
REGIONAL POLICY

Arctic Policy in an Era of Global Instability: Experience and Lessons for Russia

A. N. Pilyasov^a, V. V. Kuleshov^b, and V. E. Seliverstov^b

^a*Council for the Study of Productive Forces, Moscow, Russia*

^b*Institute of Economics and Industrial Engineering, Siberian Branch, Russian Academy of Sciences,
Novosibirsk, Russia*

e-mail: pilyasov@mail.ru, ieie@ieie.nsc.ru, sel@ieie.nsc.ru

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Abstract—The results of studies of the formation of Arctic policies and Arctic strategies of different countries under the conditions of globalization and climate change, as well as geopolitical and economic trends, are presented. The positions of the Arctic countries are shown on the basis of the analysis of a composite index, which characterizes their resources, infrastructure, and socio-economic development. Resource and innovative aspects of the development of the Arctic territories, their risks and uncertainties, new drivers for Arctic socio-economic development (climate change, globalization, and increasing economic activity in the Arctic) are considered. Problems of sovereignty and national security of the Arctic Basin, as well as the possibility of reducing the risks of uncertainty and of the instability of the circumpolar territories on the basis of international cooperation (a case study of the activity of the Arctic Council) are analyzed. Particular emphasis is placed on the economic aspects of development of the Russian North and the Arctic in the context of global instability, risks, and threats; the main requirements for a new Russian Arctic policy are formulated. These are multidimensionality, integration, environmental friendliness, use of the principles of public–private partnerships, and the social responsibility of business. The outlines of promising North–Arctic development as part of the modernization of Russia’s economic space are shown.

Keywords: Arctic, resources, Arctic Ocean, Arctic policy, national Arctic strategies, globalization, risks, uncertainty, international cooperation, national security, socio-economic development

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We are witnessing dynamic social and natural changes that are occurring in the Arctic zone. For this reason, the stock of previously accumulated knowledge about the social and natural processes in the Arctic is very quickly becoming obsolete. Paradoxically, today its main value is to recognize that earlier, in the last decade of the 20th century, we could not observe anything similar to contemporary events in the circumpolar zone.

Former models and views, which have been adjusted for years, about the relationship between the Arctic states, about the extremeness and inaccessibility of the Arctic territories compared with areas of the temperate zone, and about the nature and type of climate dynamics have stopped working. Radical transformation of many concepts and topics that were previously widely used in social and economic studies of the North and the Arctic are occurring. For example, we can mention a formerly popular topic of the foreign experience of development of the North: in Soviet times, dozens of researchers paid tribute to it; now, in the general flow of literature according to studies of the North there are only a few publications that are

devoted to it. There is a constant reduction in studies on the experience during the development of the North and the Arctic of individual polar countries, but there are increasing numbers of studies on international cooperation, on joint research, and on the exchange of best practices and experiences during the study and development of the global Arctic zone. As well, the level of an individual state at the analysis of experience on the development of the polar areas is no longer sufficient. Indeed, over the past decades in the Arctic and in the North there are many other economically and politically very influential players in the form of transnational corporations, international organizations, and global non-profit organizations that are directly involved in the processes of development of the Arctic and Subarctic.

Thus, whose foreign experience do we need to understand now? Is it the experience of the five Arctic coastal states? Or is it the experience of the Polar “eight,” the members of the Arctic Council, or the resource corporations Total SA, British Petroleum, Exxon, and Statoil, who are actively working today on the Arctic shelf and on land? Or is it the WWF inter-

national conservation organization, which annually realizes dozens of projects in the Arctic? Or is it the experience of the organizations of the small indigenous peoples of the North, viz., the Inuit, the Nordic Sami, etc.?

As another example, issues of environmental policy in the Arctic in 1970s–1980s were often considered in terms of the confrontation between NATO and the Warsaw Pact countries. Today, the same issues are often considered in the context of the conjuncture of global markets and of the prospects of oil and gas development of the Arctic shelf.

Under the influence of several events that occurred in the Arctic zone in the late 1980s, in the entire Arctic the effect of inertial dependence on the trajectory of past development has been broken and many limitations associated with past experience, as well as the previous ideas and beliefs of key actors on the development of these areas disappeared. In the Arctic, as in no other natural area of the Earth, in the early 1990s completely new and unique opportunities for institutional experiments emerged.

Let us emphasize that the changes that occurred in the Arctic were not predicted by anyone. All these events have taken place completely unexpectedly for the international community, for the polar states themselves, and for the peoples of the Arctic and the North. A new macroregion of active international cooperation had been formed very quickly by historical standards, in less than a decade, and just in a few years after the collapse of the Soviet Union and the end of the Cold War it was legally enshrined by the creation of the Arctic Council in 1996. As well, after 1 more decade the reality of climate change that is occurring with exceptional speed in the Arctic, which radically alters the entire natural context of human activities in the area, was recognized.

If one tries to define the resulting changes in the Arctic over the past 2 decades, it will be a phenomenon of increasing natural, social and economic uncertainties, which has become the natural state of the entire Arctic zone and now substantially determines the actions and behavior of the main subjects of its exploration and development. Foreign experience of Arctic development and the formation of a polar Arctic policy of a national state must be seen as an instrument of a struggle, a tool for confronting the uncertainty that is generated by the natural and social dynamics in the Arctic. Accordingly, institutional, organizational, and technological innovation must also be assessed from the standpoint of how well they work to reduce uncertainty and increase predictability in the global processes of the Arctic and the North. As well, such an understanding of the process of the latest changes in the Arctic will be completely in tune with the ideas of the Nobel laureate in economics, D. North [1].

THE GENERAL CONTEXT OF THE DEVELOPMENT OF THE WORLD ARCTIC ZONE: THE POSITIONS OF THE COUNTRIES—PLAYERS

For a general understanding of the environment of the deployment of modern processes of development of the Arctic zone, which are characterized by exceptional uncertainty, let us use the triangular index of the wealth of the Arctic nations¹. It consists of 45 indicators. Each of the three blocks of the composite index is described by 15 indicators (Table 1). Inside the Resource block five indicators characterize the state of renewable resources in the Arctic, four characterize non-renewable ones, and six indicators describe the state of the environment. Inside the Infrastructure block six indicators take the position of infrastructure facilities into account, four consider the position of information systems, and five relate to the position of control systems. Inside the Society block four indicators characterize the population, five characterize education and health indicators, and six indicators estimate economic parameters of development of the territory.

