History and perspectives for the expansion of the Russian Arctic o Ecumene

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Abstract. The study of the Arctic has been and remains an urgent scientific and practical task. The Arctic region plays an exceptional role in modern world politics and economy. Russia is an active participant in all Arctic events. Arctic possessions of Russia are huge and rich in many kinds of valuable resources. The authors formulate General theoretical provisions and criteria of practical effectiveness, with the help of which it is possible to fix the strategy and objectives in the field of development of the Russian Arctic as an intensive living space (Ecumene). Such provisions and criteria are associated with so-called "codes of expansion", among which the natural, civilizational, socio-economic, ecological, recreational and geopolitical are analyzed. It is emphasized that the main reason for the slow development and low population of the Arctic zone of Russia are extreme climatic conditions, including permanent ice cover and drifting ice in the Arctic seas.

1. Introduction
The vast extent of the Arctic zone of the Russian Federation (the total area is about 9 million km²) contrasts with the very small number of people living in it (2.5 million people) [1]. Even such powerful factors as the development of natural resources, the construction of basic settlements and supporting infrastructure have little impact on the overall density of the population located here.

Meanwhile, the Russian Arctic causes a sense of heightened spatial interest. It seems to be a measure of strategic attention to this part of the Ecumene with its inherent properties and characteristics. First of all, this interest is associated with the right to own and use a particular space and its resources. As the interest also examines the processes related to the population distribution, organization of production, ecological situation, security issues etc. Ultimately, spatial interest is legitimately associated with the problems of regional and global development, its goals and means. In this sense, a particular issue related to a certain space becomes a subject of interest.

2. Methodology and research methods
Any space is characterized by special types of resources available within it: composition, dimension, configuration, boundaries, geographical location, natural conditions and minerals, but also the degree of their possible and actual use. Meanwhile, the leading "resource
The "component" of the territory is always the person as the main and reliable wealth that the world actually possesses.

Man through reason and practice creates a resource unity in the form of spatial potential, performing special functions of the social basis. Therefore, the differences in spatial potentials determine the main trajectories of development and expansion of the Ecumene.

In our opinion, the Ecumene expansion code is a consistent set of basic theoretical provisions and criteria of practical effectiveness, with the help of which strategic ideas about the content and tasks in the field of living space development are fixed. (Earlier, the idea of geospatial code was formulated by Mironenko N. S.). These codes should be aimed at the study and analysis of natural, cultural, historical, socio-political, economic, environmental and other conditions of the expansion of the Ecumene. Thus, the codification procedure provides logic, that is, certainty (accuracy), consistency (continuity), evidence (scientific validity) of the subject construction and realism (practicality) of the formulated provisions and standards. So, the content of the codification is in the research specifics and practical recommendations for the development and arrangement of the inhabited territory (Ecumene).

The methodology of the presented research is based on the semantic comprehension of geographical space, which is based on the idea of deep dialogic nature and society. In the most general sense, geographical space is a form of involvement of the natural environment and man in relations with the world in which they exist. In other words, geographical space symbolizes a real and solidary world, within which a person ensures unity with the surrounding reality and communicates the meaning of his own life.

Thus, the essence of geographical space is reduced to the integration of nature, people, things and meanings. This unity manifests itself in the situation of human activity, the result of which is the development and expansion of the Ecumene. It follows that the necessary method of cognition of the claimed object should be a system-composite analysis, providing for the identification of structural relationships of the studied geospace.

3. Research result

3.1. Nature code

The main reason for the slow development and low population of the Arctic zone are extreme climatic conditions, including permanent ice cover and drifting ice in the Arctic seas. With the general slope of the zone to the North (where all the largest zonal rivers flow), the Russian Arctic is almost completely dependent on the Arctic Ocean. Its breath so strongly cools all Arctic zone that reaches in many places extreme limits and very noticeably shortens time of summer heat, doing average annual temperature of air negative. These and other circumstances (the existence of glaciers, permafrost and the predominance of tundra and Arctic deserts) exclude the occupation of agriculture and other types of labor.

Constantly cold climate in the Arctic in recent decades has been subject to significant changes. The air temperature here is noticeably rising, and twice as fast as in other regions of the globe. This leads to a significant decrease in the area of sea ice, which is a key indicator of the overall state of the region. The melting of ice continues to accelerate, as a result there is great uncertainty about the forecast of not only local but also global climate changes and the future fate of the Arctic. Therefore, the Arctic ecumene needs constant comprehensive and high-quality monitoring of the state of the environment on all indicators.

