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THE RUSSIAN ARCTIC: POTENTIAL FOR INTERNATIONAL COOPERATION

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The report continues work held in line with the “Roadmap for International Cooperation in the Arctic” project organized by the Russian International Affairs Council (RIAC). The report looks into the network of circumpolar territories including new industrial regions on the Arctic continental shelf, analyses key goals of educational cooperation and identifies opportunities for international collaboration among small and medium-sized businesses in the Arctic. Authors present their vision for strategic governance in the Russian Arctic and inter-municipal cooperation in the coastal zone of the Russian Federation.

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Introduction

International cooperation in the Arctic has been the subject of numerous works in recent years. Even though the extent of such cooperation is relatively small, scientists in and outside Russia have shown a keen interest in this phenomenon. The main reason for this is the unprecedented rate of its development: only 25 years ago there was no question of any cooperation between the Russian Arctic territories and those of other Arctic countries.

Among the topics that engage scientists studying international cooperation in the Arctic are above all the general aspects of interstate cooperation, notably within the Arctic Council, the Standing Committee of Parliamentarians of the Arctic Region and the Northern Forum, which ensure Arctic navigation along the Northern Sea Route. These issues are addressed in presentations, articles and monographs by A.V. Vasilyev, Y.F. Lukin, G.D. Oleinik, V.I. Smorchkova, O.R. Young and other Russian and foreign experts¹.

During Soviet times, practically the only topic approached through international cooperation in the Arctic was how to protect its fragile natural environment. This topic still looms large today, with the addition of climate change issues, as Russian and foreign scientists study the impact of climate change in the Arctic on circumpolar cooperation. We are referring to the works of A.V. Zagorsky, M.L. Lagutina, A.V. Fedotovskikh, N.K. Kharlampiyeva, W. Ostreng, M. Tennberg and others.²

A separate block of studies is naturally devoted to cooperation among the polar states in the management of natural resources and in implementing on-shore and off-shore Arctic mega-projects. The most notable works in this area come from

¹ Arctic Region: Problems of International Cooperation. Anthology: in three volumes / Russian International Affairs Council. Moscow, Aspekt Press, 2013. Vasilyev, A.V. "The Arctic: A New Development Vector // *Arktika. Ekologia i Ekonomika*, 2011. No 1, pp. 20–25 (in Russian). Zuyevskaya, A.P. International Relations in the Arctic Region: Marine Activities of the Coastal Regions of the Russian Federation // *Development of the North and the Arctic: Problems and Prospects: Proceedings of the Interregional Scientific-Practical Conference*, Apatity, November 14–16, 2012, Apatity, 2012 (in Russian). Lukin, Yu.F. Arctic Solidarity // *Vestnik Severnogo (Arkticheskogo) Federalnogo Universiteta. Social Sciences and Humanities Series*. 2010. No. 4, pp. 7–14 (in Russian). Oleinik, G.D. International Economic Cooperation in the North Must Be Actively Developed. URL: <http://www.council.gov.ru/media/files/41d44f2433e3c8cd295a.pdf#page=51> (in Russian). Smorchkova, V.I. The Arctic: Region of Peace and Global Cooperation: Institutional Prerequisites of Sustainable Development. Moscow, Russian Civil Service Academy Publishing House, 2003 (in Russian). Young O.R. The Structure of Arctic Cooperation: Solving Problems/Seizing Opportunities. 2000. URL: http://www.arcticparl.org/files/images/conf4_sac.pdf. Young O.R. Governing the Arctic: From Cold War Theater to Mosaic of Cooperation // *Global Governance: A Review of Multilateralism and International Organizations*. 2005, January/March. Vol. 11. No. 1, pp. 9–15. Young O.R. Whither the Arctic? Conflict or Cooperation in the Circumpolar North. Polar Record, Cambridge University Press, 2009.

² Kharlampiyeva, N.K., Lagutina, M.L. International Cooperation in the Arctic: The Environmental-Political Aspect // *Society. Environment. Development (Terra Humana)*. 2010. No. 3, pp. 212–217 (in Russian). Fedotovskikh, A.V. Economic Modeling of the Consequences of Climate Change in the Russian Arctic Zone // *The State of Arctic Seas and Territories in Conditions of Climate Change: Collection of Summaries of Presentations at the All-Russian Conference with International Participation / Compiled by S.V. Ryabchenko; Lomonosov Northern (Arctic) Federal University. Arkhangelsk*, 2014 (in Russian). Østreng W. National Security and International Environmental Cooperation in the Arctic: The Case of the Northern Sea Route. Kluwer Academic Publications, 1999. Tennberg M. Arctic Environmental Cooperation: A Study in Governmentality. Aldershot, 2000. Vylegzhanin, A.N. et al. International Cooperation in the Field of Environmental Protection, Preservation and Rational Management of the Arctic Ocean Biological Resources: International Scientific Symposium Proceedings (Moscow, September 4, 2012, RIAC): Working Paper / Russian International Affairs Council. Moscow, Spetskizdat, 2012 (in Russian).

scientists at the Kola Science Centre: V.V. Vasilyev, V.V. Denisov, G.G. Matishov, F.D. Larichkin, V.S. Selin and others (mainly from Moscow and St Petersburg).³

Geopolitical and geo-economic issues regarding international cooperation in the Arctic are regularly raised in the works of V.B. Mitko, A.A. Sergunin, N.A. Rubtsova and others, although they remain relatively rare.⁴ Some publications analyse examples of international cooperation between individual research organisations, civil society structures and associations of the small indigenous peoples of the North.⁵ One particularly experienced organisation is the Russian Association of Indigenous Peoples of the North (RAIPON), which operates in all the six Arctic Council working groups: the Arctic Contaminants Action Programme, the Arctic Monitoring and Assessment Programme, Conservation of Arctic Flora and Fauna, Emergency Prevention, Preparedness and Response, Protection of the Arctic Marine Environment and the Sustainable Development Working Group.⁶ Some authors (for example, E.P. Bashmakova, V.V. Didyk et al) look into aspects of interaction of the Russian Arctic regions with the Arctic territories of other countries.

This report is devoted to the less well-studied (exploratory) aspects of international cooperation among entrepreneurs (firms) and corporate structures, universities, and municipalities (Arctic cities and regions). The focus on the *economic* aspect of international cooperation that characterises this report is fully in line with recent Arctic Council decisions, notably the establishment of the Arctic Economic Council on September 3, 2014. The Council is called upon to contribute to the economic and social development of the Arctic, present the position of the local business community to Arctic Council members, and work in close cooperation with entrepreneurs in the Arctic regions and countries.⁷

International economic cooperation in the Russian Arctic today is concentrated in three areas: 1) cooperation among Arctic entrepreneurs and their associations, chambers of commerce and industry (the topic of international cooperation among small and medium-sized businesses in the Arctic has not, unfortunately, been

³ Bogoyavlensky, V.I. The Current State and Prospect of the Development of Oil and Gas Resources in the Circumpolar Region // The Arctic Region: Problems of International Cooperation. Anthology: in 3 volumes. Vol. 2 / Russian International Affairs Council. Moscow: Aspekt Press, 2013, pp. 72–109 (in Russian). Yevstigneyeva, A. Russian–Norwegian Cooperation in Developing the Russian Arctic Resources. URL: http://www.observer.materik.ru/observer/N11_2008/051_061.pdf (in Russian). Yeremin, N.A. Kondratyuk, A.T. Yeremin, A.N. Russian Arctic Offshore Oil and Gas Resource Base // Georesources. Geoenergy. Geopolitics (Electronic Scientific Journal). 2009. No. 3 (in Russian). Rudakov, M.N. Shegelman, I.R. The Arctic Natural Resources and Finland's Economic Interests. URL: http://www.ivdon.ru/uploads/article/pdf/IVD_42_rudakov.pdf (in Russian). Selin, V.S. Vasilyev, V.V. Interaction of Global, National and Regional Economic Interests in Developing the North and the Arctic. Apatity: G.P. Luzin Institute of Economic Problems of the Russian Academy of Sciences, 2010 (in Russian). Fadeyev, A.M. Larichkin, F.D. Effective International Cooperation in Industrial Support of Offshore Arctic Projects // Transfer Inovacii. 2012. No. 23. URL: <http://www.sjf.tuke.sk/transferinovacii/pages/archiv/transfer/23-2012/pdf/013-018.pdf> (in Russian).

⁴ Mitko, V.B. The Evolution of Geopolitical Factors That Determine the Russian Mission in the Arctic. URL: http://www.arcticas.ru/docs/Kongress_tisyacheletie2010_tom1.pdf#page=3 (in Russian). Rubtsova, N.A. The Barents Region in the Context of Globalization and Rationalization // Vestnik Severnogo (Arkticheskogo) Federalnogo Universiteta. Social Sciences and the Humanities Series. 2009. No. 5, pp. 60–64 (in Russian). Lukin, Yu.F. Arctic Cooling against the Background of Returning to the Cold War Instruments // Vestnik MGTU. 2014. Vol. 17. No. 3. pp. 515–522 (in Russian).

⁵ Ivanova, L.V. International Cooperation of the G.P. Luzin Institute of Economic Problems of the Russian Academy of Sciences, Kola Science Centre // Vestnik Kola Science Centre of the Russian Academy. 2011. No 4, pp. 42–45 (in Russian). Konyshchev, V.N., Sergunin, A.A. International Organizations and Cooperation in the Arctic // Vestnik Mezhdunarodnykh Organizatsiy. 2011. No. 3 (34), pp. 27–36. URL: <http://www.ecsocman.hse.ru/data/2011/09/08/1267443144/4.pdf> (in Russian).

⁶ International Activities. Association of Indigenous Small-Numbered Peoples of the North, Siberia and the Far East of the Russian Federation. URL: <http://raipon.ru/activity/mezhdunarodnaya-deyatelnost.php> (in Russian).

⁷ The Arctic Economic Council is Created. URL: <http://www.vz.ru/news/2014/9/3/703676.html> (in Russian).

covered widely enough in spite of the significant potential for further expansion and intensification); 2) cooperation among the resource corporations of various countries (the report uses the agreements made between Rosneft and foreign partners as examples); 3) international cooperation in creating new industrial regions on the Russian Arctic continental shelf.

The potential new Arctic offshore oil and gas areas differ in terms of their readiness for international cooperation. This report breaks new ground in presenting an economic assessment of the work to support Russia's claims to the areas of the Arctic continental shelf near the Mendeleev and Lomonosov ridges. The authors evaluate the costs and benefits to the country of obtaining millions of square kilometres of sea that is potentially rich in hydrocarbons, and which may in the future become an area of new international cooperation.

Emphasizing the role of knowledge, talent and innovations, we have devoted a separate section to educational cooperation among the Arctic countries and regions. A comparison of two reports on the socioeconomic development of the Arctic (one from 2004 and the other from 2014) commissioned by the Arctic Council attests to the strengthening of the knowledge component in international cooperation in the Arctic. The report analyses cooperation of the Arctic universities as new actors in the economic development of the circumpolar zone and its cities and regions. It also describes the old and new Arctic research centres and looks into the phenomenon of international education migration in the Arctic. New research projects dedicated to the role of diasporas in shaping international research networks have broadened the focus of research on the flow of knowledge in the circumpolar region. Important centres of Russian expatriate Arctic researchers abroad and their work have been analysed using the materials of the International Congress of Arctic Social Sciences held in Prince George, Canada, in May 2014. Information-wise, an instructive example of the Norwegian oil and gas project Snow White on the Northern shelf has been described to highlight the vast differences in the ways that foreign experience and competences have been used at different stages in implementing the project.

For the first time, the issue of restoring the federal structure responsible for developing state Arctic and northern policies has been considered in this report in terms of international cooperation. Russia needs such a structure, notably to adequately represent its Arctic interests in the negotiations with foreign partners. This structure is currently being designed based on Canada's Northern Economic Development Agency and the latest experience of Russia's Goskomsever in conjunction with the creation of the "virtual" Arctic Federal District, which is being modelled in various formats.

The dramatic changes in the international situation that took place in the summer and autumn of 2014 made it imperative for the authors to cover yet another aspect of the topic, i.e. cooperation in the context of the economic sanctions introduced against Russia by the European Union member states, the United States and Canada. Sanctions inevitably cool the process of interstate cooperation and hinder many of the structures and elements already created within its framework. For example, university circumpolar networks, the networks of non-profit partner organisations and civil society institutions, in the new conditions, dampen the shock of otherwise complicated interstate interaction in the Arctic.

In dealing with each area of international circumpolar cooperation and each level thereof (national, regional, municipal, corporate and atomic, i.e. individual households and entrepreneurs), the authors have sought to describe and characterise the structures, institutions and projects that exist and are being created in order to make this phenomenon more visible and tangible. To this end, they have used materials collected from expeditions, interviews conducted in the cities and regions of the Russian Arctic, research papers, publications as well as articles and documents that have been kindly made available by foreign colleagues and internet resources.

Interaction between the Russian Arctic and the countries of the Asia-Pacific Region, including China, and the description of existing and potential actors in such cooperation in Russia and Asia is not covered in the present study. We believe that this multifaceted theme calls for a separate study and possibly a separate RIAC publication.

1. Interregional International Cooperation in the Arctic

1.1. The Circumpolar Regions Network

1.1.1. Arctic Test Range for International Cooperation

In his book *Arctic Politics: Conflict and Cooperation in the Circumpolar North*, published more than 20 years ago, Oran Young predicted that in the 1990s the Arctic would become a test range for new forms of international cooperation.⁸ The past two decades have confirmed Young's prediction. The process of international cooperation in the Arctic region has been gathering pace since the end of the Cold War and the military confrontation that took place between 1989 and 1991 between the Warsaw Pact countries on the one side and NATO on the other.

Against the background of local conflicts and confrontation in the Middle East, Africa and Asia the unprecedented speed and vigour of cooperation in the Arctic during these years provides a positive example and a lesson for humankind. The Arctic regions today have emerged as a test laboratory for international cooperation. Even at times of temporarily heightened international tensions, cooperation continues on many levels between various structures, institutions and physical persons for the sake of diversifying the economies of the Northern territories, making them more innovative and more attractive for investments.⁹

The diversity of economic interactions in the Arctic Region can be reduced to three basic sectors: state, private and traditional. The state sector ensures budget employment and interbudgetary transfers. The traditional sector includes deer herding and the subsistence industries of the indigenous peoples. The private (corporate) sector is mainly represented by major extractive businesses as well as small and medium-sized Arctic enterprises.

Each of these sectors has been involved in international Arctic cooperation. The state and municipal authorities of Russia's Arctic territories have been members of international circumpolar organizations for the exchange of experience and good practices in developing the Arctic through the Conference of Arctic Parliamentarians, the Barents Region cooperative structures, the Northern Forum, the Northern Research Forum and similar bodies. The indigenous peoples of Russia, through the Association of Indigenous Peoples of the North, Siberia and Far East, have been involved in cooperation with indigenous Northern and Arctic organizations abroad. Russian corporations that develop Arctic resources have been engaged in ambitious partnership projects with Norwegian, Finnish and, until recently, US and Canadian companies.

⁸ Young O. *Arctic Politics: Conflict and Cooperation in the Circumpolar North*. Dartmouth College; University Press of New England, 1992.

⁹ Pelyasov, A.N. *International Economic Cooperation of Arctic Countries and Regions // The Russian North: Modernization and Development*. Moscow. Strategic Partnership Centre, 2012. pp. 66–76 (in Russian).

1.1.2. Stages of International Cooperation of the Russian Arctic Regions

The past 20 years of international cooperation of the Russian Arctic regions can be divided into three stages.¹⁰

Stage One (1992–1997) saw the establishment of external contacts in several areas: an increased number of partner regions abroad; a growing number of regional government structures involved in cooperation; early international contacts among the Russian Arctic townships and municipal districts beyond the Arctic Circle.

This period saw the emergence of two types of leaders in Russia's Arctic regions: those that were open to international economic cooperation in the Arctic (on land and within the 200-mile coastal zone) and prepared for broad cooperation with foreign colleagues, and those who eschewed such cooperation. The latter, purporting to defend Russia's geopolitical interests, did all they could to diminish the format and content of international economic cooperation among the Northern territories. The contrast between the two models of leadership was brought into focus when two different teams of leaders adhering to opposite views on international economic ties succeeded each other over ten years in the same region, as happened, for example, in the Chukotka Autonomous Okrug. In spite of all the risks inherent in the first model (the possible penetration of foreign partners into territories and areas of military importance), it yielded new knowledge, experience, competences and technologies for the development of the Russian North.

In the 1990s, during the massive decentralization of economic and political power in Russia, the Northern and Arctic regions were the main initiators of joint projects with foreign partners in the Arctic, originally as part of cross-border cooperation and then on a broader scale. Examples are offered by scientific cooperation between North-Eastern Russia and the state of Alaska in the early 1990s, the three-year Eurasia Foundation Project involving the transfer of the experience of the social and economic development of Alaska to Russia's Northern and Arctic regions in the mid-1990s.

Stage Two (1998–2002) was marked by a deepening of external ties among Russia's Northern regions owing to the adoption of framework regional laws on this type of activity, active work to conclude and assess international contracts financed through regional budgets, and the emergence of early economic results from circumpolar interregional cooperation. This period saw the start of international educational programmes, such as the Russian–Canadian INRIPP Programme (Institutional Building for Northern Russian Indigenous Peoples) in the Yamalo–Nenets and Khanty–Mansi Autonomous Okrugs. In the programme, specialists from the regional and municipal authorities and representatives of non-governmental organizations from Yamal and Yugra studied in Canada. The outcome of the programme was the creation of a regional national corporation of the indigenous Northern communities in the Khanty–Mansi Autonomous Okrug – Yugra.

¹⁰ For the purposes of this report, the term "Russian Arctic" refers to the territory of the Arctic Zone of the Russian Federation determined by Russian Presidential Decree No. 296 "On Land Territories of the Arctic Zone of the Russian Federation" dated May 2, 2014.

Stage Three (from 2002 to the present) has been marked by a broadening scale of international cooperation in many Northern regions and diversification in all the new areas. The following were the imperatives of this period: to reassess the external ties of Russia's Arctic regions in order to ensure their ongoing sustainable development and prepare them for progressive structural change and technological modernization; to optimise these relations to multiply the number of types and firms participating in export activities and the amount of foreign investment; to open up new markets of technological and institutional innovations that could potentially take root on local soil.

Characteristic examples are projects to shorten air routes between Eurasian and North American markets by introducing new polar flight paths (Figure 1), and the international use of space communications to promote civil aviation in Arctic and polar satellite communications.¹¹

It is important to note that the cooperative projects tend to become more and more ambitious. Thus the Canadian–Russian project for trade via the Churchill–Murmansk sea route aims not only to increase the volume of mutual trade, but also to transform the role of trans–Arctic trade within the global trade network.¹²

Another international project – CentrePort – would turn the Canadian city of Winnipeg into a domestic port that is not only a trade hub between the east and west of Canada, but also an international hub for trans–Arctic carriage. Located in the geographical centre of North America, Winnipeg can act as a staging post for the delivery of marine cargoes to Russia and China. Russia, for its part, is planning to invest about \$800 million in the modernization of facilities at Yemelyanovo International Airport in Krasnoyarsk as its Arctic air gateway, and continue to expand intercontinental carriage through the major Arctic seaport of Murmansk.

Thus, in spite of the turbulence in 2014 due to different perceptions by the Arctic countries of the situation in eastern Ukraine and in Crimea, the potential for international cooperation in the Arctic remains promising for further cooperation and the preservation of the trend developed over the past two decades, albeit on a more modest scale.

1.1.3. Analysis of Interregional Cooperation in the Barents Region

The most robust interregional cooperation in recent decades has been seen in the Barents Euro–Arctic Region (Barents Region). This was the result both of natural causes (geographical proximity, close historical links and a prolonged period of partnership going back to Soviet times) and the overall process of the formation of a common European economic space in the second half of the 20th century.

Cooperation in the Barents Region effectively started at the forum of Northern European countries in Calotte in 1967, which became a permanent structure since 1977. The populations of Nordic countries were able to move freely within Northern Europe without mandatory passport control, a common labour market

¹¹ Canada/Russia/Norway: Dialogue and Cooperation in the Arctic. URL: <http://valdaiclub.com/event/27980.html>. The study drew on research and development under the intersectoral targeted Programme "Enhancing the Effectiveness of External Links for Sustainable Development of the Khanty-Mansi Autonomous Ökrug – Yugra for 2007–2010" carried out by the Council for the Study of Productive Forces (SOPS) in 2007 (in Russian).

¹² Lessons for a New Era in Canada–Russia Business Relations.
URL: <http://tigersrealcoal.com/wp-content/uploads/2012/06/Address-by-Tye-Burt.pdf>

emerged and cultural and educational links started to broaden. Russia at the time was involved in the integration processes only as an observer. Cooperation within the future Barents Region got a new impetus in 1987, when Mikhail Gorbachev gave a speech in Murmansk calling for closer regional ties with the neighbouring countries in Northern Europe. The fall of the Berlin Wall in 1989 and the breakup of the Soviet Union in 1991 opened up new opportunities for deeper cooperation between Russia and the organisation.

A new framework for cooperation was gradually emerging. From 1992 onwards, contacts began to increase between the regional authorities in Northern Russia and the Nordic countries of Norway and Finland. Contacts also began to increase between the Saami people of the three countries, as well as between tourist, cultural and sports institutions and telecommunications corporations. Joint Russian–Norwegian and Russian–Finnish enterprises sprang up, individual travelling abroad increased and the number of Russian–Norwegian and Russian–Finnish marriages grew. Cooperation was stimulated by the fact that all three Northern states faced common problems: the danger of radiation pollution on the environment, the state of the atmosphere in the Monchegorsk and Pechenga regions, the prospects of fishing in the Barents Sea, etc. (Table 1). The Kirkenes Declaration that created the Barents Region was signed on January 11, 1993.¹³

The first 15 years of Barents Region cooperation can be described as a period of creation and adjustment of institutional instruments to harmonise interests and shape a strategy for overcoming the barriers to broad social ties and joint ventures in various sectors.

The priorities of international cooperation have changed little since that time. As before they include: 1) the environment; 2) economic cooperation; 3) scientific–technical cooperation; 4) regional infrastructure; 5) the indigenous population; 6) social aspects 7) cross–border cooperation.

The stability of priorities is confirmed by the results of the May–June 2013 survey on the flow of information on Barents Region cooperation (Figure 2).

The results of the survey concerning channels of international cooperation in the Barents Region highlight the special role of interregional projects in economy and investment, energy, environmental protection and adaptation to climate change. Other projects that receive support focus on the development of transport networks, tourism and Northern medicine. As Table 2 shows, international

¹³ The Barents Euro-Arctic Region Cooperation and Visions of the North / The County Administrative Board of Norrbotten.
URL: <http://www.bd.komforb.se/download/18.54d7ab81114cbc561f98000223/Barents+Euro-Arctic+Regionan.pdf>.
Rafaelson, R.A New Regional Approach to International Politics in the Far North // Barents Review, 2010.
URL: <http://www.barents.no/Handlers/fn.ashx?MId1=57&FIId=1740> (in Russian).
Nicol H., Heininen L. Networking the North: Cross Border Connections and the New International Circumpolar Geopolitics // Southern Journal of Canadian Studies, vol. 2, 1. P. 11–26.
URL: <https://www.journals.carleton.ca/sjcs/index.php/journal/article/view/64>.
Heikkinen H. Barents Cooperation Transport and Logistics / Regional Council of Kainuu, February 4, 2014.
URL: http://www.ndptl.org/c/document_library/get_file?folderId=335333&name=DLFE-1736.pdf.
Cooperation in the Northern Area of Europe: Actors and Proposal for Actions / Conference of peripheral maritime regions of Europe, April, 2011.
URL: http://www.crpm.org/pub/docs/322_issue_paper_northern_cooperation-3.pdf.
Hollis S., Ekengren M. Regional Organization Study: Barents Euro-Arctic Region.
URL: http://www.anvil-project.net/wp-content/uploads/2014/01/BEAR_v1.0.pdf.
Wiberg U. Outlook on the Barents Region Cooperation // Informationen zur Raumentwicklung. Heft 8/9.2009. P. 593-597.
URL: http://www.bbsr.bund.de/BBSR/EN/Publications/IzR/2009/Downloads/DL_Wiberg.pdf?__blob=publicationFile&v=2

projects within the Barents Region are pursued more vigorously than those between other Arctic countries (Table 2).

1.1.4. Projects Implemented in the Barents Region Framework

Thirty projects financed by the governments of four countries (Finland, Sweden, Norway and Russia) and the European Union's Technical Assistance Programme (TACIS) were implemented between 1993 and 2006. Their total cost was about 30 million euros and they spanned a wide range of areas, including energy supply, healthcare, environmental protection, nuclear safety, tourism and social security.¹⁴ Most of the projects were carried out in cooperation with Finnish companies. They ranged from large projects costing up to 3 million euros to smaller projects (up to 200,000 euros).¹⁵

Let us consider the projects implemented in different areas.

Environment. In 2001, the European Bank for Reconstruction and Development Board of Directors approved the rules governing the Northern Dimension Environmental Partnership's Support Fund. A series of nuclear safety projects were carried out. The Programme earmarked 1.3 billion euros to address environmental problems in the Northwestern regions of Russia, of which 500 million euros were spent on nuclear waste disposal.¹⁶

Economic cooperation. The first international Barents Region energy-saving project on Russian territory was implemented in the city of Snezhnogorsk. It involved the reconstruction of the city heating system according to European standards. In 2004, district heat supply systems in the Northern part of Murmansk were modernised. Energy efficiency centres were set up in Murmansk and Kirovsk with the support of the Norwegian Group for Energy Efficiency (Oslo). They took part in implementing projects to modernise central heating and power supply systems in public buildings. The Russian–Swedish Council for Support of Small and Medium–Sized Businesses that was established to support the activities of Swedish firms in Murmansk represents the interests of the Swedish Employers Association and the Chamber of Commerce and Industry of the Northern regions. A similar Russian centre was created in the city of Luleå to represent the interests of the Murmansk Oblast in Northern Sweden.

The main projects in terms of tourism were aimed at assessing the demand and expectations of tourists in Lapland (Finland) and Northern Norway. This area of cooperation differs from other areas in that it has a large number of participants, including local travel organizations and regional tourist centres. The problems faced by the tourist sector in the Barents Region are largely concerned with the difficulty of transport access and the irregular (sporadic) character of partnership. These problems are addressed by the BART international cross-border tourism

¹⁴ Zagorsky A.V., Glubokov A.I., Khmeleva E.N. A detailed analysis of examples of international cooperation in the Arctic in the transport and fisheries sectors can be found, for example, in *International Cooperation in the Arctic: Report / Russian International Affairs Council*, Moscow: Spetskniga, 2013 (in Russian).

¹⁵ Pashkovskaya I. The European Union: Development Aid to Russia / Scientific Coordination Council for International Research of the MGIMO University of the Ministry of Foreign Affairs of the Russian Federation. 2006. No. 8. URL: <http://www.mgimo.ru/filesserver/books/ad-13.pdf> (in Russian)

¹⁶ Sellheim N. The Barents Environmental Cooperation. URL: http://www.skemman.is/stream/get/1946/9723/23697/1/Nikolas_Sellheim_FINAL.pdf

project, which is financed by the Kolarctic Cross-Border Cooperation Programme between Russia and the European Union.¹⁷

The BART working zone did not include the whole Barents region, only the county of Troms, the Finnmark Province, Norrbotten County, Lapland and the Murmansk and Arkhangelsk oblasts. The project was managed by the Applied Sciences University in Rovaniemi. Other partners represented institutes in Finnish and Swedish Lapland, Northern Norway and Northwestern Russia. Russian participants included representatives of the Murmansk Oblast, the Ministry of Economic Development, Murmansk State Humanities University, Murmansk State Technical University, Northern (Arctic) Federal University (NArFU), the administration of the city of Monchegorsk, and the Ministry of Youth Affairs, Sports and Tourism of the Arkhangelsk Oblast. The project was implemented over two-and-a-half years, from December 2010 to June 2013. Its long-term goal was to strengthen and promote public-private partnership in the tourist industry in the Barents Region. As part of the project implementation, a step-by-step action plan was developed based on an analysis of the current state of tourism in the region. Seventy-one interviews were conducted with representatives of the local tourist companies.

Finland is the main partner in the cooperation between the Murmansk Oblast and the European Union. Four rounds of funding applications were organised in 2010–2012 as part of the Kolarctic Programme. Finnish partners, including those in border municipalities, took part in 90 per cent of the projects selected.

In previous years representatives of the Murmansk Oblast took part in 46 projects under the Programme. In many cases this was done in collaboration with Finnish partners, including Barents Logistics, the Arctic Expo Centre – Nuclear-Powered Icebreaker Lenin, Public-Private Partnership in Barents Tourism (BART), and Salla Gate: Business and Tourism Partnership. Twin-city relations were established between 12 towns in the Murmansk Oblast and the Northern provinces of Finland.¹⁸

Cross-border cooperation infrastructure. The frequency of cross-border contacts between neighbouring regions often leads to closer international cooperation in the Arctic on other issues.¹⁹ In Europe, cross-border cooperation is a common phenomenon because of the open internal borders within the European Union. In the Barents Region, however, it is complicated by the sparse population and the low density of communications.

The Barents Region countries are working hard to put an infrastructure for international cooperation in place. Cooperation between the Finnish and Russian border authorities may serve as a model of developing border control on the outer boundaries of the European Union and Russia. In 1998–2002, the Ministry of Foreign Affairs of Norway allocated over 18 million Norwegian kroner to

¹⁷ Koskinen M. Cross-Border Cooperation in Barents Tourism: Insights from Finnish Lapland. URL: https://publications.theseus.fi/bitstream/handle/10024/56360/Koskinen_Mira.pdf?sequence=1

¹⁸ Cooperation Format between Murmansk Oblast and the Republic of Finland to Change in 2013 // B-Port News Agency. October 10, 2012. URL: <http://www.b-port.com/officially/item/89619.html> (in Russian).

¹⁹ Christensen S. The Role of Culture in Conflict Prevention. Culture plays an important role in Nordic Cooperation by Building Bridges between Differences / Council for Cultural Cooperation. Culture Committee "Culture and Conflict Prevention". Strasbourg, 2001. URL: [http://www.coe.int/t/dg4/cultureheritage/culture/Completed/Dialogue/CC_CULT_PREV\(2001\)4_Christensen_E.PDF](http://www.coe.int/t/dg4/cultureheritage/culture/Completed/Dialogue/CC_CULT_PREV(2001)4_Christensen_E.PDF)

finance the continued construction and modernization of the Nikel–Prirechny–Borisoglebsk border station. The plan is to build new and upgrade existing railway and road transport corridors (Table 3).

To boost interregional cooperation, the capacity of the west to east road and rail corridors is to be increased and air links are to be established between Barents Region centres (for example, direct Archangelsk–Oulu and Murmansk–Luleå flights).²⁰

The Ministry of Transport and Road Facilities of the Murmansk Oblast is involved in the Barents Freeway project aimed at promoting economic and social development in the Barents Region through the integration of national and regional transport development plans. As part of the reconstruction of the Kandalaksha – Alarurt – Salla border post highway (100–130 km stretches), a 2,228,440 euro contract has been signed between Murmanskavtodor and the Regional Council of Lapland.²¹

Cooperation covers business, energy, healthcare and social welfare, education, emergency response and disaster management, law enforcement, environmental protection, culture and sports. For example, technological innovations in renewable energy sources, mechanical engineering, energy efficiency and utilities will help to commercialise these developments in Russia's western Arctic with due account of Finnish and Swedish experience. The Norwegian practice of creating industrial parks will come in handy in shaping the infrastructure for supporting small and medium-sized enterprises in Russia.²²

The cultural sphere. A complete review of cultural cooperation is practically impossible because of the immense diversity of multilateral, bilateral, twin city/region and other links. In any case, such cooperation in the Barents Region started about 25 years old. Interregional cultural cooperation still hinges on the ability of the regions to find development resources both inside and outside the sector.