The triangular index characterizes not only the wealth of the three main drivers of development of the polar areas, but also the extent to which they are balanced with each other. The most stable situation is an equilateral triangle, i.e., when the resource, infrastructure, and society blocks have comparable degrees of development. Clearly, in this case the risks of unbalanced development are also low. The 45 initial indicators, which are grouped around the three sides of the triangular index of wealth, after a normalization procedure allow one to give both a rank and aggregate point assessment of the wealth of the Arctic nations (Table 2).

The eighth rank among all polar countries indicates the maximum wealth of this block of indicators, the first indicates the minimum level of wealth among the eight polar countries. It is not surprising that Russia has the priority eighth rank in the level of resource wealth. However, according to the level of development of infrastructure and social systems its position is much more modest. The natural wealth of a country does not guarantee a high place in the overall rankings; stable leading positions simultaneously on all sides of the triangle are more important. For this character Norway is the leader among the polar countries.

The distribution of wealth within all three units, viz., Society, Resources, and Infrastructure is the most balanced in the American state of Alaska and in Norway. As well, Russia and Iceland have the most unbalanced distributions of wealth within the triangle: with the relative development of one block, the other two

¹ The triangular index of the wealth of the Arctic nations, which was developed at Tufts University (Boston, United States), estimates natural wealth, the ability to use it, and the social structures that are created by countries in their sectors of the Arctic.

Table 1. The indicators that form the consolidated triangular index of wealth of Arctic nations*

Resource block	Infrastructure block	Society block
<i>Sub-block of renewable resources</i>	<i>Sub-block of physical infrastructure</i>	<i>Sub-block of population</i>
Marine fishery resources	Weatherproof airports and seaports	Population
Whales	Length of pipelines	Share of indigenous population
Forest	Length of roads	Unemployment rate
Drinking water	Number of Arctic icebreakers	Government grants per capita
Renewable energy sources	Number of search and rescue teams	<i>Sub-block of education and health</i>
<i>Sub-block of non-renewable resources</i>	Number of principal drilling rigs for oil and gas production	Life expectancy
Petroleum resources of shelf and land	<i>Sub-block of information infrastructure</i>	Literacy rate
Gas resources of the shelf and land	Development of telecommunications	Number of hospital beds per 1000 people
Coal resources	Number of research stations	Share of school-age children enrolled in school
Mineral resources (zinc, copper, platinum, etc.)	Penetration of the Internet	Number of students per teacher
<i>Sub-block of environment</i>	Penetration of radio	<i>Economic sub-block</i>
Land area	<i>Sub-block of control</i>	GRP and GRP growth rates
Area of marine waters	Number of environmental agreements (bi- and multilateral)	Per capita income (in purchasing-power parity, in dollars)
Types of wildlife, endangered	Number of controversial and unresolved cases in the use of natural resources	Investments, % of GRP
Principal environmental disasters since 2000	Self-determination of indigenous peoples (councils, NPOs, etc.)	International trade
Share of nature conservation lands	Accountability of authorities	Arctic tourism, % of GRP
Share of territories with permafrost	Corruption index	Ease of forming small enterprises and the work of small business

* The sources of data for each indicator are given in [2].

catastrophically “fail” in both cases. According to an aggregate point assessment of their wealth, the Russian Arctic occupies the middle fourth place, behind Norway, Sweden and the American Arctic, where natural, infrastructural, and social components are developed more evenly and, accordingly, the graphic picture of wealth is closer to that of an equilateral triangle.

Table 2. The normalized ranks of the Arctic countries in the blocks of the triangular index

Country	Resources	Society	Infra-structure	Total rank (estimation)
Russia	8	2	2	4 (162)
Canada	7	1	4	3 (158)
USA	6	3	5	6 (163)
Norway	5	8	6	8 (178)
Greenland	4	5	1	2 (150)
Iceland	3	7	3	1 (149)
Sweden	2	6	8	7 (169)
Finland	1	4	7	5 (162)

What does the index indicate in terms of new risks and uncertainties that emerged in the Arctic since the early 1990s and what lessons can be learned from this for Russia? First, it is obvious that the Nordic countries have gained valuable experience in the formation of effective public institutions that are able to eliminate part of the Arctic risks and uncertainties, both natural and social. Secondly, all the major territories, as well as the island polar territories, including parts of Canada and the Russian Federation, have objective limitations associated with the difficulties of infrastructure systems in the Arctic. Only the State of Alaska has managed to partly overcome them and reach a level of infrastructural wealth that is almost comparable with the Nordic countries. Infrastructure systems in the Russian Arctic cannot cope as effectively with the challenges of the Arctic risks and uncertainties, particularly natural ones, as the systems of the Scandinavian countries and Alaska. Thirdly, there is a definite relationship between the country's position according to the triangular index of wealth and the level of innovative development of its polar regions. Thus, the innovative leader of the Arctic, Norway, is

also the leader in the triangular index of wealth. The aggregate positions of the countries in the general triangular wealth ranking give an indication on their position on the innovative development of the polar territories.

One can also see the correlation between the positions of polar countries in this ranking and the directions of the national Arctic strategies. Thus, the arctic strategy of Norway as the rating leader has a distinct innovation-oriented nature, while Iceland, which is last in the rating, has a strategy that is aimed solely at the priorities of international cooperation in the Arctic zone.

Despite the risks of development that are specific for each of the polar countries, they have common strong risks and uncertainties that have arisen in recent times. Those risks occurred as a result of the emergence of completely new factors of development of the circumpolar zone in the late 1980s to early 1990s.

NEW DRIVERS OF THE DEVELOPMENT OF THE ARCTIC

In the 1990s, when one of the authors worked as the head of the Arctic department of Goskomsever of Russia, as yet there was absolutely no sense that new forces were occurring in the development of the circumpolar area. There were only the themes of secrecy, Russia's national interests in the Arctic, the need to build a nuclear icebreaker fleet, etc., which were inherited from the Soviet period that were still discussed at work and plenary meetings. However, since the early 2000s, on the international, and later, at the Russian Arctic conferences completely different stories began to be told that reflected the effects of completely new drivers of the Arctic zone into a new era: the era of the end of the Cold War and the military confrontation between the superpowers in the Arctic.

