops and lids for barrels (There were *such good planks!*), Dirt was paved with them, many talks about how parents and grandmothers tried to save church property and hid it in their houses, that in many houses parts from the iconostasis and the frames from the icons that were used for the photographs were preserved, that the bells were taken away for re-melting (*Bells, icons were thrown away I remember: my mother ran, dragged everything home*). Stories about the salvation of church property by older relatives and its further use by children and grandchildren demonstrate a different correlation between Soviet and traditional symbolic systems in the minds of performers.

Tales of the destruction of churches abound in pejorative verbs: they threw, ravaged, burned, broke, chopped, dragged, etc.

And there were some bells! ... Then they decided to remove the bells. Abandoned them right on the ground!

<And what year was it before the war?>

And for a long time, it was; for a long time, not.

<Did you see how it happened?>

Well, we were small, we were witnesses, we remember. I lived not far from here; we had a house of our own.

(Record of A.E. Payusova, b. 1925, the village of Kimzha, Mezen district, Arkhangelsk Oblast; collected by S.B. Adonyev, I.S. Veselova, Yu.Yu. Marynicheva, 2007)

For respondents who witnessed the closure of the churches, the memories are eschatological, and the villagers who took part in these events are endowed with the characters of the “other world” in their stories. They are called *starvations, drunkards, anti-Christ, villains (the villains still had their villains), pests*. The Komsomol members were especially successful in sacrilege.

Most of the locals do not remember the name of the church in their village, but at the same time, some villages still have memories of congressional feast days. However, their calendar coincidence is most often not associated with the name of the church (*<Did you have a church in the village?> Yes, we did. <In whose honor is it named?> I do not know*) [Syumkin N.I., 1961].

We drew attention to the fact that among representatives of the middle generation of Mezenes (40 — 70) there are metatexts about religion, but they often lack religious consciousness. Memories of the church are not part of the cultural memory of the Mezen, except for the village of Koydy and Kimzhi. But the work of the Mezen local historians in the late 20th and early 21st centuries made a part of the educated local population interested in the history of their churches and proud of their architectural appearance.

This club is a former church. It was built at the beginning of the nineteen hundred ... there, yes, the second, probably a year or so. And before that, there was an old one, where we have a water pump. We have photos. The club also has a drawing, one man painted with a pencil. People said the church was beautiful. Now they are no longer alive. They said that they could not throw a hat to the ceiling, that is, it was high, there were two floors large. The decoration was good, beautiful, but it turned out that everything began to close.

(Record of A.A. Chikina, b. 1956, the village of Zherd, Mezen district, Arkhangelsk Oblast; collected by N.V. Drannikova, T.N. Morozova, A.S. Mysova, 2018.) [FA NArFU. P. 641]

The respondent contrasts the beauty of the destroyed church to its modern, dilapidated state. It is transmitted with the help of hyperbolas (*they could not throw a hat to the ceiling*) and gradations (*the decoration is good, beautiful*).

In narratives, there are many “formulas of authenticity”: *I remember: mother ran, old women spoke, people spoke, I heard, etc.* Various repetitions and dates reinforce the authenticity of what is happening.

Few of our respondents were able to reassess their previous views on religion. Among them, residents of the village of Koida, about which we wrote above, predominate. There we had to hear the statement that *“now those who left everything in the old fashion should*

be awarded orders and medals ... Previously, they lived under pain of death, but they kept everything ...". (Record of A.I. Malygina, A.I. Malygin, the village of Koida, Mezensky district, Arkhangelsk Oblast; collected by N.V. Drannikova, N.M. Aseeva, N.N. Yankovskaya, 2010.) [FA NArFU. P. 605].

The performer considers the protection of religious beliefs and the preservation of church objects in a totalitarian state a feat.

Despite the invaluable nature of most of the stories in our archives, some of them contain the motive of God's punishment, which, according to the performers, eventually overtakes not only the person who committed the sacrilege, but also his descendants.

<And what does the Lord turn away?>

She'll flap it, so, if you tell, say, a lie to me, you can't do it, you can't do it. In truth, you have to go, in truth, in truth.

<And if you tell a lie, then the Lord will punish you anyway?>

Does not matter.

<Not you, so your children will be punished?>

After all, the Lord says: "I am not Afonka — I will order it quietly. Quietly, I'll order it, not suddenly, not immediately. Here it is. If the Lord is, we don't know if he is, if not. "

(Record of A.E. Payusova, b. 1925, the village of Kimzha, Mezen district, Arkhangelsk Oblast; collected by S.B. Adonyev, I.S. Veselova, Yu.Yu. Marynicheva, 2007)

The performer uses the proverb "*The Lord — not Afonka — will order slowly*", which gives her speech credibility. The people involved in the ruin of the churches, in her conviction, were engaged in unrighteous deeds and violated God's commandments. Her speech has many repetitions. She says twice: "*You can't do this, you can't do this*", *I order, I order, in truth, you must go, in truth*. The blasphemers and scammers, she believes, violate the ninth commandment of Christianity, "Do not bear false witness against the neighbor". It was felt that in the conversation, she continued the internal monologue, which she had begun long before the meeting.

The destruction of religious buildings continued in the Mezen district throughout the entire existence of the Soviet period of the state. At the end of the Soviet regime in the early 1980s, the chairman of one of the local village councils decided to demolish the chapel, which, in her opinion, occupied an "extra" place in the village. Two young collective farmers participated in the demolition of the chapel. One of them died shortly afterward, the second paralyzed. Residents explain what happened with the punishment that followed the disrespect of the shrine, although in Soviet times, the chapel was used as a club. The plot includes a motive of repentance — the mother of one of the blasphemers installed a memorial cross at the site of the destroyed chapel. Thus, the cited text indicates that the plot about the punishment of the sacrileges has retained its functionality to this day.

Kara for the sacrilege is equivalent to the crime committed, our performers believe, e.g., a person who took the domes from the church fell into the mud and crashed to death, a man who

cut down a vow cross for firewood returns without a hand from the front and soon dies, the team leader who supervised the construction of a new the house of culture on the site of a burnt church, falls during the laying of the foundation in the foundation pit and dies, at the village activist who took the crosses off the domes, the coffin lights up after death, after the church was destroyed in the village, a fire starts, all the heads of the village club (the former church) died early. Let us cite the following text as an example.

Dropping the bells along with faith and destroying the top of the church, the atheistic azapoles adapted the remaining structure to the new socialist House of Culture. Who knows, maybe in punishment for the deed "on a hot summer day on July 27, 1931, when most of the azapoles were in distant hayfields, a fire occurred in the village. There was practically no one to extinguish it ...". Half of the village — and this is 58 residential buildings — was left homeless.

(Record of I.V. Borisova, b. 1972, the village of Azapolye, Mezensky district, Arkhangelsk Oblast; collect. by N.V. Drannikova, 2019)

If a person is punished for sacrilege, consider the Mezen, then for the restoration and salvation of the shrine, he receives a reward. We have at our disposal a story recorded in the village of Bereznik about the fact that a man who had pain in his legs decided to restore the cross sawn for fire by his fellow villager. After that, he not only recovered but also lived up to 90 years [O.U. Vlasova, 1973].

Before the closing of the churches, there were necropolises around each of them, on which the honorary inhabitants of the village and clergy were buried. After scolding the cemeteries, the graves were devastated, and skulls were used as visual aids in school lessons. Talking about how classmates played with skulls found near the church, one of our performers laughs (F, 59). The respondents, referring to old-timers, say that Komsomol members removed the bells in their villages during the community workday on April 22 (on the birthday of V.I. Lenin) and Easter.

In the Mezen district, all churches were closed; faith in the Soviet period became secret and acquired a non-confessional character. Respondents recall that they were forbidden to believe in God at school (in particular, they checked whether schoolchildren wear crosses, etc.). The blow to the institutions of traditional religion was so great that religion was forced into an uncontrolled space. In the Mezen villages, mixed forms of religion have survived, existing in the form of beliefs and at the level of everyday behavior. E.g., it is widely believed that patrimonial icons cannot be returned from home and that a person who violates this prohibition can be punished.

After conducting a study of the Arkhangelsk religious story, we concluded that the ideology of the Soviet era led to the fact that people lost respect for the culture of their ancestors, the cult of the ancestors, which was the basis of folk culture, was destroyed, as evidenced by the desecration of church graves, necropolises and the subsequent loss of memory of these events. The responses of our respondents demonstrate that the stories about the destruction of the churches have lost their relevance, that the breaking of the cultural tradition was ensured by decades of an-

ti-religious activity, silence by the older generation of Mezenes and insufficient educational activities of cultural and educational organizations and individuals.

We concluded that in the settlements where there were secondary schools, the degree of destruction of the cultural and historical tradition was much stronger than in the villages where there were elementary schools, or there were none.

Different generations of performers demonstrate different value orientations. The generation that witnessed the destruction of the churches, the desecration of the church is recognized as a sin. The storytellers not only reproduce the situation of that time but also combine it with subsequent times and the future of generations. Tales of the sacrilege of younger generations (primarily those born after 1940) have lost this value; they reproduce the values associated with the Soviet period of life, which denied religion and attributed it to the field of superstition and prejudice.

The undertaken research allows us to trace the dynamics of mass representations. Religion cannot be torn off from all social and cultural experiences of people. Religious narratives are part of the cultural memory of the local community. Still, their analysis indicates that they were supplanted on its periphery and replaced by the values of the Soviet period. In contrast, the emergence of new religious objects actualized the need for some residents to obtain information about the history of churches. The study led to the conclusion that local museums, teachers, textbooks, cultural and educational institutions do not have a significant impact on the knowledge of residents of the Mezen district about their culture.

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Revisiting the Quality of Area Planning Schemes in Terms of the Educational Institutions Network Development at the Municipal Level in the Extreme North Regions*

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Abstract. A lot has been said about the low quality of territory development programs at the regional and municipal levels in Russian literature. However, rare examples are given to confirm this thesis. In the case of such closely related issues as demographic and the education system development at the municipal level, we consider the territorial planning schemes and show these issues are not given sufficient attention. In terms of demography, the main disadvantages are an insufficiently detailed analysis of the age distribution of the population and its dynamics, analysis of a very short period (1–4 years), underestimation of existing trends (e.g., a wave-like change in the population), and an extremely weak demographic forecast. Concerning the education system, the main disadvantages are a short review horizon (1–3 years), insufficient analysis of trends and justification of the proposed measures, the use of planned rather than real indicators, which leads to an underestimation of demographic trends, insufficient analysis of the accessibility of education institutions. A more detailed analysis of indicators over a greater number of years should be carried out to improve the quality of the schemes. When developing them, it is necessary to involve a specialist in demographic forecasting. Finally, it is required to create a model scheme that can be guided by developing schemes at the municipal level.

Keywords: *Extreme North, educational system, territorial planning scheme, municipal administration, development, forecasting.*

Introduction

In our previous article, we showed that insufficient attention is paid to education issues in federal program documents on the development of the Arctic [1, Sinitsa A.L.]. The development in them is understood primarily as the development of the resource base and scientific research on Arctic issues, and not the complex development of the territory as a whole and all levels of the education system in particular. Representatives of authorities in these regions believe that the basis should be sustainable socially oriented development of all spheres of life. Experts confirm this point of view [2, Tsukerman V.A., Goryachevskaya A.S.; 3, Lytkina T.S., Smirnov A.V.]. This thesis becomes even fairer, given that the development of any territories is based on local context [4, Pilyasov A.N., Zamyatina N.Yu., p. 8; 5, Makarov V.L.], that is, the interests of the population living on them, as confirmed by the President of Russia V.V. Putin in his Address to the Federal Assembly on January 15, 2020, noting: “People want development and themselves strive to move forward in the profession, knowledge, in achieving prosperity, are ready to take responsibility for specific

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matters. Often, they know better what, why, and how to change where they live, work, — in cities, districts, villages, throughout the country”¹.