Project initiatives from the Arctic partners are in a more favourable position because of the developed structure of support and cooperation by foundations and sponsors. Between 1994 and 1999, some 600 cultural projects received support (not counting links between twin cities and regions). The majority of these projects were in sport (18 per cent), libraries and literature (18 per cent), small local projects (14 per cent) and arts and crafts (9 per cent) (Figure 3).²³

As of today, more than 400 interregional cultural cooperation projects are being implemented in roughly similar proportions, including bilateral exchanges, stage productions, invitations to seminars, etc.²⁴ There is potential for launching multilateral projects, which at present account for about 10 per cent of the total number. The strategy for the development of Barents cultural cooperation for 2014–2018 emphasises the following: the development of networks between

²⁰ Development of the Barents Region Cooperation Discussed in Arkhangelsk // Arkhangelsk Region Government Presscentre. March 17, 2014. URL: <http://www.dvinanews.ru/-d5brjkh7> (in Russian).

²¹ The Cooperation Format between the Murmansk Oblast and the Republic of Finland will Change in 2013 // B-Port news agency. October 10, 2012. URL: <http://www.b-port.com/officialy/item/89619.html> (in Russian).

²² Voronkov L. Geopolitical Dimensions of Transport and Logistics Development in the Barents Euro-Arctic Transport Area (BEATA) // Barents Institute Online Publication, 2010.

²³ Report on the Barents Cultural Cooperation. September, 2001.

URL: <http://www.barentsculture.karelia.ru/eng/site/1080547882/1087813305.html>

²⁴ Estimate by SOPS experts.

professional cultural institutions; cultural diversity; dialogue; the advancement of relations between culture and the creative industries; professional information exchange; and the development of new types of cultural interaction in the framework of the European Neighbourhood Instrument.²⁵

Modern forms of cooperation include annual Days of Finnish Culture in the Murmansk Oblast featuring concerts, festivals, exhibitions, film screenings, master classes and experience exchanges. Cultural cooperation with Norway includes such projects as the Norway–Russia Library and Information Services in Border Territories (NORU), Barents Region Cloudberry Field (subprojects: Children’s Manuscript Book Contest, Summer Literary Camps for Beginning Writers, Vadsø Art Studio) and Joint Performance of the Norwegian National Opera and the Murmansk Region Philharmonic. The Culture and Arts Committee of the Murmansk Region and the Finnmark Province Culture and Sport Department regularly hold joint events.²⁶

1.1.5. Future Interregional Cooperation Projects

The Pomor (Maritime) Zone Project. The idea of creating a Maritime zone was first proposed under the Barents 2020 Programme submitted to the Norwegian government by the ex-President of Statoil Arve Johnsen. The Programme seeks to form a new field of interaction between Norwegian and foreign expert communities, and between business and the authorities. It is a long-term multi-faceted document designed to attract investments into science and the development of the Northern regions. Such a zone could help to promote Russian–Norwegian cooperation in maritime areas with a view to servicing future oil and gas activities in the Barents Sea. The Pomor Zone Project has now been approved by the Norwegian government. It is among the priorities in the development of Northern territories and has a good chance of setting a world-level precedent.²⁷

The Norwegian concept of the Pomor Zone is basically about creating the infrastructure and logistics in the Norway’s Kirkenes region and the Russia’s Murmansk Oblast to support the oil and gas industry in the Barents Region. It would involve industrial companies interested in cooperation with the oil and gas sector in the two countries, the use of natural resources, addressing environmental problems and introducing new technologies. On the Norwegian side, the zone would include two fjords: the port city of Jarfjord at the first stage and the infrastructure of Kirkenes at a later stage. On the Russian side, it would initially include the Pechenga community, the port village of Liinakhamari on the Pechenga Bay, the Murmansk–Nikel railway (to be extended to Ser–Varanger) and the Luostari military airfield that can be used for civilian needs, and at a later stage the cities of Zapolyarny and Nikel.

Initially the Pomor Zone was seen as a possible starting point for the Russian–Norwegian project to develop the Shtokman field. The area has good prospects for steel and aluminium production on the Russian and Norwegian side on the

²⁵ Cultural Cooperation in the Barents Region Strategy 2014–2018.

URL: <http://www.minedu.fi/export/sites/default/OPM/Julkaisut/2014/liitteet/OKM7.pdf?lang=en>

²⁶ International Relations // Kola Encyclopaedia. URL: http://www.ke.culture51.ru/content.php?id=15#soc_gum (in Russian)

²⁷ Regional Opportunities in Creating the Pomor Zone. URL: <http://www.helion-ltd.ru/kirkeness-conf-1-2-2008> (in Russian); PomorZone: Phantom or Development Catalyst? URL: <http://www.nord-news.ru/smi/?art=32706> (in Russian).

basis of the enterprises in the city of Nikel, with the energy to be provided by the hydrocarbons off the Arctic shelf.

The main hopes for the use of offshore hydrocarbons for the Pomor Zone economic development were pinned on the Sevneft project to create an oil and bulk cargo Northern Seaport in Pechenga Bay, and on Gazprom's plans to build a gas liquefaction plant in the village of Vidyayevo. The second stage would expand the close economic cooperation between the two northern countries from Hammerfest to Murmansk. After the Shtokman project was postponed until after 2020, the formation of the Pomor industrial zone slowed down. Progress so far has been confined to a number of tentative agreements between the foreign ministers of the two countries and decisions of the Working Group on Economic Cooperation during the Russian chairmanship. Geographical referencing, however, is becoming a problem (with the two rival development projects of Teriberka and the Murmansk Transport Hub). The zone could straddle the border or be located on the territory of one of the countries. It may also take the shape of a special zone along the coast of Northern Norway and Northwestern Russia.

Of particular interest is the possible role of the Pomor Zone in creating new and efficient uses for existing transport hubs and ports within the global transportation system, intensifying maritime activities and transitioning to a new trajectory through technological, organizational and institutional innovation.

As for determining potential areas for Russian–Norwegian cooperation as part of the Pomor Zone project, in addition to developing offshore oil and gas, extraction operations, transporting and processing hydrocarbons, providing material and technical support and developing marine transport and logistics, the following issues will be addressed: fisheries (aqua- and mariculture, deep processing of water bio-resources); the development of the economy of the sea, related services and production (navigation–hydrographic and information support of sea-faring, hydrometeorology, etc.); new energy, including the introduction of renewable marine energy; mining and metallurgy; railway, road and air transportation; and the promotion of entrepreneurship in the Barents Region.²⁸

International cooperation of Arctic clusters. Traditionally, the Arctic economy is considered to be fairly open to innovation and the flow of knowledge. Therefore, Arctic clusters have the potential for integrative interaction in different forms: the creation of joint structures (research and education centres, chairs, laboratories, collective use centres, student design offices, etc.); targeted training programmes; research and development commissioned by partners; joint research, experimental design and technological work. All this could help to avoid the negative isolationist scenario of the development of clusters without international cooperation. So far, however, the Murmansk clusters strategies pay scant attention to cooperation with foreign Arctic partners.²⁹

²⁸ Kroyalo I.V. Promising Areas of International Cross-Border Arctic Cooperation with the Participation of Russia and the Russian Regions // *The Russian North: Modernization and Development*. Moscow. Strategic Partnership Centre, 2012. pp. 86–92 (in Russian).

²⁹ RTS. Rural Transport Solutions 4.5. URL: <http://www.northernperiphery.eu/en/projects/show&tid=70>. Van der Zwet A., McMaster I., Bachtler J., Gaskell F. Proposal for a Cross-Arctic Regional Collaboration Mechanism (ARC-NET) / University of Strathclyde, Glasgow. URL: <http://www.arcticconnections.eu/files/2014/04/proposal-for-a-cross-arctic-regional-collaboration-mechanism2.pdf>

The example of the Kola chemical technology cluster (Figure 4) shows that international interregional cooperation depends, on the one hand, on the potential of the Kola Science Centre institutions that carry out fundamental and applied research aimed at the all-round use of the Murmansk Oblast's mineral resources and, on the other hand, on the needs of industrial enterprises for modernization, new technologies, increasing added value, cutting energy costs and addressing environmental problems.³⁰

The outcome of international cooperation among Arctic clusters should be the "smart specialization" of the region (Table 4).

Cross-border interaction among regional research institutions and industrial enterprises in introducing new technologies is still limited. The potential of small businesses in international intellectual collaboration with neighbouring Arctic countries is not sufficiently tapped. Innovative infrastructure facilities are being created north of the Arctic circle in Russia (the Monchegorsk Industrial Park, for example) in order to promote international transfer of knowledge with the aim of stimulating small entrepreneurship in the scientific-technical and production spheres.

To intensify international links, measures need to be taken to develop and enhance the effectiveness of continuous professional education, to create conditions for training workers and specialists to the standards of advanced enterprises. It is vital to increase the links between Arctic clusters within the Barents Region. The tandem of the Russian Academy of Sciences Kola Science Centre and the Murmansk State Technical University could spearhead such interaction.

Future interaction between Arctic cities. Interregional cooperation in the Arctic has provided an umbrella for direct links between Arctic cities.³¹ Thus, Kirkenes (Norway) and the neighbouring Russian region of Nikel – Pechenga are to become a united special economic zone (SEZ), the first Russian SEZ involving a neighbouring country.³²

The first agreement between Kirkenes and Nikel was signed during the Cold War era (1973). The closed borders meant that cooperation took the form of sporadic contacts. It was given a boost in the 1990s when an agreement on twin cities was signed. Today, cross-border partnership covers areas such as support for small and medium-sized businesses (a joint business centre has been opened in Nikel), healthcare (establishing direct links between municipal hospitals) and the training of municipal workers. Kirkenes and Nikel have become a laboratory for inter-city cooperation in the Arctic. The phenomenon of twin cities emerged because they face common problems, such as a significant shortage of skilled labour (for example, the discovery of iron ore near Kirkenes makes it imperative to develop a local personnel system).³³

³⁰ Programme of the Development of the Kola Chemical Technology Cluster. Apatity: Kola Science Centre of the Russian Academy of Sciences, 2012.

³¹ Cho L.S., Jull M.G. Urbanized Arctic Landscapes: Critiques and Potentials from a Design Perspective. URL: https://www.gwu.edu/~ieresgwu/assets/docs/Cho&Jull_UrbanizedArcticLandscapes_final.pdf

³² Sergunin, A.A. Twin Cities: New Form of Cross-Border Cooperation in the Baltic Region? // Baltiisky region. 2012. No. 1, pp. 27–38 (in Russian).

³³ Rykhtik M.I., Konyshov V.N., Sergunin A.A. The Arctic: A Zone of Peace and Cooperation. Moscow, RAS Institute of World Economy and International Relations (IMEMO), 2011 (in Russian).

Nikel and Kirkenes are a success story of cooperation between two cities that may develop into a cross-border special economic zone with a common labour market, housing and synchronised work schedules.

What possible areas of international cooperation exist for Russian Arctic cities?

There are three types of cities in the Russian Arctic: 1) major administrative centres with diversified economies and developed science and education structures occupying the middle segment of industrial production and with considerable local budgets; 2) single-industry cities with sizeable volumes of industrial output; 3) economically weak port cities.

Cities of the first type seek to become fully fledged innovative university centres capable of disseminating innovations over large territories. For single-industry cities it is important to attract an inflow of knowledge from abroad, overcome the industrial legacy and make the local social environment and economy more comfortable and diverse. Port cities may do well to seek foreign investors with a view to creating intellectual logistical complexes and comprehensive security centres on the Northern Sea Route, including weather forecasting services. These should be the priorities of the Russian Arctic cities in promoting international links.

1.1.6. Conclusions

Many Russian Arctic regions, even those involved in active international cooperation with other Arctic territories, have not tapped the full economic potential of external links in the shape of foreign direct investment, new jobs, higher budget revenues and real household incomes. Because foreign interregional links are exceedingly important for opening up the economies of Russia's Arctic regions, it is particularly important to interpret these links in the broadest possible way, i.e. not just as foreign trade, but also as the flow of migrants, goods, resources and information considered in their totality.

We have to bear in mind that new development drivers are appearing in Arctic cooperation. These include individual leadership, the creative economy, competition for talent and the development of entrepreneurship, along with family businesses of the indigenous peoples. The indicators of socioeconomic development for regions and cities are being improved: along with the classical ArcticStat database there is a new project called Arctic Social Indicators, which reflects the diversity of present-day Arctic regions and cities.³⁴

³⁴ Sif Guðmundsdóttir O. Arctic Social Indicators. Measuring Change in Human Development in the Arctic. URL: http://www.skemman.is/stream/get/1946/781/2678/1/Arctic_Social_Indicators.pdf

1.2. New Industrial Regions on the Arctic Continental Shelf: Potential Spheres of International Cooperation in the Arctic

The high level of interest in the industrial development of the Arctic, primarily in offshore extractive industries (Figures 5 and 6), makes it necessary to establish common standards and rules of interaction among Arctic states. Arctic industrial cooperation is closely linked with the location of new economic activities. As recently as 30–40 years ago there was little cooperation in developing on-land oil and gas resources. The current stage in the development of Arctic offshore resources is marked by much greater international cooperation.

Harsh climatic conditions are the main impetus for international cooperation in the development and geophysical exploration of most areas of the Russian continental shelf.³⁵ Owing to several factors (environmental risks of offshore extraction and transportation of oil, etc.) Arctic countries have to pool their efforts to streamline industrial development.

1.2.1. International Cooperation in the History of Northern Norway Industrial Development and the Experience of the Snøhvit (Snow White) Arctic Project

The concept of a new industrial region was introduced into scientific literature on regional development 30 years ago. It turned out that the notion of industry being totally replaced in the post-industrial economy by the service sector was one-sided. Numerous facts attested to a kind of revival of industrial production in many regions of the world.

But it was not like the former industrial conveyor belt model that was geared towards the mass production of standardised goods. The unprecedented diversity and fickleness of consumer demand (over and above the basic needs for food, clothing and shelter) due to the rapid growth of real incomes in developed countries after World War II and the dramatically reduced life cycles of goods sounded the death knell of Ford-type factory production. It gave way to flexible and highly fragmented production processes broken up into autonomous stages and similar in nature to pre-industrial and early industrial crafts.³⁶

New industrial regions have been springing up in places other than cities. In countries where extractive industries predominated, a distinct “resource” type of industrial region emerged. A salient example is the development of marine industrial regions in Norway (Figures 7 and 8). Their formation in the Norwegian and North seas and later in the Barents Sea involved the use of various international cooperation techniques.

The example of Norway shows that international cooperation in offshore activities proceeds in waves (Table 5). It is most pronounced at the early stages of development because foreign technologies need to be borrowed and local personnel trained quickly. The next stage sees the replacement of foreign technologies with domestic equivalents. The bulk of components for offshore

³⁵ Sochnev O.Y., Zhukovskaya, E.A. Technical Accessibility of the Russian Continental Shelf for Development in Modern Conditions // *Arktika: Ekologiya i Ekonomika*. 2013. No. 2, pp. 48–61 (in Russian).

³⁶ Marshall, A. *Principles of Economics*. Basingstoke: Palgrave Macmillan, 2013.

projects is provided by local small and medium-sized businesses. As conditions for extraction become more complicated, the need to create new sectors brings international companies back to introduce new technologies and knowhow.

International cooperation has helped Norway to carry out early seismic offshore exploration, which began in 1962. The first exploration well was drilled in 1966. The discovery by US companies of the Ecofiks field (1969) proved the presence of major oil fields on Norway's continental shelf. The latest offshore fields discovered in the 1990s contained a large share of gas and condensate and were more complicated in terms of genesis than the natural fields discovered in the 1960s. This once again prompted the need to use international cooperation technologies.

The first Norwegian Arctic project, Snøhvit (Snow White), is unique because international technologies were used to lay the longest northern underwater pipeline from the field to the shore. This was a landmark project in terms of remote equipment control and transportation of multi-component products over a long distance.³⁷

The advent of foreign investors in the Norwegian Arctic enabled firms located outside Hammerfest to meet their manpower needs by hiring labour from other regions and employees from other major companies.

The early years of international cooperation on Snøhvit gave a boost to the economy of Northern Norway (Figure 9). The sector that supplied goods and services to the offshore regions was burgeoning. Today, it comprises a large number of specialised companies that differ in terms of geographical location, size and type of goods provided.

Receiving an initial impulse from international cooperation, Snøhvit became increasingly Norwegian. To implement the project the local business community set up Petro Arctic, an association of oil and gas industry suppliers. In 2002, changes were introduced in the tax system. The depreciation level for Snøhvit was set at 33.3 per cent for three years, compared with 16.7 per cent under the standard oil taxation system. Geographically, these depreciation rules were limited strictly to the Finnmark province and four municipalities in the north of the Tromsø province.

The Snøhvit project is an example of an oil field development in which international cooperation played a substantial part.

1.2.2. Norwegian Experience of Bringing Small Business into Offshore Projects (Figures 10 and 11)

The potential of international cooperation in the Arctic industrial region includes not only the extraction of oil and gas by big companies, but also the activities of small and medium-sized businesses in outsourcing and marine subcontracting from large corporations. At present, the service sector comprises 814 companies, which in 2012 employed 107,000 people (4 per cent of total employment in Norway). The sector generates 7 per cent of the country's GDP and 39 per cent of its exports. Annual added value has increased by 20 per cent since 2008.

³⁷ Snøhvit Gas Field. URL: <http://www.offshore-technology.com/projects/snohvit-field>

Even at the first stage of offshore development, joint ventures in the service sector were created with an eye to giving Norwegian engineering companies access to state-of-the-art technologies. Norway's experience shows that the procedure of giving foreign companies access to the development of hydrocarbons can be an effective tool for tackling a wide range of technological, economic and social problems.³⁸

At later stages in offshore development the Norwegian company Statoil ASA actively involved local business in large-scale offshore oil and gas projects in Norway. Having assimilated US experience, Norwegian firms have become world leaders in terms of underwater and drilling equipment and floating production, storage and offloading services. Norway came up with unique models of cooperation in the oil and gas industry between partners that formed the Norwegian Oil and Gas Partners Association (INTSOK) and research institutions.

International and foreign partners provided technical support in alliance with Norwegian companies and played the role of catalyst in turning the latter into fully fledged offshore development operators. Joint ventures in the service sectors were created above all to enable Norwegian engineering companies to borrow their technologies.

A similar instance of international cooperation in the transfer of expertise, knowhow and technologies was the creation in 2006 of Murmanshelf, a Russian association of suppliers to the oil and gas industry which today brings together more than 230 enterprises and organizations wishing to take part in offshore Arctic oil and gas projects (Figures 12 and 13). The Association was established in accordance with a Memorandum of Understanding on Technical-Economic Cooperation signed between the government of the Murmansk Oblast and the Norwegian oil and gas company Statoil ASA.

Since its foundation, the Association has held more than 30 international seminars to upgrade the competences of companies that provide supplies to oil and gas industries. Norwegian experts took part in those seminars. In addition to training, the Association offers its members consulting services, provides scientific, technical, economic and legal information and organises the exchange of experience.

All this has enabled many enterprises in the Russian regions (above all medium-sized and small businesses) to change their development strategies and place an emphasis on retrofitting and training personnel. The Norwegian company rendered financial, intellectual and organisational assistance in preparing the regional industry for Arctic offshore development.³⁹

1.2.3. Cooperation between Russian and Norwegian Companies

Another example of active cooperation between Russian companies and foreign partners is the provision of equipment for Prirazlomnaya Marine Ice-Resistant Stationary Platform (MISP). Equipment was delivered by more than 15 companies from 15 countries. According to Norwegian oil and gas experts,

³⁸ Fadeyev A.M. Improvement of Economic Approaches to Managing the Development of Arctic Offshore Hydrocarbon Resources. Apatity. Kola Science Centre Publishing House, 2012 (in Russian).

³⁹ Fadeyev A.M., Larichkin F.D. Effective International Cooperation in Industrial Support of Arctic Offshore Projects // Transfer Inováci. 2012. No. 23, pp. 13–18 (in Russian).

Norway supplied up to 25 per cent of the technological equipment for the platform built at Sevmash shipyard in Murmansk. This included major supplies for the oil loading system by Pusnes Aker (Arendal) and MacGregor Hydramarine AS (Kristiansand); the delivery of a generator by the Norwegian branch of Siemens; fire pumps by Frank Mohn; and cable gaskets, fastening and cable ladders by Oglaend System. Autronica delivered fire and gas detection systems, and Aker MH and Gann Mekaniske provided part of the equipment for the platform drilling complex. Stavanger-based Global Maritime took part in transporting the platform from the Sevmash shipyard to its destination in 2011.⁴⁰

Foreign supplies were essential because Russia lacked experience in designing and manufacturing equipment for Arctic offshore conditions.

1.2.4. Description of New Industrial Regions in the Russian Arctic and Potential for International Cooperation

In accordance with the classical Western tradition, the development of industrial regions depends on the entrepreneurial activities of the local community, and its ability to put a new local organisational model of the flow of knowledge, human resources and technologies. In Russia, the formation of new industrial regions in the Arctic depends on the country's resource specificities. Their local feature is the very fact that they have appeared recently, i.e. in the period of economic openness and large-scale reforms that saw the transition of the national economy from a centrally planned to a social-market system. In order to provide grounds for creating new Arctic industrial regions, Russia is investing heavily in determining the outer boundary of its continental shelf (Table 6).

The boundaries of future offshore industrial regions depend on the quality and reliability of the assessment of the outer boundary of the Russian Arctic shelf. The state, by investing in determining the ownership of the shelf through innovation and geological prospecting, encourages public and scientific discussion of its future industrial use. These efforts are not rendered redundant by the fact that an estimated 90 per cent of hydrocarbon resources are concentrated in territorial waters.⁴¹ Indeed, today a significant proportion of proven resources is located in the territorial waters of Arctic states. But future offshore areas where exploratory expeditions have been carried out over the last 20 years have yet to be the subject of thorough geological prospecting. So we do not yet know exactly what resource potential they have.

New industrial regions in the Russian Arctic tend to be financially dependent on major corporate and federal structures. Additionally, their regional and local authorities have limited opportunities, and many elements of strategic infrastructure need to be built from scratch. Developing these regions will require hi-tech production: 15,000 design engineers to build more than 100 offshore ice-resistant platforms, 230 submarine manifolds and 80 vessels.⁴²

⁴⁰ Pirazloznaya. Norwegian Technologies Used to Equip Artificial Arctic Island.
URL: <http://www.pro-arctic.ru/05/11/2013/technology/5433> (in Russian).

⁴¹ Nikolayev S. The Arctic Shelf: Much Ado about Nothing.
URL: <http://www.louis-dor.ru/2014/09/arkticheskij-shelf-mnogo-shuma-iz-nicheg.html> (in Russian).

⁴² Zolotukhin A.B. Arctic Hydrocarbon Resources: Politics and Technologies.
URL: <http://www.slideshare.net/pmlectures/az-lecture-at-polytechn-museum-ru> (in Russian).

New industrial regions in the Russian Arctic can be divided into those that are *promising* in terms of international cooperation (with the best conditions, work already under way and existing international links) and those that *still have small potential* for such cooperation (Table 7) because of the harsh oceanic, geological and developmental conditions, and the lack of necessary technologies. Geological and geophysical prospecting is currently under way in these regions.

According to Rosneft, the needs of ongoing offshore projects until 2020 will amount to 49 extracting platforms and 203 submarine manifolds worth nearly 2 trillion roubles.⁴³ The Russian defence industries can make a substantial contribution in terms of providing the oil and gas sector with equipment.

The logic of cooperation in the development of offshore industrial regions is determined by the need for powerful international support of Arctic megaprojects at all the stages of their implementation – from design and exploitation and equipment repair to close contact at the expert level.

Foreign companies involved in international cooperation have exhibited a keen interest in the study and exploitation of Russian offshore resources. In this regard, amendments are likely to be introduced to the legislation that will: ensure a broader circle of subsoil resources users, approve the geological study of subsoil resources as an independent type of subsoil resources use, and develop the principles for the geological information market, including its turnover. Success in this area will be contingent on the specific forms of interaction between the state and users of subsoil resources (extractive companies), i.e. licensing, organizing concessions and service contracts, etc.

Cooperation acquires different forms at different stages in the formation of new industrial regions. Thus, at the discovery and exploration stage, the most relevant activities are hearings at the level of working and expert groups, roundtables with would-be project operators, joint assessment of risks, and actions to ensure legislative support of the work's commencement. As production volumes increase and design indicators are achieved and maintained, the forms of cooperation change. The tasks that come to the fore include joint emergency response, coordination of efforts in assessing the project's social and economic effects and the use of new technologies. At the stage of declining production and decommissioning, measures towards joint environmental monitoring assume priority.⁴⁴

Another reason for international cooperation in developing the Russian Arctic shelf is mutual interest in risk insurance. Global practices of certifying technologies and developing programmes of hazardous industrial facilities insurance (which includes practically all offshore oil and gas operations) envisage close interaction between insurance companies and financial, design, construction, industrial, transport and operational organisations at all the stages of project implementation. The need to develop insurance procedures is prompted by the high specific investments in hydrocarbon extraction: while these investments for the sector as a whole amount to 926 roubles for 1,000 cubic metres of gas and

⁴³ Reflections on the Arctic Shelf Map. URL: <http://www.tribuna.ru/news/2012/10/04/19607> (in Russian).

⁴⁴ Lukin A.A., Pavlenko V.I., Bambulyak A.N., Larsen L.-H. Promising Areas in the Development of Russian–Norwegian Arctic Environmental Protection Research // *Arktika: Ekologiya i Ekonomika*. 2012. No. 2 (6), pp. 44–57 (in Russian).

316 roubles for a ton of oil, for the continental shelf the figures are 1,830 and 8,612 roubles respectively.⁴⁵

1.2.5. International Cooperation between Major Corporations on the Arctic Continental Shelf

The pace of offshore Arctic development may be seriously hampered by the decline in international cooperation as a result of sanctions on the supply of equipment for Russian offshore activities. The fact that all the participants in joint offshore projects have Arctic competences has a positive impact on these projects. Companies with state participation have chosen to form alliances with leading oil and gas companies that possess advanced technological systems of developing Arctic fields. A review of the agreements signed by Rosneft with Eni (Italy) and Statoil (Norway) shows the dependence of cooperation among corporations on their possession of Arctic knowhow (Table 8).

In June 2012, Rosneft and Eni signed an agreement to finance geological prospecting on three licensed Russian offshore areas: Fedynsky and Central Barents in the Barents Sea, and the Western Black Sea area in the Black Sea. Under the agreement, Eni has undertaken to finance all geological prospecting work envisaged under the license.

Unlike the agreements with Eni, the agreement between Rosneft and Statoil involves a higher degree of cooperation. In particular, it provides for joint development of the Russian continental shelf on the Barents Sea and the Sea of Okhotsk, Rosneft participation in developing offshore areas in Norway on the Barents Sea, and the possible acquisition by Rosneft of shares in Statoil's international projects, as well as receiving from the Norwegians a one-off bonus for each commercial discovery of oil and gas in accordance with the terms of final agreements.⁴⁶ The agreement opens up the prospect of Statoil participation in other joint projects, including the study of the feasibility of extracting heavy oil and shale oil deposits from the Severo-Komsomolskoye field in Western Siberia. Along with new areas of work, Statoil continues to support projects that have been under way in North Western Russia for many years. In addition, the two companies have declared their intention to place orders for icebreaker vessels.⁴⁷

Cooperation between Rosneft and the US company ExxonMobil provides for investment in the construction of 60 oil platforms designed for the harshest climatic conditions. The full range of research and engineering technological development services will be provided to the joint ventures of the two companies by the Arctic Research and Design Centre for Offshore Developments created especially for this purpose. At the initial stage, it will deal with problems of security and environmental protection, carry out ice, hydrometeorological and engineering-geological studies, monitor the ice situation, develop design criteria, and assess and propose concepts for field development. The competences of Rosneft and

⁴⁵ Kryukov V.A., Kuleshov V.V., Marshak V.D. In What System of Coordinates Should Alternatives of Developing Russian Arctic Hydrocarbon Resources be Assessed? // EKO. 2013. No. 4, pp. 5–27 (in Russian).

⁴⁶ Rosneft and Statoil Agree on Offshore Cooperation // Finmarket News Agency. May 5, 2012. URL: <http://finance.rambler.ru/news/economics/108288322.html> (in Russian).

⁴⁷ Rosneft and Eni Sign Agreement on Financing and Geological Prospecting of Three License Areas on the Russian Continental Shelf. URL: <http://www.rosneft.ru/eni/23072012.html> (in Russian).

ExxonMobil are to be used to create environmentally safe and more effective technologies.⁴⁸ In the immediate future the centre will focus on Kara Sea projects.

The search for, and effective development of, offshore deposits in the Arctic are impossible without the use and transfer of foreign technological and organisational–economic expertise and knowledge. Today, technological innovations have made it possible to extract hydrocarbons in the Arctic zone and the relevant knowledge has emerged as a resource for ensuring the political and energy security of leading developed countries.⁴⁹

1.2.6. Does International Cooperation End with the Freezing of Major Offshore Projects?

As part of the sanctions against Russia, US oil giant ExxonMobil has curtailed nine out of ten joint projects with Rosneft (including Arctic projects). This raises the question: does international cooperation between corporations in the Arctic end after the freezing of major projects? Developments at the Shtokman field provide a pointer as to how events may develop.

The development of the Shtokman field was due to start before 2020. It envisaged, among other things, the creation of offshore production platforms, the building of a natural gas liquefaction facility, a port transport–technological complex for loading LNG, and the development of service industries and the social infrastructure.

Norwegian specialists considered Shtokman to be a close analogue of “Snow White” in terms of depth and certain other conditions and proposed the technology of underwater injection as a priority. Another equally important feature of the project is that it is impossible to solve the problem by sticking to approaches that put a premium exclusively on commercial effectiveness.

The schedule for the implementation of the Shtokman project has been disrupted. What impact has it had on international cooperation?

The introduction of amendments to immigration laws simplifying the regime for highly skilled foreign specialists to reside, work and move freely within the Russian territory has been suspended. Cooperation in the training of specialists in design, construction, operation and repair of underwater drilling and extracting platforms, production platforms, marine transportation, icebreaker support, environmental monitoring of marine objects, and emergency and rescue work has dropped significantly. Improvement of Russian offshore extraction technologies and the production and sale of liquefied gas in partnership with foreign participants (the Russia–Norway–Europe/France triangle in the Gazprom–Statoil–Total format) had to be abandoned. After the joint German–Russian project to transport gas from the Shtokman field to the Northern Stream was frozen, the formation of a new industry oriented towards creating special technical means for the construction and operation of offshore deposits, ice–resistant drilling equipment and vessels, and the

⁴⁸ Rosneft and ExxonMobil Sign Final Agreements to Establish the Arctic Research and Design Center and Exchange Technology // *Neft Rossii*. June 12, 2013. URL: <http://www.oilru.com/news/371356> (in Russian). Considering the keen interest expressed by both partners, there is confidence that cooperation will continue once the pause caused by sanctions is over.

⁴⁹ Fadeyev A.M., Sherepovitsin A.E., Larichkin F.D. Foreign Experience of Developing Hydrocarbon Resources on the Arctic Continental Shelf // *Economic and Social Change: Facts, Trends, Forecast*. 2011. Vol. 13. No. 1, pp. 79–89 (in Russian).

development of technologies for building and repairing underwater pipelines and new shipbuilding capacity in Russia slowed down.

However, although the Shtokman project has stalled, Norway has continued active cooperation with the Russian regions and oil and gas companies, which started back in the 1990s. The Norwegian side has participated in a multitude of projects, from the creation of supplier centres to subsidizing educational programmes in the field of oil and gas at Russian higher education institutions.⁵⁰

International cooperation in developing Arctic offshore oil and gas, especially in neutralizing environmental risks, has not stopped despite the sanctions. However, as noted above, its intensity greatly influences the rate at which new industrial regions off the Arctic shores are formed. The example of Shtokman shows that the threat to the window of development opportunities after the freezing of cooperation between ExxonMobil and Rosneft in the Kara Sea is very real (Table 9).

1.2.7. Conclusions

The main purpose of international cooperation in developing the Arctic shelf is not so much to achieve linear effects as it is to achieve synergic effects that ensure diversification and create conditions for sustainable social, environmental and economic development of the projects under consideration.

So far, cooperation between Russian companies and global oil and gas corporations in the Arctic has been slow. One of the main reasons is that the importance of such cooperation has been underestimated. Companies pin their hopes on the potential of the Russian defence industry; however, the fact that unique defence complexes are being created (for example, by enterprises in Severodvinsk and Murmansk) attests rather to their potential and not to their possession of actual experience in implementing commercial projects in severe natural and climatic conditions and in a fundamentally different sphere of activity.