One of the main topics of global concern for the Arctic states with increasing activities is the issue of *climate change*. Hundreds of researchers around the world have noted the rapid decrease of the ice cover in the Arctic, including the disappearance and thinning of not only the annual but also the very thick multi-year ice. In 2007, for the first time in recent history, the Northwest Passage, which is a sea route through Canada on 36000 islands of the Arctic archipelago, was released from ice. Biologists have noted the shift of temperate ecosystems in the polar latitudes, viz., migrations of fish populations and of wildlife to the north, into the Arctic. Crops that are typical for the temperate zone (e.g., potatoes) are now starting to grow in certain areas of the Arctic zone (for example, in Greenland).

It is expected that if the observed climatic trends continue, over a century the temperature in polar latitudes will increase to be two times higher than the average in the world (approximately 3–5°C). The strongest effects of warming in the Arctic will occur in

winter months, which are going to be significantly snowier than before. This will lead to more drainage of northern rivers and greater frequency of flooding than in the previous century. Due to the fact that the strongest effects of warming in the Arctic will occur in the Arctic Ocean, the navigation activity here will significantly increase (it will be inland navigation in the Arctic itself rather than transit activities). This will ensure greater accessibility of the Arctic coastal areas. On the other hand, due to shortening of the winter roads the accessibility of remote inland polar areas will become significantly lower [3].

Researchers note that we have entered a lengthy period with a span of several decades or even a century, viz., a period of turbulence in the Arctic climate, when unexpected natural phenomena that were previously considered as anomalies now have become almost regular. This means that the old models of climate dynamics that have been configured based on the inertial ranks of perennial indicators with gradual changes do not work in the context of the growing amplitudes of fluctuations and frequent local natural disasters. Moreover, according to forecasts that are based on most models, climate change will be the most severe in the polar latitudes.

All this means that the most important task for the entire community of polar states for the long term will be protection from escalating natural risks and climatic uncertainty [4, 5]. Abrupt climate change will have very profound impact on the major economic and political institutions of the polar states. Development of completely new social institutions (both at the national and international levels) will also be required to ensure greater sustainability in the face of increasing natural and climatic instability. The thus-gained experience and new institutions that have been accumulated by one country will also be quickly assimilated in other countries.

Another major driver of transformations of the Arctic zone is associated with *increasing economic activity*, particularly in the marine Arctic. Thousands of vessels are registered in the Arctic zone each year. Approximately 1 million tourists from different countries participate in Arctic cruises each year using the summer ice-free navigation routes. The advanced post-industrial economies of the United States, Western Europe, and Canada, and the booming economies of newly industrialized countries, viz., China, India, and Vietnam, are placing increasing demands on the resources of hydrocarbons, much of which (about 25%, according to the US Geological Survey) are situated on the Arctic shelf. Not surprisingly, virtually all strategies of the Arctic states note the necessity of sustainable resource development of the Arctic shelf and land that are compatible with the environmental requirements. For Norway, in recent decades the Arctic shelf has become a new industrial area. For Russia, the Arctic shelf is becoming a new marine industrial area of oil and gas exploration.

Growth of the resource, navigation, and tourism activities in the Arctic increases the risks of accidents and anthropogenic disasters; the associated costs may be higher than in the temperate zone, simply because of the lower level of knowledge and expertise of the participants, not to mention the greater vulnerability of Arctic ecosystems. In this case, the burden of such costs may be not on the parties that incur them but on third parties.

The unprecedented level of interdependence of the polar states compared with that in the era of the Cold War generates threats of negative externalities. As well, just as in the case of climate turbulence, individual countries and the eight Arctic states generally may feel the need for institutions to protect them from new social risks and instability.

Another driver that is affecting the Arctic zone with increasing force is the process of *globalization*. Despite the fact that even in the national Arctic strategy factors of globalization tend to be underestimated or ignored [6], their pressure is evident at all levels, viz., from individual Arctic households, which now face global competition on the labor markets of the Arctic, to the level of the Arctic countries, whose economic well-being depends on the conjuncture of the global resource markets and on the economic conditions of the production of oil, gas, diamonds, gold, and other strategic resources in alternative fields of temperate, tropical, and equatorial zones. The first report on the socio-economic development of the Arctic, which was commissioned by the Arctic Council in 2004, did not even have a section on globalization [7]. The report that was published in 2014 already has a special chapter on globalization.

Today it is impossible to consider the development of the Arctic zone and individual countries outside the context of its growing migratory, trade, and financial links with the rest of the world. This statement is already commonplace. For example, the development of the Shtokman gas field in the Barents Sea was once again postponed under the influence of a “shale revolution” in natural-gas production, which has transformed the world market of this energy carrier. As another example, one of the scenarios of the Arctic as a globalized frontier comes from the feasibility of large-scale exports of fresh water from Canada and Russia to countries that have a chronic deficit of it by the middle of the 21st century [8].

The phenomenon of growing contacts of the Arctic with non-Arctic part of the world is reflected in the fact that several new countries, viz., China, Japan, Singapore, and Italy, received the status of permanent observers on the Arctic Council at its last meeting in Kiruna in May 2013. Some non-Arctic countries, such as England and France, are the headquarters for major resource corporations that have been working in the Arctic for a long time. Thus, French Total receives about 12 billion euros of profit annually, including

from its Arctic activities; it pays 1.2 billion euros to the budget of the country (data of 2011) [9].

The most important result of globalization processes in the Arctic is the rising risk of inducing external instability. Certainly, both individual polar countries and the entire Arctic community of eight states seek to protect themselves from these risks by forming a new institutional framework that includes new elements of the political structure, the structure of property rights, and the social structure. The result is a significant complication of Arctic governance institutions at both the national (as indicated by the analysis of the public policies of most of the Arctic national strategies) and international levels.

Instead of the relative certainty and orderliness that were typical for the Arctic zone in the era of the military confrontation between NATO and the Warsaw Pact countries, in the last 20 years a situation of permanent and continuous change has gradually been formed [10]. Uncertainty has become the native condition of both the natural and social systems of the Arctic. Now as never before natural and social risks determine the behavior of the main actors of economic development in the Arctic with their common need for greater predictability.