Such a statement of the question at the federal level shifts the emphasis to lower ones. It is the position of regional and municipal authorities that becomes the main one. Therefore, the results obtained depend on the quality of the regulatory framework at these levels of government, especially when we consider that there is no separate development program for the Extreme North in the country. It is understandable since a significant territorial extension and differentiation characterize the Extreme North according to most indicators. It also means that each region and municipality solve its problems to the best of its understanding of their dynamics in the face of adverse demographic trends and rapid changes in society.

The different financial and organizational capabilities of the regions and their parts are another reason for the significant differences between the administrative-territorial units. In this regard, the professional competencies of experts and state and municipal employees who participate in the development of programs, as well as the availability of standard documents that can be used in the development of documents that already take into account local specificities, are of great importance. Significant differences do not allow the use of standard forms directly without considering regional and local specifics. Still, they usually consider the most essential aspects and provide key indicators and standards, so it is imperative to focus on them.

Subject and method

Over the past 10-15 years, many documents have been adopted on the development of education. They have different qualities and different content, and their comparison can give a lot of information about the dynamics and development prospects of a particular region of the Extreme North. Despite the great practical significance, there are few works in which such comparisons are carried out. A detailed analysis of action plans for each region far exceeds the scope of this article. Such work can be done for each region, and it would be good if specialists who understand the local specifics do it. It will improve the quality of governance in any region of the Extreme North.

This work aims to analyze the legal and regulatory documents at the municipal level in the regions of the Extreme North, which address issues of planning the development of the education system. First of all, we are interested in how they reflect and take into account demographic trends and prospects for changes in the number of corresponding age groups, how the dynamics of changes in the number of educational institutions are presented, and what measures are being implemented. We are interested in the municipal level since preschool, and school education is in its area of responsibility. The placement of vocational education facilities is also carried out, considering the peculiarities of the development of municipalities. We consider territorial planning

¹ Poslanie Prezidenta Federal'nomu Sobraniyu Rossiyskoy Federatsii [Address to the Federal Assembly of the Russian Federation]. URL: <http://kremlin.ru/events/president/news/62582> (accessed 12 February 2020).

schemes, master plans of settlements (urban districts), and the materials attached to them (documents on the justification of schemes). Their functions and goals are presented in Art. 18–21, 23–28 of the Town Planning Code of the Russian Federation. It is essential for us that it is based on these documents that new buildings and structures are introduced into the education system, and old or unnecessary are withdrawn. They are the last stage in planning socio-economic development at the local level. Therefore, for their development, they require knowledge of the trends in the socio-economic development of the territory. Such schemes are used not only in Russia but also in foreign countries [6, Stroyev P.V., Reshetnikov S.B.].

This task is urgent, since much has been said about the insufficient interaction of different levels of management, the disagreement of goals, methods, and means within the framework of one document, as well as the fact that the contradictions between the documents have gained considerable scope (e.g., see [7, Bobkov V.N., etc.]). All this worsens the manageability of socio-economic systems, leads to a decrease in domestic connections, mosaic development and imbalances in the resettlement system, because if there is no forecast for a change in the population size agreed between the regional and municipal levels of government, then education plans between them will inevitably result in mismatches.

The duality of development, due to geographical location and historical trends, leads to the fact that Russia among foreign researchers by its main characteristics is defined as “like Europe, but not Europe, like Asia, but not Asia” [8, Syuelin G., Men Ch., p. 243]. As a result, some representatives of science believe that Russia should “fix itself as a “civilization of the North” [9, Ryazanov V.T., p. 646] or simply say that Russia is a northern country [10, Pichurin I.I., p. 158]. It is mostly a fair statement, because “after the collapse of the Soviet Union, Russia became, even more, a northern country” [11, Timoshenko A.I., p. 48], and the territory of the Extreme North occupies two-thirds of its entire area.

In order to understand how the issues of the development of the education system are reflected in the territorial planning schemes in each considered region, which is wholly or partially related to the regions of the Extreme North, we selected one municipal entity. We analyzed materials to substantiate the schemes that operate in them. Territorial planning schemes or general plans for the following municipalities were selected: Beloyarsky municipal district² (Khanty-Mansi Autonomous Okrug), Bilibinskiy municipal district³ (Chukotka Autonomous Okrug), Bodaybinskiy municipal region⁴ (Irkutsk Oblast), Verkhnebureinskiy⁵ municipal region (Khabarovsk Krai), Knya-

² Skhema territorial'nogo planirovaniya. Materialy po obosnovaniyu. Munitsipal'nyy rayon Beloyarskiy Khan-ty-Mansiyskogo AO [The scheme of territorial planning. Justification materials. Municipal district Beloyarsky of the Khanty-Mansi Autonomous Okrug]. URL: <http://www.admbel.ru/upload/iblock/6fa/6fa6bcb03e065be-85ac25015844eb4e0.pdf> (accessed 02 April 2020).

³ Skhema territorial'nogo planirovaniya. Materialy po obosnovaniyu. Munitsipal'nyy rayon Bilibinskiy Chukotskogo AO [The scheme of territorial planning. Justification materials. Municipal district of Bilibinskiy, Chukotka Autonomous Okrug]. URL: <http://www.bilchao.ru/engine/download.php?id=718> (accessed 02 April 2020).

⁴ Skhema territorial'nogo planirovaniya. Munitsipal'nyy rayon Bodaybinskiy Irkutskoy oblasti [The scheme of territorial planning. The municipal district of Bodaybinskiy, Irkutsk Oblast]. URL: <http://bodaybo38.ru/qa/99.html> (accessed 02 April 2020). Materialy po obosnovaniyu skhemy territorial'nogo planirovaniya Munitsipal'nogo rayona Bodaybinskiy

zhogostskiy municipal region⁶ (Komi Republic), Kolskiy municipal region⁷ (Murmansk Oblast), Kondopozhskiy municipal region⁸ (Republic of Karelia), Lenskiy municipal region⁹ (Arkhangelsk Oblast), Muyskiy municipal region¹⁰ (Republic of Buryatia), Nadymkiy municipal region¹¹ (Yamal-Nenets Autonomous Okrug), Neryungrinskiy municipal region¹² (The Republic of Sakha (Yakutia)), Noglikiy municipal district¹³ (Sakhalin Oblast), Parabelskiy municipal region¹⁴ (Tomsk Oblast), Penzhinskiy municipal region¹⁵ (Kamchatskiy Krai), Severo-Eniseyskiy municipal region¹⁶ (Krasnoyarsk

Irkutskoy oblasti [Materials on the substantiation of the territorial planning scheme of the Municipal District of Bodaybinskiy, Irkutsk Oblast]. URL: <http://bodaybo38.ru/qa/100.html> (accessed 02 April 2020).

⁵ Skhema territorial'nogo planirovaniya. Materialy po obosnovaniyu. Munitsipal'nyy rayon Verkhnebureinskiy Khabarovskogo kraia [The scheme of territorial planning. Justification materials. Municipal district Verkhnebureinsky Khabarovsk Krai]. URL: <https://yadi.sk/d/987e72la3FQLoq> (accessed 02 April 2020).

⁶ Skhema territorial'nogo planirovaniya. Materialy po obosnovaniyu. Munitsipal'nyy rayon Knyazhpogostskiy Respubliki Komi [The scheme of territorial planning. Justification materials. Municipal district of the Knyazhpogostskiy Republic of Komi]. URL: <http://www.mrk11.ru/content/menu/194/STP-Knyagh.rar> (accessed 02 April 2020).

⁷ Skhema territorial'nogo planirovaniya. Munitsipal'nyy rayon Kol'skiy Murmanskoy oblasti [The scheme of territorial planning. Municipal district of Kola, Murmansk Oblast]. URL: https://akolr.gov-murman.ru/deyatelnost/gradostroitelstvo-i-zemelye-otnosheniya/dokumenty-territorialnogo-planirovaniya.php?clear_cache=Y (accessed 02 April 2020).

⁸ Skhema territorial'nogo planirovaniya. Materialy po obosnovaniyu. Munitsipal'nyy rayon Kondopozhskiy Respubliki Kareliya [The scheme of territorial planning. Justification materials. Municipal district Kondopozhskiy, Republic of Karelia]. URL: <http://amsu.kondopoga.ru/58159/poselenia/29710/> (accessed 02 April 2020).

⁹ Skhema territorial'nogo planirovaniya. Materialy po obosnovaniyu. Munitsipal'nyy rayon Lenskiy Arkhangel'skoy oblasti [The scheme of territorial planning. Justification materials. Municipal district of Lenskiy, Arkhangelsk Oblast]. URL: <http://www.yarensk.ru/city/grad/sxemaLensk.php> (accessed 02 April 2020).

¹⁰ Skhema territorial'nogo planirovaniya. Munitsipal'nyy rayon Muyskiy Respubliki Buryatiya [The scheme of territorial planning. Municipal district of the Muyskiy, Republic of Buryatia]. URL: https://www.admmsk.ru/File_upload/Terr_Plan/Doc/tom_i.doc (accessed 02 April 2020). Materialy po obosnovaniyu skhemy territorial'nogo planirovaniya Munitsipal'nogo rayona Muyskiy Respubliki Buryatiya [Materials on the justification of the territorial planning scheme of the Municipal District of the Muyskiy, Republic of Buryatia]. URL: https://www.admmsk.ru/File_upload/Terr_Plan/Doc/tom_ii.doc (accessed 02 April 2020).

¹¹ Skhema territorial'nogo planirovaniya. Munitsipal'nyy rayon Nadymkiy Yamalo-Nenetskogo AO [The scheme of territorial planning. Municipal District of Nadymkiy, Yamal-Nenets Autonomous Okrug]. URL: <http://nadymregion.ru/upload/%D0%9E%D1%81%D0%BD%D0%BE%D0%B2%D0%BD%D1%8B%D0%B5%20%D0%BF%D0%BE%D0%BB%D0%BE%D0%B6%D0%B5%D0%BD%D0%B8%D1%8F.doc> (accessed 02 April 2020). Materialy po obosnovaniyu skhemy territorial'nogo planirovaniya Munitsipal'nogo rayona Nadymkiy Yamalo-Nenetskogo AO [Materials on the substantiation of the spatial planning scheme of the Municipal District of the Nadymkiy, Yamal-Nenets Autonomous Okrug]. URL: <http://nadymregion.ru/upload/%D0%9E%D0%B1%D0%BE%D1%81%D0%BD%D0%BE%D0%B2%D0%B0%D0%BD%D0%B8%D0%B5.doc> (accessed 02 April 2020).

¹² Reshenie Neryungrinskogo rayonnogo Soveta deputatov. Skhema territorial'nogo planirovaniya. Materialy po obosnovaniyu. Munitsipal'nyy rayon Neryungrinskiy Respubliki Sakha (Yakutiya) [Decision of the Neryungrinsky District Council of Deputies. The scheme of territorial planning. Justification materials. Municipal district of the Neryungrinskiy, Republic of Sakha (Yakutia)]. URL: http://www.neruadmin.ru/upload/11-42_22.12.2017.pdf (accessed 02 April 2020).

¹³ General'nyy plan. Gorodskoy okrug Noglikiy Sakhalinskoy oblasti [General plan. The municipal district of Noglikiy, Sakhalin Oblast]. URL: http://www.nogliki-adm.ru/assets/files/docs/Gen_plan/GPProekt.zip (accessed 12 February 2020).