Russia can and must give foreign partners more than just the right to engage in oil and gas extraction on circumscribed areas of the shelf. It is capable of raising funds by coming up with competitive technologies and producing competitive equipment. International cooperation aimed at the transfer of unique technologies, know-how, experience and knowledge makes it possible to create a fundamentally new Russian oil servicing sector that would ensure the safe and effective development of Arctic fields.⁵¹

Expanding the circle of interested parties by including existing and potential partners – NGOs, scientists, government bodies of Arctic countries, interstate and sectoral associations and experts – will lead to the creation of pan-Arctic groups of experts in various fields who study marine industrial territories in the Arctic. Cooperation with them is necessary to tackle the problems that crop up

⁵⁰ Compiled by SOPS experts on the basis of: Yevstigneyeva A.M. Characteristics of the Contemporary Development of Russia–Norway Relations (the Case of Interaction in the Arctic) / Ph.D. Qualifying Dissertation (Political Science): 23.00.04. (Defended at the Diplomatic Academy of the Ministry of Foreign Affairs of the Russian Federation) Moscow, 2008.

⁵¹ Tsukerman V.A., Selin V.S. Innovative Factors in the Development of the Norwegian Shelf // Sever I Rynko: Formirovaniye Ekonomicheskogo Poryadka. 2009. No. 2, pp. 92–96 (in Russian).

in the course of the work and for broader international cooperation in nature conservation and social spheres.

The study of foreign experience in creating a new institutional environment is relevant for putting an optimal tax system based on the principles of the social state in place. Specific Arctic models will be required to facilitate the entry of small and medium-sized innovative and venture companies into offshore business.

1.3. Arctic Cooperation of Small and Medium-Sized Businesses on the Sites of the Business Forum Established by the Arctic Council

1.3.1. “Blank Spots” of International Cooperation of Small Businesses in the Arctic

Paradoxically, the diversity of scientific work in the transfer of entrepreneurial experience (including innovative experience) that has characterised the social sciences in the last two decades has not been matched by similar activities in the Arctic. Not a single Arctic country has produced a monograph or even a scientific article describing the phenomenon of Arctic entrepreneurship. The question may arise: does Arctic entrepreneurship even exist? Is it perhaps the case that the development of cooperation between Arctic entrepreneurs is deterred by the objective rising cost of transport and energy, the small size of Arctic markets, and remoteness from large decision-making centres?

We interpret the phenomenon of international cooperation of Arctic small business in the broad sense as a creative pro-active high-risk economic, social and political activity in the interests of the local community. Because small business has weak positions in the Arctic it seeks to find some kind of “protective” structure, including major companies such as Arctic resource corporations and international associations. The positions of small businesses are also bolstered by cross-border cooperation and the emergence of new types of specialisation and economic activity as a result of deepening links between twin cities and regions. Strengthening the mechanisms of international cooperation among small businesses in the Arctic is the aim of the Canadian initiative to create a circumpolar business forum and ensure broad opportunities for businesses to collaborate with the Arctic Council. Canada declared these objectives as one of the priorities of its chairmanship of the Council in 2013–2015.⁵²

The Kiruna Declaration signed at the 8th Ministerial Session of the Arctic Council in May 2013 admits that economic activities in the Arctic form an inalienable part of sustainable development of the peoples and communities in the region. The ministers of eight Arctic Council states spoke in favour of further strengthening the efforts of the Council to promote dynamic and sustainable economies and best practices in the Arctic and decided to set up a task force to promote the creation of a circumpolar business forum. Canada, Finland, Iceland and Russia became the co-chairs of the target group. The group has held regular meetings since May 2013. In January 2014, senior Arctic Council officials approved the new name for the Arctic business forum proposed by the group.⁵³ In line with these decisions, on September 3, 2014 the Arctic Council formed the Arctic Economic Council (AEC), which will seek to promote the socioeconomic development of the Arctic Region, protect the environment, present to Arctic Council members the position of the business community on a range of issues, and work closely with businesses and

⁵² Canadian Chairmanship Program 2013–2015 // Arctic Council. May 15, 2013. URL: <http://www.arctic-council.org/index.php/en/about-us/arctic-council/canadian-chairmanship/735-canadian-chairmanship-Programmeme-2013-2015>

⁵³ Arctic Economic Council // Arctic Council. January 28, 2014. URL: <http://www.arctic-council.org/index.php/ru/about-us/working-groups/aec> (in Russian and English).

manufacturers.⁵⁴ It is to be a structure independent from the Arctic Council in determining its composition and identifying its main areas of activity.

1.3.2. An International Network of Northern Chambers of Commerce and Business Associations as a Potential Source of International Knowledge on Entrepreneurial Arctic Projects

The idea of setting up a Circumpolar Chamber of Commerce that brings together the chambers of commerce and other business organisations of circumpolar countries in the Northern hemisphere was discussed at the initiative of the Canadian side at the 3rd World Chambers Congress in Quebec (2003), although it only received formal backing at the time.⁵⁵

The regional Northern Forum non-governmental organisation founded in 1991 as a “partner of the business community in achieving the goals of sustainable development” and headquartered in Anchorage (Alaska) gave a new impetus to the creation of an international Circumpolar Chamber of Commerce. The Northern Forum includes: the city of Akureyri (Iceland), the Chukotka Autonomous Okrug, the Khanty–Mansi Autonomous Okrug, the Murmansk Oblast, the Republic of Sakha (Yakutia), the Krasnoyarsk Krai, the Yamalo–Nenets Autonomous Okrug (Russia), Kangwon Province (North Korea), Hokkaido Prefecture (Japan), Lapland (Finland) and Yukon (Canada).⁵⁶

In September 2007, Khanty–Mansiysk hosted a roundtable discussion on “The Possibility and Practicability of Creating an International Circumpolar Chamber” in the framework of the Northern Forum’s Partnership for Progress business summit. The General Assembly of the Northern Forum passed a resolution that approved the creation of a network of northern chambers of commerce and industry (CCIs).

Work in this area continued in April 2008 in Akureyri, where a special session of the conference of the Northern Forum regional coordinators signed a protocol of intent to create a network of chambers of commerce and industry of Northern regions and developed its concept. The protocol was signed by the representatives of the chambers of commerce of Lapland, Khanty–Mansi Autonomous Okrug, the St. Petersburg Chamber of Commerce and Industry, the Administration of the Republic of Sakha (Yakutia) and the Akureyri Region Business Agency.⁵⁷

On March 2, 2009 an international network of Northern and circumpolar chambers of commerce and industry and business associations was formed in Toronto under the aegis of the Northern Forum. It comprised the chambers of commerce and industry of Lapland, the cities of Edmonton and Yellowknife, Northwest territories, Yukon, World Trade Center Alaska, the Akureyri Region Business Agency, as well as the chambers of commerce and industry of St. Petersburg and the Yamalo–Nenets and Khanty–Mansi Autonomous Okrug.⁵⁸

⁵⁴ Arctic Economic Council Created // Vzgl'yad business newspaper. September 3, 2014.
URL: <http://www.vz.ru/news/2014/9/3/703676.html> (in Russian).

⁵⁵ Kobanov A.I. Current Issues of Cooperation between Northern Circumpolar Chambers of Commerce and Business Associations. URL: <http://www.nrbf2012.com/files/Arctic/Draft-Circumpolar-Kobanov.pdf> (in Russian).

⁵⁶ The Northern Forum. URL: <http://www.northernforum.org>

⁵⁷ Kobanov A.I. Op cit. URL: <http://www.nrbf2012.com/files/Arctic/Draft-Circumpolar-Kobanov.pdf> (in Russian).

⁵⁸ Georgi Petrov: Reproduction of Labour Resources in the North: Pressing Task // TPP-Inform. August 17, 2011.
URL: http://www.tpp-inform.ru/economy_business/1508.html (in Russian).

The chambers of commerce and industry are playing an important role in bilateral cooperation between Arctic countries. Thus, the Norwegian–Russian Chamber of Commerce (NRCC) was founded on October 20, 2003 at the initiative of the Norwegian business circles to promote bilateral trade and economic relations. Among its founders are the Norwegian companies Telenor, Statoil, Orkla Foods, Aker Kvaerner Contracting, Eksportfinans, A-Pressen, the Industrial Development Corporation of Norway, the Norwegian Industrial and Regional Development Fund, Norges Bank, and a number of Russian companies. The main areas of the Chamber's activity are: representing and protecting the interests of Norwegian and Russian companies; mediation and consultancy services, including market studies; disseminating information on the economic situation in Norway and Russia; analysing trade and investment opportunities; and organizing business meetings, seminars and symposia (non-members of the Chamber can avail themselves of these services on commercial basis). Since 2006, the Chamber has been organizing events in different parts of Norway to better inform the Norwegian business circles about Russia as a promising market. For its part, Russia has hosted regular members meetings since 2006. The NRCC regards oil and gas, fishing and fish farming, forestry, shipbuilding, and information and telecommunications technologies as potentially promising areas of bilateral economic cooperation.⁵⁹

In December 2010, the heads of the chambers of commerce and industry of Russia's Northern territories decided at a meeting in Moscow to create an Association of Chambers of Commerce and Industry of the Northern (Circumpolar) territories and the Arctic Zone. The new organisation includes the chambers of commerce and industry of the Republic of Sakha (Yakutia), the Arkhangelsk, Murmansk, Magadan and Tyumen oblasts, and the Khanty–Mansi and Yamalo–Nenets Autonomous Okrugs. The association is shortly to be joined by the chambers of commerce and industry of Karelia and the Komi Republic, and the Krasnoyarsk and Kamchatka Krai.

In addition to promoting initiatives on regulating trade and economic flows between the Arctic territories, the network may be useful for transferring entrepreneurial knowledge. It is important to bring in emerging forms of support for small and medium-sized businesses in Russia (for example, the Yamal network of business incubators). Business incubators offer start-ups a range of services from preferential rates for renting premises to legal and financial assistance. In the Yamalo–Nenets Autonomous Okrug, they operate in the cities of Gubkinsky, Labytnangi, Tarko–Sale and Novy Urengoy. In 2014, business incubators were scheduled to be opened in Nadym, Muravlenko and Noyabrsk, and the areas in Novy Urengoy were to be expanded. The business support infrastructure comprises four municipal funds (in the cities of Gubkinsky and Novy Urengoy and the Nadym and Purovsky districts) and two district funds (the Microloans Fund and the Sureties Fund).

In the future, the Association may be joined by the Chambers of Commerce and Industry of the Northern (Circumpolar) territories and the Arctic zone of the Alakurtti Industrial and Technological Park in the Murmansk Region, as well as the proposed industrial sites for small and medium-sized production

⁵⁹ Norwegian-Russian Chamber of Trade. URL: http://www.norge.ru/nrcc_kort (in Russian).

enterprises, a demonstration and exhibition centre of innovative technologies and a technological information centre.

What other opportunities for international cooperation are offered by the Association of the Chambers of Commerce and Industry of the Northern (Circumpolar) territories and the Arctic zone? Some possibilities include: putting issues of the development of the transport infrastructure in the Arctic up for discussion at the international level; promoting transport accessibility for businesses; initiating the development of cooperation mechanisms between private businesses and international development institutions in projects to supply technology, machines and equipment designed to withstand extremely low temperatures; and conducting expert reviews of international contracts aimed at ensuring environmental security in the Arctic region and the results of their implementation in the purchase of goods and the delivery of services.⁶⁰

1.3.3. International Cross-Border Cooperation of Small Businesses

Another example of international cooperation among small businesses is the Kosstone Project in Kostomuksha. The city is located within 36 km of the Vartius border crossing point in Finland. The project participants are the Regional Council of Kainuu (Finland), the Geological Institute of the Kola Science Centre of the Russian Academy of Sciences, the Kuhmo municipality (Finland), the local administration of Kostomuksha and the Suomussalmi municipality (Finland).

The project envisaged the opening of a new extractive facility on the talc (soap) stone in Kostomuksha in order to attract Finnish investors to the region. Karelian businesspeople could only acquire the expertise needed to develop small business in the city under this project if they interacted with the Finnish partners who had been working with talc stone for more than 30 years.

Joint Russian–Finnish use of the raw materials in Kostomuksha helped the city to replenish its budget and create new jobs. Finnish companies had the opportunity to develop their activities both in Kostomuksha and at other mining and processing enterprises in the Republic of Karelia. Two major soapstone processing enterprises were built in Kuhmo and Suomussalmi, bringing down the unemployment level there substantially (previously people moved en masse from the border territories to southern Finland and major industrial centres in search of jobs). Thus the cross–border project for technological cooperation benefited both Russian and Finnish entrepreneurs.⁶¹

The “Salla Gatå: Business and Tourism Partnership” project has been under way in the Murmansk Oblast since 2012. Five border municipalities on the Russian side (the cities of Kirovsk and Apatity and the Kandalaksha, Kovdorsky and Tersky districts) and four on the Finnish side (the communities of Salla, Kemijärvi,

⁶⁰ Chlenov V. Do It All Together // *Biznes & Proekt*. March 2012, pp. 107.
URL: http://www.bkgis.ru/uploads/posts/2012-03/106-107%20str_.pdf (in Russian).

⁶¹ Mezhevich N.M. Prospects for Northern Industrial Mono-Cities in the Context of Modern Development Tasks in the Russian Arctic // *Proceedings of the Research Department of the Institute of Military History*. Vol. 9, Book 2. Ensuring Russia's National Interests in the Arctic/Western Military District, Military Academy of the General Staff of the Armed Forces of the Russian Federation, Institute of Military History, State Polar Academy. St. Petersburg: Politekhnik Servis, 2014 (in Russian).

Pelkosenniemi and Savukoski) have agreed to develop cross-border cooperation via the Salla border crossing point.⁶²

The flow of Russian tourists is growing with each passing year. Meetings organised as part of the project discuss ways to develop more sustainable tourist niches such as fishing, helicopter excursions, quadracycle trips, etc. Finnish companies are prepared to take tourist groups to cities in the Murmansk Oblast for cultural events and even for shopping. The participation of the Russian side in this project is mostly limited to implementing educational programmes: as a rule, hired experts hold seminars on territory branding or conduct English-language courses for the staff of travel agencies.

The second part of the project is concerned with business partnership. Salla Gate brings together Russian and Finnish entrepreneurs that provide services for major mining enterprises, such as equipment repair, transportation, etc. Each side has committed 15,000 euros for joint participation in tenders. Investments in tourism generated by this project are distributed in the following way: Kirovsk and the Kandalaksha District – 50,000 euros each; Apatity – 40,000 euros; and the Kovdorsky and Tersky districts – 16,000 euros each.

Thanks to business links with the Nordic countries, the Murmansk Oblast has been able to diversify its foreign economic relations. They were instrumental in creating business cooperation organisations that help promote business interests in neighbouring territories (for example, the SIVA Industrial Park was opened in Murmansk in 1999).

Foreign entrepreneurs come to Murmansk for international exhibitions and fairs. Overseas enterprises and organisations traditionally show an interest in such events as “Kola Partneriat”, “Sea. Resources. Technologies” and SevTec.⁶³

1.3.4. International Cooperation of Small Businesses through Participation in Fairs, Conferences and Exhibitions

The presence of small Arctic business projects at business events provides opportunities for meetings and exchanges of opinions among scientists, businesspeople and municipal and government officials. During conferences and exhibitions, entrepreneurs demonstrate projects aimed at improving the quality of life and listen to the opinions of experts, enabling them to confirm or reject the ideas underlying their plans. Meetings with foreign partners allow them to turn such projects into objects of intellectual export, while the city benefits from the diversification of its economy and the influx of new technologies. Medium-sized enterprises with serial production facilities can use these exhibitions to display samples of their products and expand their markets, and would-be consumers can see new trends in technology and sign contracts to transfer cutting-edge technologies and equipment.

The problems and needs revealed during the course of conferences, exhibitions and forums are reflected in the development of new technologies, equipment, materials and other hi-tech products. For these to be turned into innovative

⁶² Good Neighbourhood Corridor // Khibinsky Vestnik. September 26, 2013.
URL: <http://www.hibvest.ru/news/?newsid=418&page=25> (in Russian).

⁶³ International Links // Kola Encyclopedia. URL: <http://www.ke.culture51.ru/content.php?id=15> (in Russian).

products, small businesses in the Arctic must test, perfect and commercialise them jointly with foreign partners.

Thus, conferences, fairs and exhibitions are a very necessary and important attribute of international Arctic cooperation among small businesses. The largest number of such events are organised by the Murmansk Oblast, the Republic of Sakha (Yakutia) and the Yamalo–Nenets Autonomous Okrug.

The Murmansk Oblast has made it a tradition to host annual exhibitions and fairs for small enterprises, such as Imandra, as well as other municipal and regional exhibitions.⁶⁴ To promote locally made products in the interregional and international markets, entrepreneurs also take part in exhibitions and fairs outside the oblast.

Murmansk regularly holds the Matchmaking Conference,⁶⁵ the aims of which are to familiarise participants with the way business is done in Russia and the Murmansk Oblast and help them find necessary contacts for developing their innovative business ideas. The programme includes visits to Murmansk companies whose activities are in one way or another connected with international cooperation, attendance at the Kola Partneriat Exhibition, and participation in a special business game that gives an idea of the main stages in starting a business in Russia and the Murmansk Oblast. The conference is usually attended by about 100 representatives from Russia, Finland, Sweden and Norway.

As part of the Arctic Year regional initiative, the Government of the Republic of Sakha (Yakutia) held the International Scientific Conference “Arctic: Sustainable Development Prospects” in Yakutsk on November 26–28, 2014. The “Arctic Technologies” exhibition, which formed part of the Conference, displayed Russian and foreign products in construction, energy, utilities, mining, agriculture and transport.⁶⁶

In 2014, the Yamalo–Nenets Autonomous Okrug hosted the “Innovative Arctic” international design contest as part of the Interregional Innovation Forum “Innovation in Small Arctic Cities”. Small innovative development enterprises, producers of innovative products, residents of industrial parks, innovative–technological centres, small innovative enterprises affiliated with higher education institutions, enterprises on the innovative activities register in the Yamalo–Nenets Autonomous Okrug, and business teams from Russia and other countries presenting innovative ideas for Arctic regions all took part in the competition.⁶⁷

1.3.5. Prospects for International Cooperation of Small Businesses in the Russian Arctic

In the current economic situation, businesspeople interested in developing their own production and services enterprises face a lot of obstacles. Unreasonable

⁶⁴ Entrepreneurship Days in Murmansk Oblast to be Opened by the XV Imandra Trade and Industry Fair 2014 // Arktik-TV. April 11, 2014. URL: <http://www.arctic-tv.ru/news/murmanskaya-oblast-arktika/dni-predprinimatelstva-v-murmanskoy-oblasti-otkroet-xv-torgovo-promyshlennaya-vystavka-yarmarka-imandra-2014> (in Russian).

⁶⁵ Second International Matchmaking Conference // Northern Chamber of Commerce and Industry Matchmaking conference. URL: <http://www.ncci.ru/section/extras/yie/437> (in Russian).

⁶⁶ International Scientific Conference “Arctic: Sustainable Development Prospects” to be held on November 26–28, 2014 // Ministry of Federal Relations and External Affairs of the Republic of Sakha (Yakutia). September 19, 2014. URL: <http://www.sakha.gov.ru/node/196074> (in Russian).

⁶⁷ Innovative Arctic: International Contest of Innovative Projects. URL: http://www.ingria-startup.ru/ingria/novosti/lenta_novosti/innovacionnaya_arktika (in Russian).

administrative barriers are a disincentive for entering new markets, as they increase non-production costs and bring forth corruption (Table 10).

To address these long-standing Russian problems, the experience of entrepreneurship support in Northern European countries can be used. These countries have a widespread system of independent advisors who are typically experienced retired entrepreneurs and specialists.⁶⁸ They provide consultations to fledgling entrepreneurs, help them organise their business activities and implement investment projects. Occasionally their services are partly paid for by the state, but sometimes they work for free. An international project to create a similar system in the Russian Arctic Regions is being planned.

There is some interesting international experience of streamlining and cutting procedural costs for joining the infrastructure facilities of natural and local monopolies, facilitating the access of small and medium-sized enterprises to state and municipal property, and ensuring the right of first refusal in buying out leased premises and the maximum transparency of the terms of business organisation.⁶⁹

In the near term, small Russian businesses will be able to open up a new sphere of international cooperation in Arctic cities through projects to create municipal industrial zones. One major advantage of industrial zones and sites is that the cost of maintaining the infrastructure facilities (energy facilities, power grids, heating networks, water supply facilities, sewage and water treatment facilities) are shared among all the property owners. Although the enterprises operating on one and the same site belong to different spheres of activity, they all use the same infrastructure.

A municipal industrial zone is a joint product of the business community and the administration of a municipal entity involving natural monopolies (owners of networks) created to provide the most comfortable environment for small and medium-sized business in industry and production services.⁷⁰ The creation of municipal industrial sites for small and medium-sized businesses is a quick and effective way to develop them and consolidate their positions in Arctic municipalities as a constant source of tax revenues for the local budgets. It is quite reasonable for the international projects of Russian Arctic entrepreneurs (joint ventures with foreign participation) to actively avail themselves of the benefits of municipal industrial zones in the Russian Arctic cities.

International cooperation among small businesses as part of contacts between twin Arctic cities has considerable potential. Arkhangelsk is a twin city of Kiruna and Ljusdal (Sweden) Oulu (Finland) and Vardø (Norway). It is strengthening its twin relationships with Tromsø. There is extensive cooperation between higher education institutions and cultural and healthcare institutions in the two cities.⁷¹ However, it is less noticeable in the sphere of small business.

⁶⁸ Long-Term Targeted Programme Development of Small and Medium-Sized Enterprises in the Murmansk Oblast in 2009–2011: Resolution No. 445-PP/15 of the Government of the Murmansk Oblast dated September 17, 2008. URL: http://www.smb.gov.ru/measuresupport/Programmeme/srfi?Programmeme_id=47,1168 (in Russian).

⁶⁹ Development of Entrepreneurship in the Republic of Sakha (Yakutia) in 2012–2016. State Programme of the Republic of Sakha (Yakutia). URL: <http://www.b14.ru/registry/Programmeme/srf/98,27423> (in Russian).

⁷⁰ Turlatovo Municipal Industrial Zone. URL: <http://www.restko.ru/invest/1294> (in Russian).

⁷¹ Tromsø and Arkhangelsk Ready to become Twin Cities // BarentsObserver. January 27, 2011. URL: <http://www.barentsobserver.com/ru/sections/news/tromsyo-i-arkhangelsk-gotovy-oformit-pobratimskie-otnosheniya> (in Russian).

Salekhard and Rovaniemi became twin cities in June 2014. The meeting in Rovaniemi was attended by members of the Salekhard Administration and the Department of International and Foreign Economic Relations of the Yamalo–Nenets Autonomous Okrug. A Memorandum of Understanding will be signed shortly between Salekhard and Rovaniemi on developing multifaceted cooperation, including in small and medium–sized businesses.⁷² The two cities are already forging business ties, which have a good chance of expanding.

⁷² Salekhard and Rovaniemi to become Twin Cities // Arktika-Info. June 16, 2014. 0
URL: <http://www.arctic-info.ru/news/16-06-2014/salekhard-i-rovaniemi-stanyt-gorodami-pobratimami> (in Russian).

1.4. Educational Cooperation in the Arctic and Competition for Talent

1.4.1. Arctic Human Development Report: Ten Years on

In the ten years since the first issue of the Arctic Human Development Report (2004), which was prepared by a team of authors representing the member states and permanent participants in the Arctic Council, efforts to create new social databases and a knowledge network for social studies in the Arctic have intensified.⁷³ A separate chapter in the Report was devoted to local education and a comparative analysis of national educational systems in the Arctic.

The past decade has seen substantial changes in international educational cooperation among circumpolar countries and territories. The number of bilateral agreements between various organisations in the Arctic Region has increased. This allows an effective and sustainable network of observations of Arctic processes to be developed and the national systems of Arctic science and education to be harmonised gradually.⁷⁴ Therefore, the 2014 Report, in addition to updated material, included new data on the human capital reserves in the region, and the flow of knowledge and skills between Arctic territories.⁷⁵ The chapter on education deals with the corresponding problems in rural and peripheral settlements, as well as such issues as the preservation of the languages of small indigenous Northern peoples and gender gaps in education.

While the 2004 Report did not discuss the problems of human capital, the authors of the 2014 Report tackled the issue upfront, considering it in the context of training and the impact on sustainable development of Arctic communities. They describe education not as a standardised commodity, but as a resource adapted to the conditions of a specific locality. For the first time, the Report introduces the issue of the role of implicit knowledge and informal education in the development of Arctic human resources.

This is no accident, because in present-day conditions sustainable development of Arctic territories hinges on the accumulation of human capital and the creation of foundations for a knowledge economy. These tasks require interdisciplinary coordination and the integration of diverse knowledge types in Arctic universities, industrial parks, business incubators, etc.

1.4.2. The University of the Arctic Phenomenon: Virtual Interaction with Real Initiatives

The University of the Arctic (UArctic) is, in our opinion, the most dynamic part of the modern Arctic education space.⁷⁶ It was founded in 2001 to ensure sustainable development of the circumpolar North through the development of human capital.

UArctic is a non-commercial network of higher education institutions and organisations that, in addition to teaching, also carry out research in the North

⁷³ Arctic Human Development Report 2004. URL: <http://www.thearctic.is/AHDR%20chapters.htm>

⁷⁴ Arctic Observing Network (AON) Programme Report-Highlights.
URL: <http://www.arcus.org/witness-the-arctic/2010/1/article/888>

⁷⁵ Larsen J. N., Fondahl G., Rasmussen H. Arctic Human Development Report: Regional Processes and Global Linkages (2014). URL: <http://www.norden.diva-portal.org/smash/get/diva2:788965/FULLTEXT01.pdf>

⁷⁶ UArctic. URL: <http://www.uarctic.org>

and the Arctic. It is a unique example of international education cooperation. To be sure, the Caspian and Mediterranean university projects of recent decades never got off the ground, whereas such a university materialised in the Arctic. How did this happen?

UArctic is an organisation with international management and administrative and auxiliary services distributed between the partner institutions. University members exchange educational resources, equipment and accumulated experience to develop programmes that are suitable and accessible for students of educational institutions located in the Northern regions.

The president of UArctic directs its activities from GRID–Arendal centre in Norway. The international secretariat is located at the University of Lapland (Finland). Northern (Arctic) Federal University coordinates cooperation between UArctic members and is the base of the university's research office.⁷⁷

UArctic cooperates with and enjoys the support of a number of government and non-governmental organisations that are engaged in Northern affairs, specifically the Arctic Council, the Standing Committee of Arctic Parliamentarians, the UN Environment Programme (UNEP) etc. The university cooperates closely with government structures responsible for education and science in Arctic Council countries and welcomes such cooperation.⁷⁸

The priorities of this network university community are the comprehensive study of Arctic regions and the development and promotion of education programmes, including student exchanges. UArctic also coordinates the research activities of universities, science centres and research organisations in the Arctic regions.⁷⁹ The creation of research networks enables participants to exchange information, accumulate knowledge on the Northern regions and improve the quality of educational programmes. In the nearly 15 years of its existence, UArctic has trained 1.1 million students and more than 80 researchers. Its network of partner organisations comprises 143 institutions.⁸⁰

UArctic unites the rectors of Arctic and Northern universities. The UArctic Rectors' Forum is a venue that enables the heads of Arctic and Northern universities to join their voices and have a greater say and presence in the international arena. The first Rectors' Forum was held at Dartmouth College (United States) in March 2007. The second meeting was held at the University of Lapland (Rovaniemi, Finland) in February 2008 as part of the meeting of the Arctic Parliamentarians. The venues of the following meetings of the Rectors' Forum are shown in Figure 14.

Through its programmes, UArctic enables higher education institutions in the circumpolar North to share their knowledge on problems regarding development of the Arctic and the North and strengthen their key role in generating Arctic knowledge. The training of personnel is the focus of the University and all its programmes.

⁷⁷ Arctic University Administration. URL: <http://www.uarctic.org/about-uarctic/organization/administration>

⁷⁸ Scientists Propose Transnational Model of Arctic Management in the XXI Century // Regnum News Agency. October 4, 2011. URL: <http://www.regnum.ru/news/td-abroad/polit/1452421.html#ixzz1ZtviJ4rm> (in Russian).

⁷⁹ Strategic Plan 2020. URL: http://www.uarctic.org/media/360332/UArctic_Strategic_Plan_FINAL_screen.pdf

⁸⁰ Presentation "UArctic Parliamentarians of the Arctic Region". Brussels, 2010. In 2014, there were 48 Russian participants of UArctic.

The north2north Student Exchange Program (Figure 15) gives students in Arctic countries access to different cultural conditions and the possibility to study in other countries in the region.

The entire range of programmes reflects both real and virtual student mobility. Virtual mobility in the form of distance education eliminates the need to move. The UArctic electronic catalogue (*studies.uarctic.org*) allows students and advisors on academic issues to find courses and programmes on various themes at northern higher education institutions. The catalogue, including disciplines on sustainable Arctic development, has become available through the support of the UN Environment Programme and the UN Decade of Education for Sustainable Development.

Arctic migration among young people is essential for higher education institutions in the Arctic, and coincides with global trends. Over the past 40 years, the increase in the number of foreign students worldwide has outstripped the overall pace of higher education expansion. According to UNESCO, international academic mobility increased by more than 300 per cent over the 25-year period until 2012.⁸¹

An increasingly notable trend in international cooperation is the transition from bilateral links to university consortia. This reflects both the relevance of the development of interdisciplinary studies and educational programmes, and the processes of globalisation in the education system, as well as the needs of the global labour market.⁸² The UArctic phenomenon highlights this trend.

The university environment has no state boundaries, so cooperation between Arctic countries in this field continues despite adverse political circumstances. On October 7, 2014 around 40 representatives from 17 UArctic member institutions came to Northern (Arctic) Federal University to attend the regular Global Access seminar aimed at promoting the international education programmes of northern universities and effective international marketing strategies. Practically all the Arctic regions were present at the seminar: the Arkhangelsk and Murmansk oblasts, the Krasnoyarsk Krai, the Komi and Sakha republics, and the Nenets and Yamalo–Nenets Autonomous Okrugs. The Western countries were represented by the University of Saskatchewan (Canada), the University of Lapland (Finland), the Arctic University of Norway and the University of Nordland (Norway). Arctic universities possess advanced expertise in designing and implementing joint educational programmes. The next student enrolment is planned for February 2015, in spite of the deteriorating geopolitical situation.⁸³

1.4.3. International Cooperation through Thematic Networks and Diaspora Resources

International contacts on the ground at UArctic are implemented through thematic networks. A thematic network refers to a certain area of knowledge, research and education. The aim of such networks is to create a research field,

⁸¹ Ryzhkova I.V., Sergeyev A.M. Education Space of the Barents Euro-Arctic Region // *Nauchny Dialog*. 2012. No. 10, pp. 34–51 (in Russian).

⁸² The Mission of Lomonosov Northern (Arctic) Federal University. URL: <http://www.narfu.ru/upload/other/SAFU.pdf> (in Russian).

⁸³ Osipov V.V. Sanctions no Object to Advancement of Northern Universities. URL: <http://www.riss.ru/analitika/3701-sanktsii-ne-meshayut-prodvizheniyu-severnoykh-universitetov#.VGsO1cnQvY> (in Russian).

as well as a community of teachers and independent researchers. The UArctic thematic network enables students and instructors to take part in an open and ongoing dialogue on matters of common interest, including global changes, Arctic medicine and the development of the Northern regions.