RISKS, UNCERTAINTY, AND A NEW INTERPRETATION OF SECURITY

Because of the growing natural and social risks and uncertainty in the Arctic zone the concept of security is undergoing a radical reinterpretation (expansion). Security in the Arctic is becoming less and less only a military issue. Increasingly, it is linked to economic activities, natural–climatic (environmental) dynamics and the interests of the main Arctic players, including that in ensuring their own and the global energy security. This is the broad interpretation of Arctic security that has been introduced in the context of many national Arctic strategies that were adopted over the past 7 years. The key difference between the new, broader interpretation of Arctic security and the former one from the period of the Cold War, is that previously the gain of one participant in the level of security was the loss of another, whereas today and in the future the gain of one party (due to the non-confrontational and cooperative relationship between them) is a gain for everyone. This is due to the fact that the mutual dependence of the Arctic Mediterranean has become significantly stronger than during the Cold War. Another difference is due to the fact that decisions to reduce the risk of military confrontation were sought earlier on a national or international level, while now they are sought within the Arctic zone itself, among the polar states and territories.

It appears that prolonged failure of the Russian bill on the Arctic zone of the Russian Federation (in the last 20 years at least three versions of it have been prepared and none was approved) is connected with the

fact that the ideological core of a new basic law of the Arctic has not been found. Simultaneously, the old ideological core of the Soviet Arctic policy in the form of subsidies and state support for the Northern and Arctic territories exclusively on their geographical location is already unjustified under the new conditions of the state—market economy. It seems that today the ideological core of the new Russian Federal Law On the Arctic zone of the Russian Federation may be the idea of Arctic security, viz., at the level of an individual household, community, region and country, as well as energy, food, military, scientific, and environmental security, as well as other types.

The practice of the past 2 decades shows the successful creation of the Russian and international institutions in the field of Arctic security. As examples of such international institutions the agreement on international cooperation during search and rescue operations in the air and maritime spaces of the Arctic may be mentioned, which was concluded at the level of the Arctic Council, as well as the creation of national (Russian) EMERCOM stations along the Northern Sea Route.

PROTECTION AGAINST RISKS IN THE ARCTIC OCEAN

The maximum efforts on protection against risks in recent years are being undertaken with respect to maritime activities in the Arctic. This is where many of the new Arctic institutes are formed. This is not surprising, because the main uncertainties of modern development in the Arctic are concentrated here: controversial issues concerning the definition of the boundaries of zones of the shelf in the national jurisdiction, issues of the regulation of navigation under conditions of increasing accessibility of the marine Arctic, issues of environmental security with the inevitably expanding shelf oil and gas production, etc. For these issues environmental and social risks often accumulate and eventually provoke a situation of even more uncertainty for the participants. For example, in issues of transit along the Northern Sea Route there is a combination of the physical risks of proper navigational security and the seasonal ice conditions that are associated with the lack of reliable navigation and port infrastructure, and institutional risks due to the uncertainties that are associated with the activities of Russian regulatory agencies, with restrictions on tonnage, regulations on seasonal availability, etc. It is because of these high Arctic risks that accompany the apparent gain in the time of shipping in comparison with the route through the Suez Canal that the Northern Sea Route cannot be regarded as its rival, but rather it is to be used as an additional transit route.

The systemic efforts of the entire Arctic community for the creation of new institutions that regulate maritime activities in the Arctic based on new realities have become the answer to the marine Arctic risks: the

reduction of the ice cover of the polar seas and the Arctic Ocean and the growing economic, recreational, and scientific presence in the marine Arctic in the last decade. In 2009 an international guidelines for Arctic shelf oil and gas production was adopted. In 2011, under the auspices of the Arctic Council the Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic was adopted. An agreement on the prevention of oil spills in the Arctic seas is being prepared. The Maritime Polar Code (The International Code for the safety of ships that operate in polar waters), on which work is occurring in the framework of the International Maritime Organization, must be approved in 2015. It is necessary to adopt common rules for oil and gas production in the polar latitudes.

The expert in Arctic jurisprudence O. Young believes that for protection against Arctic marine risks and uncertainties it is more effective to approve certain specific rules and regulations of maritime activities and not to create a single comprehensive agreement on the marine Arctic, as was done in the case of Antarctica². The first method allows greater flexibility and ease of ratification by all participants.

Among the uncertainties of the marine Arctic the issue of unlocated maritime areas of the shelf water area is of particular importance. Almost all of the coastal Arctic countries in recent years were involved in the very expensive process of mapping of the Arctic seabed and its geological structures in order to distinguish their property rights to the resources of the Arctic shelf. In the marine Arctic the expenses on this procedure of “staking off” property rights were unprecedented (billions of dollars) due to the need to painstakingly gather an evidence base.

THE SOVEREIGNTY OF THE POLAR COUNTRIES AND THEIR EFFORTS ON PROTECTION AGAINST THE RISK OF DISPUTES ON PROPERTY RIGHTS

It is paradoxical that at no time during the Cold War did the polar countries raise questions about their sovereignty over the spaces of the water areas, land, and air spaces of the Arctic. During the period of military confrontation between the superpowers the issues of Arctic sovereignty were the collective responsibility of NATO and the Warsaw Pact countries, and not of an individual state. In the last 2 decades things have changed. Almost all of the major polar countries have put the issues of ownership of the Arctic sea, land, and often air spaces in their national Arctic strategies very

² The analogy of the Arctic and Antarctica here is counterproductive in view of the different natures of the compared phenomena: the Arctic is a total seawater area that is surrounded by land that consists of the polar territories of different countries, with different settlement densities, while Antarctica is land surrounded by a seawater area and is virtually uninhabited.

strongly [11]. This formulation of the problem, which involves the authority of international institutions, such as the UN Convention on the Law of the Sea, is a desire to reduce the risks of uncertainty about the ownership of vast Arctic spaces that are dynamically changing under the influence of the new climatic trends.

The result is that there is a risk of the redefinition of property rights to the vast Arctic sea, land and air areas, which previously were not always clearly defined. Each country, in addition to international institutions, uses its own institutions as an evidence base with respect to their rights. For example, to prove its sovereignty over the vast Arctic spaces, Canada refers to aboriginal peoples, who were the first settlers of this territory. Russia refers to the historical experience of the colonization of Siberia, the North, and the Arctic by the Pomors, the Cossacks, and free peasants. The United States argues for the nation that develops the frontier (This is where the declaration of President Obama, which anticipates the recent national Arctic strategy, begins). As well, almost all countries use the potential of polar research expeditions, ground, and space monitoring of the state of the Arctic environment to enhance their knowledge about their Arctic regions, and through this knowledge, sovereignty over them.