¹⁴ Skhema territorial'nogo planirovaniya. Munitsipal'nyy rayon Parabel'skiy Tomskoy oblasti [The scheme of territorial planning. Municipal region Parabelskiy, Tomsk Oblast]. URL: <http://www.parabel.tomsk.ru/files/Arhitektura/polozh.pdf> (accessed 12 February 2020). Materialy po obosnovaniyu skhemy territorial'nogo planirovaniya Munitsipal'nogo rayona Parabel'skiy Tomskoy oblasti [Materials on the justification of the territorial planning scheme of the Municipal District of Parabelskiy, Tomsk Oblast]. URL: <http://www.parabel.tomsk.ru/files/Arhitektura/obosnov.pdf> (accessed 12 February 2020).

¹⁵ Skhema territorial'nogo planirovaniya. Materialy po obosnovaniyu. Munitsipal'nyy rayon Penzhinskiy Kamchatskogo kraia [The scheme of territorial planning. Justification materials. Municipal district of Penzhinskiy of the Kamchatka

Krai), Srednekanskiy municipal district¹⁷ (Magadan Oblast), Todzhinskiy kozhuun¹⁸ (Respublika Tyva).

All these municipalities are in areas of the Extreme North or equivalent localities. This sample is not representative of the geographical location of municipalities since, e.g., Lensky municipal district is located in the south of Arkhangelsk Oblast and, possibly, there are features more characteristic of the Extreme North regions in Mezensky municipal district. Also, we work with only a small part of all available schemes. However, from a substantive point of view, it is not important for the analysis which of these municipal areas to study. As we show below, territorial planning schemes at the municipal level have common conceptual flaws, which are characteristic of the vast majority of them.

Moreover, the cited shortcomings are present in most territorial planning schemes for municipalities located outside the Extreme North. From this point of view, the selection of schemes is reasonable and representative. Having considered these schemes, we will get enough information to draw conclusions on the quality of municipal territorial planning schemes throughout the Extreme North and give recommendations for improving them using the available examples. It should also be noted that if we look at the schemes developed by one institution for different municipalities, the qualitative differences can be quite significant. It means that not only the features of the municipality play an important role but also the qualifications and personal qualities of the performers responsible for developing the schemes.

The conceptual foundations of developing development programs using the example of the Arctic are presented in the work of V.N. Laksin and B.N. Porfiryev [12]. More general principles for working out development programs are presented in articles by V.L. Tambovtsev [13–14]. They are not specifically devoted to education but contain many provisions that can be applied to this area. The importance of supplementing the plans for territorial development with forecasts of the dynamics of the population reproduction, considering local characteristics and balances, is also noted by specialists [15, Lazhentsev V.]. Even in the USSR, experts insisted on linking urban devel-

Krai]. URL: <http://m.пенжинский-район.пф/tinybrowser/files/imushcestvo/zemlya/territorial-noe-planirovanie/she-ma-territorial-nogo-planirovaniya.rar> (accessed 12 February 2020).

¹⁶ Materialy po obosnovaniyu skhemy Munitsipal'nogo rayona Severo-Eniseyskiy Krasnoyarskogo kraya [Materials on the justification of the scheme of the Municipal District of the Severo-Eniseyskiy, Krasnoyarsk Krai]. URL: <http://www.admse.ru/bitrix/tools/pixelcraft.document/download.php?action=download&hash=QyYcUD5fLD5aMR4zAj8WAmIhelk3> (accessed 12 February 2020).

¹⁷ General'nyy plan. Gorodskoy okrug Srednekanskiy Magadanskoy oblasti [General plan. The Municipal District of Srednekanskiy, Magadan Oblast]. URL: http://storage.inovaco.ru/media/project_mo_193/79/62/70/0a/76/76/srednekanskij_g_o_tom_1_gp-p.doc (accessed 12 February 2020). Materialy po obosnovaniyu general'nogo plana Gorodskogo okruga Srednekanskiy Magadanskoy oblasti [Materials on the substantiation of the general plan of the City District of the Srednekanskiy, Magadan Oblast]. URL: http://storage.inovaco.ru/media/project_mo_193/cb/bd/9c/7d/9d/7d/srednekanskij_g_o_tom_2_mo.doc (accessed 12 February 2020).

¹⁸ Skhema territorial'nogo planirovaniya. Kozhuun Todzhinskiy Respubliki Tyva [The scheme of territorial planning. Todzhinsky kozhuun, Republic of Tuva]. URL: <http://todzhinsky.ru/files/files/2018-10-25-773967315.doc> (accessed 12 February 2020). Materialy po obosnovaniyu skhemy territorial'nogo planirovaniya Todzhinskogo kozhuuna Respubliki Tyva [Materials on the substantiation of the territorial planning scheme of the Todzhinsky kozhuun, Republic of Tuva]. URL: <http://todzhinsky.ru/files/files/2018-10-25-1328994770.docx> (accessed 12 February 2020).

opment planning schemes and development planning schemes for larger territories, since their mismatch inevitably leads to serious errors [16, Khorev B.S., pp. 197, 212–221].

Nevertheless, the quality of Arctic development programs [17, Leksin V.N., Porfiriyev B.N.] and development programs as a whole [18, Bukhvald E.M., Kolchugina A.V.] continues to be low, incl. and due to inconsistency of documents, although there are examples of a high degree of consistency [19, Zhikharevich B.S., Lebedeva N.A.]. This problem is a part of a more general problem of the availability of statistics and its processing [20, Bessonov V.]. It is especially true for the municipal level. At this level, a significant amount of managerial decisions is made that affect the life of the population most directly. Therefore, high requirements should be applied to the quality of information and analytical support, especially since local authorities should know their statistical indicators better than authorities or researchers at the regional or even at the federal level.

Territorial planning schemes are the result of the development of conceptual (for 25-30 years) programs for the development of the territory. The methodological foundations for creating these schemes in modern literature are also given in sufficient detail [21, Vilner M.Ya.; 22, Malo-yan G.A.; 23, Mityagin S.D.]. In the works, much is said about the low quality of circuits and the presence of serious flaws [21, Vilner M.Ya.; 24, Polivaeva O.G.], their inconsistency at all levels [25, Nekrasov I.B., Glotina I.M.; 26, Nesterova A.A.] and problems in organizing competitions and choosing a developer [27, Kosykh P.A., Petrishchev V.P.]. These specific problems indicate that the planning system for the development of municipal territories is at the initial stage, which was noted in the 1960–the 1970s [16, Khorev B.S., p. 211–212].

If we consider the experience of the USSR, it should be noted that in theoretical studies, much attention was paid to the justification of the complexity of development plans [16, Khorev B.S.; 28, Khorev B.S.; 29, Borschevsky M.V.; 30, Korenevskaya E.I.]. Much attention was paid to the development of the education system in territorial plans ([29, Borschevsky M.V.; 30, Korenevskaya E.I.; 31, Aitov N.A.], etc.).

Before starting work, we studied educational development programs and related action plans at the regional level. An analysis of the development programs of education systems in the regions of the Extreme North showed that they formulated goals and identified priorities. Nevertheless, they often do not provide information on the number of young people and their groups, their dynamics, which is very important in the context of a wave-like change in the population, the number of education institutions in the region and their problems (physical deterioration of buildings, suboptimal distribution, low staff pay, equipment of education institutions and similar indicators). Also, essential indicators such as the coverage of the population of all ages by the education system, the needs of the economy in the workforce of a certain level of education, qualification and professional composition may not be distinguished. Instead, issues that are also important are considered, but their significance is much lower compared to these. If such significant aspects are not considered in full, then it can be assumed that even less attention will be paid to them at the

municipal level. Besides, indicators are given for a specific date or in just a few years, which is not enough to reveal trends.

Analysis of demographic trends in territorial planning schemes

Territorial planning schemes for education do not allow them to fulfill what they are created for. The information displayed is partly consistent with the objectives of the document, but not its spirit. Such an essential criterion of schemes as the comprehensive planning of economic and social development is not fulfilled. When B.S. Khorev wrote that “local (a kind of “municipal”) planning” [16, p. 200] only recently has spread and there are errors, it could be understood, because it was about the 1970s. However, since then, science has stepped forward, and an integrated approach should underlie any socio-economic planning.

The physical component of the territory can be described in detail in a scheme: water resources are described, mineral resources are presented, what is the volume of deposits and which ones are developed, climatic features are displayed and how they affect socio-economic development, even animals in general and game animals, in particular, are reflected in the document in detail. All this can take from 50 to 150 pages. No one disputes that this section is essential. Still, the section describing the dynamics of the population is no less important, since it is demographic development that determines how feasible the plans for socio-economic development are. Is it impossible to describe the observed trends at least on the 7-10 pages of this section and do it not just formally, but in such a way that it is clear from the scheme how much the territory is provided with human resources? It is complicated for a user from far away to obtain high-quality municipal demographic statistics in the right amount. Still, the scheme is developed at the request of the municipal authorities, which should have such data. Hence, the argument about the unavailability of information, in this case, is not applicable.

In all the considered territorial planning schemes, a demographic section is presented. However, it is not always in a satisfactory condition. For the municipal level, the use of crude coefficients is justified, since the calculation of more complex indicators (e.g., total fertility rate or life expectancy for any age) can sometimes be difficult for them (especially in the context of settlements). However, there are more serious disadvantages.

The sex distribution of the population provides some useful information, but its absence is not a critical drawback. In contrast, the age structure of the population is significant for assessing the socio-economic development of a municipal district. Still, in many documents, it is not presented at all (e.g., the schemes of Bilibinsky and Neryungrinsky municipal districts) or is presented by enlarged social and economic groups: younger than working age, working-age, older than working age (e.g., schemes of Bodaybinsky and Kondopozhsky municipal districts). In the scheme of Srednekansky urban district, there are no absolute numbers, and only the percentage distribution of groups is given. Such a division is not suitable for assessing the education system since data are needed on children at preschool and school ages, as well as on young people at the age of voca-

tional education if there are corresponding educational institutions in a municipality. In the absence of the entire age structure, children in preschool and school ages are distinguished in the population section in the scheme of Muysky municipal district. In this case, data on the total population and the number of enlarged groups is an information indicator as informative as it is such an indicator as to the overall temperature in the hospital or its departments. As positive examples, territorial planning schemes can be singled out in which the age structure of the population is represented graphically in the form of a sex and age pyramid (Verkhnebureinsky and Penzhinsky municipal districts, as well as the Nogliksky urban district, in which data are presented for five-year age groups) or in the form tables (Knyazhpogostsky municipal district, Todzhinsky kozhuun).

The marital structure of the population is of some interest since it affects fertility and mortality, but its absence only slightly worsens a scheme. It is given, e.g., in the scheme of the Penzhinsky municipal district. The educational structure is more important for the labor market and is largely determined by migration, therefore its importance for planning the development of the education system is less important (it is presented, e.g., in the scheme of the Verkhnebureinsky municipal district). In addition, children under 18 years of age mostly have general education, and higher levels of education are already under the authority of the state.

The regions of the Extreme North are distinguished by a large migration movement, which largely determines the demographic dynamics, so it is worth paying great attention to the analysis of migration. As a fairly good example, we can point to the schemes of the Verkhnebureinsky, Nadymsky, and Penzhinsky municipal districts.

In most schemes, demographic indicators and population dynamics are given for a short period of 3-4 years. This period is not enough, because the wave-like dynamics of the population has a significant impact on the ongoing processes in the field of education and on the need for places in educational institutions, forcing to take into account periods of decline and increase in the number of children. This is another argument in favor of the need to include the age structure of the population in a scheme. The dynamics of indicators and age structure should be presented for a longer period, as is done in the schemes of Knyazhpogostsky, Nadymsky, Neryungrinsky, and Penzhinsky municipal districts. In the scheme of Bodaybinsky municipal district, in addition to a long time series of indicators, its demographic history of the district is described in detail.