The network focuses on training instructors and studying pedagogical processes and promoting the use of information technologies.⁸⁴ The UArctic thematic network falls into the following subgroups covering areas related to the Arctic sciences:

- Arctic coastal and marine problems
- Arctic R&D
- Arctic industries
- Arctic legislation
- Arctic art and design
- Managing business in the North
- Environmental training and education for sustainable Arctic development
- Natural hazards
- Food security of northern communities
- Managing Northern territory development
- Northern tourism
- Polar ice, climate and dynamics
- Indigenous peoples of the North
- Regional and local development
- Arctic geology

Thus, the subgroup of the thematic network on regional and local development formed in 2006 on the basis of Finnmark University College in Norway brings together instructors and researchers from universities in Canada, Norway, Finland and Russia. The network's strategic goal is to create potential for more sustainable development of northern communities in the economic, social, scientific and cultural spheres by strengthening theoretical knowledge and practical skills in the management and rational use of regional resources. It is based on the joint experience of scholars from University College in dealing with issues of local and regional development in Northern Norway. The priority of international cooperation is small municipal entities and small communities in the circumpolar region. This thematic network has the support of the Barents Secretariat and the Ministry of Education and Research of Norway.⁸⁵ It makes a major contribution to accumulating knowledge and competences, and adapting members of rural communities to the new globalised world. The same end is served by applied research projects in local and regional development, practice-oriented seminars and socioeconomic partnerships created in remote Arctic communities.

⁸⁴ UAA and UArctic Discussion. URL: <http://www.uaa.alaska.edu/undergraduate-academic-affairs/upload/UArctic.pdf>

⁸⁵ Gjertsen T., Golubeva V. UArctic Thematic Network on Regional and Local Development at University College Finnmark // *Arktika i Sever*. 2011. No. 2. pp. 1–6 (in Russian).

The Russian diaspora in foreign centres has vast potential for developing Arctic thematic networks. There are four types of impact that the diaspora may have:

A – In the most common case, a Russian national joins representatives of the Russian diaspora abroad at conferences to present a report on the topic of their common Northern mother country;

B – A Russian researcher presents a report together with a foreign researcher on the Russian North;

C – A Russian researcher presents a report together with a foreign researcher on general circumpolar problems or on international cooperation in the Arctic;

D – Comparative studies involving representatives of different Northern countries and institutions (Table 11).

For example, the diaspora contacts of the Yakut people may strengthen the impact of the NEFU which, unlike NArFU, does not yet have significant access to the Arctic educational space. Meanwhile, NEFU is called upon to promote progressive and comprehensive development on its surrounding territory, and create and develop platforms for the interaction of all interested parties. International intellectual cooperation contributes to the implementation of these tasks.

Through its Yakut diaspora, the NEFU has resources and opportunities to expand its influence beyond the Republic of Sakha (Yakutia), not only in the training of personnel, but also in research projects relevant to the Far Eastern Federal District and to the Arctic as a whole.

The university can expand its international reach by building up its diaspora network: the best mode of cooperation for NEFU would involve researchers previously connected to the university. Relying on these contacts, it can promote interaction with other higher education and research institutions, industrial enterprises and consultancies.⁸⁶

1.4.4. Experience of Education Cooperation in the Barents Region

The most vivid example of Arctic educational cooperation is the Barents Region. The common forms of such cooperation include the development of joint training programmes, Master's programmes in business and student internships.

The University of Oulu (Rovaniemi, Finland) is the leader in Arctic education cooperation. It has six departments and specialises in research in the field of business, economics, medicine and information technologies.⁸⁷ The university considers international activities to be an important part of its development strategy and attaches particular significance to Master's programmes for Russian students. The programmes that are most in demand include: Social Work, Tourism, International Business, Design, and Media Education. In addition, universities in Northern Finland and North-Western Russia cooperate closely within the Barents Cross-Border University Network.

⁸⁶ Volkova T.I., Zavarykina L.V., Ivanov P.P., Lazutina I.V., Medushevsky N.A., Nagornov V.A., Perfil'yeva O.V., Savvinov V.M., Strekalovsky V.N. Prospects for the North-Eastern Federal University in Light of the Tasks and Opportunities for Socioeconomic Development of the Far-Eastern Federal District // *Vestnik Mezhdunarodnykh Organizatsiy*. 2013. No. 1(40), pp. 163–198 (in Russian).

⁸⁷ Ryzhkova I.V., Sergeyev A.M. Education Space of the Barents Euro-Arctic Region // *Nauchny Dialog*. 2012. No. 10, pp. 34–52.

In second place in terms of contacts with Russia are the universities of Tromsø and Nordland (Norway). The University of Tromsø has six faculties, with the faculty of humanities, social sciences and education considered to be the most important. Its research focuses on socio-humanities and natural sciences. It studies the Arctic and issues related to preserving the culture of indigenous northern peoples.

Both universities offer undergraduate and Master's programmes in English. Certain programmes are partly conducted online (Bachelor's in Northern Studies, BSc in Circumpolar Studies). Attracting students from Russia is a priority. International cooperation in higher education emphasises cross-border cooperation with neighbouring Russian higher education institutions.

Swedish higher education institutions prefer short-term internship formats. Every year, Luleå University of Technology receives Russian students, mainly as part of grant programmes. The university has ten faculties, with the Department of Business Administration, Technology and Social Sciences, Informatics and Electronic Engineering, and Education being the most popular. Master's programmes in English cover nine subject areas.

One of the most rapidly developing areas of international education cooperation is cooperation between universities (student exchanges, inviting foreign instructors to teach at Russian higher education institutions, foreign internships for Russian teachers, methodological and information assistance to Russian education institutions). Thus Bauman Moscow State Technological University has teamed up with partners from Sweden and Finland to train specialists in social work, engineering and the environment.

NArFU pays great attention to bilateral links with Arctic universities. And it was at the initiative of Tromsø University that Arkhangelsk and Tromsø became twin cities. Both universities have formally joined the Norwegian–Russian Chamber of Commerce. In 2012–2013, they co-chaired the Barents Region Joint Working Group on Education and Research.⁸⁸

In October 2014, NArFU created a consortium in Arkhangelsk Oblast for the study and development of the Arctic that brings together representatives of Russian regions and partners from Norway, Finland, Sweden, France, the Netherlands and Singapore. The aim of the consortium is to consolidate the efforts of the authorities and society to preserve the best traditions of the Russian Navy and the national sea-faring legacy, enhance the role of the Arctic zone in Russia's social and economic development, promote marine education and improve the system of encouraging young people to be patriotic towards their country.⁸⁹

Cooperation in the Arctic and Subarctic with international partners whose educational and scientific innovation activities focus on the Arctic corresponds to the priorities and interests of NArFU.⁹⁰ Among its key partners are the University of Alaska Fairbanks, Versailles Saint-Quentin-en-Yvelines University European

⁸⁸ Morshchikhina L.A. Arctic FUnd: Lomonosov NArFU Scientific-Educational Project: The Territory of Dialogue / Report at the "Environmental Information and Environmental Culture" Section, Crimea 2012 International Conference.
URL: http://www.gpntb.ru/ntb/ntb/2013/3/ntb_3_12_2013.pdf (in Russian).

⁸⁹ Consortium for Arctic Study and Development Created in Arkhangelsk // RIA Novosti, October 24, 2014.
URL: <http://www.ria.ru/economy/20141024/1029960247.html#ixzz3JPfvrp7s> (in Russian).

⁹⁰ The Role of the Northern (Arctic) Federal University in Training Specialists for the Arctic Exploration.
URL: <http://www.nrfb2012.com/files/Research/Research-NarfU-Kudryashova.pdf>

Centre for the Arctic (Paris, France), Spitsbergen University Centre (University Centre in Svalbard) and the High North Centre for Business (Bodø, Norway). In terms of NARFU's strategic development, UArctic network is an important partner. NARFU is engaged in two educational programmes in the framework of UArctic: the Bachelor of Circumpolar Sciences and Circumpolar Sciences.⁹¹

In connection with the revival of the mining industry in Northern Europe, international cooperation among higher education institutions in the training of mining engineers, ore dressing specialists, geologists, metallurgists etc. is particularly relevant. Nordic universities have strong competences in geophysics and engineering geology, while mining and metallurgy are under-represented.

Europe is in the process of creating the Nordic Mining School, which will offer Master's and scientific and education programmes. The project involves the universities of Oulu (Finland), Tromsø and Nordland (Norway), and universities in Denmark, Greenland and Sweden.

International educational cooperation in the Barents Region is not confined to the university level. The Murmansk Oblast Education Committee and the educational authorities in Finnmark and Tromsø provinces (Norway) and Lapland (Finland) have annual cooperation plans. Distance learning projects in deer herding, the use of natural resources and nature tourism (Vocational School No. 26), fisheries (Vocational College No.6/Honningsvåg Senior School in Vardø), oil and gas (Moscow State Mining University / Arktikmorneftegasrazvedka Vocational School/ Hammerfest High School).⁹²

1.4.5. Old and New Arctic Research Centres: Magnets for International Education Migration

In comparison with the situation in the early 1990s, when international socioeconomic and political research in the Arctic began to intensify, significant changes have taken place in the geography of Arctic research centres.

Norway, Canada, Iceland, Finland and Greenland have made unprecedented efforts to improve existing and create new Arctic research centres. They are all a response to the imperative of education and scientific cooperation. It is worth noting that these priorities are clearly visible in the national strategies of Northern territory development. For example, Norway's national Arctic strategy is permeated with the idea of international education cooperation, and the Arctic strategies of Finland and Canada emphasise the need to form and strengthen research infrastructure.⁹³

A significant role in the development of international research infrastructure for the Arctic has been played by the activities carried out as part of the International Polar Year, a key global interdisciplinary research initiative, effectively a super-

⁹¹ Riepula E. The International Cross-Border Cooperation on the Institutes of Higher Education in the North and in the Barents Region Since the 1970s. URL: <http://www.bcbu oulu.fi/Rovaniemi2010/Riepula.pdf>

⁹² International ties // Kola Encyclopaedia. URL: <http://www.ke.culture51.ru/content.php?id=15> (in Russian).

⁹³ Section of the Norwegian Arctic Strategy "Part 2 – Knowledge Generation and Competence Building". URL: http://www.gordonfoundation.ca/sites/default/files/publications/Eikeland_2011-04-07_NorwegianArcticPolicy_Summary.pdf. Section of the Finnish Arctic strategy "Education and Research: Finland's Arctic Expertise". URL: <http://www.vnk.fi/julkaisukansio/2013/j-14-arkinen-15-arktiska-16-arctic-17-saame/PDF/en.pdf>. Section of the Canadian Arctic strategy "Defining Our Domain and Advancing our Knowledge of the Arctic". URL: <http://www.northernstrategy.gc.ca/cns/cns.pdf>

project that consolidated the efforts of teams and scientists from different countries and went a long way towards creating a new research infrastructure (websites, databases).

Research organisations that have existed for decades (the Scott Polar Research Institute at the University of Cambridge, the Arctic Institute of North America at Calgary University, the University of Alaska Anchorage Institute of Social and Economic Research, and research structures at the University of Alaska Fairbanks) have been joined by a number of new players in the list of foreign institutions working in the Arctic (Table 12). Almost all of the Arctic research centres in the Scandinavian countries, including some universities in the northern cities of Norway, Finland and Sweden, did not exist 25 years ago. Some were built from scratch and others were formed within existing structures or when Arctic research units hived off (for example at Carleton University in Ottawa, Simon Fraser University in British Columbia and George Washington University in the United States).

The thematic range of Arctic social studies has broadened substantially. During the Cold War, such work was confined to the study of the indigenous small-numbered peoples of the North, the placement of the main industrial and military centres in the circumpolar North and certain aspects of Arctic navigation. Today, it includes: international relations with regard to the interests of circumpolar and non-circumpolar countries in the Arctic; legal issues regarding the application of international law in the Arctic and the creation of Arctic institutions in the region through international cooperation between Arctic countries; security in the broad sense (energy, environment, food, etc.); governance at the level of municipal entities, regions, countries and the entire Arctic zone; managing the natural resources of the Arctic; the socioeconomic consequences of climate change, etc.

A new Arctic identity is emerging as a result of active multidimensional cooperation between circumpolar countries at the governmental, territorial, local, community and individual level. The implementation of projects in mining, tourism, agriculture, etc. leads to a new industrialisation of the Arctic, which presents the local communities with the challenge of finding opportunities to develop the surrounding area, while at the same time strengthening their Arctic identity.

1.4.6. Norway: Strategy for Education Cooperation in the Development of the Arctic Territories

Norway's Arctic strategy is unique because, unlike the national strategies of other countries, it pays great attention to education.⁹⁴ It is no accident that Norway is an innovative leader in the Arctic, a result of the sustained efforts to develop human capital in the Arctic that the country has been exerting in recent decades.

The Norwegian Government's High North Strategy recognises the importance of relations with Russia. The Norwegian government has even established a special scholarship for Russian undergraduates and postgraduates to study and carry out research at educational and research centres in North Norway.⁹⁵ In this way,

⁹⁴ The Norwegian Government's High North Strategy // Norwegian Ministry of Foreign Affairs.
URL: <http://www.regjeringen.no/upload/Ud/Vedlegg/strategien.pdf>

⁹⁵ Komleva N.A. Arctic Strategy of Circumpolar States: General and Specific Features // *Arktika i Sever*. 2011. No. 2, pp. 19–25 (in Russian).

Norway is effectively launching a competition for young Arctic talent from Russia that, upon returning to their homeland, will bring with them new Norwegian competences.

The Strategy claims that Norway should build “people’s knowledge and experience” to “show the way, utilise existing opportunities, discover new ones, and attract other countries that want to take part, invest and share knowledge”. The key words for the Norwegian Arctic Strategy are “education, competence and knowledge”. Knowledge is “at the core” of the strategy. “Our focus on knowledge will include further developing our capacity,” the document stresses, “to safeguard Norway’s foreign policy interests in the High North.”

Norway’s experience could be useful for Russia in ensuring active intellectual presence in the Arctic by strengthening international education and scientific cooperation.

1.4.7. Conclusions

Modern Arctic education is in many ways international, as it transcends the efforts of single countries. But the study of the Arctic is also carried out by international research teams, and the joint efforts of countries, institutions and organisations. This spells the need to harmonise and coordinate these efforts skilfully, and to have prompt communications.

Practice shows that Russia has not been particularly quick to respond to the initiatives of its foreign partners. The transaction costs of forming Arctic educational partnerships are exorbitant precisely because of Russian red tape and sluggishness. However, it is obvious that no Arctic partnership can be fully effective without the participation of Russia as the major Arctic country.

The paradox is that while there is no alternative to Russia’s participation in international educational and Arctic research projects, such participation increases the transaction costs of coordination, agreement and communication significantly.

One rather expensive plan implies that Russia needs its own widespread infrastructure for Arctic research and education. It is based on the old mentality that reigned when Russia conducted its polar research alone, primarily for defence purposes. But there is another way, one that involves networking with international partners to share the costs of organizing an Arctic science infrastructure. In the latter case, Russia is a full member of international projects, contributing to their organisation and implementation, while minimizing its own research in the Arctic under its national programme. This scheme has both its advantages and its limitations.⁹⁶ It is substantially less expensive, but it requires Russia to be totally open to agreements and uphold its national interests in organizing international projects.

Considering the current international situation and the potential for Russia to finance Arctic research, everything points to the advantages of the second scheme for Russia. So far, however, Russia has not been very good at negotiating when it

⁹⁶ Pelyasov A.N. Research and Innovation in the Arctic // Russian International Affairs Council. August 24, 2012.
URL: http://www.russiancouncil.ru/en/inner/?id_4=712#top

comes to organizing such research and avoiding giving in to foreign partners and at imposing its interests on them. This much we have to admit.

It turns out that of the two paradigms for organizing research in the Russian Arctic, the second has already gained the upper hand. The most reasonable thing now would be to recognise the fact that research and education in the Russian Arctic has been internationalised and that now is the time to shift the focus in the discussions to upholding Russia's interests and priorities in the framework of international projects, teams and initiatives. Russia would do well to put forward more of its own initiatives in science and education using international financial resources in order to bridge international gaps in the development of Arctic education and research.

1.5. Inter-Municipal Cooperation in the Coastal Zone of the Russian Federation

1.5.1. Global Experience in Coastal Zone Management and the Challenges for Russia's Coastal Arctic Zone

The Arctic coast is probably the most critical zone of the natural Arctic environment in terms of the speed and scale of environmental and socio-economic change and its long-term consequences for economic activities. In addressing institutional and social problems faced by Arctic coastal municipalities in Russia, we should draw on global experience in coastal zone management.

The United States, Japan, France, Canada and Australia have identified some major problems in the planning, use and protection of coastal zones. The most serious contradictions were found between the economic aspects of managing coastal zone development and private and public interests in the use of the coastal areas. In most countries, conflicts in the coastal zone arise because of the economic and environmental incompatibility of certain business activities. Conflicts are reduced by coordinating programmes for the comprehensive development of this or that region and by taking into account and harmonizing the interests of all actors. In practice, such coordination takes the form of fierce competition between sectors of the economy and defending regional interests against the background of national interests, and vice versa.

An important aspect of the experience of the United States, Great Britain, Australia, Canada, Japan and France in coastal zone management is the drafting of laws governing the process of developing the “sea-land” interaction zone. The first such act was passed in the United States in 1972. It was based on the following principles: conserving, protecting, developing, restoring and increasing the quantity of resources; encouraging and assisting states in developing the coastal zone; assisting in the development of managerial programmes to protect key natural resources; developing cooperation and joint participation of all the interested agencies in environmental protection.

It has to be noted that the United States' experience of coastal management has never treated the specifics of the Arctic separately because of the relatively small size of the Alaskan Arctic coast.⁹⁷ The situation in Russia is exactly the opposite, and so it emphasises the features of the Arctic zone (bringing in supplies, the Northern Sea Route, etc.) without identifying the specificities of coastal management.

⁹⁷ Alaska Coastal Management Programme. URL: <http://www.alaskacoastalmanagement.org>. Marine Spatial Planning in the Nordic Region – Principles, Perspectives and Opportunities.

URL: http://www.imr.no/filarkiv/2011/03/msp_nordic_region.pdf/en.

Eddy S., Fast H., Henley T. Integrated Management Planning in Canada's Northern Marine Environment: Engaging Coastal Communities. URL: <http://www.pubs.aina.ucalgary.ca/arctic/Arctic55-3-291.pdf>.

Climate of Coastal Cooperation. URL: http://www.yccc.eu/wp-content/uploads/2013/05/eucc_ccc.pdf.

Maritime Spatial Planning in the Framework of the French Maritime Policy.

URL: http://www.ec.europa.eu/maritimeaffairs/documentation/studies/documents/france_01_en.pdf.

Gjøsæter J. Knowledge-Based Decisions in Coastal Zone Management.

URL: <http://www.vliz.be/imisdocs/publications/74385.pdf>.

Parkes J.G. Michael, Manning E.W. An Historical Perspective on Coastal Zone Management in Canada.

URL: <http://www.dfo-mpo.gc.ca/Library/253981.pdf>.

Bjørn K. Sagdahl Integrated Coastal Zone Management. From Sector Policy to Integration and Devolution?

URL: http://www.coastman.free.fr/wp/Coastman_WP8.pdf.

The European Union has developed documents aimed at the preservation and harmonious development of coastal areas. The most interesting of these is the European Code of Conduct for Coastal Zones adopted in Geneva in 1999, which summarises the legal experience of European countries and identifies priority areas for improving the regulation of life in the coastal regions.

Arctic countries have entered the practical phase of forming their coastal zones by implementing “marine spatial planning”. At the initial stage, this approach was used effectively to manage protected marine zones. Russia does not yet have comprehensive plans for managing marine ecosystems. We do not even have an officially accepted translation of the term, with some authors referring to “functional zoning of marine areas” (FZMA).

Although domestic legislation does not expressly envisage the use of the FZMA mechanism, some legislative acts provide the basis for identifying functional zones in order to ensure the effective preservation and restoration of marine ecosystems in Russia. The federal laws in question are “On Specially Protected Natural Areas”, “On Internal Marine Waters, the Territorial Sea and the Adjacent Zone of the Russian Federation”, “On the Exclusive Economic Zone of the Russian Federation”, “On the Continental Shelf of the Russian Federation”, “On Subsoil” and “On Fishing and the Preservation of Marine Biological Resources”.

Identifying coastal zones as independent objects of management would improve inter-municipal awareness on existing problems and encourage the development of motivation mechanisms to attract the attention of businesses and investors to such zones. In tackling the body of social problems involved in the comprehensive management of coastal zones it is important to develop mechanisms for the active involvement of the population in the decision-making process.

Traditionally, Russia has not recognised the special nature of coastal management and its specific features. The importance of the coastal zone in federal legislation is not emphasised in any way except in the model of integrated coastal zone management in the Arctic approved by the Ministry of Regional Development of the Russian Federation (Table 13). And yet it is impossible to solve single-handedly the environmental, economic and social problems of the Arctic coastal zone without referring to other levels (inter-municipal, regional, federal).

Activities aimed at improving the comprehensive management of Arctic coastal zones should be carried out as part of the Maritime Doctrine of the Russian Federation 2020. Along with setting out the general principles, goals and methods for implementing the national maritime policy, the document identifies regional areas of work, including the Arctic.

The development of inter-municipal cooperation may be promoted by:

- creating science and technology parks in the Arctic zone of the Russian Federation;
- supporting venture capital funds;
- structuring mutual relations between businesses and the authorities on the basis of public-private partnership;
- utilizing the productive capacity of the defence industries by placing hi-tech orders.

The functional and spatial types of marine activity could be coordinated through forming marine corporate entities that have the character of special economic zones. However, if this is to be achieved, it is necessary first to expand the scope of the Federal Law “On Special Economic Zones in the Russian Federation” by removing territorial limitations and then to include SEZs of “Strategic Marine Priority” among such zones (Article 4 of the Law).⁹⁸

1.5.2. Specifics of Inter-Municipal Cooperation in the Russian Arctic Coastal Zone

Coastal communities in the Arctic are becoming ever more accessible due to global warming, which increases the anthropogenic load and prompts the need for competent management of the Arctic coastal zone. This highlights the link between climate change and the challenge of strengthening inter-municipal cooperation in managing the coastal zone. These problems are particularly relevant in the Russian Arctic because the Arctic Ocean is so shallow. The threats of flooding are more real than in the coastal areas of Canada and the United States.

The structure of anthropogenic presence in the Russian Arctic coastal zone includes the Northern Sea Route – ports (municipal districts, administrative centres), national villages within municipal districts, single-industry resource communities (some of which have been shut down or have lost their former status), a network of coastal meteorological stations and observation points.

The most populated and industrially developed area of the Arctic coast is the Kola Peninsula. It has a population of around 1.1 million, 92 per cent of which is concentrated in 12 large and 20 small cities.

The Kara Sea coast is part of the Nenets and Yamalo–Nenets Autonomous Okrugs and the Taymyr Dolgano–Nenetsky District in Krasnoyarsk Krai. The main urban settlements are: Labytnangi, Salekhard, Nadym, Novy Urengoy, Noyabrsk, Igarka, Ust–Port, Dudinka and the regional city of Norilsk.

Eastern Taymyr, New Siberian Islands and North Yakutia are the most remote, poorly developed and sparsely populated parts of the Russian Arctic. The entire region has a population of just 50,000. Administratively, it is part of the Taymyr Autonomous Okrug and the Republic of Sakha (Yakutia). The region’s main industries are agriculture, including deer herding, fishing and battery farming (on a small scale). There are no real projects aimed at stepping up the economic development of the region in the foreseeable future, with the possible exception of intensifying maritime traffic on the Northern Sea Route.⁹⁹

At the same time, some of the adopted federal programmes may stimulate inter-municipal cooperation in the eastern maritime sector of the Russian Arctic; for example, the creation of a modern transport system in the Arctic zone of the Far East. The coastal infrastructure of inter-municipal cooperation would then comprise the ports of Khatanga, Tiksi, Pevek, Anadyr and Petropavlovsk.

⁹⁸ Savelyeva S.B., Gerashchenko L.V. Prospects of the Socioeconomic Development of the Arctic Coast // Vestnik MGU. 2012. Vol. 15. No. 1, pp. 212–215 (in Russian).

⁹⁹ Scientific Support for the Balanced Planning of Economic Activities on Unique Marine Coastal Landscapes and Proposals for its Use Drawing on the Example of the Azov–Black Sea Coasts. Vol. 4. The Seas of the Arctic Basin. URL: http://www.coastdyn.ru/e-lib/tom04_2013.pdf (in Russian).

Petropavlovsk–Kamchatsky would then play the role of an eastern proto–hub on the Northern Sea Route.¹⁰⁰

The participants in Arctic coastal inter–municipal cooperation include urban districts and coastal zone municipal entities. The latter have large areas that are difficult to manage at the local level. Inside the municipal districts, there are often coastal ethnic villages with their own specific problems. These include problems of coordinating actions in the face of climate change and adapting deer herding and the harvesting of marine, fur animals and fishing to changes in nature and climate. For example, warming opens up new areas for marine harvesting, while at the same time reducing the number of reindeer because of the winter ice and the formation of a solid crust that prevents the animals from feeding on the lichen.

Many urban districts in the Arctic are single–industry entities with one dominant extractive or defence industry facility.

The problem of insufficient interaction between neighbouring municipal areas that are parts of different Arctic regions is widely recognised in Russia. Another problem is cooperation between neighbouring ethnic villages that are parts of different municipal districts of one and the same Arctic region. A drop in the shipment of cargoes along the Northern Sea Route and the abandonment of the practice of using caravans of vessels during the period of Arctic navigation have led to a severe shortage of horizontal links in the Arctic coastal zone.¹⁰¹ The prevalent channels for delivery, such as rivers, often bypass the Northern Sea Route.

The unity of the Arctic coastal zone is recognised at the federal level, as witnessed for example, by the distribution of integrated emergency and rescue centres of the Russian Ministry of Emergency Situations along the Northern Sea Route (Figure 16). However, awareness of the integrity of the Arctic coastal zone is much less evident at the regional and municipal levels. The single chain of Arctic municipal entities stretching along the common Arctic coastal zone that spells the need for inter–territorial links is occasionally mentioned in the corresponding sections of municipal strategies and programmes for the socioeconomic development of Arctic urban districts and municipal regions (for example, Lovozersky District in the Murmansk Oblast, Tazovsky District in the Yamalo–Nenets Autonomous Okrug and Zapolyarny District of the Nenets Autonomous Okrug).¹⁰²

The best prerequisites for inter–municipal cooperation exist in the Western part of the Northern Sea Route: while Murmansk is a powerful magnet for cargoes and intensive transport operations, there is no comparable development base in the eastern part of the Northern Sea Route.

¹⁰⁰ Marenin K. This will be a Hub City. Petropavlovsk–Kamchatsky Becomes the Eastern Base of Arctic Navigation // Rossiyskaya Gazeta, September 26, 2013. URL: <http://www.rg.ru/2013/09/26/reg-dfo/petropavlovsk.html> (in Russian).

¹⁰¹ Selin V.S., Vasilyev V.V. Interaction of Global, National and Regional Economic Interests in the Development of the North and the Arctic / Russian Academy of Sciences, Kola Science Centre, Lulin Institute of Economic Problems of the Russian Academy of Sciences, Apatity: Kola Science Centre Publishing House, 2010 (in Russian). Istomin A.V. The Northern Sea Route: Organizational–Economic Principles of Revival and Development. URL: <http://www.kolasc.net.ru/russian/innovation/ksc75/6.3.pdf> (in Russian).

¹⁰² The Association of Arctic Municipalities created on December 25, 2014 is called upon to consolidate the efforts of local government bodies and step up cooperation in addressing the issues of sustainable social–economic development of Arctic territories.

1.5.3. Possible Specialisation of Inter-Municipal Cooperation in the Arctic Coastal Zone

Analysis of the structure of inter-municipal cooperation on the Arctic coast of Russia has shown that only some parts of the Western Arctic sector – the coasts of the Barents, White and partly Kara seas – are actively used. Other coasts see the degradation of the industrial, transport and utilities infrastructure that existed in the Soviet period. It is clear that inter-municipal cooperation on promising projects connected with the economic development of the Arctic coast is practically non-existent (with the exception of projects to develop major hydrocarbon fields in Western Arctic). At present, such cooperation is limited to existing or developing oil and gas industry projects and the construction of population centres.

The development of the oil and gas sector may integrate the initiatives of inter-municipal cooperation aimed at organizing a network of protected territories in the region. If we stick to the concept of polycentric management, it can be argued that the number of factors contributing to “brotherly relations” between Arctic municipal entities along the Northern Sea Route is woefully inadequate. Existing projects to develop international transit on the Northern Sea Route are still in the development stages. A multitude of unpredictable factors – economic, climatic and political – make an early breakthrough in this direction unlikely. Inter-municipal cooperation suffers from the slow pace at which the transport, fishing and service fleets are renewed. This tends to diminish potential contacts between coastal municipalities in the Arctic seas.¹⁰³

Fishing and cargo transportation on the Northern Sea Route appear to be the most significant factors in inter-municipal cooperation. At present, new types of natural resources use are emerging alongside the traditional industries, including: aquaculture, recreational activities and the establishment of nature conservation zones. The coastal zone on the Kola Peninsula, which is the most likely place for inter-municipal cooperation to take place, has 13 areas of the Kandalaksha Reserve as part of protected natural zones. These areas are becoming centres for the development of the recreational and tourist sectors of the economies in the Arctic coastal zone’s urban districts and municipalities.

The priority task of inter-municipal cooperation in the Arctic is to approve the rules of economic use with a view to determining the compatibility and desirability of interaction types. The rules must take into account the existing economic infrastructure, as well as natural (including extreme natural phenomena) and environmental factors. We should bear in mind that a significant part of the Arctic coast is already officially included in protected natural territories. But there is no real protection of these territories, their boundaries are not clearly defined and the rules of their economic use have not been approved. Inter-municipal cooperation does not overcome interdepartmental disunity.

In future, the specialisation of inter-municipal cooperation on the Arctic coast (Figure 17) should be in line with environmental safety requirements for the environment, as well as for economic entities, humans, the rational use of natural resources and economic practicability. These requirements are often mutually

¹⁰³ Scientific Support for the Balanced Planning of Economic Activities on Unique Marine Coastal Landscapes and Proposals for its Use Drawing on the Example of the Azov–Black Sea Coasts. Vol 4. The Sea of the Arctic Basin. URL: <http://www.ocean.ru/content/view/1892/141> (in Russian).

exclusive. We therefore have to look for alternative methods for ensuring the economic development of the Arctic coast and assess the effectiveness of such methods with due account of the limitations on the use of resources in areas of Arctic coastal landscapes, possible contradictions between different sectors and the need to comply with national and international legislation.¹⁰⁴

New industrial Arctic shelf regions are emerging against the background of undeveloped (or sometimes non-existent) cooperation with the coastal municipalities. However, the “alienation” that exists today is fundamentally different from that experienced during industrial era. At that time, communications were based on standard methods and mechanisms that were the same for all the major projects across the country. The situation is different in the new Arctic industrial regions, the question being how to use the local features to solve the problems of oil transportation in extreme conditions.

Coastal Arctic municipalities should interact with one another and become modern port terminals that provide a full range of services in receiving and handling all types of cargo for the safe and continuous development of offshore oil and gas fields. Before our very eyes, Arctic municipalities are beginning to vie with each other for infrastructure sites with the highest growth potential.¹⁰⁵

Expanded transport cooperation between coastal Arctic municipalities creates demand for comprehensive scientific support of projects at all stages, as well as technologies that minimise the adverse consequences of development for the unique and vulnerable nature of the Arctic Sea coasts. For example, Novaya Zemlya has prerequisites for cooperation in the coastal zone primarily as a centre for the development of offshore oil and gas. The development of ore deposits on Yuzhny Island may play a part. The option is being considered of creating a major seaport on the archipelago to serve as a staging post for the transportation of hydrocarbons from Western Siberia and the Timano-Pechora oil and gas province.

At present, inter-municipal cooperation in the Arctic coastal zone of Russia is still in its infancy. In order to expand horizontal links between municipalities it is necessary to take into account economic and political factors for and against such cooperation, and the potential of the local communities to actively influence these processes.

¹⁰⁴ Strategy of the Development of the Arctic Zone of the Russian Federation and Ensuring National Security in the Period up until 2020 (Draft). URL: http://www.narfu.ru/aan/institut_arctic/strategy_AZRF_2010.pdf (in Russian).

¹⁰⁵ “This is Business, not Politics” / MK v Murmanske. April 17, 2014. URL: <http://www.murmansk.mk.ru/article/2014/04/17/1015917-eto-biznes-a-ne-politika.html> (in Russian).