INSTITUTIONS THAT CONTRIBUTE TO THE ALLEVIATION OF UNCERTAINTY IN THE ARCTIC

In the last 2 decades a massive global experiment began to create completely new public institutions in the Arctic zone for the reduction of significant environmental and social risks during modern economic activities in the Arctic. More than a dozen new political and economic structures arose with unprecedented speed in the circumpolar zone, the main task of which is to establish intensive communications between the main actors of the Arctic economy and politics for a more predictable and friendly decision-making environment. As a rule, these institutions are of a democratic (non-bureaucratic) nature, are based on scientific expertise and preliminary research elaborations, involve the equality of all participants regardless of their political and economic weight in the world, and seek to provide a more predictable future for the Arctic. A special place among the new international institutions is occupied by the Arctic Council as the main tool for “soft” impacts on the situation in the Arctic. The Council has no relationship to the issues of the exploitation of natural resources, military security, and defense. It was created to discuss and resolve issues that are related primarily to the sustainable development of the Arctic territories under conditions of increasing natural and social risks and worsening of ecological (environmental) problems.

The idea of the creation of the Arctic Council was proposed in 1989, when the geopolitical situation in the Arctic was only beginning to change. Then, in the early 1990s, several scientific papers on the feasibility of establishing such a body were published. However, initially, the Arctic Environmental Protection Strategy (AEPS) was created in 1991 as an organization that only had a mandate to discuss environmental issues. In Ottawa, 5 years later, the eight Arctic states signed the Declaration on the establishment of the Arctic Council, which acquired the mandate to a significantly greater agenda, viz., discussion and solution of issues of economic and social development and environmental management, as well as the development of transportation, communications, tourism, and health in the Arctic territories. In 2011, a permanent secretariat of the Arctic Council in Tromsø (Norway) was established.

The Arctic Council was able to reduce the risks of management and life sustenance in the Arctic as a result of regular discussions of these issues and to take concrete decisions on the most critical of them. Of course, this is an institution of “soft” policy, which some Arctic experts, such as O. Young, call “toothless.” Many specialists point out that the modern Arctic, which has entered a long-term period of unstable development, needs a stronger institution for the protection of the region and its inhabitants from the new economic activities that occur here as a result of sudden availability [12] due to the melting ice of the Arctic Ocean and the Arctic seas.

It should be noted that Russia is not yet in full use of its membership in the Arctic Council. For example, the potential Russian presidency in this body in 2004–2006 did not occur, in order to advance a number of important Arctic initiatives that raise the prestige of our country in Arctic cooperation.

It seems that the challenges that are associated with new risks and uncertainties require the formation of “hard” institutions in the Arctic in the form of signed agreements with a detailed protocol on selected priority areas (such as the Agreement on Cooperation on Aeronautical and Maritime Search and Rescue of 2011); the establishment of new organizations to manage the Arctic Ocean in areas beyond the national jurisdiction, as well as “soft” institutions to ensure the harmonization of environmental and technical standards of coastal states in key sectors (shipping and fishing, as well as exploration for and production of hydrocarbons); and the implementation of new initiatives for transboundary marine ecosystems of the Barents, the Bering, and the Beaufort seas. Depending on the different scenarios, in the future the Arctic Council may become a treaty organization or receive new powers from participating countries.

INTERNATIONAL ARCTIC COOPERATION AS A RISK-REDUCTION FACTOR

After the end of the Cold War, the Arctic states, as well as the non-state actors that are involved in the development of the polar areas, demonstrated unprecedented international cooperation. This phenomenon cannot be explained by simply the overcoming of the legacy of the Cold War. In the new environment, viz., extremely dynamic natural and social changes in the Arctic and new risks associated with them, international cooperation is an effective tool to reduce uncertainty.

A strong characteristic of international cooperation in the Arctic is that it is either strictly scientific or substantially based on the results of scientific studies and expeditions. It is hard to find another example of the use of the intellectual component in international cooperation. As well, it is completely natural, because Arctic science, as well as international cooperation in the Arctic as a whole, is focused on the reduction of significant risks for the major actors of the development process of the polar areas.

Modern Arctic science (as confirmed by the research that was carried out in the framework of the International Polar Year) substantially has an economic and environmental character. It is aimed at obtaining new knowledge and the formation of new ideas about the regularities of the development of polar ecosystems in terms of active climate change and about new forms of Arctic nature management that are compatible with environmental restrictions.

International Arctic cooperation has narrow (bilateral), wide (multilateral), and ultra-wide (with the involvement of all polar countries and many non-state actors) formats. It is developing simultaneously on several levels: between participants and observers in the Arctic Council; inside macro-regional organizations in the Barents region, the Nordic Council; as bilateral cooperation between Arctic and non-Arctic countries; and between non-governmental organizations. It provides prompt mutual aid, exchange of information and best practices, planning of joint actions to prevent the consequences of natural disasters, etc.

The most important task of Arctic cooperation is the formation of new institutions and improvement of the existing institutions for the management of the Arctic zone in the face of new risks [13]. It is already evident that the intellectual, material, and financial resources of only five coastal Arctic states are insufficient for this task. The efforts of the eight polar countries are also not enough. The solution of a problem of this scale will require the mobilization of resources of both the Arctic and non-Arctic states that have the necessary intellectual and financial resources, competences, and technologies.

NATIONAL ARCTIC STRATEGIES: WHICH POLAR COUNTRIES SEE PROTECTION AGAINST THE RISKS OF NATURAL AND SOCIAL INSTABILITY?

Analysis of national Arctic strategies reveals the characteristics of the struggle against new risks that is waged by each country. The documents of each country (Table 3) focus on the limitations of development that states wish to overcome in order to expand their spheres of freedom in the Arctic (initially at least at the level of official declarations, and then in practice).

The number of examined topics in all the documents is limited, and they are repetitive in many respects, but each country produces its Arctic strategy based on the characteristics of its national history and traditions, on the specifics of its development in the Arctic, and in view of the place of the Arctic economy in its domestic and foreign policy. These factors determine the characters of the institutions for combating Arctic risks.