Despite the presence of the demographic wave, the general trend in the dynamics of the share of children in the entire population is bearish [1, Sinitsa A.L.; 32, Sinitsa A.L.], and the share of the population older than working age is growing. If data are presented on the total population or for a short period, these especially important changes will not be considered.

Finally, it is necessary to say about the quality of the analysis of the available data. Given the above comments, it is satisfactory since most of the documents present and analyzes the main demographic trends. Of the schemes considered, we most liked the schemes of Bodaybinsky, Verkhnebureinsky, Penzhinsky municipal districts, which we can recommend as the most interest-

ing and informative. As examples of an insufficient analysis, we can cite the schemes of Bilibinsky and Muysky municipal districts.

Demographic forecast in territorial planning schemes

The forecast of the population is presented much worse. A considerable number of new disadvantages are added to the existing ones, which raises the question of the need to include a profile specialist in demography in a development team.

The most important of them is that the forecast is provided for only three years: the year of creating the scheme, the year of completion of the first stage, and the year of completion of the entire forecast. It is consistent with established practice, but it is methodologically incorrect since it does not allow substantiating the planning of the placement of objects of the education system. Despite the general downward trend in the dynamics of the number of children, the demographic wave leads to significant fluctuation in the number of children over 10-15 years. If the developer cites data for only three years with a large interval between them, then the dynamics trends will not be taken into account, e.g., since the year of the end of the planning period is a local maximum and the number of children in other years will be less. It means that there may be significant excess capacities in the education system, which will require funds for their maintenance. A similar situation is possible when the end of the planning period is a local minimum, and there can be a shortage of places in educational institutions.

The demographic wave does not affect all municipalities (e.g., in the case of a significant departure of the population, it may be interrupted). However, still, there are enough of them to talk about the need to provide information at least every two to three years, or more often. It will improve the prognostic qualities of the document, as well as better justify the planned goals and the possibility of achieving them. The same conclusion holds for migration. As an example of a planning document, where the forecast is given for a more significant number of years, we can cite the territorial planning scheme of the Bilibinsky municipal district.

The developed forecast can be presented for settlements, though not always (e.g., in the scheme of the Severo-Yeniseysky municipal district, information is given only for the entire population as a whole). It is correct, but even then, only one scenario is often presented, which is not enough. A population forecast interval is needed (it is presented in the schemes of Verkhnebureinsky, Kondopozhsky, Parabelsky, Penzhinsky, and Severo-Yeniseysky municipal districts), which can be substantiated using the cohort-component method or probabilistic methods at a significance level of 66% or less.

Due to the small population of the municipal district, difficulties may arise in developing the most familiar and widespread forecast based on the cohort-component method but making such a forecast will not be as difficult as it seems with all the data available. However, this problem is not only facing domestic municipalities and has been resolved on a global scale. Some methods allow making quite reliable forecasts of the population for a period not exceeding 20

years based on a combination of extrapolation and cohort-component approaches (e.g., the Hamilton-Perry method and its modifications). In the USSR, there were also good practices that allowed forecasting the number of small populations (e.g., see [33, Bronshtein I.P.]). However, this experience is not currently considered. Some schemes use formulas developed based on financial discounting methods (e.g., in the scheme of Uritsky municipal district¹⁹ Orel Oblast). If the developer has a clear idea of demographic trends, their use for small periods is also acceptable since such formulas allow them to work with the age-sex structure of the population. In this example, the population is projected to double in 10 years. The likelihood of such a situation in the innovative variant of the development of the municipality is low, even considering the possible migration inflow.

We have already said about the importance of the age structure for the analysis of demographic dynamics. However, such information is provided even less frequently in the forecasts. Even for the enlarged social and economic groups, the information is given only occasionally (e.g., in the schemes of Beloyarsky, Bodaybinsky, Knyazhpogostsky, Kondopozhsky, and Nadymsky municipal districts), but mainly the entire population is considered. Arguments in favor of the need to bring a complete age structure have already been given. In some cases, the developers of the schemes provide predicted data on the number of children in preschool and school ages (the schemes of the Nogliksky and Srednekansky urban districts). Still, information is provided for only three years, which does not show its dynamics.

When working with forecasts, some uncertainty is added, which means that it is easier to work with the whole population since it is easier to give a reliable estimate. However, analysis of the age structure is still necessary at least at the level of the municipal district since age characteristics determine what and where to build. If we mean to reduce the uncertainty, it is necessary to put adequate hypotheses in the forecast, because the choice of a hypothesis has a significant influence on the obtained results, and to develop several forecast scenarios.

Hypotheses for most forecasts are generally presented and substantiated, which allows us to assume the inclusion of demographic trends. However, this is not always the case: e.g., there may be assumptions about a zero-migration outflow, although, before that, it was quite large (the scheme of the Parabelsky municipal district). In the Extreme North, the absence of migration movement contradicts current trends.

Another important drawback is that the forecast calculation methodology is presented only in the schemes of Beloyarsky and Verkhnebureinsky municipal districts. In other cases, one must guess about the methods used for making forecasts.

The section on population forecasting needs to be strengthened to improve its quality. First, it is necessary to add forecast values for a more significant number of years, as well as data

¹⁹ Materialy po obosnovaniyu skhemy territorial'nogo planirovaniya Munitsipal'nogo rayona Uritskiy Orlovskoy oblasti [Materials on the substantiation of the territorial planning scheme of the Uritsky Municipal District of the Orel Region]. URL: <http://urickiy.ru/files/archit/stp-ur-pz-1.doc> (accessed 12.02.2020).

on the age structure of the population. Of the schemes that can be recommended with different reservations, the schemes of the Beloyarsky and Kondopozhsky municipal districts should be distinguished. The weakest are the schemes of Muysky, Neryungrinsky, Severo-Yeniseysky municipal districts, Todzhinsky kozhuun. Of particular note is the scheme of the Bilibinsky municipal district of Chukotka Autonomous Okrug, in which the entire population forecast takes less than a page. Such a presentation does not allow us to understand what work was carried out on forecasting.

Analysis of education system development trends in territorial planning schemes

General education and additional education for children are presented in all territorial planning schemes. If higher education is provided on the territory of the municipality, the vocational institutions are also considered.

Extraordinarily little is said about the radius of accessibility of education institutions. Such information is presented, e.g., in the schemes of Severo-Yeniseyskiy municipal district and Noglikovsky urban district, and a simple mention is in the scheme of the Penzhinsky municipal district. Even though they are rarely performed at present, such information is necessary because it gives an overview of some problems in the development of the education system.

Most territorial planning schemes show the distribution of education institutions by settlements. Still, there are examples in which the number of institutions is given without such a distribution (schemes of the Verkhnebureinsky, Kondopozhsky, Lensky, Muysky, and Severo-Yeniseysky municipal districts). Generalizing indicators do not allow us to assess the population's need for educational institutions in a settlement and to plan their development, especially if we consider that the prognostic section of a scheme is usually rather weak.

Since there is usually no information on the number of children in the demographic section, these data can be presented in the section on education (e.g., in the schemes of Bilibinsky, Knyazhpogostsky, Kondopozhsky, Parabelsky municipal districts, Noglikovsky urban district), but there are weak spots. E.g., the scheme of the Srednekansky urban district shows the total number of children, the number of children attending preschool institutions, and the number of children attending schools. However, the number of children who do not attend education institutions is given in general without separation of age groups. As a result, we cannot calculate the coverage of children by the education system by its levels, and we do not know in which age group the share of children not attending education institutions is higher.

The documents show the number of children attending educational institutions, the actual and project occupancy of institutions. Still, often there is no data on the coverage of children by the network of education institutions (such data are only available in the schemes of the Verkhnebureinsky, Knyazhpogostsky, and Kondopozhsky municipal districts). It does not allow us to understand whether children do not attend institutions (primarily preschool ones) because of lack of places or parents do not want to send children there, because data on occupancy show only the load on education institutions and staff. Also, indicators such as the lineup of children for a place

in an educational institution are rather rarely cited (the absence of a line is mentioned in the schemes of the Neryungrinsky municipal district, the Nogliksky, and Srednekansky urban districts). Data on the lack of places for children already attending education institutions can be obtained from available information.

The horizon of consideration of the network of education institutions is small. Two to three years, and even more so one year, is not enough to reveal trends and conduct an analysis since the dynamics of changes in the number of educational institutions and places in the education system are not shown. Even the available data are not always presented in detail. Nevertheless, the dynamics is given for enough years in the scheme of the Verkhnebureinsky municipal district.

An essential characteristic of the network of education institutions is the technical condition of buildings since the construction time for new ones depends on this. Most documents do not provide this information. Nevertheless, this information is presented in the schemes of Beloyarsky, Verkhnebureinsky, Nadymsky, Penzhinsky municipal districts, and Todzhinsky kozhuun, which makes the forecast of the development of the network of education institutions more reasonable.

Information on additional education of children is provided quite fully. Data on the number of institutions and children attending them, their location and type of activity, as well as security standards, are considered. Concerning this section, we have a few complaints, but the significance of this element of the education system is lower in comparison with general education. Vocational education institutions exist in the few municipalities out of those examined. They are not subordinate to municipal authorities, it is not necessary to attend them, and it is possible to do this in another municipal district, the needs of the local economy do not always cause their creation. Therefore, they are considered briefly but quite adequate. However, data on the number of relevant age groups of the municipality are not considered. The indicators of boarding education institutions are considered briefly, but given the noted disadvantages, provide enough information.

The analysis of trends is not presented in all schemes. Where it exists, its quality is not always high, since there is no dynamics in the indicators characterizing the development of the education system, it is rarely said about the differences within municipalities, which are associated with an excess of places in rural areas and shortages urban ones (e.g., in the schemes of the Verkhnebureinsky and Penzhinsky municipal districts) and it is often very difficult to compose a holistic picture of the ongoing processes. In our opinion, the schemes of the Bilibinsky and Bodaybinsky municipal districts are of the least quality, and the schemes of the Verkhnebureinsky and Penzhinsky municipal districts are the best. The schemes of the Nadymsky and Neryungrinsky municipal districts are also of high enough quality to highlight them.

Forecast of the development of the education system in territorial planning schemes

As with the use of demographic indicators, the forecast for the development of a network of education institutions is presented worse than an analysis of the current situation. It is partly

due to an insufficient level of demographic forecasting. However, there are problems inherent only in the educational section of a scheme. A brief analysis of the dynamics means that the proposals for the development of a network of education institutions are poorly justified, and it is not clear to the outside reader based on which it is necessary to have exactly as many places as planned by a certain date in a given municipal district or settlement. Unpublished calculations may be used in work. Still, in this case, they should be given in the materials on the justification of the draft territorial planning scheme to understand the logic of the authors.

Nevertheless, in the schemes of the Knyazhpogostsky and Kondopozhsky municipal districts, the proposals are presented and substantiated well enough to be recommended as positive examples. Some provisions are also well represented in the schemes of the Bodaybinsky, Lensky, and Penzhinsky municipal districts.

In the territorial planning schemes, the projects for the development of the education system are presented in a very general way: only how many places in education institutions are indicated by the levels of the education system should be in the municipal district by a certain time without highlighting specific settlements. Sometimes this is reasonable, but if there is a city or urban-type settlement in the area, then at least it should be allocated separately. For settlements, plans are presented, e.g., in schemes of the Beloyarsky, Bodaybinsky, Knyazhpogostsky, Lensky, and Nadymsky municipal districts.