1.6. Ecosystem–Based Management in the Arctic

1.6.1. International Environmental Cooperation in the Arctic

International environmental cooperation in the Arctic was making good headway back in the 1970s–1980s, long before the Arctic Council and its working groups were formed. Today, the main coordinator of environmental cooperation is the Arctic Council Ecosystem–Based Management Experts Group created in May 2011, which includes specialists in marine and land ecosystems among its members.¹⁰⁶

Two stages can be identified in the development of Russia's international environmental cooperation in the Arctic. The first stage came in the 1990s, when pollution of the Russian Arctic all but stabilised as a result of the economic slump and decreased production. Cooperation was confined to monitoring the concentration of toxic substances in the ecosystems, the incidence of bronchial and lung diseases, and oncological and skin conditions among the population. It also kept a tab on the load on the landscapes of the tundra, forest–tundra and northern taiga in Western Siberia and the Bolshezemelskaya tundra.

The second stage saw increased international cooperation, mainly due to a more active Russian environmental policy. The government policy aimed at ensuring environmental security in the Arctic zone of the Russian Federation called for measures to introduce special regimes for managing natural resources and protecting the environment, including monitoring pollution, restoring natural landscapes, disposing of toxic industrial waste and chemical security, especially in population centres. Some of these measures were carried out as part of the Integrated Plan for the Implementation of the Climate Doctrine of the Russian Federation in the Period until 2020 approved by Executive Order of the Russian Government on April 25, 2011.

International environmental cooperation projects are being carried out in the following areas: Murmansk Oblast (10 per cent of the total emissions of pollutants in the Russian Arctic), Norilsk (more than 30 per cent), oil and gas field development areas in Western Siberia (more than 30 per cent) and Arkhangelsk Oblast (high pollution with specific substances). Among the Arctic zone industries that contribute to pollution, the biggest is the mining and metallurgical industry, with major centres in Norilsk, Monchegorsk, Pechenga, Zapolyarnoye, Olenegorsk, Kandalaksha, Talnakh, Kovdor, Deputatsky, Bilibino and others.

The main feature of the ecosystem–based approach in international cooperation in the Arctic is to overcome sectoral limitations, in accordance with which issues of managing natural resources and environmental protection are exclusively within the competences of the corresponding sectors. Ecosystem–based management, on the other hand, emphasises the space of land or sea territory that reveals systemic unity features. Ecosystem–based planning and management imply the integration of all resource users in a single area with similar qualities and specific features.

¹⁰⁶ Ecosystem-Based Management in the Arctic. Report submitted to Senior Arctic Officials by the Expert Group on Ecosystem-Based Management / Arctic Council. May 2013. URL: <https://www.havochvatten.se/download/18.3f5692b613e6622a2ebd78/1369205856863/rapport-ecosystem-based-management-arctic-english.pdf>

The ecosystem-based approach was first introduced under Norwegian chairmanship of the Arctic Council in 2006–2009, when a corresponding report was prepared by the Sustainable Development Working Group (SDWG) and the Working Group on Protection of the Arctic Marine Environment (PAME).

Modern management of Arctic resources requires the participation of all the players – national and local, public and private. Inclusion in this case means not only formal attendance at council meetings, but also tangible participation in the making of critical decisions on managing natural resources and developing, implementing and evaluating policies.

An ecosystem-based approach can be implemented in the following areas:

- Joint environmental projects to develop Arctic flora and fauna (for example, the exchange of biological diversity data);
- Ensuring environmental security throughout the course of industrial development of the Arctic;
- Coordinated actions to prevent oil spillage, monitor the atmosphere of Arctic cities and communities and bodies of water;
- Adapting advanced technologies for restoring Arctic lands, including natural forage grassland for deer.

The draft law on introducing the best available technologies could form the legal foundation for implementing an ecosystem-based management approach in the Arctic.¹⁰⁷ The issue is highly relevant for the Arctic. “Arctic-style” production requires modern emissions, drainage purification and waste disposal systems, as well as valid environmental and economic calculations and forecasts, to be launched early. Solving these problems should be the aim of international cooperation in disseminating such technologies, updating reference books, etc.¹⁰⁸

1.6.2. Implemented Projects in the Main Areas of Integrated Ecosystem-Based Development in the Arctic

One example of implemented pilot programmes of ecosystem-based management in the Arctic is the management of marine biological resources in the Bering Sea and fishing in the Aleutian Islands. The novelty of the approaches in these regions is the introduction of principles into the management of natural resources that take into account the impact of a broader range of factors on marine resource harvesting, as well as the impact of marine resource harvesting on the components of marine ecosystems. These pilot projects also envisage that managerial strategies should match the spatial and temporal characteristics of marine systems.

When introducing ecosystem-based management, plans for the interaction of all the parties concerned – including environmental NGOs – are often developed. For example, preliminary studies for a gas megaproject in the MacKenzie River

¹⁰⁷ Federal Law of the Russian Federation No. 219-FZ “On Introducing Amendments to the Federal Law On Environmental Protection and Certain Legislative Acts of the Russian Federation” dated July 21, 2014 // Rossiyskaya Gazeta, July 25, 2014. URL: <http://www.rg.ru/2014/07/25/eco-dok.html> (in Russian).

¹⁰⁸ Ignatyeva I.A. Legal Foundations of Sustainable Development in the Arctic Zone of the Russian Federation // On the Way towards the Sustainable Development of Russia. 2013. No. 64. pp. 50–55 (in Russian).

(Canada) resulted in a cooperation plan that envisaged five working phases involving 17 agencies. The purpose was to include all the actors and all the public influence groups in the project and to accommodate their interests as much as possible. The rules and procedures for ecosystem-based management imply that civil society structures and civil initiatives take active participation in discussing and promoting resource projects.

International environmental interaction is most evident in the solution of cross-border environmental problems in the Arctic. The formation of new cooperative structures between the national and private sectors is of particular importance.

Leading Russian companies connected with the global market have introduced environmental certification institutions according to international standards. The mining and metallurgical complex Norilsky Nickel has ISO 14001 environmental certificates of quality management since 2005. Its own system of environmental management was certified in 2011 for compliance with the ISO 14001:2004 international standard.¹⁰⁹

As part of international cooperation in eliminating oil spillages, the Norwegian Oil & Gas Producers developed an Arctic Oil Spill Response Technology Joint Industry Programme (JIP) for special technologies, bringing together such major players in the industry as Shell, ExxonMobil, Statoil, BP, Chevron, ConocoPhillips, Eni, North Caspian Operating Company and Total. The aim of the Programme is to expand the base of industry knowledge and the potential to prevent and respond to oil spillage in the area north of the Arctic Circle.

The Programme includes research projects in seven key areas:

- Behaviour of dispersed oil under ice and dispersant efficacy-testing in Arctic environments;
- Environmental impacts of Arctic spills and the response to them;
- Trajectory modelling in ice;
- Oil spill detection and monitoring in low visibility and ice;
- Mechanical recovery;
- In-situ burning in Arctic environments;
- Experimental field releases.¹¹⁰

Another project implemented in Norway – Coastal Environment, Technology and Innovation in the Arctic (CETIA) – is an interdisciplinary educational programme designed to integrate various areas of knowledge and expertise on environmental protection among northern partners, improve training in the development of Arctic territories and the continental shelf, and expand the boundaries of academic

¹⁰⁹ For example, the first pulp and paper plant in Russia to obtain the ISO 14001 environmental management systems certificate was the Svetogorsk Pulp and Paper Mill. In 1994, it became the property of the Swedish company Tetra Laval, and in 1996 it developed an environmental policy to reduce discharges and emissions to the allowable world levels; it stopped using molecular chlorine in the process bleaching wood pulp. See: Tsyachuk M.S. et al. NGOs in Promoting Environmental Modernization of Paper and Pulp Plants // The Role of Civil Society in Stimulating Corporate Social Responsibility in the Russian Forestry Sector. Scientific Reports of Independent Economic Expert Reviews Series. No. 202. Moscow, Moscow Independent Scientific Fund, 2008. p. 18 (in Russian).

¹¹⁰ Thomas M. Exploration in the Arctic Gathers Pace.
URL: http://www.rgtec magazine.com/PDF/Issue_028/05_Arctic_Exploration.pdf (in Russian and English).

mobility among participating university students and lecturers. CETIA comprises Murmansk State Technical University, Murmansk State Humanities University, Northern (Arctic) Federal University, Murmansk Marine Biological Institute, the Knipovich Polar Research Institute of Marine Fisheries and Oceanography, Northern Industrial Ecology Problems, Luleå University (Sweden), the University of Tromsø (Norway) and Akvaplan-niva (Norway).¹¹¹

1.6.3. Promising Areas of International Environmental Cooperation in the Arctic

The main areas of environmental cooperation in the Arctic will remain relevant in the future. The Arctic Council Working Group has prepared recommendations to ensure safe offshore oil and gas extraction in the Arctic. Those who drafted the recommendations have sought to achieve a consensus on the goals and processes of managing the main risk elements and identify approaches the government bodies in the Arctic could use to ensure the safety of organisations and their own personnel. The report contains a comparative analysis of the regulatory systems of Canada, Greenland, Norway and the United States.¹¹²

An integrated climatic strategy of the Barents Region will be developed for the Murmansk and Arkhangelsk Oblasts, the Komi Republic, the Republic of Karelia and the Nenets Autonomous Okrug. It will seek to adapt the region to climate change and reduce the anthropogenic load on the climate system. A system of accounting and reporting greenhouse gas emissions is to be developed and introduced.

In the future, Russia will take a more active role in the Arctic Council's nature conservation projects. In 2014, the Ministry of Finance of the Russian Federation transferred the first 5 million euro tranche towards the implementation of Arctic Council nature conservation projects (the total Russian contribution should amount to 10 million euros). The fund's resources are to be used to eliminate pockets of pollution in the Arctic and reduce toxic emissions into the atmosphere, including those directly affecting climate change.

Nature conservation initiatives are to be pursued further. For example, coordination of the work of neighbouring national parks is pertinent to both the United States and Russia. It involves a territory covering the Bering Strait, including the cross-border area within the Beringia Russian National Park, the US Bering Land Bridge National Preserve and the Cape Krusenstern National Monument in Alaska. Beringia National Park will be developed as part of the US–Russian cross-border protected natural territory.

¹¹¹ Matveyev Y.Z., Komeyev, O.Y., Rybalko A.E., Fyodorova N.K. The Tasks and Organization-Methodological Principles of the State Monitoring of Subsoil Resources in the Arctic Offshore. URL: <http://helion-ltd.ru/state-monitoring/> (in Russian).

¹¹² Arctic Council Develops Recommendations for Safe Work on the Arctic shelf // Arktika-Info. May 27, 2014. URL: <http://www.arctic-info.ru/news/27-05-2014/arkticeskii-sovet-razrabotal-rekomendacii-dla-bezopasnoi-raboti-na-sel-fe-arktiki> (in Russian).
Barents Region to Get a Climate Strategy // Arktika-Info. July 21, 2014. URL: <http://www.arctic-info.ru/news/21-07-2014/y-barenceva-regiona-poavitsa-klimaticeskaa-strategia> (in Russian).
Russia Transfers First Tranche to Arctic Council // Ministry of Natural Resources and Environment of the Russian Federation. July 16, 2014. URL: <http://www.mnr.gov.ru/news/detail.php?ID=134731> (in Russian).
US and Russia to Merge National Parks on the Shores of Bering Strait // Arktika-Info. January 30, 2014. URL: <http://www.arctic-info.ru/news/30-01-2014/ssa-i-rossia-ob-edinat-nacparki-y-beringova-proliva> (in Russian).
Balance between Industrial Development and Environmental Security in the Arctic Can and Must be Kept // Arktika-Info. October 18, 2012. URL: <http://www.mvestnik.ru/shwpn.asp?pid=201210187837> (in Russian).

The largest part of the Russian Arctic zone, Yakutia, can be a model for the spread of land ecosystems for international research in modelling climate change in the Arctic with projections until 2030 and 2100.

A balance between adherence to the ecosystem management approach and industrial development of the Arctic can and must be preserved. International cooperation opens up prospects not only for organizing environmental studies, but also for developing a green economy, and encouraging environmentally friendly social and economic development.

A distinctive problem of environmental cooperation in the Arctic is the dependence of resource production on the state of the global market. Curtailment of production as a result of falling prices for resources is fraught with negative environmental (pollution of groundwater due to flooding of mines, atmospheric pollution with the dust from coal tips) and social consequences (widespread unemployment and social degradation of the population in mining communities). The former oil extraction areas – the Komi Republic, the south of the Yamalo–Nenets Autonomous Okrug and some parts of the Nenets Autonomous Okrug – bear the scars of oil pollution, the building of roads and off-road vehicle movement. Instability of subsoil resource production in the Arctic zone makes it necessary to develop an internationally recognised mechanism for their environmentally safe conservation, including for emergency situations.

Considering the complex natural and climatic conditions off the Arctic coast of Russia, it is necessary to improve the technology of hydrocarbon extraction and provide offshore drilling equipment that is protected against oil leaking from wells. The main danger of Arctic offshore projects is the wide-scale impact on the fragile ecosystems of the Northern seas and marine bio resources. Waste drilling fluids, drill cuttings (crushed drilled rock) and formation water (resulting from the separation of extracted oil) are inevitable consequences of development.

To ensure the environmental security of the Arctic shelf, Russia must conduct regular joint exercises with neighbouring Arctic states to combat oil spills and develop mechanisms for interaction in emergency situations. That would require a specialised fleet. In 2015, Russia may open an international centre for the exchange of oil spillage control technologies (the initiative to establish a training centre for the exchange of technologies and mechanisms for oil spill response is spearheaded by Gazprom).¹¹³

The experience of constructive interaction gained by network communities of fishermen and government fisheries protection bodies (joint raids, etc.) accumulated outside the Russian Arctic zone is vital for the Arctic as well. There needs to be greater support for volunteer movements and network communities of fishermen, hunters, and the tourists and coordination of their actions and joint work with the government bodies.

Network self-organisation of the local residents involved in the use of renewable natural resources is an important means of ensuring Arctic environmental security. As such, it calls for special measures. In the first place, it is necessary to establish cooperation with non-governmental environmental organisations with extensive

¹¹³ Tugolukov E.A. Ensuring Environmental Safety in Offshore Oil Field Development.
URL: http://www.federalbook.ru/files/TEK/Soderzhanie/Tom%2012/III/III_04_Tugolukov.pdf (in Russian).

experience in interacting with the local communities, network communities of fishermen, hunters and tourists, and education institutions.

1.6.4. Measures to Promote International Environmental Cooperation in the Russian Arctic

In terms of international cooperation, large transnational companies that supply Arctic resources to the global markets have the most powerful potential. However, these companies may also cause the biggest amount of damage to the Arctic environment because of the sheer scale of their production. The key factor in keeping the situation under control is the openness and the availability of information on the activities of such companies (for example, in the media).

The biggest challenges for international environmental cooperation come from the middle and local levels, where small and medium-sized mining, logging and fishing companies operate. The situation can be improved, on the one hand, by refining practices at the local and regional levels (with the regional NGOs playing a significant role) and, on the other hand, by international projects aimed at promoting regional companies in the global market. Also important are measures to ensure that companies obtain international environmental certificates (for example through organisational and consultancy support). A positive information policy that disseminates information on the best environmentally friendly practices in the respective industries and the support of regional and local authorities in their efforts to introduce environmentally safe technologies are crucial as well. At these levels, moderate non-governmental environmental groups (for example, the World Wide Fund for Nature, or WWF, and others) should become key partners.

For specific types of economic activities – depending on the character of business entities – a combination of measures is needed (Table 14).

2. Strategic Governance of the Russian Arctic

Over the past two decades, Russia's international cooperation in the Arctic has developed primarily through stronger links between non-profit organisations, civil society structures and municipal authorities, while state (especially federal) institutions have been lagging behind in this process. In the 1990–2000s, non-governmental organisations (for example, the Association of Indigenous Small-Numbered Peoples of the North, Siberia and the Far East of the Russian Federation, and others) were often criticised on the grounds that their cooperation with foreign partners in the Arctic exceeded interaction at the interstate level. But for states to be able to interact they need corresponding structures. Russia in the 2000s had problems with state agencies coordinating the development of a federal Arctic and northern policy.

2.1. Prospects for the Creation of a Single Centre Responsible for the Implementation of the Russian Federation's State Policy in the Arctic

2.1.1. Goskomsever: A Novel Institution

Over the past 20 years, Russia's federal Arctic policy, mainly sealed in government resolutions and federal regulatory acts, has seen the erosion of Soviet-era benefits due to growing budgetary constraints. Considering that, an interesting attempt at a structural experiment was the creation of the Goskomsever (the State Committee on Northern Affairs of the Russian Federation) in 1991, a completely new federal body responsible for the state's Northern and Arctic policy, i.e. organised on territorial and not sectoral or functional principle like most other government ministries and agencies. The fact that during its short period of existence (until the late 1990s) the Committee was abolished and restored five times shows that the federal authorities needed such an agency.

The key prerequisite for the creation of the agency was the growing inability of the federal centre to cope with the information problem. It may be argued that the creation of the Committee in 1991 reflected the growing strength of the regional elites (in the unstable conditions created by the transformation of the USSR and Russia), which got the chance to lobby the creation of such a structure for their own benefit, as well as the wish of the new Russian government to acquire new allies in the political struggle with the union centre at a relatively low cost.¹¹⁴

The repeated closing and reopening of Goskomsever suggests that the federal government needed it to perform certain special functions which no other government ministry could perform at the time. What were these functions? An analysis of the five Russian government proposals concerning Goskomsever

¹¹⁴ Pelyasov A.N. The State Acquires a New Role in the North: From Regulation to Economic Coordination // The Russian North: Pressing Problems of Development and the State Approach to their Solution / Russian Academy of Sciences Council for Regional Development Issues; Komi Scientific Centre Urals Branch of the Russian Academy of Sciences. Moscow; Syktyvkar, 2004, p. 20 (in Russian).

(Table 15) provides an answer. Of the more than 60 functions mentioned in the documents, only two recur in all the five: 1) the coordination of food and energy supplies to the North; and 2) the coordination of northern research. In other words, the government was concerned about the management of energy and information flows to the North.

In the period of transition from a planned economy to a market economy, the tight state regulation (first non-delimited and then predominantly federal) of many areas of the development of Northern and Arctic regions was dictated by the lack of new structures that could assume the functions of management and coordination. The old mechanisms had been destroyed and new market ones had not yet taken shape. Meanwhile the emergence of numerous economic outcasts (depressed territories, bankrupt enterprises that were the sole employers in cities, unemployment) demanded the active intervention of the state.

Due to its small size, the Committee could coordinate its actions more cost effectively than other federal structures. It introduced a measure of certainty to the issues of Northern supplies and the flow of knowledge between the regions and federal structures, and within departments of the Russian government. The ability to ensure the delivery of supplies to the North in terms of coordination and information, and prevent catastrophic disruptions gave a temporary lease of life to the Committee despite its well-known lobbying activities aimed at “beating out” privileges for individual regions.

The Committee was useful for the regions, especially the Asian North, which were the most geographically remote from the sources of information in Russia. Through interaction with the Committee, the authorities of these regions could quickly accumulate tacit knowledge of the situation in the federal government and in parliament.

As supply powers were increasingly delegated from the centre to the regions, the coordinating structure lost its relevance for the federal government. The committee was abolished in 2000 without consulting the regions.

Among the functions mentioned in all the five government documents on Goskomsever, five belong to various aspects of international cooperation (Table 16).¹¹⁵

Goskomsever was abolished in the 2000s, when the vertical federal power structure was put in place. The grassroots approach gave way to the more cumbersome development of interstate initiatives of the Russian Federation concerning the Arctic within the structures of the Arctic Council, the International Arctic Science Committee and other specialised associations and councils.

After Goskomsever was shut down, the issue of state support for the Northern territories was taken over by the Northern Affairs Department of the Ministry of Economic Development of the Russian Federation. It was charged with coordinating the activities of the regions in requesting federal subsidies for the delivery of cargoes during the navigation period, the distribution of housing certificates and the monitoring of housing construction for people moving out of the Far North areas.

¹¹⁵ Pelyasov A.N. International Economic Cooperation between Arctic Countries and Regions // *The Russian North: Modernization and Development*. Moscow, 2012, pp. 66–76 (in Russian).

The Ministry of Regional Development of the Russian Federation was created in 2004 as part of administrative reform in the country. Its functions included state regulation of Northern territories development. The Ministry reduced all of these activities to monitoring progress in the development and implementation of federal programmes on individual Northern problems. Their implementation was supervised by the Northern Division at the Regional Programmes Department. After the Ministry of Regional Development was disbanded in September 2014, these functions are likely to be returned to the Ministry of Economic Development.

2.1.2. Trends in Reforming State Support for the Development of the North and the Arctic in the 2000s

In the 2000s, the growing popularity of the Arctic as a topic for discussion had an impact on the building of state institutions for high latitudes. It is no coincidence that, from the 2000s onwards, the development of “Arctic” legislation (drafting of the Federal Law, the Development Strategy and the State Programme of Social and Economic Development of the Arctic Zone of the Russian Federation) fully supplanted “Northern” legislation.

Since the mid-2000s, the state’s Northern policy has been determined by the Concept of State Support of the Economic and Social Development of the Northern Regions approved by Resolution No. 198 of the Government of the Russian Federation dated March 7, 2000. The legal foundation of state support was Federal Law No. 78-FZ “On the Basic Principles of State Regulation of the Socioeconomic Development of the North of the Russian Federation” dated June 19, 1996, which was repealed in 2005.¹¹⁶ Thus, “Northern” legislation was contracted to the competences of social policy: benefits, guarantees and compensation. Its further contraction was highlighted by the downgrading of Northern issues on the Russian parliament’s agenda: the committees for Northern affairs were reorganised into the State Duma Committee on Regional Policy and the Affairs of the North and the Russian Far East and the Council of the Federation Committee on the Federal Structure, Regional Policies, Local Self-Governance and Affairs of the North.¹¹⁷

Arctic institutions in Russia were developing rapidly during that period. On September 18, 2008, the “Foundations of the Russian Federation’s State Policy in the Arctic until 2020 and beyond” were approved. For the first time an official document recognised that “the sphere of international cooperation is a priority for ensuring a mutually beneficial regime of bilateral and multilateral cooperation between the Russian Federation and circumpolar states on the basis of international treaties and agreements.”¹¹⁸

¹¹⁶ Transcript of Parliament Hearings on “Legal Support of the Socioeconomic Development of the Arctic Zone of the Russian Federation.” November 29, 2013
URL: http://www.narfu.ru/aan/Encyclopedia_Arctic/Encyclopedia_Chernyshenko.pdf (in Russian).

¹¹⁷ State Duma Committee for Regional Policy and Northern and Far Eastern Affairs. URL: <http://www.komit2-1.km.duma.gov.ru> (in Russian); Council of the Federation Committee on Federal Structure, Regional Policy, Local Government and Northern Affairs. URL: <http://www.region.council.gov.ru/about/> (in Russian).

¹¹⁸ Foundations of the Russian Federation’s State Policy in the Arctic until 2020 and beyond.
URL: <http://www.scrf.gov.ru/documents/98.html> (in Russian).

The provisions of that document were elaborated in “The Development Strategy of the Russian Arctic Zone until 2020”, which came into force on February 20, 2013. Unlike the “Foundations of the Russian Federation’s State Policy in the Arctic until 2020 and beyond”, it paid particular attention to the issues of international Arctic cooperation. The Strategy identified the key areas of such cooperation:

- The development of Arctic tourism and expansion of environmental tourist activities in the Arctic;
- Broader use of renewable energy sources;
- The formation of a network of highways in the Arctic Zone of the Russian Federation that are part of international transport corridors;
- The development of expedition activities;
- The creation of a unified regional search and rescue system;
- The establishment of a mutually beneficial Russian presence, as well as economic and scientific activities on the Norwegian Svalbard archipelago;
- The promotion of dialogue between the regions and municipalities of Northern countries with the aim of exchanging experience in mapping out climatic and energy policy.¹¹⁹

These ideas saw a practical continuation in the “State Programme of Social and Economic Development of the Arctic Zone of the Russian Federation until 2020” approved by Government Resolution No. 366 dated April 21, 2014.¹²⁰ Specifically, it states that investment projects should be implemented “through active collaboration of the Russian Federation with circumpolar states on the basis of their interest in improving the quality of life, the social conditions of economic activities and the development of the resources of the Arctic zone of the Russian Federation.”

Where did this surge of activity in building Arctic institutions come from? The scale and speed of change in the Arctic that we have seen over the past two decades have led the Arctic states to revise their policy priorities in the region. Let us stress that we are talking about the Arctic and not the North.

Within a very short period of time – a little over seven years (late 2006 to early 2013) – all the circumpolar countries adopted strategic documents on the development of their Arctic zones and cooperation with other circumpolar states in the face of rapid climate change and the increasing globalisation of the global natural resources, transport services and tourism markets. Russia could not afford to be pushed to the side and thus joined the process of creating a national Arctic strategy.

These conceptual documents have different names in different countries: strategies, the basic objectives of state Arctic policies, etc. Two countries –

¹¹⁹ Strategy for the Development of the Arctic Zone of the Russian Federation // Russian Government site 20 February 2013. URL: <http://www.government.ru/news/432> (in Russian).

¹²⁰ Resolution No. 366 of the Government of the Russian Federation “On Approving the State Programme of Social and Economic Development of the Arctic Zone of the Russian Federation until 2020” dated April 21, 2014. Moscow. // Rossiyskaya Gazeta internet portal. Published on April 24, 2014. URL: <http://www.rg.ru/2014/04/24/arktika-site-dok.html> (in Russian).

Russia and the United States – did not confine themselves to presidential decrees on state policy in the Arctic and went on to adopt development strategies for their own Arctic zones.¹²¹ Norway, which triggered the process of “Arctic strategy making” in 2006, moved on to the second round in 2009 to adopt a new version of its document.¹²² In its strategy, Finland announced the intention to include within the state power structure an agency capable of coordinating the actions in the country’s sub-polar regions more effectively than the Advisory Committee for the Circumpolar Regions, which had not been particularly active.¹²³

In 2012, the European Union issued a new document on the development of its policy in the Arctic Region (the previous version was passed in 2008).¹²⁴ The fact that non-Arctic countries such as China, South Korea, Singapore, Great Britain, France, Germany and others joined the process of adopting national strategies and basic principles of state policy on the Arctic proved that the process was gathering momentum.

Comparing today’s documents with those adopted 20–30 years ago – their essence, major topics and terminology – reveals that dramatic changes have taken place in terms of the perception of what “our” part of the Arctic is as opposed to what belongs to the “world”, and the challenges and priorities. Thus, the Arctic policy of early post-Soviet Russia repeated that of its predecessor in terms of the “special character” of the Arctic, the need to strengthen military presence in that zone and protect national interests.¹²⁵

Twenty years on, the range of topics addressed by the Arctic policy in the Russian Strategy is much wider and very different in terms of essence and terminology. The document no longer stresses the “special character” of the Arctic; along with military security, it mentions other types of security (environmental, energy, Arctic navigation), spells out the problems of modern development of the Arctic zone of the Russian Federation, and the priority challenges of the technological modernisation and restructuring of the Arctic economy.

In spite of the breakthroughs in the building of Arctic institutions, the lack of a coordinating structure dealing with the federal policy in the Arctic makes it impossible for Russia to address the tasks proclaimed in the Strategy and Foundations of the Russian Federation’s State Policy in the Arctic until 2020 and beyond through international cooperation.

2.1.3. What Functions Could a New-Look Goskomsever Perform?

Shortly after the abolishment of Goskomsever, the Council on Far Northern and Arctic Affairs was established by the Government of the Russian Federation.

¹²¹ National Strategy for the Arctic Region. URL: http://www.defense.gov/pubs/2013_Arctic_Strategy.pdf

¹²² The High North – Visions and Strategies (white paper on The High North). URL: https://www.regjeringen.no/globalassets/upload/ud/vedlegg/nordomradene/ud_nordomradene_en_web.pdf

¹²³ Finland’s Strategy for the Arctic Region 2013. URL: <http://www.vnk.fi/documents/10616/334509/Arktinen+strategia+2013+en.pdf/6b6fb723-40ec-4c17-b286-5b5910fbecf4>. Finland may establish a committee for Arctic affairs // Barents Observer. October 20, 2009. URL: <http://www.barentsobserver.com/ru/politika/v-finlyandii-mozhet-poyavitsya-komitet-po-dela-arktiki> (in Russian).

¹²⁴ EU Arctic Policy. URL: http://www.eeas.europa.eu/arctic_region/index_en.htm

¹²⁵ Pelyasov A.N., Kuleshov V.V., Seliverstov V.E. Arctic Policy in an Era of Global Instability: Experience and Lessons for Russia // Region: Ekonomika i Sotsiologiya, 2013, No. 4, pp. 61–94 (in Russian).

There is a need to have a structure at the federal level that can reduce the cost of gathering information about the North. At present, these costs are growing due to the duplication of efforts, the presence of institutional barriers to the dissemination of information on the Arctic, and a great dispersion of the functions of managing Russia's Arctic zone. There is still a need for the Northern regions to intensify the experience exchanges on current issues regarding regional development in the North and the Arctic (for example, reforming the housing and utilities system in the Northern cities).

The following federal government agencies currently develop the main principles of Arctic policy:¹²⁶

- Interagency Working Group of the Presidential Administration of the Russian Federation on Climate Change and Sustainable Development
- Commission for Strategic Development of the Fuel and Energy Sector and Environmental Security
- The Expert Committee on the Arctic and the Antarctic under the Chairman of the Federation Council
- The Federation Council Committee on the Federal Structure, Regional Policies, Local Governance and Northern Affairs
- The State Duma Committee for Regional Policy and Northern and Far Eastern Affairs
- Russian Federation Government Marine Collegium
- Government Commission on the Fuel and Energy Complex, the Reserve Replacement and Improving the Economy's Energy Efficiency
- Ministry of Civil Defence, Emergencies and Disaster Relief of the Russian Federation
- Ministry of Economic Development of the Russian Federation
- Ministry for the Development of the Russian Far East
- Ministry of Natural Resources and Environment of the Russian Federation

Proceeding from the Federation Council scientific information bulletin "Problems of the Russian North and the Arctic", we have compiled a list of "potential competences" of the state structure coordinating Arctic and Northern development issues:

- The improvement of Arctic legislation, including the development of regulatory acts on the export of hydrocarbons from Arctic fields exclusively by vessels flying the Russian flag;
- The development of an optimum transport support scheme for the Northern territories, as well as programmes to replenish the icebreaker fleet and the building of ice class and river-sea vessels;
- Methodological and consultancy assistance in the creation of resource clusters that combine state and private business resources, as well as scientific,

¹²⁶The list has been compiled by SOPS experts on the basis of: Kharlampiyeva N.K. The Arctic: A New Region of World Policy. St Petersburg, St Petersburg University, 2013 (in Russian).

design, production, processing, construction, nature conservation and other enterprises and organisations;

- Upgrading the status of the Northern Sea Route administration and its state control functions;
- Contributing to the development of Northern Sea Route infrastructure;
- Creating a new system of economic incentives and social guarantees to attract young people to relocate to the areas where pioneering development of the North and the Arctic is taking place;
- Developing and implementing a system of measures to ensure the sustainable functioning of the housing and utilities complex in the Northern urban districts and municipalities;
- Preparing a new system of zoning in the North of the Russian Federation that takes climate change into account;
- Supporting entrepreneurship among the indigenous peoples, offering preferential-term loans to small entrepreneurs in the Arctic, streamlining the mortgage loan system in the North.

The development of Arctic cooperation raises the issue related to establishing a Russian national fund to co-finance joint projects in the North and the Arctic. Another relevant issue is the creation of a system that would offer timely and effective financing of Russian initiatives in the Northern and Arctic projects of international organisations, including the development of a corresponding regulatory framework.¹²⁷ A new Goskomsever could assume responsibility for accomplishing these tasks.

2.1.4. Possible Format of a Federal Centre of Responsibility for the Implementation of the State Arctic Policy

As for the format of the state structure for coordinating federal Arctic and Northern policies, the experience of Canada and the United States as Northern federations is applicable to Russian conditions. The United States does not have a special government body that manages Arctic and Northern development. But then the size of its “Arctic” and “North” is incommensurable with Russia’s: the United States has access to the Arctic only through the small “window” of Alaska. The entire US Arctic constitutes one region within which the smooth performance of the function of federal ministries can comfortably be ensured. However, this model is hardly practical for Russia and its vast Northern and Arctic areas, although it is the model that the country currently implements.