Typically, the large polar countries have higher hopes for technological methods for neutralizing Arctic risks, creating appropriate infrastructure facilities, new polar stations for Arctic monitoring, information networks for data exchange, etc. Small polar countries in which Arctic territories are relatively dependent on infrastructural equipment place greater emphasis on institutional mechanisms of protection against risks.

Large countries use bilateral international cooperation to neutralize the Arctic risks more often, while small countries rely more on broad multilateral cooperation. Arctic federations associate their main hopes for risk protection with the Arctic inner potential of a country itself, and small countries depend on the community of Arctic states and the world community.

Large countries are more sensitive to the social risks (such as the risks of the loss of sovereignty over maritime routes) that are associated with the interactions of the various players in the global Arctic. The small polar countries (Sweden, Norway, and Denmark) more often mention the risks of climate change as the highest priority in their documents.

The Arctic countries estimate the potential of technological innovations in the struggle against Arctic risks differently. For example, the strategy of the government of Norway in the Extreme North on the neutralization of Arctic risks is mainly focused on new knowledge. The document notes the role of the Arctic universities (Tromsø, Kirkenes) and colleges (Bodo and Narvik) as centers of specific Arctic competencies. On the other hand, the Icelandic document has practically no mention of using the potential of innovation for protection against natural and social risks in the Arctic.

Table 3. National Arctic Strategies

Country (group of countries)	Title	Number of pages	Time of adoption
Norway	The Norwegian Government's High North Strategy. Norwegian Ministry of Foreign Affairs	76	2006
	New Building Blocks in the North. Norwegian Ministry of Foreign Affairs		2009 (updated version)
Denmark	Denmark, Greenland and the Faroe Islands: Kingdom of Denmark. Strategy for the Arctic 2011-2020	58	2011
Canada	Canada's Northern Strategy. Our North, Our Heritage, Our Future. Government of Canada	48	2009
USA	National Security Presidential Directive (NSPD-66) and Homeland Security Presidential Directive (HSPD-25)	6	January 9, 2009
	National Strategy for the Arctic Region	13	May 10, 2013
Russia	Principles of the State Policy of the Russian Federation in the Arctic for the period up to 2020 and beyond. Approved by the President of the Russian Federation	7	September 18, 2008
	Development strategy of the Arctic zone of the Russian Federation and national security for the period up to 2020. Approved by the President of the Russian Federation	26	February 8, 2013
EU	European Union. Commission of the European Communities. Communication from the Commission to the European Parliament and the Council: The European Union and the Arctic Region (COM 2008)	14	November 20, 2008
	The Inventory of Activities in the Framework of Developing a European Union Arctic Policy. Developing a European Union Policy towards the Arctic Region: Progress since 2008 and Next Steps. Brussels. SWD (2012). European Parliament 2012.	45	June 26, 2012
Iceland	A Parliamentary Resolution on Iceland's Arctic Policy. Approved by Althingi at the 139th Legislative Session	11	March 28, 2011
Finland	Finland's Strategy for the Arctic Region. Prime Minister's Office Publications	98	2010
Sweden	Sweden's Strategy for the Arctic Region. Government Offices of Sweden	52	2011

ECONOMIC ASPECTS OF THE DEVELOPMENT OF THE RUSSIAN NORTH AND ARCTIC IN THE CONTEXT OF GLOBAL INSTABILITY, RISKS, AND THREATS

Certainly, all the above-mentioned trends on the formation and implementation of Arctic policies in different countries, as well as the world context of global instability have and will continue to have significant influences on the formation of a new Arctic policy of Russia. For the present, this is formed largely under the influence of the Soviet experience on the development of the northern and circumpolar latitudes; it is important to understand, first, to what extent and how effectively the principle of continuity in the strategic development of the Russian North and the Arctic can be used and, secondly, how to eliminate the vestiges of the Soviet era and the heavy load of consequences of failed reforms of the 1990s.

During the entire period of existence of the Soviet Union a fairly rigid state policy on the development of northern and Arctic areas was implemented, in which mining and processing of the richest natural resources of the region were the dominant issues and social and environmental issues were overshadowed. With the collapse of the Soviet Union, in the new Russia the forms and methods of state support for the Northern and Arctic areas have changed. First, in terms of the political and economic crisis of the 1990s the opportunity to finance circumpolar projects through direct public investment virtually disappeared. Secondly, in terms of the transition and the process of privatization of property a vacant niche in the development of the North was taken by private companies, which provided corporate rather than state policies in the North and in the Arctic. Thirdly, the small indigenous peoples of the North became more active regarding the

processes of democratization and increasing national consciousness. As a result, as a part of the Russian Federation some northern autonomous districts were established as independent subjects of the Federation on a national basis; small indigenous peoples of the North began to coalesce into communities and associations, and have become a serious social and political force. Fourthly, in terms of the widespread concept of sustainable development, the issues of environmental conservation of the northern territories and the cultural heritage of the indigenous peoples that live there have achieved particular importance.

All these processes do not proceed smoothly in modern Russia. Private companies that operate in the North have practiced the concealment of their incomes, taken privatized property into the sector of the shadow economy, underpaid taxes, failed to comply with the requirements of environmental security, and violated the rights of indigenous peoples. Regional authorities had virtually no controls or financial resources for the implementation of social programs to support the budget organizations and housing and communal services. Federal power eliminated the principle of “two keys” in subsoil use and changed the order of distribution of tax payments from oil, gas, and timber harvesting, and thus significantly reduced the potential of Northern and Arctic areas for independent solution of socio-economic problems. Therefore, in the coming period, the development of the Russian North and the Arctic in the context of the realities of the world economy and politics will inevitably require the implementation of a new Arctic policy, whose basic elements should be the provision of conditions for the expanded reproduction of socio-economic development in these areas, the formation of new standards for economic activities and the quality of life in the regions of the Extreme North. It is obvious that in the global economy the first 20 years of the 21st century will be a new stage of the development of the Arctic, whose character will consist of large-scale involvement in the economic turnover of biological and mineral resources of the seas of the Arctic Ocean, as well as in the implementation of international commitments to eliminate pollution of the environment and preservation of the ecological balance in the Arctic. How ready is Russia for such changes? Let us consider some important points concerning the formation of a new Arctic policy.