Often, instead of the predicted number of children, following Construction norms and specifications 2.07.01-89 and Urban development. Urban and rural planning and development 42.13330.2011, planned standards are used (number of places per 1,000 population). Under the conditions of a demographic wave and a decrease in the share of children in the entire population, this indicator may be a false reference point that does not reflect the real situation, since it depends on the dynamics of the age structure of the population and does not always allow taking into account the actual number of children in the municipality. It is necessary to use data on the actual number of children, for which it is necessary to make appropriate forecasts of the population by certain age groups, or it is mandatory to indicate how many children per 1,000 inhabitants are planned. It will allow a more accurate assessment of the need for places and predict the development of a network of education institutions. However, the standards are used even in the section devoted to the analysis of the current situation, so we cannot hope that such information will appear in the section dedicated to the forecast. If we approach the problem more broadly, then it is necessary to assess how existing urban planning standards correspond to the current sex-age structure of the population.

The plans list the needs for places in educational institutions for certain dates, but it is unknown how many places need to be between them. If we take into account possible significant fluctuations in the number of children, then the need for a more frequent display of information becomes obvious, as well as the development in case of a significant deviation of the actual number of children from the planned one, which is not found in any scheme. Nevertheless, in more

detailed schemes, the need for the development of public-private partnerships, the implementation of educational services not only in educational institutions but also, e.g., in clubs or libraries, as well as the introduction of similar measures that partly take demographic dynamics into account, may be noted.

Recommendations for improving territorial planning schemes

The analysis of territorial planning schemes showed that the indicators characterizing the development of the education system at the municipal level are not presented to a sufficient extent to enable one to draw conclusions about the past and the prospects for its development. The same can be said about demographic indicators, which testifies to the low quality of the scheme substantiation.

It is worth noting some important recommendations regarding the development of development programs and territorial planning schemes, which are often not considered. This list is not complete. It presents only those that address the issues discussed in the article.

The targets of any education development program depend not only on the financial capabilities of the regions and municipalities but also on the size of the population. In this regard, we believe that they should contain information about the dynamics of the population and the prospects for its change. It does not have to be presented in the main text, but at least in the appendix, the size of the corresponding age groups of the population and the prospects for their change should be reflected. It is necessary to provide such information for one-year age groups (it is possible doing by sex-age groups) since five-year groups do not allow assessing the need for the education system in places, buildings, and workers. Only groups for the ages of preschool, school and vocational education can be presented separately, however, to justify the scheme, one needs to know the number of older age groups, which still requires the compilation of full-fledged population movement tables.

The step of displaying data should be no more than two to three years, but it is better to give annual dynamics. More considerable periods do not allow to quickly track changes, e.g., when a decrease in the size of a population group is replaced by a stable state or growth. The depth of data should be at least ten years for the retrospective and at least 10-15 years for the perspective. 25 years (the length of one demographic generation [34, Nikitenko V.V.]) is a sufficient period for demographic trends to be fully disclosed.

The population forecast should be multivariate. At least three scenarios should be presented: e.g., favorable, unfavorable, and probable. As an alternative to the cohort-component method, the developer can use techniques in which confidence intervals for the population are presented, e.g., for a significance level of 66%, since 95% of the interval will give too large a spread of probable values and this forecast cannot be used in the practical work of management territory. However, these techniques do not always allow working with one-year age groups, so the cohort-component method looks preferable and easier to use. Predicted values in tabular form are more

informative. In the absence of volume in the document, data can also be presented in graphical form. It will be better than if the forecast is given only for specific dates with a large interval between them.

At the end of the period, the territorial planning scheme is evaluated in terms of the results achieved, and then a new one is developed on its basis. However, the approved scheme should not be a dogma. In the case of significant deviations from the predicted values, e.g., there was a sharp change in the number of children due to accession of the territory or large emigration, not only financial indicators but also indicators of the number of children, as well as the number of education institutions, which should be in the system by a certain date should be adjusted. Probably they must develop a new scheme.

Before starting work on territorial planning schemes, an analysis of existing documents should be carried out. There are two reasons for this. Firstly, the document being developed should correspond to the development goals of a specific territory; that is, it should consider local features that can make significant adjustments to the standard document. Secondly, the document being developed should not contradict both documents of its level and documents of a higher level. Otherwise, the development goals will differ, and the quality of education management will decrease.

In order to determine development goals when developing a document, it is necessary to assess various risks, identify weaknesses and strengths (e.g., as part of a reasonably often used SWOT analysis) that should be taken into account. It will make it possible to understand what results more clearly are planned to be obtained, and what should be done for this, that is, to coordinate goals, methods, and means, as well as allocated resources. Finally, a similar procedure will help to evaluate how planned indicators are achievable, considering the allocated financial resources and the projected realities of the surrounding life.

If we consider the level of general education and additional education for schoolchildren, then, of course, local authorities are more responsible for it. However, to solve the problems of providing professional education, it should be borne in mind that some of these tasks can be transferred to other regions (including those outside the Extreme North), in which there are specialists with the necessary competencies, or vice versa, requests for solving such problems. Tasks may come from other regions, and it is needed to establish interregional cooperation. It means that in educational development programs, attention must be paid to the issues of educational migration and the development of mechanisms to bring back those who leave to study outside the region. There is educational migration, and a significant part of youth is involved in it, this cannot be denied. Therefore, it is necessary to have mechanisms for its regulation. This issue is essential for the municipal level since, after graduation, very few people plan to return home to small settlements [1, Sinitsa A.L., pp. 38–39]. Therefore, the schemes should consider the possibility of significant fluctuations in the population at some ages, which are associated with the acquisition of professional education.

When developing education development programs, one should not chase quantitative indicators. Quality indicators are also important. E.g., significant graduation of students from a university is usually considered a positive phenomenon, since higher education, which is involved in the formation of personality, has value. However, if graduates do not work in their specialty, this fact is no longer so positive since considerable funds are used for nothing, fulfilling only social goals: to engage young people, distract them from the streets and illegal actions, socialize them, and so on. In conditions of an aging population and a shortage of workers with primary and secondary vocational education, which in the conditions of the Extreme North require more than the national average, territorial planning schemes should more clearly take into account the needs of the economy for personnel of different qualifications.

Education development programs require a section on linking graduation plans with vocational education institutions with the needs of the regional and local economies, since the territorial planning schemes at both the regional and local levels take into account the qualitative composition of the workforce. Accordingly, it is necessary to consider the schemes of how many human resources of the required qualifications and specialties the education system will provide, and how much must be attracted from outside. This issue is mostly the responsibility of the regional authorities, as they have a complete picture than the municipal authorities. Still, indicators of different levels should be agreed upon, and local authorities should also be involved in this process since they better know the features of their territory and its economic development.

When developing sections on the population for territorial planning schemes, it is necessary to involve a demographer or economic geographer with a specialization in demography. An analysis of the documents shows that this requirement is mandatory since, at present, the relevant sections are often poorly developed. The specialist not only knows what needs to be captured and how to do it, but he can reasonably prove why this section is important for making plans, and thus increase the quality of the document and its managerial potential.

A unified database of indicators and decisions is required to increase the degree of consistency of documents. If Rosstat generally copes with the first, then the second has not yet been done, although this has been talked about for many years. As a result, documents in one region may have discrepancies, even those accepted with a difference of several days. Such a base can become one of the elements of a mechanism for systematic diagnosis of decisions made and their integration at the regional and municipal levels. It can also be used in the scientific support of the development of the education system of the Extreme North regions.

To improve the quality of municipal territorial planning schemes, it is also possible to recommend the creation of a standard territorial planning scheme of a municipality. It should present indicators and sections that must be reflected, the most suitable methods for assessing the current state and forecasting socio-economic development, present minimal requirements for developers, and disclose other similar aspects. Developers will only have to adapt it, considering local specifics.

Finally, it is necessary to increase the competence of the heads of municipal districts and officials. V.L. Makarov wrote about this back in 2007 and made his proposals [5]. It will allow them to evaluate the approved documents better and improve the quality of management at the municipal level.

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Wrangel Island as Actant in the Historical Geography of the Russian Arctic through a Mi'kmaw Lens*

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Abstract. Wrangel Island is the largest island in the Russian Eastern Arctic and is now a protected place with international recognition. One of only five UNESCO world heritage sites in the Arctic, Wrangel Island is uniquely varied in its flora and fauna for an Arctic island. In this reflection piece, I use an Indigenous Mi'kmaw cosmological approach to envision the much-storied Wrangel Island as a being and an actant in its long history, especially regarding human beings and anthropocenic activity. My approach asserts that, like plants, rocks, mountains, water, and landscapes, Wrangel Island has a unique and remarkable identity, personality, and spirit. For centuries, Wrangel Island has rebuffed human presence and it has been little affected by human activity. Today only scientists visit; no human collectivity has ever gained more than a slippery grip on the island. The tragedy is that, despite the island's inclinations, the warming of the Russian Arctic may change this.

Keywords: *Wrangel Island; ice; Arctic; Anthropocene; Mi'Kmaq.*

In 1923, a young Inupiat woman was found alone and half-mad on Wrangel Island in the Arctic [1, Niven J.], 300 miles north of the Arctic Circle. Ada Delutuk Blackjack posed for a picture at a gravesite. Despite her vulnerability, she was a solitary figure of strength and survival. Two years before, Blackjack had been part of a group of five people, the others all white men, but, starving and desperate, three of them tried to walk from Wrangel Island over the 700-mile icefield to Siberia to get help. They were never seen again. After Ada was rescued, it was as if she and her companions had never been on Wrangel Island.

This reflection piece discusses Wrangel Island as a singularly storied geographical, political, and cultural being in Arctic colonial history. As a scholar of Mi'kmaw¹ ancestry and a member of the Newfoundland Mi'kmaw community, I use an Indigenous lens, following the cosmology of the Mi'Kmaq, the original people of what is now eastern Canada, to reflect on Wrangel Island. Mi'Kmaq believe that every single entity on earth – plants, rocks, water, and islands – has sentient life and is alive [2, Robinson M.; 3, Hornborg A.]. Because everything is living, Mi'Kmaq see non-human beings as equivalent to persons, making them persons themselves (*Inu'k*). In contrast to dominant western cultures, and especially the capitalism that is imbued in them, such natural elements are not a resource to be exploited or a means to an end. As our fellow *Inu'k*, rocks, plants and, in this case, islands all have inherent worth [2, Robinson M.]. They deserve respect and we are always in relationship with them. Accordingly, having researched Wrangel Island as one of the settings in a recently

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¹ Mi'kmaw is an adjective or possessive while Mi'Kmaq is the noun.

published book focused on the Arctic exploration career of Robert Abram Bartlett [4, Hanrahan M.], I wanted to examine the relationship between the island and human beings, using available texts viewed through a Mi'Kmaq lens.

I recognize that this cosmology differs from that of the Indigenous people of Chuktoka and Alaska whose homelands are relatively close to Wrangel Island, but I am duty-bound to use philosophical frameworks with which I am familiar. My approach asserts that plants, rocks, mountains, and water each have “an identity, personality and spirit” [2, Robinson M., p. 4]. I take the position that Wrangel Island has a unique and remarkable identity, personality, and spirit, as do other islands, such as Herald Island nearby. Human beings are a tiny part of Wrangel Island's history; at best they pass through and, not infrequently, their intrusions led to their destruction. Their intermittent and sometimes chaotic interactions with Wrangel Island mean it has long a fringe part of the Anthropocene, although this is changing as the Russian as the Arctic warms and animal life on the island is impacted [5, Khruleva O.A., Stekolshchikov A.V.]. Fiercely independent, reliably rebuffing people, Wrangel Island has constantly reminded us of its own inherent value. It has long resisted being part of whatever entity human beings might try to define it as - colony, ecosystem, aquapelago and so on - with particularly obdurate ice as an effective buffer. Certainly, its entirety cannot be captured by the terms imposed by human beings, as I aim to demonstrate through my Mi'Kmaq-influenced reflection on Wrangel Island's history.