Russian conditions are probably most similar to those of Canada, which has its Northern Economic Development Agency (CanNor).¹²⁸ CanNor was formed in 2009 on the basis of the Department of Indian Affairs and Northern Development, which had existed for many years. Its function is to provide state support for the creation of a diversified, sustainable and dynamic Northern economy.

¹²⁷ Problems of the North and Arctic of the Russian Federation. Publication of the Federation Council of the Federal Assembly of the Russian Federation. Nos. 1–14.

URL: <http://www.council.gov.ru/activity/analytics/publications/?publisher=12> (in Russian).

¹²⁸ Canadian Northern Economic Development Agency. URL: <http://www.cannor.gc.ca/eng/1351104567432/1351104589057>

CanNor stimulates the growth and development of Northern and Arctic Canada through programmes of economic development and cooperation, and coordinates work with representatives of indigenous peoples and federal ministries and agencies in developing and implementing infrastructure and resource projects, assessing the degree of their potential social, economic and environmental impact on the local communities.

Russia's Goskomsever is very similar to CanNor in terms of its functions and spheres of responsibility. Is it not high time to fall back on Russian domestic experience?

The new centre responsible for developing Russia's federal Arctic policy could be an independent ministry within the Russian Government or a ministry (considering the great defence and strategic significance of the Arctic) that reports directly to the President of the Russian Federation (like the Ministry of Defence and the Ministry of Emergency Situations) or a structural unit of the Ministry of Economic Development of the Russian Federation. Working under the auspices of the latter, it could unite and coordinate the efforts of all currently existing but disparate scientific councils, commissions and administrative structures that deal with Northern and Arctic affairs.

2.2. The Arctic as a New (Virtual) Federal District

2.2.1. Modern Institutional Prerequisites for the Formation of the Arctic Federal District

There are three examples in the present-day Russian political system where a ministry has been combined with a federal district institution to manage specific territories: the Ministry for the Development of the Russian Far East and the Far Eastern Federal District, the Ministry of North Caucasus Affairs and the North Caucasian Federal District, and the Ministry of Crimean Affairs and the Crimean Federal District. It thus makes sense to consider the possible use of this “combined” approach to managing the Arctic zone of the Russian Federation.

The project of consolidating Russia’s Arctic regions within a single structure was first proposed in 2010–2013 and was called the Arctic Union of Russian Regions.¹²⁹ In the 1990s, the idea of an interregional “Arctic Agreement” association took shape. The need for this project was prompted by the Development Strategy of the Russian Arctic Zone until 2020 and the State Programme of Social and Economic Development of the Arctic Zone of the Russian Federation.

The authors of the “Arctic Union of Russian Regions” project stressed the acute need for the interregional economic, social and political coordination of activities in the Russian Arctic. They argued that the Union would help to mitigate the contrasts within the Arctic zone and establish an effective flow of knowledge and human resources between the old and new industrial Arctic territories. The project envisaged: the introduction of remote control technologies; the elimination of the negative aspects of single-industry Arctic communities; the use of best international management practices, and the establishment of channels for interaction between the authorities, business and national self-government structures of the small-numbered indigenous peoples of the North and non-profit organisations with the goal of stimulating activities in remote local Arctic communities. The project’s roadmap included more than 40 measures to the tune of 34.4 million roubles to be implemented in 2011–2020. Arkhangelsk was to be the driver in creating the Arctic Union of Russian regions and an unofficial capital of Russian Arctic regions.

The argument for strengthening the functions of the state in the Arctic through the creation of a federal executive body has been presented above. Organizing the Arctic Federal District is a fundamentally different issue. It cannot emerge from another federal district in the same way that the North Caucasian Federal District, which has been isolated from the Southern District, did. Nor can it be formed in a natural way, like the Crimean or the Far Eastern District were.

The (Virtual) Arctic Federal District is formed across four federal districts: the North-Western Federal District, the Ural Federal District, the Siberian Federal District and the Far Eastern Federal District. Functionally, it would be weaker than the other federal districts. But the functions of economic coordination based on international cooperation would be very manifest here.

¹²⁹ Lukin Y.F. Arctic Projects of Interregional Integration // *Arktika i Sever*. 2013. No. 13, pp. 1–19 (in Russian).

In accordance with government provisions,¹³⁰ the ministries for the affairs of individual territories are the main coordinators of activities to implement programmes, perform the functions of the state customer of programmes for the comprehensive development of territories and coordinate territorial development projects, with due account of the priorities of the development of Russian regions. In addition, they seek to harmonise the strategic planning documents of the Russian regions with the strategic planning documents of the Russian Federation, provide a clearing house for the practices of applying Russian legislation, and analyse the implementation of state policy in the relevant spheres of activity.

Although the overall tasks are similar, there are nuances to the functions of the ministries. Thus, the Ministry of North Caucasus Affairs of the Russian Federation takes part in managing organisations created to meet the challenges in the North Caucasian Federal District (the North Caucasus Development Corporation and North Caucasus Holiday Resorts). A separate block of functions has to do with the development of small and medium-sized enterprises in the North Caucasus: “The Ministry of North Caucasus Affairs of the Russian Federation contributes to the activities of all-Russian non-profit organisations that represent the interests of small and medium-sized enterprises.”

By contrast, the specificities of the Ministry for the Development of the Russian Far East are determined by its involvement in promoting large-scale investment projects. The Russian Far East does not have the kind of density of economic activities that exists in the North Caucasus, so infrastructure comes to the fore.

Government regulations on the Ministry of Crimean Affairs and the Ministry for the Development of the Russian Far East are practically identical, with the exception of the emphasis on large-scale investment projects in the latter case. The main thrust of the activities of the Ministry of Crimean Affairs is to coordinate economic policy and the state programmes for the development of the Crimean Federal District.

Despite the slight differences in the functions of the ministries, the functions of presidential envoys to these districts are practically identical. The plenipotentiary representative to the federal district in fact helps the president perform his duties as head of state,¹³¹ including ensuring the integrity and stability of state power and its effective functioning. Coordinating the work of federal executive bodies, he also supervises state policy in the following areas: integrated socioeconomic development of the constituent entities of the federal district; state regulation in providing financial assistance to the constituent entities of the district and monitoring its use; development and implementation on the federal district's territory of state programmes, Federal Targeted Programmes and state investment programmes; and attracting investments to the Russian regions. The ministries for territorial affairs ensure compliance with decisions on these issues and play

¹³⁰ On the Ministry for Development of Russian Far East: Resolution No. 664 of the Government of the Russian Federation dated June 30, 2012 // Rossiyskaya Gazeta. July 6, 2012. On the Ministry of North Caucasus Affairs and Introduction of Amendments to Certain Acts of the Government of the Russian Federation: Resolution No. 549 of the Government of the Russian Federation dated June 16, 2014 // Rossiyskaya Gazeta. June 19, 2014. On the Ministry of Crimean Affairs: Resolution No. 427 of the Government of the Russian Federation dated May 10, 2014 // Rossiyskaya Gazeta. May 13, 2014 (all in Russian).

¹³¹ Decree No. 849 of the President of the Russian Federation dated May 13, 2000 (in Russian).

the role not of strategic, but of operational headquarters in implementing state policy in these parts of Russia.

2.2.2. Possible Models for Organizing the Arctic Federal District

The Arctic Federal District can be formed in one of three ways:

- As a classical federal district (modelled on the nine existing federal districts);
- As an interregional economic interaction association;
- As a network community of regions.

We believe that there are three key principles to all the three models: 1) the concept of the federal district must be tailored to fulfilling strategic and policy decisions of the country's leadership that are aimed at enhancing the economic and political role of the Russian Arctic; 2) there must be an awareness of the need to ensure social stability and social acceptance of the strategic decisions made; 3) the "open architecture" of each model. Individual elements may be added to each of the models to harmonise the interests of all the economic agents in implementing the national Arctic policy.¹³²

Model 1. The Arctic as a Classical Federal District

As of today, this concept represents an attempt to form a region on the basis of latitude and would appear to be the least realistic of all. If implemented, the Arctic zone of the Russian Federation would come under direct presidential control. The President's envoy would be responsible for exercising the constitutional powers of the head of state in the Russian Arctic.

This would have the following implications: it would ensure that all the work of the government bodies follow the guidelines of state domestic and foreign policy laid down by the President of the Russian Federation; it would monitor the execution of the federal executive bodies' decisions in the federal district; it would ensure the implementation of the human resources policy of the President of the Russian Federation in the federal district; it would submit regular reports on national security and the political, social and economic situation in the federal district to the President of the Russian Federation, and make corresponding suggestions; and it would interact with the Main Control Directorate of the President and the bodies of the Prosecutor General's Office of the Russian Federation in organizing inspections to ensure compliance with federal laws, presidential decrees, executive orders, government resolutions and decrees in the given federal district.

Model 2. The Arctic as a Federal District with an Emphasis on Interregional Economic Interaction

Implementing this model would require the creation of an expert advisory body to ensure the effective coordination of interregional and international cooperation among the regions of the Russia's Arctic zone. The district's Coordinating Council

¹³² Kononov A.M. The System of State Strategic Planning of the Development of the Russian Arctic Zone // Russian Transport: Portal for Transport Industry Specialists. January 30, 2014.
URL: <http://www.rostransport.com/themes/12499/> (in Russian).

as a flexible governing body would attend to a specific range of issues related to Arctic development. Through that structure, the federal district would implement the overall policy of socioeconomic reform in the Arctic regions.

The total range of Arctic problems must be identified before such a coordinating body is set up. The decisions of the advisory body made within its competences provide grounds for drafting regulatory acts and developing and carrying out programmes, action plans and measures in implementing the Development Strategy and the State Programme of Social and Economic Development of the Arctic Zone of the Russian Federation.

The following tasks could be solved as part of this model:¹³³

- Monitoring and preventing cross-border pollution of Arctic territories, creating optimum conditions for the preservation of biodiversity in the region;
- Rendering effective assistance to executive and legislative bodies in the social and economic development of the regions by setting the direction of their interregional cooperation;
- Developing recommendations on regional priorities in corresponding spheres of activity for the federal and regional bodies with due account of Russia's national interests;
- Preparing proposals on the socioeconomic development priorities of the Arctic regions of the Russian Federation;
- Representing the interests of the executive power bodies of the Russian regions that are members of the Arctic Federal District (at their request) on issues arising in the corresponding spheres of activity and in international governmental and non-governmental organisations;
- Preparing proposals, measures, draft strategies and programmes for sustainable development in the Arctic Region at the regional and federal levels;
- Preparing studies and proposals on pressing issues in the management of natural resources, environmental protection, security and emergency situation management and the use of the Northern Sea Route for interaction with the federal ministries and agencies.

The performance of a district in this model could be assessed by: 1) mitigating the negative impact of accumulated disproportions in the economy during the transition to a market economy; 2) easing social tensions; 3) achieving economic stability among the Arctic territories in the new economic environment; 4) intensifying the interregional exchange of manpower, material, financial and information resources (knowledge, competences, advanced expertise).

Model 3. The Arctic Federal District as a Network of Interacting Arctic Regions

Virtual network interaction among the Arctic regions is a form of organizing interregional interaction among Russia's Arctic regions. The aim of virtual

¹³³ Based on the materials of interregional associations for economic interaction between the constituent entities of the Russian Federation: Siberian Agreement. URL: <http://www.sibacc.ru/>; the Far East and Trans-Baikal Areas. URL: <http://www.assoc.khv.gov.ru> (in Russian).

interaction is to generalise, systematise and disseminate advanced development experience and create conditions for the exchange of knowledge and technologies. The interacting agents may be legal or physical persons representing different industries.¹³⁴

The website of the Arctic Federal District acts as an information and communication space. The district's activity is regulated by the Development Strategy, the State Programme of Social and Economic Development of the Arctic Zone of the Russian Federation and the Statute on the Arctic Federal District.

Arctic network interaction could be instrumental in addressing the following tasks:

- Organizing a nationwide Arctic information and communication network for the population of the Russian Arctic;
- Developing distance (internet-based) and other forms of interaction in the Russian Arctic;
- Creating conditions for the exchange of best practices;
- Discussing state policy measures with regard to Arctic regions that have been tested in practice;
- Building up collections of useful leads and catalogues of data on economic, social, scientific and technical, industrial and human development of the Russian Arctic;
- Conducting network professional contests of Arctic competences;
- Organizing distance support for municipal employees in the Arctic (web conferences, commissions);
- Conducting internet and video conferences, as well as methodological seminars on pressing issues related to the opening up and development of the Arctic zone of the Russian Federation.

The main differences between the three models and the role of international cooperation in each of them are summed up in Table 17.

The formation of the Arctic (virtual) Federal District would echo the ideas of Arctic political scientist Oran Young, who advocates “soft power”, rather than a formal treaty, i.e. informal strengthening of ties for the global Arctic. In any case, the implementation of the Arctic Federal District project in one format or another and the development of legal acts following up on this idea would provide normative, legal and institutional conditions for long-term sustainable development of Russia's Arctic zone. By establishing a common platform for development, the federal district could encourage international cooperation in the global Arctic region, help increase the amount of investments in the economy of the Russian Arctic while improving the quality of life (including that of the indigenous small-numbered peoples of the North), and reduce the risk of crises due to the exclusive orientation of many Russian Arctic territories towards extractive industries.

¹³⁴ Wibster D. Network Interaction as a factor of Innovative Development.
URL: <http://anyanova.tomsr.ru/wp-content/uploads/2013/02/cetevoy.pdf> (in Russian).
Kondrakova I.E. Network Interaction: Mechanisms of Implementing Education Policy.
URL: <http://www.kpinfo.org/activities/research/conferences/conference-internet-2013-april/78-problemy-i-perspektivy-razvitiya-obrazovaniya-v-sovremennom-mire/510-1-27> (in Russian).

3. Conclusions and Recommendations

When assessing the current state of international economic cooperation in the Arctic, it is necessary to note that such cooperation has grown significantly and its forms have become more diverse compared with the early 1990s. The undisputed leader of circumpolar economic cooperation is certainly the Barents Region, where it is already taking place at the most fundamental of levels and beyond. It involves individual households, as well as small and medium-sized enterprises, which testifies to its dynamic and massive scale. The use of advanced foreign expertise, knowledge and technological solutions in implementing projects in the ecotourism, urban utilities and resource sectors enables cross-border technological cooperation in the European Russian Arctic to develop faster than the eastern part of the Russian Arctic.

Arctic megaprojects on the Russian continental shelf have powerful international support at all stages from design to the start of operations and equipment repair. Norwegian experience shows us that attracting experienced and competent foreign partners with skilled personnel is particularly important in the early stages of developing offshore hydrocarbon fields.

A comparatively little-studied but exceedingly important area of economic cooperation is the interaction of circumpolar chambers of commerce and industry as networking organisations that structure Arctic entrepreneurs from different countries. The experience of the Norwegian–Russian Chamber of Commerce, which has existed for over ten years, is of particular interest. The Chamber renders consultancy and legal services to Russian and Norwegian companies, conducts market studies, disseminates information on the economic situation in Norway and Russia, analyses trade and investment opportunities, and organises business meetings, seminars and symposia.

The business community of circumpolar countries at the grassroots level of entrepreneurship is in line with Canada's efforts to create a circumpolar business forum. As noted earlier, this task was proclaimed as a priority of Canada's chairmanship of the Arctic Council (2013–2015).¹³⁵

Cooperation among Arctic universities is making a tangible contribution to the innovative development of Russian Arctic territories. In Russia, the Northern (Arctic) and North–Eastern federal universities have been the catalysts in recent years. International university cooperation is particularly active on the thematic projects initiated by the University of the Arctic network set up in Norway in the 1990s.

The sanctions imposed by the European Union, Canada and the United States with regard to the civil war in Ukraine have created a new obstacle to Russia's international economic cooperation in the Arctic in 2014. Above all, they have led to the narrowing of the format for the largest forms of interstate cooperation through the interaction of resource corporations and the governments of Russia

¹³⁵ Canadian Chairmanship Program 2013–2015 // Arctic Council. May 15, 2013. URL: <http://www.arctic-council.org/index.php/en/about-us/arctic-council/canadian-chairmanship/735-canadian-chairmanship-Programme-2013-2015>

and other Arctic countries. At the same time, the links at the level of Arctic regions and cities, cross-border cooperation, and contacts among business partners continue, and may even become more active (in contrast to their being frozen at the official level).

Another barrier to cooperation can be described as cognitive. The Russian authorities often underestimate the importance of interaction between universities, scientists, experts and research organisations in promoting the innovative transformation of the economies in Russia's circumpolar territories. This constitutes a considerable untapped reserve that can be further strengthened and expanded upon.

Yet another barrier is the deficiency of normative and legal regulation of corporate, cross-border and interregional cooperation among Arctic territories on the Russian side. It is highly desirable to have clearly formulated rules and formalities regarding Russia's economic cooperation in the Arctic zone.

The participants in circumpolar economic partnerships on the Russian side are clearly lacking a strategic vision – a vision of what goals should be sought and what long-term tasks should be set, considering both the processes of globalisation and local features. Objectively, the problem is complicated by the lack of a single body managing and coordinating federal policy in the Arctic.

The mission of Russia's international cooperation in the Arctic is to use the achievements of its Arctic partners to ensure sustainable development of high-latitude Russian territories, considering the growing role of the knowledge and innovation factors. International cooperation in the Arctic has a wide range of possibilities, including attracting new foreign investors to Russia's circumpolar territories, creating joint international rules of offshore economic activities and ecosystem-based management, and adopting joint measures to adapt Arctic economic systems to growing climatic fluctuations and the new climate dynamic. For all these reasons, cooperation between Russia's Arctic regions and foreign partners must be pragmatically oriented towards addressing the acute economic and social problems of their development, forming a positive image and making these Russian regions more attractive for investments. To this end, it is necessary to constantly upgrade the qualifications (improve the infrastructure) of personnel supervising external links. Regional structures (chambers of commerce and industry, entrepreneurship support funds, universities, statistical authorities, etc.) must become part of the pan-Arctic partnership network and form the elements of an integrated infrastructure of international cooperation.

The study of the realities of contemporary economic cooperation for Russian Arctic territories in the circumpolar region suggests the following recommendations:

1. Arctic cooperation should be aimed at enhancing the economic stability of Russian circumpolar territories and should deliver a tangible and measurable economic effect (new jobs, the flow of revenue to residents of the Russian Arctic regions). This can best be guaranteed by using the advanced experience, practices and competences of foreign partners in the new business projects in the Russian Arctic.

The drivers of such knowledge flow can be Russian businesspeople in the Murmansk and Arkhangelsk oblasts, the Nenets Autonomous Okrug,

the Krasnoyarsk Krai, the Republic of Sakha (Yakutia) and the Chukotka Autonomous Okrug. This is a key priority for state support, especially considering the sanctions that target major Russian structures and federal executive and legislative bodies. Therefore, a shift of emphasis in cooperation to the regional and municipal levels, and to the level of individual entrepreneurs, is amply justified and practicable. The state must stimulate the formation of international partnerships that can enrich the Russian Arctic with new competences, technologies and knowledge, for example in energy-saving, alternative sources of energy, the modernisation of urban infrastructure, ecotourism, etc.

2. Foreign partners should be encouraged to participate in creating innovative infrastructure objects in the Russian Arctic – industrial parks, business incubators, technology transfer centres, branches of university consortia, etc. – in order to gradually build up intellectual industrial services for the extractive industries in the circumpolar regions.
3. Each international cooperation project must emphasise the knowledge component, which would replenish or modernise the existing set of competences in the Russian Arctic. In the contacts between twin Arctic cities and research institutions, it is advisable to always see the potential for creating new Arctic start-ups capable of quickly commercializing the knowledge competences and expertise of foreign partners.
4. At the same time, it is necessary to try and minimise the cost of international cooperation, which for Russia means the outflow of young talent to the neighbouring Barents-region countries. This painstaking work to provide attractive living and working conditions for young qualified personnel in the Russian subArctic regions is a priority for the local and regional authorities and needs to be included in federal and regional legislation.
5. The issues of dynamic and comprehensive international economic cooperation of Russia in the Arctic are directly linked with its institutionalisation. Above all, this would require recreating a structure at the federal level that would be responsible for the formation of an integrated and coordinated federal Arctic policy. It is necessary to work out a set of legal norms and determine the strategic goal and tasks of interstate cooperation in the Arctic as a blueprint for the actions of all Russian participants.

Russia's international cooperation in the Arctic in the forecast period is acquiring a new dynamic. The forms of participation of Russian Arctic regions in circumpolar cooperation will be harmonised with the national interests of the country and aimed at acquiring new knowledge with regard to modern technologies, institutions, structures and bringing about progressive structural change in the regional economy and the social sphere. They will also facilitate a more effective solution to the tasks of opening up and using the potential of the Russian Arctic.

Tables and Figures

Table 1. Potential of the Barents Region Economies for International Cooperation (2013 data)

Region/Province	Size of population, thousand people	Population density, per sq km	Area, thousand sq km	Main economic sector with potential for international cooperation
Finland				
Kainuu	85	3,48	24,4	Woodworking
Lapland	183	1,85	99	Services
Oulu	380	10,27	37	Technologies
Norway				
Finnmark	74	1,53	48,7	Fish processing
Nordland	234	6,15	38,2	Oil
Tromsø	153	5,94	25,8	Fish processing, agriculture
Russia				
Arkhangelsk Oblast	1300	2,18	587,4	Woodworking, fish processing
Murmansk Oblast	836	5,77	145	Woodworking, mining
Komi Republic	993	2,38	416,8	Woodworking, agriculture
Republic of Karelia	684	3,79	180	Woodworking
Nenets Autonomous Okrug	42	0,25	176,7	Oil
Sweden				
Norrbottn	248	2,52	98,5	Agriculture, woodworking, fish processing
Västerbotten	257	4,66	55,4	Agriculture, woodworking, fish processing

Source: Calculated based on the ArcticStat socioeconomic database. URL: <http://www.arcticstat.org>

Table 2. Matrix of the Density of Interregional Links in the Eight Arctic Countries (based on the survey of 74 completed projects that involved interregional cooperation)

Country total number of projects)	Norway	Finland	Sweden	Russia	Denmark	Canada	United States	Iceland
Barents Region countries								
Norway (25)	*	14	10	24	8	4	3	3
Finland (55)		*	11	53	7	4	3	3
Sweden (17)			*	15	8	4	3	3
Russia (67)				*	8	4	3	3
Other Arctic countries								
Denmark (10)					*	4	4	4
Canada (3)						*	2	2
United States – Alaska (3)							*	1
Iceland (3)								*

Note: The cells show the number of projects implemented between pairs of Arctic countries.

Source: European Commission Database 2006. Projects Relevant for the Arctic Region (165 projects).

URL: http://www.ec.europa.eu/external_relations/north_dim/nis/2006/arctic/arctic_priorityarea_en.pdf

Table 3. International Cooperation in Building Interregional Sections of Railways in Northern Europe

Railway route	Participating states	Cargo throughput capacity, million tons	Construction period	Total investments, billion dollars
Kolari – Skibotn	Finland, Norway	7–13	2017–2020	2,8–3,2
Rovaniemi – Kirkenes	Finland, Norway	7–13	2016–2020	2,8–3,2
Rovaniemi – Narvik	Finland, Sweden, Norway	7–13	2017–2020	0,8–1,1
Rovaniemi – Murmansk	Russia, Finland	7–13	2008–2012 (put on hold)	0,7–1,6
Murmansk – Nikel – Kirkenes	Russia, Finland, Norway	10	2002–2006 (put on hold)	Feasibility studies not carried out

Source: Compiled by the Council for the Study of Productive Forces (SOPS): The Sea Without Waves.

URL: <http://www.rg.ru/2013/06/04/arktika-site.html> (in Russian); Development of Railway Network in Northern Europe. URL: <http://www.tv21.ru/news/2013/04/23/?chid=6&newsid=56620> (in Russian).

Table 4. Selected areas of Smart Specialization of Arctic Clusters

Area	2014–2015	2016–2018	2019–2020
New sustainable development of Arctic industry	Creating conditions for the development of a low-carbon economy	Creation of innovative platforms	
Arctic bioeconomics	Commercialization of bioeconomics	Cooperation between interested parties in generating bio-energy	Bio-terminal pilot projects
Arctic natural resources	Investment in processing and recycling to support small and medium-sized enterprises	Commercialization of innovations in the non-renewable natural resources sector	
Sustainable development of Arctic tourism	Development of a new generation of Arctic tourism products	Research and educational programmes for future Arctic tourism	

Source: Compiled by experts of the Council for the Study of Productive Forces (SOPS) on the basis of: Heikka K., Jokelainen K., Teräs J. Lapland's Arctic Specialisation Programme / Regional Council of Lapland.
URL: http://www.lapland.fi/en/lapinliitto/c/document_library/get_file?folderId=53982&name=DLFE-21455.pdf

Table 5. Stages in the Development of Industrial Offshore Regions in Norway

Stage	Main projects	Technological innovations (average time of project planning)	Main content of international cooperation
1970–1980	1969/1970: discovery of the first major field Ekofisk 1974: Statfjord oil field discovered	Multi-phase flows in pipelines, 3D-seismic studies (2 years)	International cooperation is at its most intense. Main areas: – promoting cooperation through mandatory foreign programmes for foreign companies to ensure that innovative technologies are developed in Norway and not elsewhere; – refitting fishing vessels to provide procurement services and drilling platforms; – flow of production culture and knowledge from fishing to the new offshore sector; – setting the use of local goods and services at 90 per cent. International and foreign companies play a key role in providing technological support in alliance with Norwegian enterprises. They also act as catalysts in turning national companies into fully fledged operators of offshore fields.
1980–1990	1984: launching of Snow White natural gas field	Injection of water in the process of oil extraction (8 years)	Phasing out of international cooperation. Replacing foreign technologies and personnel with Norwegian analogues. US operators replaced with Norwegian operators (in 1987, Statoil became the operator of Statfjord)
1990–2000	1991: Oseberg oil field discovered 1996: production starts at Troll natural gas and oil field 1997: Ormen Lange natural gas field discovered 1999: Gullfaks oil field	Troll and Oseberg fields: gas injection, horizontal drilling, 4D-seismic studies (13 years)	Fresh upsurge of international cooperation to create the next level of industrial technologies. Measures initiated to reduce offshore production emissions. Methanol production industry created. Fields linked by pipelines. 1997: Norwegian Oil & Gas Producers created (80 per cent of the Norwegian oil and gas sector). Offshore activities dominated by Statoil, Norsk Hydro and international oil majors

Continuation of Table 5

Stage	Main projects	Technological innovations (average time of project planning)	Main content of international cooperation
2000 – present	2007: start of production at Snow White natural gas field	Cables on seabed, integrated operations, multi-phase processing, Smart seismic reconnaissance (Snow White natural gas field –23 years)	<p>Cooperation with US companies in designing Arctic field development technologies.</p> <p>Building of the longest multi-phase pipelines. Cooperation in building a natural gas liquefaction plant. Agreement on Rosneft participation in developing the Norwegian continental shelf areas of the Barents Sea. Norway intends to place orders for ice breakers and drilling rigs with Russian shipyards.</p> <p>Norwegian oil and gas cluster project developed. About 40 new offshore companies appear (55 per cent of licensed areas). End of Statoil monopoly. Encouragement of prospecting at mature areas of fields by providing greater access to mature areas, attracting new companies, tax breaks.</p>

Source: An Industry for the Future – Norway’s Petroleum Activities / Norwegian Ministry of Petroleum and Energy. URL: https://www.regjeringen.no/globalassets/upload/oed/petroleumsmeldingen_2011/oversettelse/2011-06_white-paper-on-petro-activities.pdf; The Norwegian Oil Field Services Analysis 2013 / EY. URL: [http://www.hollandlaw.nl/Publication/vwLUAssets/EY-The-Norwegian-oil-field-services-analysis-2013/\\$FILE/EY-Norwegian-Oilfield-Services-Analysis-2013-web.pdf](http://www.hollandlaw.nl/Publication/vwLUAssets/EY-The-Norwegian-oil-field-services-analysis-2013/$FILE/EY-Norwegian-Oilfield-Services-Analysis-2013-web.pdf); Norwegian Offshore Shipping Companies – Local Value Creation, Global Success / Norges Rederiforbund. URL: [http://www.rederi.no/nrweb/mmm.nsf/lupgraphics/Norwegian_offshore_shipping_companies.pdf/\\$file/Norwegian_offshore_shipping_companies.pdf](http://www.rederi.no/nrweb/mmm.nsf/lupgraphics/Norwegian_offshore_shipping_companies.pdf/$file/Norwegian_offshore_shipping_companies.pdf); Angell E., Stokke K.B. Sårbarhet for klimaendringer og klimatilpasninger– Coast Adapt-prosjektet i Hammerfest. URL: http://www.norut.no/sites/norut.no/files/static_files/content/download/4571185/9301112/Norut%20Alta%20Rapport%202012_3.pdf (in Norwegian)

Table 6. Economic Assessment of the Cost of Confirming Russia's Claims to Parts of the Arctic Continental Shelf

Type of work	Estimated cost (billion roubles)
Actual funding of "Development and use of the Arctic" subprogramme, according to the Federal Treasury (as of July 1, 2014), including off-budget resources	1,94
Exploratory expeditions in 2000–2012	11,15
Federal Targeted Programme "Ecology and Natural Resources of Russia (2002–2005)"	0,7–1,1*
Long-term state programme for studying subsoil resources and the reproduction of the mineral and raw materials bases of Russia in terms of balancing consumption and production of mineral raw materials (in the Arctic)	14,3
Budget itemisation of the "Geological Study of Subsoil Resources of the Russian Federation, the Continental Shelf and the World Ocean for Federal Needs According to the Federal Budget" (in 1999–2001, with reference to the Arctic) and "Geological Study of Subsoil Resources of the Continental Shelf, the World Ocean, the Arctic and the Antarctic for Federal Needs" (in 2002–2007 with reference to the Arctic)	9,15
Costs incurred by users of subsoil resources (financing geological prospecting by subsoil resource users)	44,88–48,96
Research under the Russian Academy of Sciences and specialised Arctic institutions	0,8–1
Allowance for Arctic risks	16%
Total: 96.2–101.6 billion roubles	

Note: *Including Ministry of Natural Resources and Environment of the Russian Federation funding of the subprogramme "Mineral Resources of the World Ocean, the Arctic and the Antarctic" in 2001–2005 (federal budget resources allocated to the Ministry under the item «Other Needs»).

Source: Calculated by A.V. Kotov, Ph.D. in Economics.

Table 7. Characteristics of the New Oil and Gas Industrial Regions on the Russian Arctic Shelf

Region	Planned production level	Operating wells stock	Average well capacity	Duration of constant production, years	Recovery coefficient over 50 years of operation, %	Area, thousand square km
Industrial regions with considerable potential for international cooperation						
Prirazlomnoye (oil)	6.58 million tons (total 72 million tons)	745 ² (492) ³	6.5 tons per day	20.5–22	26 ⁴ –32.2 ⁵	2.1 ⁶
Number of employees: 2500 (200) ¹						
Yurkharovsky (oil/gas)	38.3 billion cubic metres of gas and 2.72 million tons ⁸	Not less than 72	Up to 4.5 million cubic metres per day	15–20	25–30	0.26 ⁹
Number of employees: 3500 (650) ⁷						
Regions with poor potential for international cooperation at present (start of development at least 15–20 years away)						
Vostochno–Prinovozemelsky (1, 2, 3) (oil)	4.9 ¹⁰ –6.3 billion tons of oil, 8.3–14.6 ¹¹ trillion cubic metres of gas	> 4000 ¹²	–	20 ¹³	–	126
Medyn–Varandey (oil)	6 million tons (total 163 million tons)	12–14	–	30 ¹⁴	19–21 ¹⁵	2.6
Fedynsky (oil/gas)	18.7 BOE ¹⁶	9 marked out PS ¹⁷	–	–	–	38 ¹⁸
Yuzhno–Russky (oil/gas)	270 ¹⁹ –320 ²⁰ million tons (oil), 64 billion cubic metres (gas)	–	–	–	–	9.7
Shtokman (gas) ²¹	67.5–71.1 billion cubic metres	156 (144) ²²	2.62–4.06	22–50	72.09–86 ²³	1.4

Note: The table describes offshore regions which can reasonably emerge before 2025–2030.

¹ Engaged in direct servicing of the field (SOPS expert estimate).