1. The new Northern and Arctic doctrine of Russia and the appropriate policies should be multidimensional; this is the key to their feasibility and effectiveness. For the present they are at best two-dimensional and focused mainly on solving problems of national security and the development of resources. Without denying the tremendous importance of the issues of national sovereignty, the inviolability of the Russian borders, and control over Russian resources, let us note, however, that the social, ethnic, environmental, scientific, technical, and infrastructural aspects of

development of the Northern and Arctic regions have not yet become dominant issues in the Russian Arctic policy. Related to this, there is another requirement, viz., the requirement for complexity and consistency. The Arctic policy must be linked with the main managerial policy of the country and its main focuses should be seen not as separate isolated actions, but in “batch” mode (i.e., in the unity of geopolitical, economic, social, environmental, and other issues, as well as in the unity of economic, legal, and institutional initiatives and decisions). The new Northern and Arctic policy must be an essential component of the modernization of Russia’s economic space, improve the spatial organization of the Russian economy and society, and be an essential component of the new strategy for the spatial development of the country. In circumstances where such a holistic strategy does not occur, society receives no signal about the strategic territorial (spatial) priorities of modern Russia, i.e., about the issue of which macro zones of the country and segments of their economy and social spheres need high-priority support from the government, how the corresponding large-scale actions should occur in time and in what spatial order, what the proportion should be of the use of funds and mechanisms of state support, on the one hand, and, on the other hand, the efforts and investments of private businesses. It is obvious that today the Russian budget will not sustain simultaneous large-scale support of the Northern Caucasus, the Far East, the North, the Arctic and the economic and political “Russian showcases,” viz., Moscow and St. Petersburg.

2. The most important requirement for the Northern and Arctic policy of Russia should be its integration on the north–south vector, i.e., it should provide economic, social, infrastructural, research and innovation, and recreational interregional integration. For example, we need a holistic concept of the formation of logistic bases in the central districts of the Krasnoyarsk Krai for the development of the Northern territories with the widest spectrum of activity; a large-scale scientific program (megaproject) of work for the Siberian Branch of the Russian Academy of Sciences in the interests of the development of the North and the Arctic is required; a program to develop new segments of domestic engineering for the production of machinery and vehicles with northern modifications is needed, etc.

3. Due to recently sharply increased demands on the responsibilities of countries of the Arctic basin for the prevention of harmful emissions into the ocean and the atmosphere, environmental standards for the operation of large Russian enterprises and industries in the circumpolar area should be revised; this should also be an important orientation of the new Arctic policy of Russia. First of all, we mean the Norilsk Nickel Mining and Metallurgical Company. Certainly, the presence of especially large enterprises and major cities within the Polar circle is a purely Russian charac-

teristic. However, besides the fact that it is a matter of pride³, this is also a concentration of problems that transcend the national boundaries. It is obvious that in the present conditions Russia cannot ignore the demands of the international community concerning the reduction of harmful emissions in the Arctic, as occurred previously. This requirement should not be taken as pressure on Russia; this is the rule of civilized business with regard to the interests of neighboring countries.

4. The new Northern and Arctic doctrine and policy of Russia should use new elements and mechanisms of public–private partnerships and the social responsibility of business. First, the practice of the social responsibility of business (in Western terminology, corporate social responsibility) that currently prevails in the Russian North is not responding adequately to local realities, such as increased pressure from industrial production on the local environment and the living conditions of the population and the large degree of their vulnerability to it, the dominant role of large corporations in the regional economy, etc. Secondly, the Russian interpretation of the principles of public–private partnerships and social responsibility of business does not provide sufficient transparency, which can generate corruption, misuse of funds, and other abuses. Thirdly, in the Russian North and the Arctic there are no regulatory frameworks and best norms and standards for the social responsibility of business. Fourthly, the participation of civil society in the practical implementation of the principles of public–private partnerships and the social responsibility of businesses in the Northern and Arctic regions of the Russian Federation is not sufficient. With respect to public–private partnerships in the North and in the Arctic the use of elements of the foreign experience should be studied very thoroughly. For example, Canada has had a program entitled “Products by Post” for many years, whose task is the year-round provision of the population in remote northern areas with fresh and high-quality food (including fruits and vegetables) at a price that is not much higher than those that are in the central provinces of the country. To this end, the state subsidizes private aviation companies and firms that are engaged in the preparation and special packaging of products for their subsequent regular delivery to remote Northern areas. The fundamental difference between these initiatives and the practice of the Soviet (and Russian) “Northern Delivery” is obvious.

5. It is possible that the state’s efforts to implement a new Northern and Arctic policy should be put into a new institutional initiative, for example, in the form of the formation and implementation of the high-prior-

ity national project “The Russian North and the Arctic in the Global Challenges of the 21st Century” as the most important action of the state for new approaches to the development of the resources of the North and the Arctic; new integration projects (transport, energy, and social) in the Northern and circumpolar areas on the principles of resource and economic complementarity of economic complexes of Northern and Arctic regions of the European and Asian parts of Russia; the interaction of the Northern and Southern areas (including by addressing the problems of modernization and reorientation of regional economies); state support of the North; problem solving by indigenous peoples, etc. Finally, given the strategic importance of Northern and Arctic issues a government body should be recreated in Russia, viz., the State Committee for issues of the North and the Arctic.

We believe that in Russia no economic dilemma exists over whether or not to create new resource projects in the North and in the Arctic. This are actually no alternatives⁴. The main question is different: how can this be done with the maximum efficiency at the lowest possible use of human potential in exceptionally harsh climatic conditions and with the maximum possible environmental measures?

The Northern and Arctic issue has become an essential component of a number of important strategic documents. For example, in the strategy of the socio-economic development of Siberia for the period up to 2020, which was approved by the Government in July 2010, when considering the spatial framework for future development of Siberia the question of the development of its resources and the territory of the Siberian part of the Russian Arctic was raised especially sharply. The future of this most northern latitudinal zone of Siberia was defined as follows: “This is a new generation of industrial complexes: oil and metallurgical complexes with the development of the Russian Arctic oil and gas shelves, conservation of the natural and economic potential of the traditional management of the natural environment of small indigenous peoples of the North, modernized energetics, as well as transportation and communication systems that are adequate to the requirements of a post-industrial society. Development of transport infrastructure on a new technological basis, Arctic aviation, a system of settlements with high quality and reliable life-support systems, and combining base cities and mobile camps staffed by experts who reside permanently in the southern regions of Siberia” [15]. The obvious connection between this formulation of the issue and the special role of the Arctic was sharply

³ Canadian Prime Minister P.E. Trudeau noted during a visit to Norilsk in May 1971 that: “What was made here will undoubtedly become one of the modern wonders of the world: a miracle that is an example for all the other countries of settling in the Extreme North” [14, p. 5].