In one sense, Wrangel Island is a conventional island defined as a body of land bounded by water, located in the Arctic Ocean between the Chukchi Sea and the East Siberian Sea. Like other remote islands, it enjoys a continuing culture as J. Druett [6] conceived it, despite the absence of consistent human settlement. Wrangel Island is a social creation as well as a physical reality. Like other natural spaces, it is a “concrete abstraction,” in M. Fitzsimmons' words, with enduring power in our social and intellectual life [7, p. 106]. In this way, Wrangel Island as it sits in human culture reflects not just itself, its own characteristics and history, but the culmination of ideas about nature, land, islands, and Arctic landscapes. Yet these ideas are all in relation to human beings. Thus, these ideas tell us about ourselves while not necessarily recognizing the personality and spirit of the island without reference to human beings. At least this is the case with western cultures and, of course, it is true of other islands as well. Here I adopt a different perspective to help fill in this gap.

In the geography of the Arctic, Wrangel Island stands alone as the largest island in the eastern Russian Arctic (see Fig. 1). Straddling the 180 meridian, the island is 79 km wide. Also known as Ostrov Vrangelya, Wrangel Island has been called Kellett Land, Plover Land, and New Columbia, it has been indisputably part of Russia since 1924. The island is marked by mountain ridges with some peaks reaching as high as 2,500 feet [8, Barr W.; 9, Diubaldo R.J.]. Coastal lowlands lie at the south of the island while there is tundra to the north [10, Kos'ko M., Lopatin B., Ganelin V.]. One of only five UNESCO world heritage sites in the Arctic, Wrangel Island is uniquely varied in its flora and fauna for an Arctic island, its ecological diversity having developed because it was not glaciated during the Quaternary Ice Age. It hosts over 400 plant species, twice as many as any other Arctic tundra territo-

ry of similar size and more than any other Arctic island as well as hundreds of mosses and 310 lichen species [11, Kazmin V.D., Kholod S.S., Rozenfeld S.B., Abaturon, B.D.]. Accordingly, the island has been termed a “little-known hotspot for polar biodiversity”². The island’s plant species have various origins; some have developed from continental forms, others because of recent hybridization, and 23 are endemic to Wrangel Island³. Wrangel is home to about 24 bird species, incl. Asia’s only snow geese⁴, and acts as a northern nursery for more than 100 migratory bird species, incl. the Snowy Owl and the Peregrine Falcon⁵. Numerous polar bears live on Wrangel Island, constructing dens, especially near the coast and coastal lowlands [12, Howlin S., Stishov M., McDonald L., Schliebe S., p. 130]; Arctic foxes live here, too, molting their winter coats in June, eating birds’ eggs when they can⁶. On the shore live Pacific walruses while abundant gray whales feed nearby; it appears that the last remaining woolly mammoths lived on Wrangel Island well into the Holocene [13, Vartanyan S.L., Arslanov K.A., Karhu J.A., Possnert G., Sulerzhitsky L.D., p. 51]. Today about 900 muskoxen wander the island⁷.



Fig.1. Map Showing Wrangel Island. Source ⁸.

² Hoag H. High Stakes in the High North. *Cosmos*, 2017. URL: <https://cosmosmagazine.com/climate/high-stakes-in-the-high-north> (accessed 03 February 2020).

³ UNESCO. Natural System of Wrangel Island Reserve', World Heritage Convention. 2018. URL: <http://whc.unesco.org/en/list/1023> (accessed 03 January 2020).

⁴ Taylor A. Studying the Arctic Wildlife of Russia's Wrangel Island. *The Atlantic*, October 18, 2017. URL: <https://www.theatlantic.com/photo/2017/10/studying-the-arctic-wildlife-of-russias-wrangel-island/543282/> (accessed 03 February 2020).

⁵ Bouglouan N. Wrangel Island Bird Species, Arctic Ocean, n.d. <http://www.oiseaux-birds.com/article-island-birds-endemic-wrangel-island.html> (accessed 18 March 2020).

⁶ Taylor A. Studying the Arctic Wildlife of Russia's Wrangel Island. *The Atlantic*, October 18, 2017. URL: <https://www.theatlantic.com/photo/2017/10/studying-the-arctic-wildlife-of-russias-wrangel-island/543282/> (accessed 03 February 2020).

⁷ Hoag H. High Stakes in the High North. *Cosmos*, 2017. URL: <https://cosmosmagazine.com/climate/high-stakes-in-the-high-north> (accessed 03 February 2020).

⁸ Source: esri.maps.arcgis.com (Modified 05 March 2020).

These large mammals had been here during the late Pleistocene⁹ and later died out in Asia but were brought back to Siberia in the mid-1970s through an American and Soviet initiative [14, Berger J.]. Like their neighbors, the reindeer, the muskoxen employ selective feeding. They prefer willows year-round for nutrition, largely eschewing the island's abundant mosses which make up 40% of the total forage biomass and completely avoiding lichen [11, Kazmin V.D., Kholod S.S., Rozenfeld S.B., Abaturov, B.D., pp. 748-749]. Yet they eat a wider range of plants during the seasons than do reindeer [15, Rozenfeld S.B., Gruzdev A.R., Sipko, T.P., Tikhonov, A.N.]. In addition, the muskoxen are hampered less by the island's snow cover than are reindeer, whose population on Wrangel Island is declining [16, Kazmin V.D., Abaturov B.D.]. In spite of the reindeers' difficulties, Wrangel Island is a rich and fertile landscape and, in the words of UNESCO, "a self-contained island ecosystem"¹⁰, which speaks to the intertwined relationships it features. Since 2004 Wrangel Island has been a protected nature sanctuary under the Russian Federation. Besides Wrangel Island itself, the Natural System of Wrangel Island Reserve encompasses the surrounding waters and tiny, much less fecund Herald Island, some 60 km away; the Reserve is divided into a land-based territory and an ocean-based aquatory. In this respect Wrangel Island is part of an aquapelago, "an assemblage of the marine and land spaces of a group of islands and their adjacent waters" [17, Hayward P., p. 5].

With such apparent fertility and impressive features, Wrangel Island might seem to qualify as part of what Icelandic-Canadian explorer V. Stefansson called the "friendly Arctic," meaning that the region could easily support human life, despite its reputation to the contrary [18]. Wrangel Island, however, seems to repel human beings and their ships and the flags they carry, as if deliberately and proudly guarding itself from intrusion. It has devoured human life in dramatic fashion. It was long contested — Stefansson wanted to claim it for Canada — yet it yielded to no one. Wrangel Island lay still and confident as conflicts raged around it and a succession of human beings tried to conquer it. Accordingly, the human presence on Wrangel Island has a long history but has been intermittent. The remains of dwellings were found at Devil's Gorge dating to 3000 BP [19, Krauss M., p. 179] and a 1726 account refers to people living there [19, Krauss M., p. 172]. As recorded in 1823, Indigenous oral history points to stories of human habitation on Wrangel Island from two centuries before [19, Krauss M., p. 177]. The Inupiat used the island as a stopping point on travel between Alaska and the Chukotka Peninsula and would likely have considered it part of their home territory. A 1726 account refers to people living there [19, Krauss M., p. 172]. By 1878, extensive trade networks at many points meant such distant travel was no longer necessary [19, Krauss M., p. 172, 178].

Colonial attempts to possess Wrangel Island were propelled by several ideas that shaped Europeans' relations with land and place. *Terra nullius* is one such idea; it presumes that lands from the Arctic to Australia were unoccupied, even if these lands were extensively used by Indigenous people [20, Connor M.; 21, Asch M.]. *Terra nullius* has long fashioned western states' relationship with the

⁹ Taylor A. Studying the Arctic Wildlife of Russia's Wrangel Island. The Atlantic, October 18, 2017. URL: <https://www.theatlantic.com/photo/2017/10/studying-the-arctic-wildlife-of-russias-wrangel-island/543282/> (accessed 03 February 2020).

¹⁰ UNESCO. Natural System of Wrangel Island Reserve. World Heritage Convention. 2018. URL: <http://whc.unesco.org/en/list/1023> (accessed 03 January 2020).

Indigenous peoples within acquired borders and territories [21, Asch M.] and has provided motivation to seek and ‘discover’ unknown lands. Built on the assumption of European Christian superiority, the concept of discovery shaped and remains embedded in United States and Canadian law [22, Lindberg T.; 23, Miller R.]. John Quincy Adams, the 6th president of the United States, for instance, asserted that the law of nature dictated American dominion over the entire North American continent [24, Bolkhovitinov N., Dmytryshyn B., p. 103]. Animals, plants, rocks, mountain ranges, and islands, of course, were never considered and had the status of tools, useful to varying degrees for human beings, their enterprises, colonies, and states.

Russia, near which Wrangel Island lies, brought its own ideological baggage to the island. The west had viewed Russia as a threat since the first half of the 19th century [24, Bolkhovitinov N., Dmytryshyn B., p. 102] and relations became even frostier with the establishment of the USSR in 1922. The rigidly anti-capitalist Soviet Union was especially concerned about western capitalist and acquisitional activities in the Soviets’ “region of attraction,” which included Wrangel Island [25, Lakh-tine W., p. 707]. Thus, Wrangel Island was coveted by colonial forces from many sides. Yet, with its tough jagged ice acting as a shield, Wrangel Island stubbornly resisted human efforts to colonize it.

These efforts to establish a presence on the island were scattershot and mostly doomed. The 1923 disaster involving *Ada Blackjack* was not the first human tragedy on Wrangel Island (and nor was it the worst). It began in 1921 when Stefansson sent a small under-resourced group to the island to secure British sovereignty [26, Bockstoce J.]. Along with *Blackjack*, who, like most Indigenous women on Arctic expeditions, would serve as seamstress, four young white men – Canadian Allan Crawford and Americans Fred Maurer, Lorne Knight and Milton Galle – would live on the island for two years. In so doing, they would put in place the human foothold necessary for a claim under British colonial law, given *terra nullius* and its implications for “emptiness” [1, Niven J.]. The ice that surrounded Wrangel Island prevented the arrival of crucial supplies in 1922; later, it would block Russian fox pelt traders [26, Bockstoce J., p.138]. In 1923, Russia insisted that Red Guards accompany the would-be rescuers after trying to prevent them travelling to the island at all [26, Bockstoce J.]. Although a rescue of *Blackjack* was affected in 1923, Stefansson’s reputation was damaged by this episode and the Americans, British, and Canadians were reluctant to back his Arctic ambitions from then on; they began to shift their gaze away from Wrangel Island.