² The current State of Development of Prirazlomnoye Oil Field.
URL: <http://www.neftsearch.ru/?p=222> (in Russian).

³ Extracting wells stock.

⁴ Bulatov E. Oil Recovery Coefficient at Russia's Prirazlomnoye is Half that of Norway.
URL: <http://www.teknoblog.ru/2014/07/21/19585> (in Russian).

- ⁵ Mapping Project. Map of Oil and Gas Projects. Review of Oil and Gas Projects in Russia's Northern Regions. URL: <http://www.murmanshelf.ru/upload/iblock/e2b/mappingbruss.pdf> (in Russian).
- ⁶ Geographical–Economic Data on Prirazlomnoye Oil Field. URL: <http://www.actual-history.su/tag/prirazlomnogo> (in Russian).
- ⁷ Engaged directly in servicing the field (SOPS expert estimate).
- ⁸ Accumulated extraction in 2003–2013.
- ⁹ Yurkharovskoye Oil and Gas Condensate Field. URL: <http://www.russiaptec.ru/tehnicheskaja-biblioteka/mestorozhdenija/neftegazokondensatnoe-mestorozhdenie-yurharovskoe.html> (in Russian).
- ¹⁰ Samofalova O. Expedition to the North // Business newspaper *Vzglyad*. July 11, 2013. URL: <http://www.vz.ru/economy/2013/7/11/640912.html> (in Russian).
- ¹¹ Matishov G.G. Brekhuntsov A.M. Dzhenyuk S.L. Kara–Sea Exploration at the Current Stage of the Development of the Russian Arctic // *Arktika: Ekonomika i Ekologiya*. 2013. No. 1 (9), pp. 4–11 (in Russian).
- ¹² Rosneft Plans to Drill 4,000 Wells in the Kara Sea Alone. URL: <http://www.pro-arctic.ru/17/10/2013/news/5257> (in Russian).
- ¹³ Ponomaryov V. Time to Drill in the Arctic // Expert Online, August 10, 2014. URL: <http://www.expert.ru/2014/08/10/vremya-burit-v-arktike> (in Russian).
- ¹⁴ Kutychkin B. Whose Oil Will be First? // *Neftegazovaya Vertikal*. No. 16. 2005. pp. 70–71. URL: <https://www.rosgeoportal.ru/association/materials/SitePages/downloads/00/0043.pdf> (in Russian).
- ¹⁵ SOPS expert forecast.
- ¹⁶ Summary expert estimate.
- ¹⁷ Promising Structures.
- ¹⁸ Rosneft and Eni Sign an Agreement on the Completion of Transactions on Three Russian Offshore Projects. URL: <http://www.rosneft.ru/printable/eni/21062013.html> (in Russian).
- ¹⁹ Cumulative reserves. Rosneft Starts Exploration in the South–Russian Area of the Pechora Sea // Russia Today Agency, August 16, 2012. URL: http://www.ria.ru/arctic_news/20120816/724730121.html (in Russian).
- ²⁰ Annual Report 2012. OAO NK Rosneft. URL: <http://www.fs.moex.com/content/annualreports/1433/1/rosneft.pdf> (in Russian).
- ²¹ Khistyayev A.A. Review of Alternatives for Development of the Shtokman Gas Condensate Field. URL: <http://www.helion-ltd.ru/many-variants-13> (in Russian).
- ²² Extracting wells stock.
- ²³ Shtokman Gas Condensate Field. URL: <http://www.iv-g.livejournal.com/327423.html> (in Russian).

Table 8. Analysis of Rosneft Agreements with Eni and Statoil (2012)

Agreement	Rosneft and Eni	Rosneft and Statoil
Financing geological prospecting work		Yes
Geological prospecting cost over and above license commitments	In proportion to shares in the projects (33.33 per cent for Eni and 66.67 per cent for Rosneft)	No
Compensation of the bulk of the cost of geological prospecting already carried out on the Russian continental shelf		Yes
Creation of joint ventures	No	Yes
Possibility of acquiring shares in projects	No	Yes
Compensation for the cost to the Russian company of paying for licenses	No	33.3 per cent
Intention to place orders for the building of vessels	No	Yes
Additional payments	No	Lump-sum bonus for each commercial discovery of oil and gas reserves

Source: Compiled by SOPS experts on the basis of the articles “Rosneft and Eni Sign Agreement on Financing Geological Prospecting on Three Licensed Sections of the Russian Continental Shelf”. URL: <http://www.mineral.ru/News/49431.html> (in Russian); “Rosneft and Statoil Agree on Offshore Cooperation”. URL: <http://www.finance.rambler.ru/news/economics/108288322.html> (in Russian).

Table 9. Possible Development Scenarios of the Kara Sea Offshore Regions with and without International Cooperation

Indicators	Scenario 1 (without international cooperation and with sanctions in force)	Scenario 2 (with international cooperation)
Intensity and time period of well drilling	In 2015–2020 Gazprom drills one well in two years; Rosneft drills two wells	Drilling of exploration wells by Gazprom at a rate of one well per season starts at the Kara Sea in 2015–2020. Rosneft begins exploratory drilling in 2015. The company drills 3 wells in 2015–2020
Quantity	One drilling unit	Two drills, one from Gazprom and one from Rosneft may be used
Number of operational wells drilled	In 2012–2020, 18 exploratory and 92 operational wells will be drilled in the region	In 2012–2020, 9 exploratory and 76 operational wells will be drilled
Time period of development	Development of the Severo– Kamennomysskoye, Kammenomysskoye–sea and Ob fields falls behind schedule and is completed by 2018–2020	Fields are developed on schedule; after 2015 the Severo–Kamennomysskoye field will need one platform; the Kamennomysskoye–sea deposit will require two platforms and the Ob deposit will require one platform in 2017–2019

Source: Kravets V. Development of the Russian Arctic Shelf Needs to Be Stepped up. URL: http://www.rogtecmagazine.com/wp-content/uploads/2014/09/06_Development-of-the-Russian-Arctic-Shelf-RPI.pdf; http://www.rogtecmagazine.com/PDF/Issue_031/06_RPI%20Development%20of%20the%20Russian%20Arctic%20Shelf%20The%20Need%20for%20Accelerated%20Development.pdf (in Russian).

Table 10. Problems, Influence Potential and Recommendations on Strengthening International Cooperation among Russian Arctic Entrepreneurs

Bottlenecks in the implementation of regional programmes	Potential of the state to strengthen international cooperation among entrepreneurs	Methods of enhancing opportunities for international cooperation (recommendations)
Underfunding on the part of regional budgets	Average	Determining financing priorities. Assessment of the effect of budget investments.
Underfunding on the part of local budgets	Average	Promoting the benefits of investing in the development of entrepreneurship.
Significant changes in tax rules	High	Interaction of state and municipal bodies with non-governmental and professional organisations and business associations.
Mistrust on the part of entrepreneurs	High	Inviting foreign advisors on municipal finance. Greater openness through keeping entrepreneurs informed about the activities of the authorities through various information channels.
Lack of confidence among entrepreneurs in their own abilities	High	Publicizing successful entrepreneurial projects and start-ups, including foreign initiatives. Conducting training events for entrepreneurs.
Output of uncompetitive products	High	Training for small and medium-sized businesses, product certification according to ISO 9000 international standards.
Incorrect assessment of the prospects for the development of entrepreneurship	High	Developing methods for assessing the subjects of small and medium-sized enterprises with due account of foreign experience. Signing agreements between local small and medium-sized business associations and municipal authorities on a list of targets for small and medium-sized enterprises

Source: Compiled by SOPS experts on the basis of the following documents: Resolution No. 441–P of the Government of the Yamalo–Nenets Autonomous Okrug “On Approving the Okrug’s Long–Term Targeted Programme ‘Development of Small and Medium–Sized Enterprises in the Yamalo–Nenets Autonomous Okrug in 2011–2013’” dated December 9, 2010 (in Russian); Executive Order of the Governor of the Murmansk Oblast No. 195–PG “On Financing the Programme of State Support for the Development of Small Entrepreneurship in the Murmansk Oblast for 2000–2004” dated May 10, 2000 (in Russian); State Programme on the Development of Entrepreneurship in the Republic of Sakha (Yakutia) in 2012–2016 (draft). Yakutia, 2011 (in Russian).

Table 11. Examples of Diaspora Links on Arctic Topics at the International Congress of Arctic Social Sciences (May 2014)

Title of presentation at the Congress by members of the Russian diaspora overseas	Partner organisations of the report co-authors	Type of intellectual cooperation
Indigenous Peoples and Resources in the Russian North	RAIPON – Arctic Council	A
Biography of M56 Road	North-Eastern Federal University (NEFU) – University of Aberdeen, Scotland	A
Linguistic Diversity: Case of Kolyma (Yakutia)	NEFU – George Mason University, United States	A
Traditional Komi Sports: Promoting Sustainable Community and Business Development based on Komi-Izhmetsy's Traditional Values	Izhma Sport School – University of Melbourne, Australia	A
Arctic Cities in Move: The Case of Oil & Gas Towns in Western Siberia	Moscow State University Faculty of Geography – University of Rouen, France	B
Changes in Forest Yukagirs' Traditional Nature Use, 1997–2013: Local Views	NEFU, St. Petersburg State University – University of Northern British Columbia and the University of Saskatchewan	B
Northern Universities as a Key to Arctic Sustainability	NEFU – Laval University, Canada	C
Itelmen Connections – Historical Ties and Contemporary Linkages Up and Down and Across the Pacific	Kamchatka Branch, Pacific Ocean Geographical Institute of the Russian Academy of Sciences – University of Alaska, United States	C
Mapping Ecosystem Services and Values in Local Communities – The Case of Mining in Greenland, Russian and Norway	Kola Science Centre, Luzin Institute of Economic Problems, Russian Academy of Sciences – University of Nordland, Norway	D

Source: Compiled by the authors based on the papers of the International Congress of Arctic Social Sciences.

Table 12. Foreign Centres of Social Arctic Research

Centres	Subject Matter
European	
<i>Leading</i>	
Arctic Centre, University of Lapland, Finland	Political science; legal issues of Arctic development; study of Sami culture; anthropological studies of national households.
University of Nordland and Nordland Research Institute, Norway	Climate change and adaptation of local communities; knowledge economy in the Arctic; the ecosystem approach and the assessment of ecosystem services; interconnection between the management of the natural resources of the Arctic and local community development.
Nordregio Centre for Spatial Development, Sweden	Mapping support for the circumpolar zone; knowledge economy and spatial development in Northern Europe; stability of Arctic local communities.
Scott Polar Research Institute at Cambridge University, United Kingdom	Anthropological studies of national households of Northern Yakutia.
Thule Institute Centre for Arctic Medicine, University of Oulu, Finland	The health of members of Barents Region Arctic communities; occupational injuries and demographic development.
University of Aberdeen, Scotland	Anthropological studies of national households of the North and Arctic, mainly in Russia.
<i>Other</i>	
University Tromsø (UArctic Norway)	Political studies of Arctic development.
Northern Research Institute (Norut, Tromsø), Norway	
Umeå University, Sweden	Socioeconomic problems of Northern Sweden.
Centre for Innovation and Research in Culture and Learning in the Arctic, Aalborg University, Department of Development and Planning, Denmark	Problems of the socio-economic development of Greenland.
University of Greenland	Problems of socio-economic development of Greenland.
Stefansson Arctic Institute, Akureyri, Iceland	Problems of socioeconomic development of Iceland; scientific support of Arctic Council activities.
American	
<i>Mature</i>	
University of Alaska Anchorage Institute of Social and Economic Research	Problems of resource and socioeconomic development of the state of Alaska.

Continuation of Table 12

Centres	Subject Matter
University of Alaska Fairbanks	Anthropological and cultural studies in Alaska and the world Arctic zone. <i>New</i>
George Washington University George Mason University	Problems of the development of Arctic cities; socioeconomic consequences of climate change in the Arctic.
	Canadian <i>Mature</i>
Arctic Institute of North America, Calgary University	Anthropological, sociological, interdisciplinary studies of the Canadian Arctic.
Laval University, Faculty of Social Sciences	Economic and social studies of the Canadian Arctic.
McGill University, Montreal	Gender issues of the development of the Canadian Arctic; Arctic microeconomics.
	<i>New Arctic Centres</i>
Carleton University	Education of indigenous peoples; development of the Canadian North.
Simon Fraser University	Development of local communities in the Canadian Arctic.
Canadian Circumpolar Institute, University of Alberta	Socioeconomic development of the Northern Alberta.

Source: Pelyasov A.N Review of Reports Presented at the International Congress of Arctic Social Sciences VIII: Northern Sustainabilities (Prince George, Canada, May 2014) // *Sovremennye Proizvoditelnye Sily*, 2014. No. 2, pp. 131–155 (in Russian).

Table 13. Model of the Comprehensive Management of Coastal Zones in Arctic Regions

Levels	Goal	Document	Deadline
1	Transitioning to a comprehensive approach to planning the development of maritime territories and coastal areas of the sea of specific coasts by treating them as a separate object of state management	Methodological recommendations for the development of the coastal component in the Strategy for the Social and Economic Development of the Maritime Area of the Russian Federation	December 2014
2	Forming a uniform interagency approach to creating conditions for the comprehensive development of maritime territories and coastal areas and waters	Methodological recommendations on forming the structure of regional programmes of socioeconomic development of the Russian Arctic zone (as regards the inclusion of the coastal–marine component)	December 2014
3	Adopting a comprehensive approach to planning the development of maritime municipal entities	Methodological recommendations on the development of the coastal–marine component of the Programme for the Development of a Maritime Municipal Entity	December 2014
4	Creating an effective method of functional zoning and strategic assessment of opportunities of the use of marine areas	Methodological recommendations on the development of schemes of marine spatial planning taking into account the strategic documents of maritime regions of the Russian Federation	December 2015

Source: Approval of the Model of Integrated Coastal Zone Management in the Arctic Regions. Executive Order No. 82 of the Ministry of Regional Development the Russian Federation dated March 26, 2014.
URL: <http://www.garant.ru/products/ipo/prime/doc/70535410> (in Russian).

Table 14. Effective Measures to Ensure International Environmental Cooperation in the Field of Economic Activities in the Russian Arctic

Type of economic activity	Main owners	Regions	The most effective international cooperation measures
A. Mineral extraction	Transnational companies and big companies operating in the global market	Yamalo–Nenets Autonomous Okrug, Norilsk, Murmansk Oblast (partially)	Increasing the impact of the global market (favourable regime for international environmental organisations); certification programmes; programmes for preventive waste disposal, and preventive conservation risk management.
	Regional companies	North–Western Yakutia, Nenets Autonomous Okrug (partially)	Sharing practices in stimulating local community participation, strengthening corporate social responsibility; certification programmes, programmes for preventive waste disposal, preventive conservation risk management.
B. Use of renewable natural resources	Management of natural resources aimed at supporting traditional communities	Nenets Autonomous Okrug, Yamalo–Nenets Autonomous Okrug, Taymyr Region, Krasnoyarsk Krai, Republic of Sakha (Yakutia), Chukotka Autonomous Okrug	In areas with surviving traditional institutions, the development of international experience in strengthening traditional institutions; in areas with disrupted traditional institutions, adapting foreign technologies for restoring natural landscapes.
	Management of natural resources aimed at producing marketable goods: major companies	Arkhangelsk Oblast, Republic of Karelia, Murmansk Oblast	Increasing the impact of the global market (favourable regime for international environmental organisations); certification programmes; programmes for preventive waste disposal and preventive conservation risk management.
	Management of natural resources aimed at producing marketable goods: big companies	Everywhere on a small scale	Measures to promote corporate social responsibility taken by the regional authorities and the local community; certification programmes; programmes of preventive waste disposal and preventive conservation risk management.
C. State activities to support strategic projects	The state	Universities	Using of best practices in state regulation; programmes of preventive waste disposal and preventive conservation risk management.

Source: SOPS research materials: Development of Proposals of Institutional, Organisational and other Measures to Diminish Environmental Hazards Caused by Expanded Economic Activities in the Arctic, Eliminate the Effects of the Activities of Industrial Enterprises Polluting the Environment and Preventive Measures in Establishing New Production Complexes in the Arctic Zone of the Russian Federation, Including the Continental Shelf (project head A.V.Shevchuk) (In Russian).

Table 15. Evolution of Goskomsever Functions of 1992–1999

Functions	1992	1993	1996	1998	1999
Determining the volumes of the supply of goods to the Northern regions with limited accessibility periods; proposals concerning the principles and forms of state support for supplies and their implementation; monitoring and inter–sectoral coordination	x	x	x	x	x
Participation in the coordination of research and development on problems in the North	x	x	x	x	x
Participation in state expert reviews of projects and programmes		x	x	x	x
Analysis of the practice of applying federal legislation on regional socioeconomic policy/state regulation in Northern areas; ensuring the rights of small–numbered indigenous peoples; developing proposals on improving the legal framework; preparing draft laws and other regulatory acts	—	x	x	x	x
Preparing proposals on ensuring a special regime for managing natural resources and the development of a network of protected national territories and waters	—	x	x	x	x
Preparing proposals to enhance the effectiveness of the Arctic transport system, including the sustained and safe functioning of the Northern Sea Route	x	x	—	x	x
Training personnel from amongst representatives of indigenous Northern peoples	x	x	—	x	x
Analysis of the socioeconomic situation and the effectiveness of state support for the North and the progress of economic reform	—	—	x	x	x
Submitting a Report on the socioeconomic situation in the North to the Government of the Russian Federation	—	—	x	x	x
Developing proposals on regional and interregional aspects of the economic development and restructuring in line with the economic reform being implemented	—	—	x	x	x
Developing and implementing state support measures for the agro–industrial complex, deer herding and other traditional industries of indigenous small–numbered peoples of the North with due account of their way of life	—	—	x	x	x
Acting as a customer of Federal Targeted Programmes (FTPs) for socioeconomic development in the Northern areas	—	—	x	x	x
Introducing proposals on the formation of indicators in the section of the federal budget draft on financing Northern FTPs	—	—	x	x	x

Continuation of Table 15

Functions	1992	1993	1996	1998	1999
Monitoring the targeted management of natural resources allocated from the budget for the support of the Northern territories	—	—	X	X	X
Submitting proposals on international cooperation in the North and the Arctic, and participating in their implementation	—	—	X	X	X
Developing and implementing measures to provide citizens leaving the North with housing and land plots/housing and settlement, as well as social adaptation to the new place of residence	—	X	—	X	X
Preparing forecasts, concepts and programmes for the socioeconomic development of Northern regions	X	X	—	—	X
Forming proposals on the zoning of the North with due account of the economic and geographic factors, cargo delivery conditions and other criteria	X	—	—	X	X
Preparing proposals and opinions on social and economic development projects and programmes in the North	—	—	—	X	X
Developing proposals on the main areas of social and labour relations policy; the formation of the labour and employment market; the effective use of manpower resources and the optimisation of population size in the Northern regions	—	—	—	X	X
Creating and operating an integrated state system of environmental monitoring in the North and the Arctic	—	—	—	X	X
Concluding agreements with the regions on joint action to solve socioeconomic problems in the Northern areas	—	—	—	X	X
Developing and implementing, in conjunction with the Ministry of Emergency Situations, life support measures in Northern communities in the event of natural and manmade emergencies	—	—	—	X	X
Developing and implementing proposals to stabilise the socioeconomic situation; transitioning to sustainable development	—	—	X	—	X
Implementing measures to comply with a traditional use of lands regime, preserve and improve the natural landscape; protect and monitor the use of lands	—	X	—	—	X
Monitoring compliance with legislative and other regulatory acts on state support of the socioeconomic development of the Northern territories; respecting the rights and interests of indigenous small-numbered peoples of the North	—	—	X	X	—

Continuation of Table 15

Functions	1992	1993	1996	1998	1999
Analysis of foreign experience in the economic and social development of Northern regions; revival of the culture and traditional way of life of Northern peoples	x	x	—	—	—
Considering proposals, applications and complaints of citizens on issues within the Committee's jurisdiction and taking necessary measures	x	x	—	—	—
Reporting on the socioeconomic conditions of the life of indigenous small-numbered peoples of the North	—	—	—	—	x
Developing and implementing measures to enable the Northern regions to be self-sufficient in fuel and energy; introducing energy-saving technologies; preparing facilities for uninterrupted operation in winter	—	—	—	—	x
Measures, taken jointly with Gosstroy of Russia, to form an urban development policy in the North and implement the Basic Provisions of the General Scheme of Population Distribution on Russian Territory	—	—	—	—	x
Measures to create conditions for the healthy physical, mental and cultural development of children in the North	—	—	—	—	x
Introducing proposals for limits and quotas on harvesting (catching) water biological resources for industrial purposes	—	—	—	—	x
Introducing proposals on state support measures for delivering supplies to the Northern regions	—	—	—	—	x
Introducing proposals on support measures for research and development under the Committee's jurisdiction	—	—	—	—	x
Introducing proposals on the distribution of resources of the Federal Financial Support Fund for the Constituent Entities of the Russian Federation	—	—	—	—	x
Preparing proposals on the distribution of federal budget resources allocated for housing subsidies to citizens leaving the Northern regions	—	—	—	—	x
Carrying out work to attract extra-budgetary sources of financing, including loans from international financial organisations, to implement FTPs, support the supply of products to Northern areas, etc	—	—	—	—	x
Organisational and technical support of interagency commissions for Northern and Arctic affairs under established procedures	—	—	—	—	x
Preparing proposals on the criteria and mechanisms of state support for organisations catering to state needs as well as those involved in addressing social problems	—	—	—	x	—

Continuation of Table 15

Functions	1992	1993	1996	1998	1999
Implementing measures to ensure epidemiological wellbeing in Northern regions, improve the health and medical monitoring of indigenous small-numbered peoples, with due account of their traditional way of life	—	—	—	x	—
Reforming the education system for the children of indigenous peoples of the North and taking support measures aimed at providing equal opportunities in education, cultural and creative endeavours, hobbies and interests and summer vacations in accordance with their traditional way of life	—	—	—	x	—
Measures to preserve the historical-cultural heritage of small-numbered indigenous peoples of the North	—	—	—	x	—
Licensing of Russian and foreign physical and legal persons to carry out tourism activities in marine areas close to the Northern coast	—	—	—	x	—
Contributing to the planning of measures to protect the social rights of the Northern population, including the rights of the Northern peoples	—	x	—	—	—
Preparing proposals on the development of industry, agriculture, transport, communications, information systems, production facilities and traditional industries in the Northern areas	—	x	—	—	—
Planning and implementing measures to develop new economic structures and promote competition and entrepreneurship in Northern areas	—	x	—	—	—
Informing the local population through the media on progress in implementing state programmes for the socioeconomic development of the Northern areas and similar localities, and the implementation of other measures	—	x	—	—	—
Cooperation with international and foreign organisations and research centres on the rational use of Northern resources and revival of indigenous Northern peoples	—	x	—	—	—
Preparing proposals for the comprehensive processing and rational use of natural resources in Northern areas	x	—	—	—	—
Developing and implementing programmes for using the economic zone and continental shelf resources of the Arctic Ocean seas, the Bering Sea and the Sea of Okhotsk	x	—	—	—	—
Ensuring that government decisions on Northern issues are carried out	x	—	—	—	—

Continuation of Table 15

Functions	1992	1993	1996	1998	1999
Informing the Council of Ministers of the Russian Federation on the state of socioeconomic development of the Northern regions and any problems that may arise there	x	—	—	—	—
Rendering assistance to the Northern Fund	x	—	—	—	—
Formation and use of a regional development fund to finance additional measures to develop the Northern regions.	x	—	—	—	—
Planning and implementing measures to optimise employment and provide social protection of the population in the Northern regions	x	—	—	—	—
Contributing to the development of foreign economic links; expanding the export potential of the Northern areas; attracting foreign investments; setting up and operating joint enterprises	x	—	—	—	—
Adopting measures to organise the navigation of foreign vessels all along the Northern Sea Route	x	—	—	—	—
Conducting measures to improve internal and external transport links in the Northern areas	x	—	—	—	—
Developing short-range polar aviation to cater to the needs of indigenous Northern peoples	x	—	—	—	—
Agreeing regional and sectoral schemes on the development and distribution of productive forces in Northern regions with due account of the interests and way of life of the Northern peoples and environmental regulations	x	—	—	—	—
Coordinating activities to implement these schemes	x	—	—	—	—
Taking part in creating and improving the mechanism for switching the Northern economy to market conditions with due account of its orientation towards the extraction of raw materials	x	—	—	—	—
Preparing proposals on economic methods of stimulating rational management of natural resources and environmental protection	x	—	—	—	—
Developing a uniform legal framework for the management of natural resources in the Arctic zone of Russia, including the economic zone and the continental shelf	x	—	—	—	—

Source: Compiled on the basis of an analysis of five proposals approved by the Government of the Russian Federation on the functions of Goskomsever: No. 1018 dated December 25, 1992; No. 1151 dated November 10, 1993; No. 22 dated January 13, 1996; No. 683 dated June 30, 1998; and No. 1113 dated October 4, 1999.

Table 16. Aspects of International Cooperation in the Functions of Goskomsever

Functions	1991	1992	1996	1998	1999
Analysis of foreign experience in the economic and social development of Northern regions; revival of the culture and traditional way of life of Northern peoples	x	x	—	—	—
Licensing of Russian and foreign physical and legal persons to carry out tourism activities in marine areas close to the Northern coast	—	—	—	x	—
Cooperation with international and foreign organisations and research centres on the rational use of Northern resources and revival of indigenous Northern peoples	—	x	—	—	—
Contributing to the development of foreign economic links; expanding the export potential of the Northern areas; attracting foreign investments; setting up and operating joint enterprises	x	—	—	—	—
Submitting proposals on international cooperation in the North and the Arctic, and participating in their implementation	x	—	—	—	—

Source: Compiled on the basis of an analysis of five proposals approved by the Government of the Russian Federation on the functions of Goskomsever: No. 1018 dated December 25, 1992; No. 1151 dated November 10, 1993; No. 22 dated January 13, 1996; No. 683 dated June 30, 1998; and No. 1113 dated October 4, 1999.

Table 17. Main Differences between the Models of Creating the Arctic Federal District

Differences	Model 1 (hard version)	Model 2 (intermediate version)	Model 3 (soft version)
Goal	Fit the Russian Arctic into the existing system of federal districts	Expressly strengthen economic ties of the Arctic zone of the Russian Federation	Implicitly strengthen Arctic zone ties through the information flows
Essence	Protectionism	Similar to a purchase and sale contract	“Soft power” method
Predominant institutions	Federal	Regional	Local/regional
Hierarchy/relationships between participants	Centralised character, unidirectional impact on the object	Single level, multi–subject	Combination of civil, economic and other relationships
Potential for international cooperation	Clear work and forms of cooperation determined by the federal centre; prevailing opinion of the federal centre backed up by budgetary resources	Independent participants, easy entry into and exit from projects; the fact that the interests of all actors are linked is a problem	Large masses of information opening up diverse paths towards cooperation

Source: The models were elaborated by the authors.

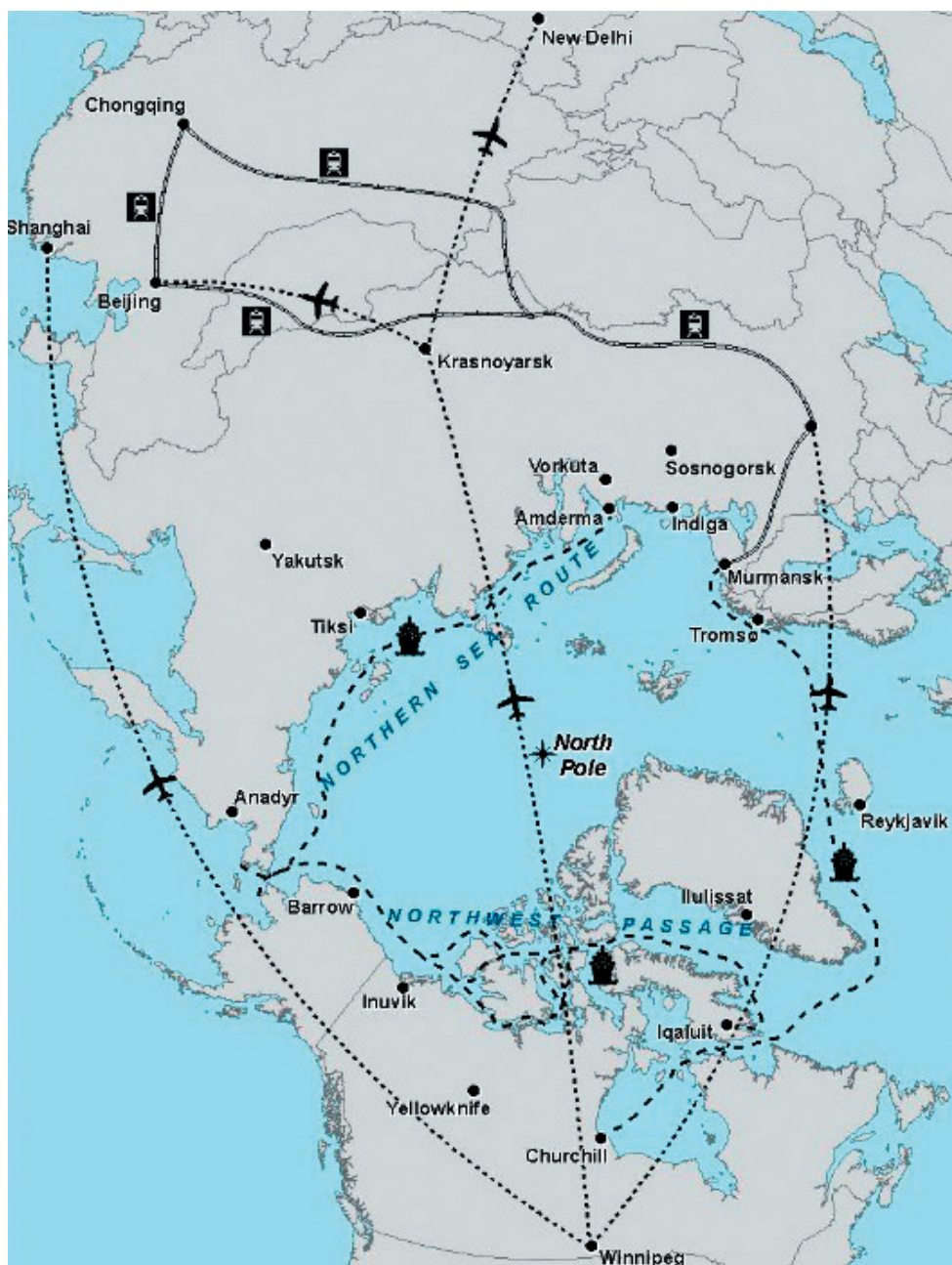


Figure 1. Potential Air Routes in the Circumpolar Region

Source: Stephenson S. Collaborative Infrastructures: A Roadmap for International Cooperation in the Arctic. Arctic Yearbook 2012. URL: http://www.stephenson.bol.ucla.edu/Stephenson_2012_AY.pdf

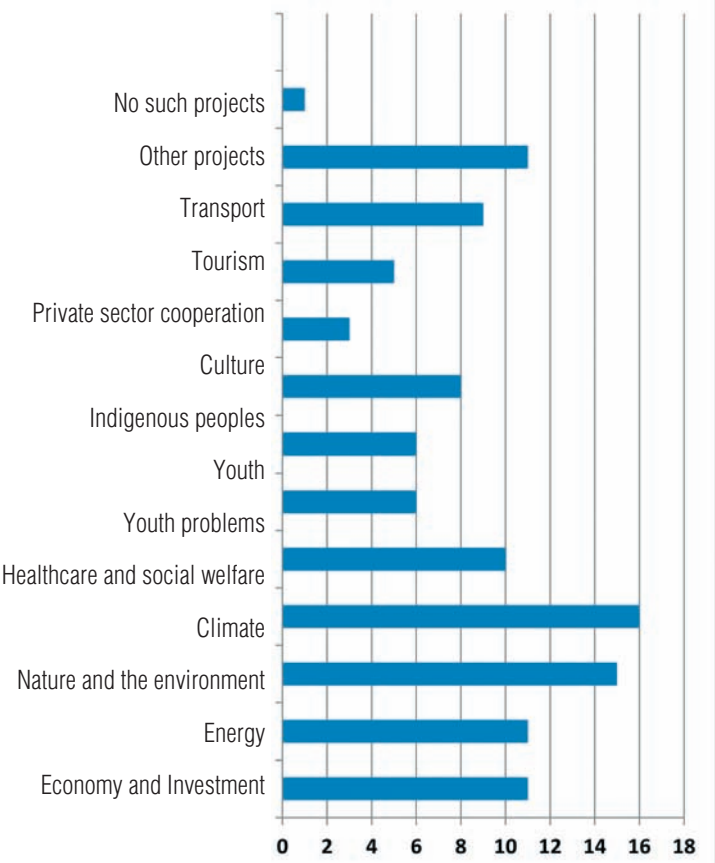


Figure 2. Sectoral Profile of Prevalent Forms of Cooperation in the Barents Region

Source: Recent Communications Survey Revealed the Traditional Results / The International Barents Secretariat.
URL: <http://www.beac.st/newsletter/Newsletter-2-2013/The-survey-%E2%80%9CThe-information-flow-among-the-cooperation-in-the-Barents-Euro-Arctic-Region%E2%80%9D>

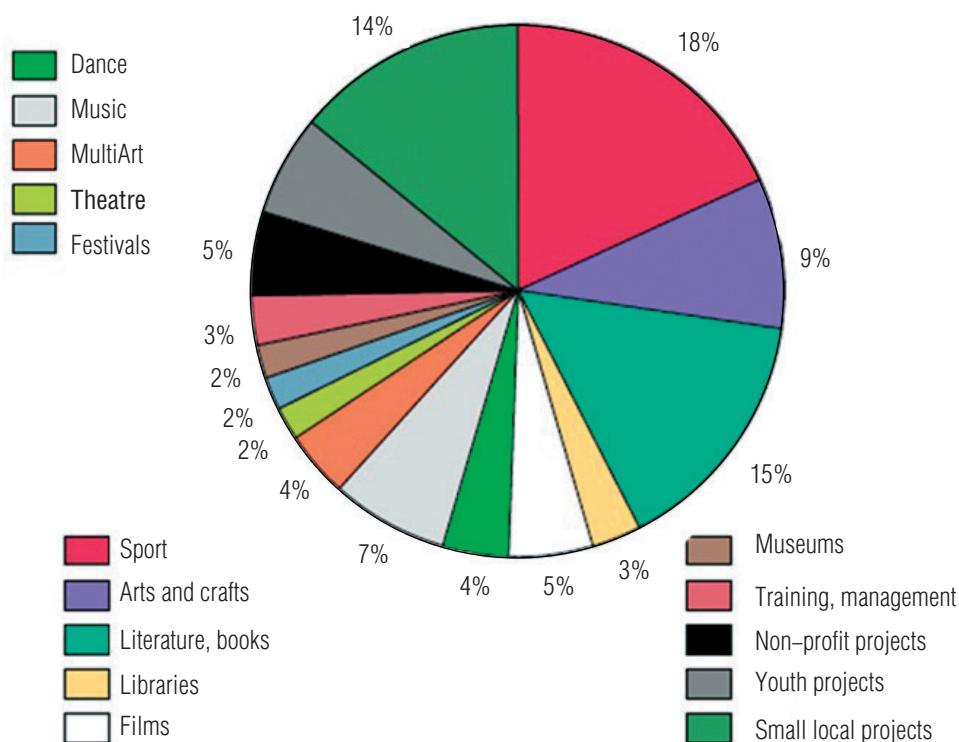


Figure 3. Breakdown of Interregional Cultural Cooperation Projects in the Barents Region, 1994–1999.