⁴ At the same time, there is another position. Although the wealth of the Arctic today attracts worldwide attention, a number of foreign experts have warned that there should be no hurry in the production of hydrocarbons on the Arctic shelf because the world has not yet used the less expensive hydrocarbon potential, where the extraction is lower risk and has lower costs for environmental protection.

intensified by the recent cross-country competition for the right to exploit its unique natural resources and with the protection of Russian interests in this area.

Other important initiatives have also been implemented. For example, in May 2011, the State Duma of the Russian Federation held an audition, where preferences were marked for foreign investors who will take the risk to invest tens of billions of dollars in new gas fields in the Yamal Peninsula, Siberia, and the Arctic shelf. The Ministry of Natural Resources and the Environment has prepared a draft state program for the exploration of the continental shelf and the development of its mineral resources for the period from 2012 to 2030. During this period, according to different scenarios, from 4.8 to 6.4 trillion rubles will be invested in the project. According to the plan, by 2030 40–80 million tons of oil (8–16% of the current level of total production) and 190–210 billion cubic meters of gas (32–35%) will be produced annually on the shelf.

It is expected that large integrated transportation and energy networks (especially within the Yamal-Nenets Autonomous District and north of the Krasnoyarsk Krai) will be created for the development of mineral resources in the Russian Arctic. Gas production in Yamal is expected to increase to 360 billion cubic meters in the next 20 years. The conceptual innovation is the emphasis on the development of liquefied natural gas production in subarctic conditions. At the same time, development of the Yamal fields will require investments that are unprecedented by the standards of modern Russia. A total of 100 billion US dollars is necessary just to run the Bovanenkovskoye field and to construct the associated infrastructure (this is about 15 times greater than the investment in the development of the Vankor field). The general costs are estimated at 200 billion dollars⁵.

Of course, great hopes in the new Arctic policy are assigned to the revival of the Northern Sea Route. The potential Northern Sea Route traffic along the Northern Sea Route is estimated in the long term at 50 million tons per year. Adoption of a federal law on the Northern Sea Route is expected; thus, Russia will secure the status of the Northern Sea Route as a national thoroughfare. By 2020, construction of three new double-draft atomic icebreakers is to be completed. The budget dedicated to the construction of icebreakers is approximately 90 billion rubles.

Other Northern and Arctic initiatives have been discussed and are beginning to be implemented: operation of environmentally friendly bio-resources of the North and the Arctic, the development of Arctic tour-

ism, cross-polar flight from Krasnoyarsk Krai to Manitoba (Canada). A new concept for involving indigenous peoples of the North in active economic activities while retaining their traditional management of nature and traditional way of life should be a special and very serious initiative. All of this fits into the concept of the modernization of the economic area of the East of Russia, which will rely on a new specialization and new tasks of latitudinal economic zones.

Despite the importance of these initiatives and major investment projects in the circumpolar latitudes, they are still poorly coordinated with each other and are, as a rule, of a corporate or institutional nature. That is the reason that we need new systematic solutions and new management technologies embodied in an integrated development strategy of the Northern and Arctic regions of Russia and in the appropriate public policy⁶.

The combined impact of the melting of the ice cover of the Arctic seas and the Arctic Ocean, the expanding economic presence in the Arctic zone, and globalization have led to an increase in the natural and social risks for the main subjects of the Arctic economy and politics. In these conditions, their natural reaction is to develop new mechanisms of protection against uncertainties. All other things being equal, the countries that have managed to ensure balanced development of the Resource, Infrastructure, and Social blocks receive benefits. This situation is characterized by the model of an equilateral triangle in the triangular index of the wealth of the Arctic nations.

As follows from the analysis of national Arctic strategies, federated and unitary polar countries have different perceptions of Arctic risks and have developed various institutions for protection from them. Large federations see major risks in the threat of loss of sovereignty over the waters of the Arctic areas and maritime transit routes; small countries see major risks in climate change. Large countries place their main hopes of protection against Arctic risks with tangible assets and technological innovations, small countries depend on institutional innovations. In the struggle against the Arctic risks large federations rely more on the potential of bilateral international cooperation, while small countries rely more on multilateral cooperation.

The most important breakthrough in the construction of Arctic institutions that are aimed at protection against new risks is associated with the establishment of the Arctic Council and the formation of new inter-

⁵ The construction of unique vehicles and infrastructures is projected. Thus, the railway bridge over the Yuribey river is the world's only railway bridge in the Arctic, with a length of 4 km. The total mass of the bridge will exceed 3000 tons and the bridge will lie on 110 pillars, which will be anchored in permafrost for 70 m.

⁶ These issues were discussed at the Canadian–Russian conference The Siberian North and the Arctic in the Global Challenges of the 21st Century (Krasnoyarsk, November 2011). The authors of this article were among the main organizers of this conference and were speakers.

national institutions that regulate economic activities and navigation in the maritime Arctic. The lessons that can be learned for Russia from the struggle against new natural and social risks by other Arctic states are the need to revive the federal agency that is responsible for the formulation of the government's Arctic policy (an analogue of the Russian Goskomsever of the 1990s); to strengthen the federal Arctic legislation and primarily to adopt the Federal Law On the Arctic zone of the Russian Federation, which will be the core of the new concept of security in the Russian Arctic; to use the potential of multilateral cooperation and international organizations more actively, primarily the Arctic Council and its working groups, for the creation of new mechanisms and instruments of the struggle against the Arctic risks.

The unique conditions of the Russian North and the Arctic (the world's longest Arctic border, the presence of especially large reserves of natural resources) require the development of a new Russian Northern and Arctic policy that considers the characteristics of our country, its strategic interests and national security requirements, as well as the need for more active inclusion of Russia in global Northern and Arctic economic and political interactions and strategic initiatives.

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