It was a place to which they had paid significant attention in the early part of the 20th century. Wrangel Island had featured in the fate of the *Karluk* in 1914. In 1913 the *Karluk* sailed out of Victoria, British Columbia, as part of the Canadian Arctic Expedition (CAE), the largest ever scientific mission to the Arctic with scientists and crew members from many countries [4, Hanrahan M.]. The Canadian government’s first foray into the Western Arctic¹¹, the CAE aimed to advance Canadian sovereignty in the region, as such sovereignty had been established in the Eastern Arctic. Canadian Prime Minister Robert Borden spoke of “protecting these northern lands and having the British flag

¹¹ Gray D., Gray S. Canadian Arctic Expedition 1913–1918: Commemorating the 100th Anniversary’, Canadian Arctic Expedition 1913–1918. 2013: URL: <http://canadianarcticexpedition.com/> (accessed 20 February 2020).

fly over them” before the U.S. could stake its claims [27, Smith G., p. 146]. Canada’s Minister of Naval Service gave Stefansson, the CAE leader, “authority to take possession of and annex to His Majesty’s Dominions any lands lying to the north of Canadian territory which are not within the jurisdiction of any civilized Power” [27, Smith G., pp. 175-176]. In terms of science, the CAE was successful but just a few months into the expedition, the *Karluk* carrying the Northern Party became jammed in ice, drifted, and eventually sank. The *Karluk*’s captain, Robert Abram Bartlett, and a young Inupiat hunter from Alaska, Claude Kataktovik, made for the Siberian coast, leaving the survivors on Wrangel Island, where they eked out an existence for almost six months. Not all of them survived. Bjarne Mamen, a 22-year-old topographer from Norway, died in late May 1914, writing in his diary: “My body looks horrible. It has swollen up now so that I am frightened about myself. Is it death for all of us?” and “I for my part cannot stand it staying here.”¹² Geologist George Malloch died a few days after Mamen [28, Bartlett R., p. 278] and firefighter George Breddy was mysteriously found dead in his tent followed an argument over dwindling rations [29, McKinley, p. 136; 30, Hadley J., p. 720]. Kataktovik, who later reached Siberia with Bartlett, had shouted “*Nuna! Nuna!*” (land) when the CAE survivors first spotted Wrangel Island after the *Karluk* sank [29, McKinley., p. 119]. He and Mamen had cheered when they discovered driftwood on the island’s Icy Spit [29, McKinley., p. 119]. But when rescue came in September 1914 the survivors were on the point of despair, defeated by the vagaries of Wrangel Island and terrified at the prospect of a second winter there. As McKinley wrote decades after the rescue, “I have never ceased thanking Him [God] for bringing me through the experience of the *Karluk* and Wrangel Island. I believe it was my faith in God that maintained me...” [29, p. 202].

Remarkably, one of the *Karluk* survivors, firefighter Fred Maurer, would return to Wrangel Island in 1921 for Stefansson and then die, aged 28, trekking to Siberia. For some, Wrangel Island had a sort of indescribable pull. Some of the first non-Indigenous people to stand on Wrangel Island were British seamen looking for the lost Franklin Expedition in 1849. The island existed in the colonial imagination since 1824 when the Russian explorer Ferdinand Von Wrangel, for whom the land was named, noted that the Chukchi knew of land north of the Chukchi Peninsula. Whalers occasionally visited Wrangel Island and, in 1881, the US revenue cutter *Corwin* and the USS *Rodgers* landed parties there [26, Bockstoce J., p. 138]. In 1916, Tsar Nicholas II claimed Wrangel Island and other Arctic lands for Russia [25, Lakhtine W., p. 708], two years after the *Karluk* survivors had raised the Canadian Red Ensign, reasoning that their desperate presence validated a British and Canadian claim.

Stefansson sold his presumed rights to Wrangel Island to American reindeer herd owner Carl Lomen, making the island an object of commerce. Russia halted Lomen’s attempt to colonize the island, using 12 Inuit from Port Hope, Alaska who were deported to China but not before two of their children had died [26, Bockstoce J., p. 139]. No one should have been surprised by the Soviet Union’s reaction to capitalist incursions [27, Smith G., p. 292]. Even scientists from the west, incl. the

¹² Mamen B. Diary of Bjarne Mamen, 1913-1914. Unpublished, Ottawa, Library and Archives Canada.

Danish-Greenlandic Knud Rasmussen, were not welcome on Wrangel [26, Bockstoce J., p. 140]. The USSR was stymied in its own colonization efforts, however. These began in 1926 with the settlement of 55 Yupik to trade in furs but, in 1927 and 1928, supply ships could not land; again, the island spurned human being. This practice continued. In 1931, the relief ship *Chukotka* was sunk by ice; 1932 and 1933 also saw failed efforts due to, again, the impenetrable ice surrounding Wrangel Island [26, Bockstoce J., pp. 131–140]. Wrangel Island used ice as a shield against human incursions. From a Mi'Kmaq perspective, this merits respect which, in turn, demands adherence.

The human history of Wrangel Island is marked by catastrophe. The last great human tragedy on Wrangel Island ended in 1934, brought about by human flaws. The Russian-sponsored Yupik who came to the island in the 1920s were, at first, successful with their hunting, trapping, and fishing. But in 1934, the station manager, Konstantin Semenchuk, would not allow them to hunt walrus, an important source of protein and a meat of cultural importance, in the fall; subsequently, they were forced to eat their dogs. The USSR tried Semenchuk and his accomplices and executed them, but one-third of the Yupik starved to death [26, Bockstoce J., p. 140].

What does Wrangel Island tell us? What do the political, geographical, and cultural aspects of its ongoing story mean? Viewed through a Mi'Kmaq lens, the island emerges as an active actant engaged in resistance. Firmly attached to its own solitariness, it resists being part of any larger entity, such as an aquapelago or any other assemblage. It dwarfs nearby Herald Island in terms of its size and its fecundity, its promise. But when human beings try to push through the ice surrounding it, Wrangel Island uses drastic means to repel ships, people, and anthropocenic activity. Today only scientists visit, on occasion; no human collectivity has ever gained more than a slippery grip on the island. In this way, Wrangel Island urges human beings to simply leave it alone, a sentiment that Mi'Kmaq can understand. There are places that Mi'Kmaq leave alone or tread carefully; such places are seen as more than *Inu'k* but as mirrors of the sacred. In this way, Wrangel Island represents many other islands and places across the world and echoes their wishes. The tragedy is that climate change, mainly unchecked, may finally overcome Wrangel Island's longstanding resistance, and cause the island the harm which it seeks to avoid.

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REVIEWS AND REPORTS

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The New Book “Nature and Indigenous Peoples of the Arctic under the Influence of Climate Change and Industrial Development: the Murmansk Oblast” *

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Abstract. In 2020, a book, edited by E.A. Borovichov and N.V. Vronsky, “Nature and the indigenous population of the Arctic under the influence of climate change and industrial development: the Murmansk Oblast” was published by the Graphite Publishing House. The book provides a comprehensive assessment of the effects of modern climate dynamics and human impact on biota, the environment and nature management in the Murmansk Oblast, one of the most industrially developed regions of the Russian Arctic, with particular attention to changes in the life of the indigenous people of the area — the Sami. The approaches to the development of a regional climate change adaptation strategy based on scenarios of the development of the Murmansk Oblast and considering the traditional knowledge of the indigenous population, as well as the socio-cultural development strategy of Lovozero, the compact residence area for the Kola Sami, are presented.

Keywords: *consequences of climate change, Murmansk Oblast, Arctic, zones of intensive nature management, Sami.*

Who does not speak about the problems of the Arctic today! Especially in the context of global climate change and the growing influence of technogenic factors on the environment and people. However, just talking about it is not enough; it is important to do something. The authors of the new book “The Nature and Indigenous Peoples of the Arctic under the Influence of Climate Change and Industrial Development: Murmansk Region” have truly created something remarkable — from a scientific, practical, and even cultural-aesthetic point of view. The monograph not only contains a large amount of well-processed and well-presented data to the reader about the natural, social and economic characteristics of the Murmansk Oblast, which was chosen as the leading platform for the Arctic research of the authors but also allowed the reader to think about what he can do for the development of the Arctic.

Even though the eight chapters that make up the book seem different at first glance, they are all closely intertwined. In any of them, you can find references to other parts of the monograph (possibly even involuntary). It makes the book whole and allows the reader to delve deeper into the world of the changing Murmansk Oblast.

One of the advantages of the book is its interdisciplinarity. In the case of the monograph under discussion, this is not just a modern trend, but a phenomenon that is undoubtedly useful for

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science. The problems of climate change and the growing industrialization of the Arctic are discussed at the beginning of the book. It vividly reflected in the following chapters, where the authors talk about vegetation, water resources and the indigenous population of the Murmansk Oblast, but do not just talk, but explain what happened to them in light of global transformations on our planet, incl. a separate corner of the Russian Arctic.

Also, the book is useful for a simple acquaintance with the Murmansk Oblast and all its features. Therefore, the publication will be especially useful for those who live in other regions of Russia and the world and have a poor idea of the Kola North. But even for locals and readers who are well acquainted with the Murmansk Oblast, the monograph contains a lot of useful and new information. E.g., you will find out how many new plant species brought about the development of the region at the beginning of the 20th century, what kind of plants they are, and whether you can meet them while walking in one of the cities of the region. You will learn what types of fishing are relevant for the indigenous people of the modern Murmansk Oblast, why they changed over time, and where to go to see at least a couple of examples from modern life.

The book is beautifully illustrated. It primarily relates to chapters devoted to the description of nature. The diagrams and graphs used to explain complex processes are understandable to a wide range of readers.

At the end of the book, immediately after the list of sources, you can see Appendix 1. It describes the main ideas (regarding relevant international documents) on the interaction of official authorities, representatives of indigenous peoples and society in connection with climate and human-induced changes around the world and the North of Russia.

Summing up, I would like to note that, even having read some of the data presented in the book "Nature and Indigenous Peoples of the Arctic under the Influence of Climate Change and Industrial Development: Murmansk Oblast", readers will understand better how our northern nature functions, which indigenous peoples live there, and how prepared are they for the various scenarios of planetary change.

The electronic version of the book is available on the IPPES KSC RAS website: http://inep.ksc.ru/documents/Book_screen.pdf

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Overview of Arctic Policies and Strategies*

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Abstract. The scientific report *Arctic Policies and Strategies — Analysis, Synthesis and Trends* delivers a holistic analysis of the policies, strategies, and declarations of relevant Arctic stakeholders, and new / emerging trends of Arctic governance and geopolitics at the 2020s. The analysis, using quantitative and qualitative methods, is based on a coding of the text of 56 policy documents (in 1996–2019). It considers how different Arctic actors address issues around the following indicators: human dimension, governance, international cooperation, environmental protection, pollution, climate change, security, safety, economy, tourism, infrastructure, and science & education. The study shows that the most-coded quotes of Arctic States' policy documents relate to Governance, Economy, International Cooperation, Human Dimension, and Environmental Protection included Pollution and Climate Change. Those of Indigenous Peoples Organizations explicitly address issues surrounding Indigenous rights, Governance and 'Traditional knowledge.' The most-quoted indicators of Observer states are Science & Education, International Cooperation and Economy. The overall trends of Arctic governance and geopolitics are: i) Ambivalence of Arctic development, incl. 'political inability,' whenever a balance is sought between environmental protection and economy; ii) The domination of states within the Arctic territory due to geopolitical stability and sovereignty vis-à-vis globalization; iii) Focus on science for problem-solving due to climate change; iv) Close interrelationship between the Arctic and Space (digital security, meteorology) due to globalization and rapidly advancing climate change in the Arctic.

Keywords: *policy & strategy, Arctic, state, indigenous people's organization, analysis, trend.*

Introduction

The first comparative studies and analysis of Arctic strategies were published at the early-2010s: Discussion how cooperation and conflict appear in the Arctic strategies of the five Arctic Ocean littoral states [1, Brosnan J.G., Leschine T.M., Miles E.L.], and the first comprehensive inventory and comparative study on the national policies and strategies of the eight Arctic states, as well as the European Union [2, Heininen L.]. These studies belong to the first focus — inspired by intergovernmental cooperation, governance and institutions, geopolitics, the resource potential — of existing social sciences literature on the Arctic. The second focus is covered by multidisciplinary studies on global-related issues and the globalized Arctic as a part of global dynamics in the environmental, societal, political, and economic spheres (e.g., *Globalization and the Circumpolar North* 2010; *Governing Arctic Change: Global Perspectives* 2016) [3, Heininen L., Southcott C.].