Source: Report on the Barents Cultural Cooperation.

URL: <http://www.barentsculture.karelia.ru/eng/site/1080547882/1087813305.html>



Figure 4. Prospective Chemical Technology Cluster on the Kola Peninsula

Source: Programme of the Development of the Kola Chemical Technology Cluster. Apatity. Kola Science Centre of the Russian Academy of Sciences, 2012 (in Russian).

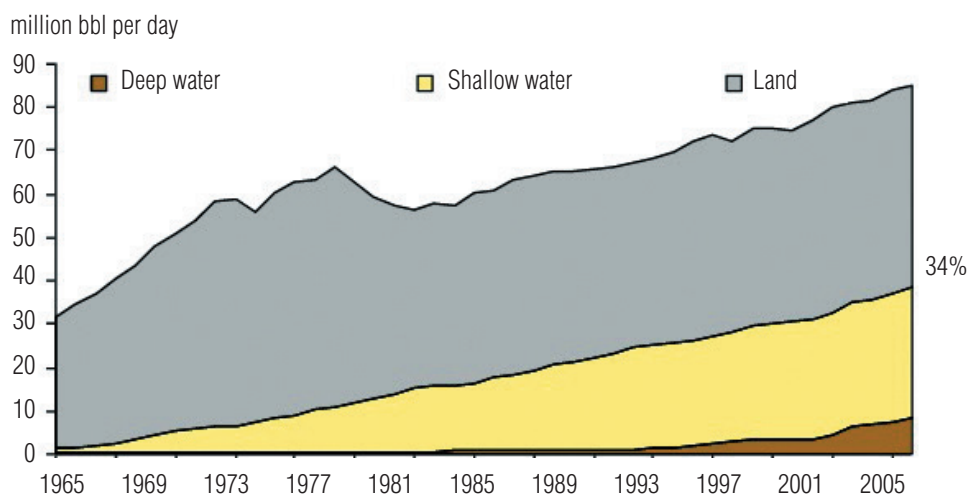


Figure 5. World Output of Oil and Condensate in 1965–2005

Source: World Offshore Oil and Gas Production and Spend Forecast 2009–2013; Prospects for the Development of Technologies for Exploration, Exploitation and Wellsite Engineering for Russian Arctic Offshore Oil and Gas Fields / RN–SakhalinNIPImorneft 2010.

URL: http://www.murmanshelf-conf.ru/archive/presentations/2010/09_Nikitenko.pdf (in Russian)

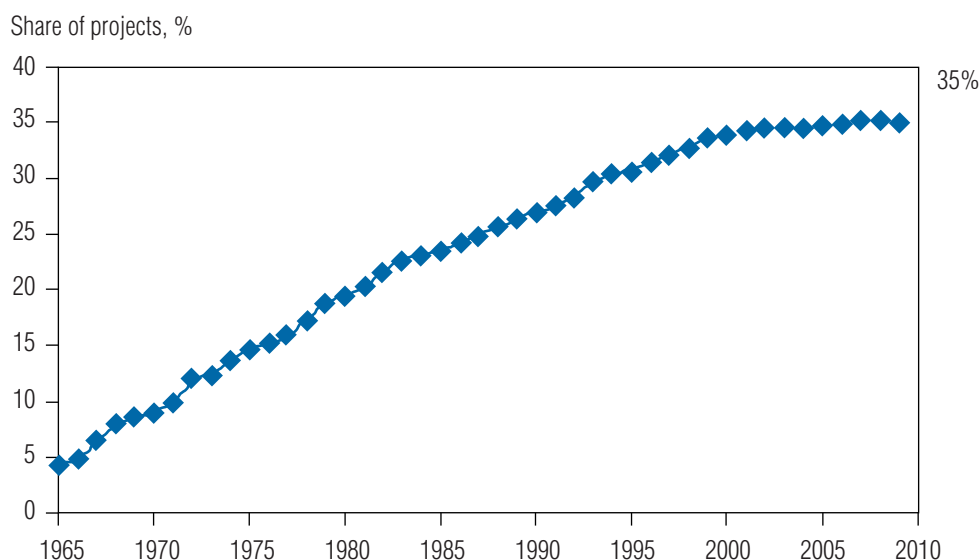


Figure 6. Share of Offshore Oil and Gas Production Projects in the Total Number of Global Oil and Gas projects in 1965–2008

Source: World Offshore Oil and Gas Production and Spend Forecast 2009–2013.

URL: <http://www.douglas-westwood.com/shop/shop-infopage.php?longref=456-6#.VCz3jhbQvhY>;
http://www.murmanshelf-conf.ru/archive/presentations/2010/09_Nikitenko.pdf (in Russian)

**THE RUSSIAN ARCTIC:
POTENTIAL FOR INTERNATIONAL COOPERATION**

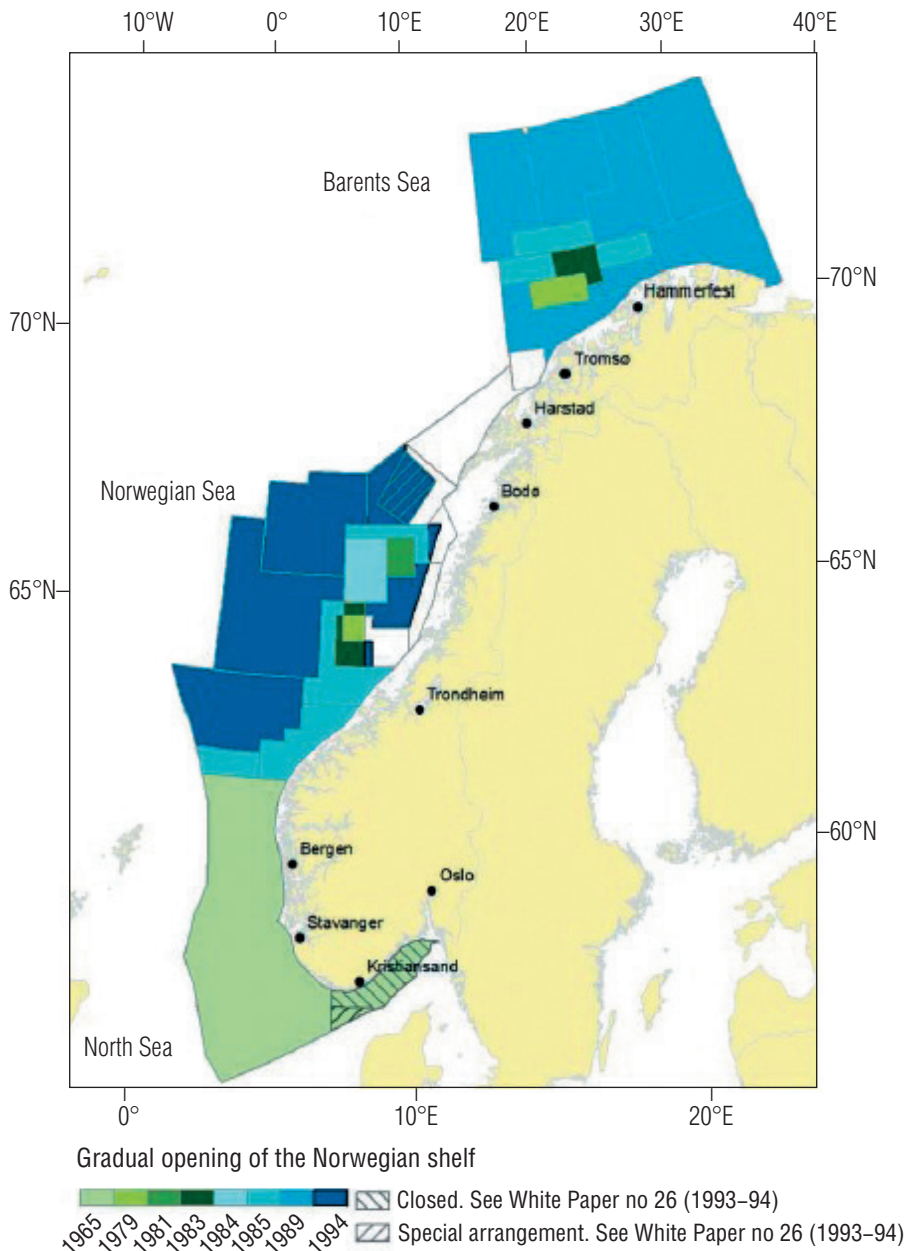


Figure 7. History of the Discovery of Offshore Deposits in Norway

Source: Alveberg L.-J., Melberg E.V. The Norwegian Petroleum Sector. URL: http://www.npd.no/Global/Engelsk/3-Publications/Facts/Facts2013/FACTS_2013.pdf; An Industry for the Future Norway's Petroleum Activities / Norwegian Ministry of Petroleum and Energy. URL: https://www.regjeringen.no/globalassets/upload/oed/petroleumsmeldingen_2011/oversettelse/2011-06_white-paper-on-petro-activities.pdf

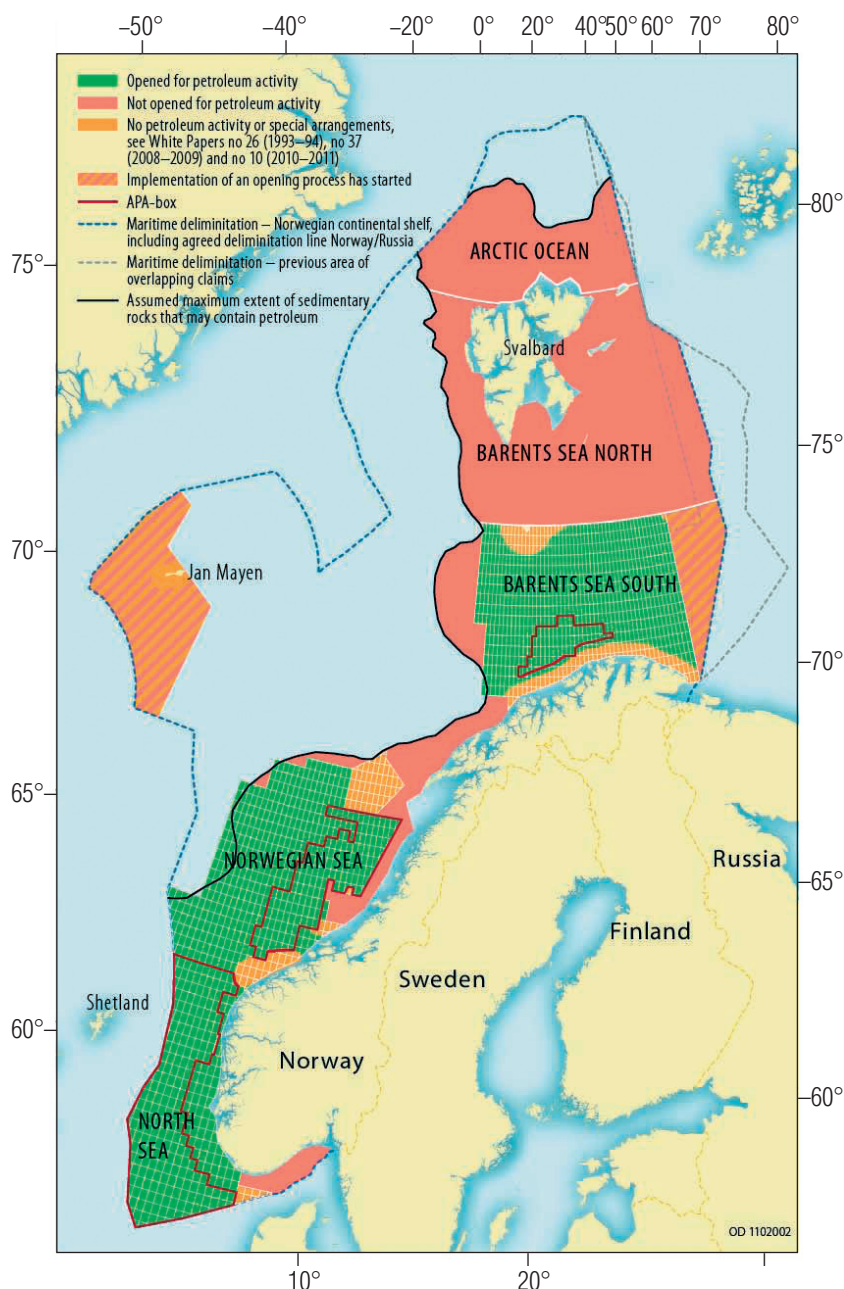


Figure 8. Location of Existing and Future Offshore Regions in Norway (in green and red, respectively)

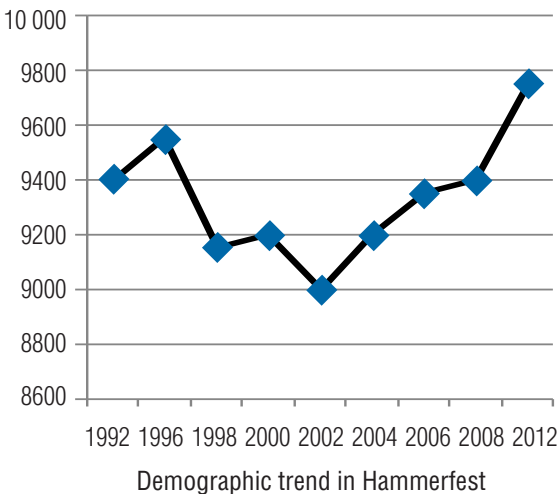
Source: Alveberg L.-J., Melberg E.V. The Norwegian Petroleum Sector. URL: http://www.npd.no/Global/Engelsk/3-Publications/Facts/Facts2013/FACTS_2013.pdf; An Industry for the Future Norway's Petroleum Activities / Norwegian Ministry of Petroleum and Energy. URL: https://www.regjeringen.no/globalassets/upload/oed/petroleumsmeldingen_2011/oversettelse/2011-06_white-paper-on-petro-activities.pdf



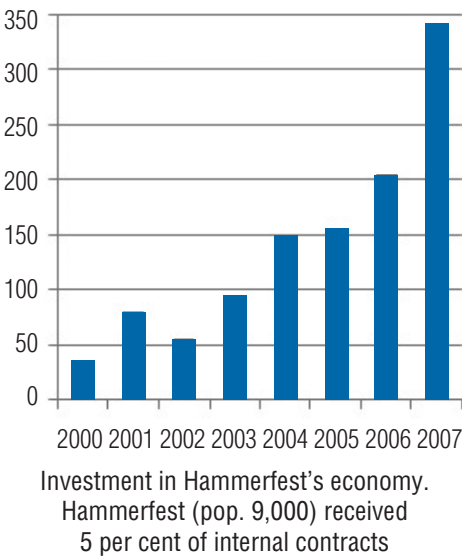
Place in the national economy

18,000 Norwegians from 1,454 enterprises across the country worked on Melkøya Island (2008)

Demographics



Municipal economy



Investment in Hammerfest's economy.
Hammerfest (pop. 9,000) received
5 per cent of internal contracts

Figure 9. The Social and Economic Impact of the Initial Stage of International Cooperation on the Snøhvit Arctic Offshore Operation

Source: Snøhvit LNG Konsekvensutredning. URL: <http://www.statoil.com/no/EnvironmentSociety/Environment/impactassessments/fielddevelopments/Downloads/Sn%C3%B8hvit%20LNG%20-%20Konsekvensutredning%20-%20April%202001.pdf> (in Norwegian); Laudal T., Steineke J.M. Etne Ø. og Vindafjord kommune: Reduserte kostnader og bedre tjenester gjennom samarbeid/sammenslåing. URL: <http://www.regjeringen.no/upload/kilde/krd/red/2006/0040/ddd/pdfv/158239-etneolenvindafjord.pdf> (in Norwegian)

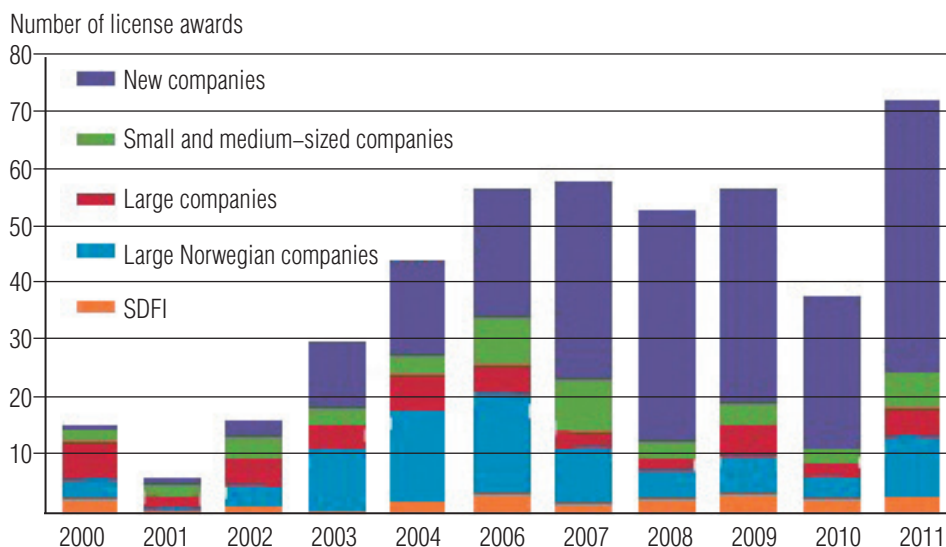


Figure 10. Growth of the Number of Companies Working on the Norwegian Continental Shelf

Source: Alveberg L.-J., Melberg E.V. The Norwegian Petroleum Sector. URL: http://npd.no/Global/Engelsk/3-Publications/Facts/Facts2013/FACTS_2013.pdf

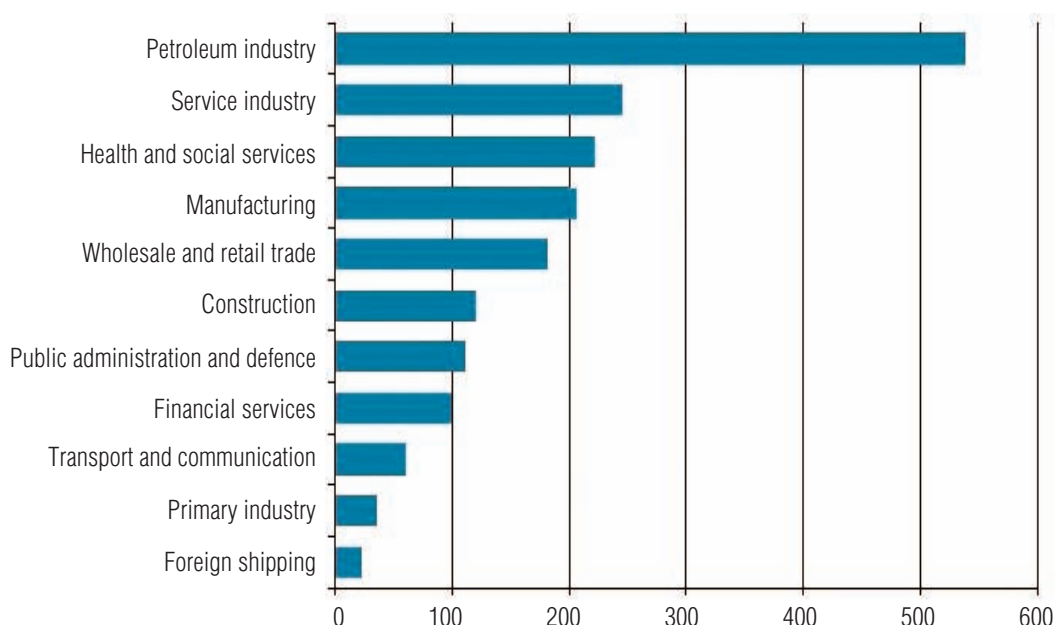


Figure 11. Number of People Working in Norway's Oil and Gas Sector (per 1,000 employees)

Source: Alveberg L.-J., Melberg E.V. The Norwegian Petroleum Sector.
URL: http://www.npd.no/Global/Engelsk/3-Publications/Facts/Facts2013/FACTS_2013.pdf

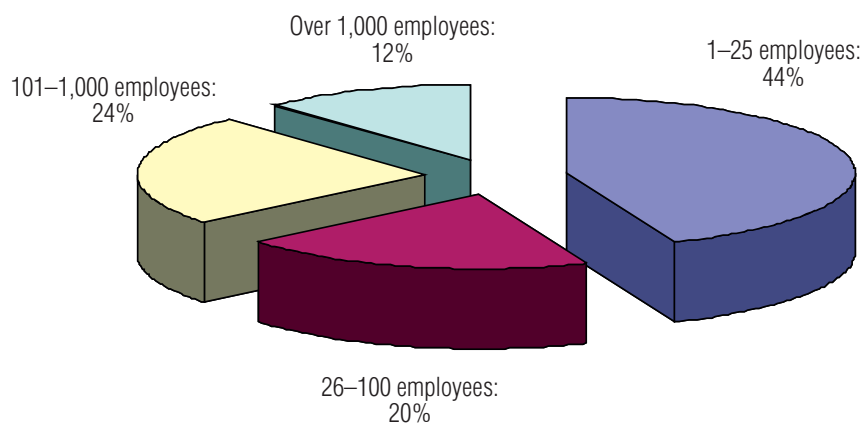


Figure 12. Breakdown of Murmanshelf Members in Terms of the Number of Employees

Source: Fadeyev A.M. Arctic Offshore Exploration: An International Perspective // Russian International Affairs Council. March 27, 2014 URL: http://www.russiancouncil.ru/en/inner/?id_4=3396#top

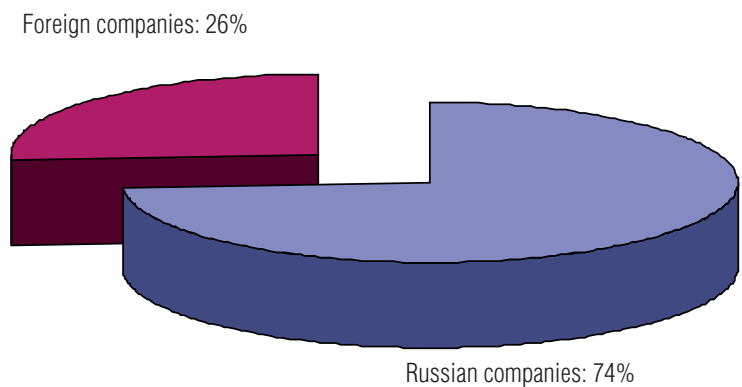


Figure 13. Composition of Association Murmanshelf in Terms of the Ratio between Russian and Foreign Participants

Source: Fadeyev A.M. Arctic Offshore Exploration: An International Perspective // Russian International Affairs Council. March 27, 2014 URL: http://www.russiancouncil.ru/en/inner/?id_4=3396#top



Figure 14. Venues of Rectors' Forum Meetings

Source: Arctic Universitaten – Svalbard Symposium. URL: http://www.polar-academy.com/News_archive/News_2013/n_13_07_10_symposium_longyearbyen_2013/documents/08_UArctic-SvalbardSymposium-August2013_LK_UA.pdf

THE RUSSIAN ARCTIC:
POTENTIAL FOR INTERNATIONAL COOPERATION

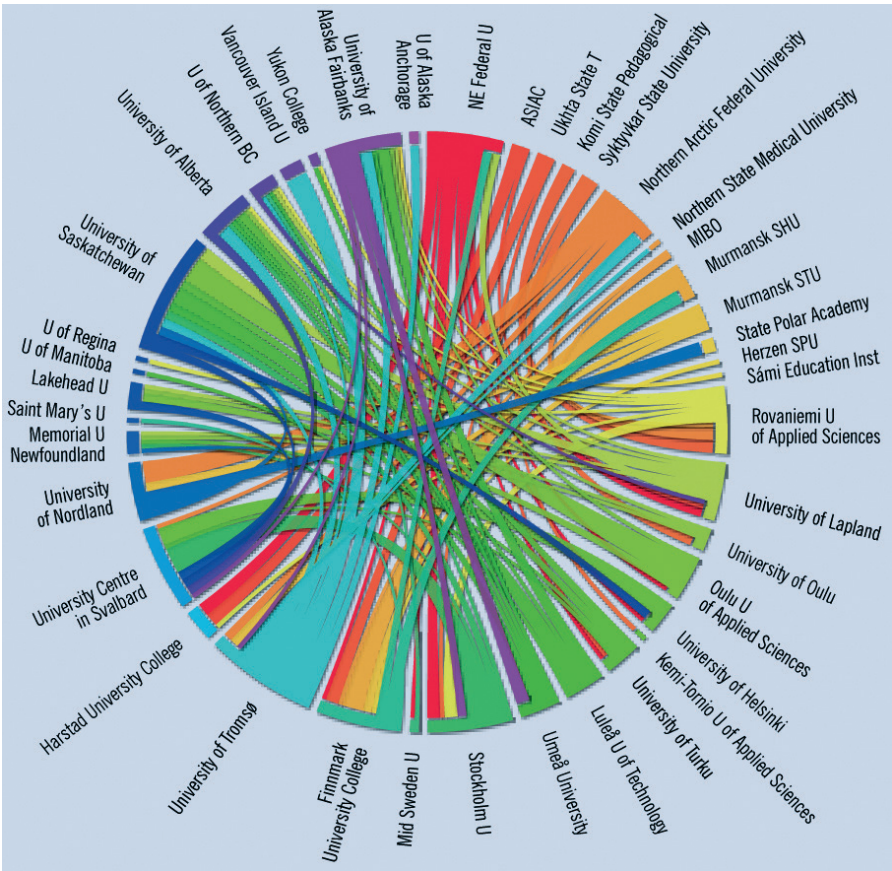


Figure 15. Student Mobility under the north2north Student Exchange Program by University in 2012.
The width of lines corresponds to the number of students

Country	From	To
Russia	53	14
Finland	40	20
Sweden	26	13
Norway	32	51
Canada	9	57
United States	7	12
Total	167	167

Source: UArctic Student Network Exchange Maps and Diagrams.
URL: <http://www.nordpil.com/go/news/uarctic-student-network-exchange-maps-and-diagrams>



Figure 16. Integrated Emergency and Rescue Centres

Source: Preventing Emergency Situations in the Arctic Zone of the Russian Federation.

URL: http://www.mchs.gov.ru/upload/site1/gosdoklad/5_4_.pdf (in Russian).

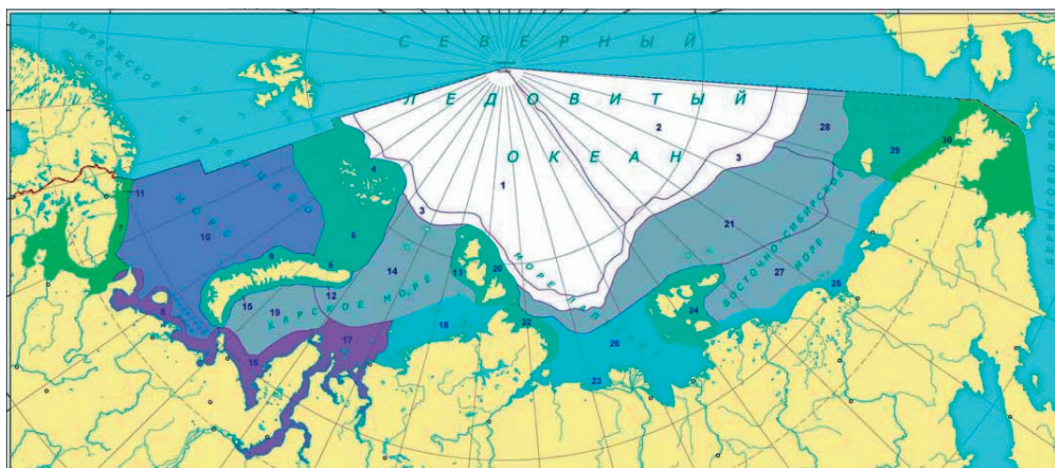


Figure 17. Promising Areas of Specialisation in Inter-Municipal Cooperation in the Arctic

Note: Proposed version of the functional zoning of marine areas of the Russian Arctic and the adjacent part of the Arctic basin. 1, 2, 3 – Arctic basin zone; 4, 5, 6, 12, 13, 20, 22, 24, 29 – zone of vast protective natural areas; 10 – zone of industrial fishing managed as part of the ecosystem; 7, 11, 30 – the White Sea waters off Chukotka – multipurpose use zones; 8, 16, 17 – zone of intensive Northern Sea Route navigation; 18, 23, 25, 26 – zone of potentially intensive navigation; 14, 19, 21, 27, 28 – zone of scientific research and intermittent use.

Source: Atlas of Biological Diversity of Russian Arctic Seas and Coasts / ed. Spiridonov V.A., Gavrilov M.V., Krasnova E.D., Nikolayeva N.G. Moscow, 2011.

URL: http://www.wsbs-msu.ru/res/DOCFOLDER120/atlas_biol_ros_arkt_web.pdf (in Russian).

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