Though there are a couple of brief overviews on the priorities of the strategies of the Arctic Council (AC) Observer states, there have been no in-depth analyses of the national strategies and policies of the Arctic states and the Observer States (as non-Arctic countries). Neither studies and analyses on policies of Arctic Indigenous peoples organizations (as Arctic Council Permanent Participants) and declarations of their conferences, nor the AC Ministerial meeting declarations, nor con-

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nections between national strategies and AC chairmanship programs of the Arctic states between the national strategies and. These various gaps in research related to Arctic governance and politics were seen an opportunity for the Arctic Futures Initiative, a new-generation research project coordinated by International Institute for Applied Systems Analysis (IIASA). Its main aims were to provide a holistic and systematic study & analysis of existing policies and practices, and deliver decision support with options that balance environmental protection, economic prosperity & societal well-being for the rapidly changing Arctic, as well as support public & private policymaking in both Arctic states, among residents & civil societies, and in non-Arctic countries.

The Analysis and Synthesis Reports on Arctic Policies, Strategies & Programs Project (2018–2019) is, and was, the main scientific activity of AFI. As its flagship project it was a comparative, deep, systematic study and analysis of existing policies of the Member States, Observers, Permanent Participants of the Arctic Council (AC), and AC documents, i.e. their priorities and how they are been implemented, as well as Arctic Parliamentarians' declarations, programs of major Arctic forums (e.g. Arctic Circle Assembly). The expectation was to understand first, how perceptions of the Arctic have changed; second, how different actors behave, and define, address, prioritize issues around relevant factors; third, identify the common / shared interests, and dynamics of the interplay, of stakeholders, and how their behaving impacts the Arctic region and the entire globe; and third, based on that determine policy consistency, identify new / emerging trends, and discuss them with narratives and perceptions of Arctic governance & geopolitics. In the background is, first, social relevance of science, and to implement the interplay between science, politics and business.

As the Arctic Futures Initiative was terminated (by the IIASA Directorate) in summer 2019, only the first phase of the aimed project, *Arctic Policies & Strategies – Analysis, Synthesis, and Trends* was managed to be completed. This scientific report was carried out by Prof. Lassi Heininen, Dr. Karen Everett, Dr. Barbora Padrtova and Dr. Anni Reissell. It was co-funded by IIASA and Ministry for Foreign Affairs of Finland and supported by Arctic Circle and INAR at University of Helsinki.

Methods

As the primary references 56 policy documents – national policies / strategies, chairmanship programs, declarations – covering the years 1998-2019 were coded and analyzed. They come from the following categories of actors: Arctic States, Permanent Participants of the Arctic Council, Arctic Council Observer States, and AC Chairmanship programs & Ministerial declarations. This large number of different source materials have never analyzed before.

In the beginning, relevant variables were selected as indicators (and sub-indicators), altogether the following 14 indicators: (Re)defining & (Re)mapping, Human dimension, Governance, International cooperation & treaties, Environmental protection, Pollution, Climate change (these three together also consisted of a super-indicator), Security, Safety & SAR, Economy, Tourism, Infrastructure, Science & education, and Implementation. Then the texts of all these documents were coded according to the indicators (except (Re)defining & (Re)mapping and Implementation) as a quantita-

tive method. Current policy of each actor was analyzed (using applied system analysis), compared and searched for similarities & differences (striking, relevant, fragmentation), and priorities based on explicit, as a qualitative method. Then policies with priorities of the actors in each category compared and discussed with each other. Finally, based on all this, combining quantitative and qualitative methods, new / emerging trends were identified, formalized, and briefly discussed in the context of existing narratives, perceptions, and discourses.

Outcomes & Results of the analysis

There are the following relevant and interesting findings of the recent policy documents (adopted in 2009–2013) of the **Arctic States**. They all use the term ‘Arctic’, fragmentation in describing the region, global perspective explicitly in half. As overarching official priorities: Economy / economic development, Environmental protection, International cooperation, Security / Stability — among most-quoted indicators are Governance, Environmental Protection (incl. Pollution and Climate change), Economy, International cooperation, Human Dimension.

The fact that governance and international Arctic cooperation, as well as international treaties (e.g., for maritime safety), are emphasized by all can be interpreted to mean political support for current geopolitical stability and Arctic Council work. At the same time, security per se is fragmented, as ‘hard security’ is emphasized by Canada, Iceland, and USA, and ‘comprehensive security’ by Canada and Finland.

Economic activities and trade are explicitly emphasized, although fields are fragmented, and transportation & shipping, mining and tourism as priorities are striking. Private sector explicitly mentioned by all, and government and public sector are depicted as the most important. Human dimension is with good number of quotes, though not among official priorities. A striking similarity is that Climate change is defined as the major research driver when Pollution rarely mentioned. Although research is emphasized, education is neglected and mostly as attainment for economic reasons. Finally, implementation is explicitly mentioned and planned by all, except Canada.

The policy documents of Arctic Indigenous peoples’ organizations, as **Permanent Participants** of the Arctic Council, are fragmented, as they do not cover all the indicator fields in full detail, as they come from different directions. *Arctic Athabaskan Council’s Arctic Policy* (2017) sets out nine principles of partnership of a new Shared Arctic Leadership Model to provide advice on two important topics: first, “New ambitious conservation goals for the Arctic in the context of sustainable development”, and second, “The social and economic priorities of Arctic leaders and Indigenous peoples living in remote Arctic communities”. The policy priorities of *Inuit Arctic Policy* (2010), supported by the Inuit Circumpolar Council 2018 Declaration, are first, health & well-being of the Inuit, in particular their children, and environmental protection; second, governance of their homeland, *Inuit Nunaat* meaning the rights of Inuit to their self-government; third, being active in international cooperation, and being supported by international agreements and organizations (e.g. UNs, AC). Those of the *Sami Arctic Strategy* (2019) are first, “Acting as a robust and reliable partner on Arctic Sami issues”; second, “Ensuring Right to choose”; third, “Addressing climate change and environ-

mental protection”; fourth, “Deploying Sami Indigenous knowledge and science...; and finally, the Saami Council as a partner in policy- and decision-making on Arctic issues.

There is a striking similarity that all policy documents explicitly address issues broadly surrounding Indigenous — individual and collective — rights, although in different contexts on the one hand, and on the other hand, those of governance — both broadly and in detail —, as well as the importance of international cooperation. The importance of the International cooperation and treaties is much highlighted for Indigenous rights and self-governing. Unsurprisingly, all the documents emphasize the rights of Arctic Indigenous peoples to use and utilize the resources of their homelands, as well as the importance of ‘Traditional knowledge’. Unlike, the indicators of Environmental protection, Pollution and Climate change not explicitly covered by all documents, instead the Saami Strategy has critical comments on *the Green colonialism*. Scientific findings are seen to be produced and developed further in partnership, as the Gwich’in Report states. All in all, there is an impression that these are nations, who are proud, consciousness, and know what to want and how to accomplish that.

Among the **Observer States** of the Arctic Council there are France, Germany, Italy, Japan, Netherlands, PRC, ROK, Spain and UK, who have adopted an Arctic policy or strategy (UK has updated its policy, or ‘framework’, the documents of Netherlands and Spain national strategies for the both polar regions). India, Poland, and Switzerland are in a process. As the European Union, though it has adopted a few Arctic policies, is not a permanent observer it was excluded the analysis.

One of the relevant and interesting findings of these nine policies / strategies, which are more current documents (adopted in 2013-2018), is that they all use the term ‘Arctic’ indicating a wish to become Arctic ‘stakeholders’, and though there is fragmentation to include or exclude self-identification toward the Arctic, France, PRC and UK do so. The most-quoted indicators are Science & Education, Environmental protection (incl. Pollution and Climate change), International cooperation & treaties, and Economy. It is more or less according to the official priorities / policy goals of these states’ national policies: Science & Education, incl. research infrastructure (stations & vessels), formal networks (IASC, UArctic), knowledge-creation (e.g. the Italian *Tavolo Artico* group), is emphasized by Netherlands, ROK and Spain; Environmental protection (incl. Pollution and Climate change) by France, Germany, Italy, PRC and UK; and Economic activities by France, PRC, ROK and UK, e.g., France’s Roadmap includes economic opportunities for French companies & emphasize on environmental challenges. Correspondingly, Security, incl. sovereignty and defense, is among the least-quoted issues, though explicitly mentioned by France, Germany, Japan, PRC, and UK.

Concerning the Arctic Council **chairmanship programs** (in 1996-2019) there is a relevant finding that there are no striking similarities in official priorities, which are focusing on the environment, climate, and AC functions. Based on the coding the focus of the programs is on governance, international cooperation, and human dimension (e.g. health, culture). A bit surprisingly there is no formal or public evaluation processes explicitly mentioned.

What comes to the **declarations** of the Arctic Council Ministerial meetings, they do not include explicit priority statements, and therefore can be determined based on section headings. In general, the prioritized issues are around the main functions of the Council: environmental protection and sustainable development, incl. e.g., biodiversity, balance between environmental protection and economic activities, as scientific community is heard in climate action. Also, health, governance & international cooperation are explicitly mentioned.

As a summary according to the coding of the policy documents the lists of priorities of the Arctic States, the PPs (Indigenous Peoples), and the Observer States are the following:

Arctic States: Governance; Environmental protection, included Pollution and Climate change; Economic activities; International cooperation; Human dimension;

Permanent Participants: Indigenous rights, reflecting Human dimension and Governance; International cooperation; Right to use resources; Traditional / Indigenous knowledge;

Observer States: Science & education; International cooperation; Environmental protection, included Pollution and Climate change; Economic activities.

New and emerging trends

Based on the analysis of the Arctic policies / strategies of Arctic States, Permanent Participants, Observer States, and their priorities lists of new and emerging trends of Arctic governance and geopolitics of the five categories are the following.

Arctic States: State domination, Ambivalence of Arctic development, Focus on science, and Political inability;

Permanent Participants: International treaties on Indigenous rights, Indigenous rights to self-determination and self-government, and focus on science;

Observer States: Arctic stakeholders, Global Arctic, Ambivalence of Arctic development, and Focus on science.

It is needed to note that these are new and/or emerging trends, not current ones. E.g., the high geopolitical stability of the Arctic as the current state of the region (e.g. Heininen 2018) is not included, as it is not a new trend.

Finally, based on these lists there is one more list, new and emerging overall trends. The new and emerging overall trends are the following:

First, an ambivalence of Arctic development, as a balance is being sought between environmental protection & climate change mitigation, and new economic activities ('Political inability');

Second, state domination supported by geopolitical stability & sovereignty vis-à-vis globalization based on international treaties, UNCLOS & maritime law, and UN declarations esp. regarding Indigenous rights & self-determination;

Third, focus on science, as to lean on scientific research & international cooperation in science, for problem-solving (due to the pressure of the rapidly advanced climate change & the Arctic development paradox); and

Fourth, new interrelationship between the Arctic and Space (digital security, meteorology, WMO) due to climate change, globalization, the global economy.

Conclusions

As critical comments to conclude this overview is that the most-quoted indicators accord with the official priorities / policy goals of the states' and Indigenous peoples organizations' policies. Climate change, as a threat multiplier, is the driver and a uniting and merging factor. There are relevant interrelations between the new overall trends and major narratives, such as Ambivalence vis-à-vis Race for resources / State domination vis-à-vis Geopolitical stability & State controlled development / Focus on science vis-à-vis Climate ethics / Arctic & Space vis-à-vis 'Global Arctic'.

In spite of the focus on science — mostly meaning natural sciences and technology, less so social sciences, as well as scientific and Indigenous knowledge to lean on in tackling climate change, which requires international and global action, there is hesitation and 'political inability' to act. An ability and ethics, based on the tradition of Enlightenment, are however, needed to overcome the ambivalence and find a balance (between economic activities & environmental protection bound with stability), stop the hesitation, move into action and explore practical solutions for solving the wicked problems — governments need an assistance in this.

In maintaining the achieved constructive cooperation and high geopolitical stability, which seems to be resilient, would support the Arctic becoming a 'Best practice' for stability-building in world politics. And this could be a foundation for 'political ability' to make 'paradigm shift' in mind-set as a precondition for problem solving.

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