The harsh climatic conditions of the Arctic are combined with enormous natural resources concentrated within its borders. In many respects, the polar regions are an invaluable resource
reserve of our entire planet. At the bottom of the Arctic Ocean there are huge deposits of tin, manganese, nickel, lead, gold, platinum and diamonds. Up to 25% of the world's oil and gas reserves are also concentrated here. At the same time, almost all Arctic gas reserves and up to 80% of oil reserves are concentrated in the Russian Arctic. There is also more than 90% of Russian nickel, cobalt and platinum group metals, 60% of copper, almost all explored deposits of titanium, tin and barite. According to various estimates, the subsoil of the Arctic contains from 70 to 90% of Russian reserves of gold, diamonds, lead, bauxite, apatite and many other minerals that have the greatest export attractiveness [2]. This implies the urgent need for rational environmental management for the sustainable development of the Arctic ecumene and increase its investment attractiveness.

3.2. Civilizational code
It is believed that along with the regional civilizations of the classical type there is a special Arctic (circumpolar) civilization. It covers the Northern parts of the continents adjacent to the polar space. The majority of the peoples of these territories, who appeared here many millennia ago, revealed a common "Arctic" genotype, as well as common linguistic and cultural traditions [3].

Extremely stingy and ruthless Arctic nature influenced the overall picture of the development of the original life world here. Aggressive exposure to prolonged cold, polar night, eternal snow and ice required reliable adaptation to such conditions and strong preservation of the achieved experience. Therefore, the world of Arctic man now clearly shows all the signs of koinema (from the Greek word кοινόν - "general", indivisible principle underlying society) - ethnocentrism, archaic mythology, psycho-mental attributes, a deep connection with the world, a special structure of ethnic thinking and worldview that requires the height of spirit and willpower, inquisitiveness of the intellect and peace of mind. Thus, the Arctic ethnic groups represent a priceless civilizational treasure, as they carry links with the past, from which other peoples have not left such bright traces. All these norms and characteristics are the most important component that Arctic civilization contributes to the world cultural heritage.

However, it is necessary to note the particular fragility of polar cultures, which without long-term historical training found themselves in the environment of more differentiated societies. The absence of any immunity to other civilizational laws and rules made the Arctic peoples extremely vulnerable in the conditions of modern life practice [4]. Close contact with advanced technologies, social norms and political institutions can be very dangerous for the preservation of a unique Arctic identity. In this regard, the Arctic ethnic groups of Russia should be declared the highest value and put in special conditions of existence, which they will choose for themselves and become subjects of their own development. The general direction of the Russian Arctic should be considered consolidated policy of convergence of national interests in the single space of the Russian Federation [5, 6, 7, 8, 9].

3.3. Social and economic codes
The Russian Arctic is very different in terms of population concentration, level of economic activity and development of space. The average density of the population Siberian North is less than 1 person per km², so economic activity in most of the zone remains little noticeable [10]. At the same time, the overwhelming share of the inhabitants of the Russian Arctic are now citizens (80%; several cities have a population of 100 to 350 thousand people). Today, the population of the region is multinational, as it is formed largely by migrants representing various subjects of the Russian Federation and neighboring countries. This fact influenced the
dynamics of urbanization in the Russian Arctic. An integral part of the population are the indigenous peoples of the North, adhering to the traditional way of life, as well as the Russian old-age population. It is noteworthy that the number of permanent population of the Russian Arctic currently exceeds the total number of inhabitants of the polar territories of foreign countries. This means that the Russian Arctic remains the most habitable sector of the entire circumpolar space.

The Arctic regions of the Russian Federation with a small population play an important role in the economic life of the country. They create about a fifth of Russia's GDP and provide more than a quarter of its exports [11]. The largest resource sector of the domestic economy has been formed in Northern Russia. It is represented by both old industrial areas created in the Soviet period and new territories and centers of innovative development that have emerged in recent decades [12].

Thus, in the modern development of Arctic resources, two realities coexist - the former industrial one, which is reproduced by proven algorithms, and the modern post-industrial one, which generates intelligent technologies free from the past "waves" of development [13]. The new plans combine the global situation of commodity markets and local processes of their production. The main distinguishing feature of these projects is that they become simultaneously centers of advanced knowledge and experience, on the basis of which a common strategy for the development of Arctic resources is formed. In fact, the ambitious idea of combining the Soviet school of "development", European regional practice and North American frontier theory is tested here. As a result, new Russian responses to the Arctic challenges become successful and capable of technological "cloning" [14].

Meanwhile, the main factor in the development of the Russian Arctic and its true wealth remains a person with invaluable knowledge, skills and skills of life in extreme conditions, the ability to innovate and value worldview, that is, "Arctic competencies". However, the social reality in the north regions is characterized by the preservation of an unfavorable demographic picture, low level of population health, migration loss and other problems [15]. Therefore, the main task of state policy in the Russian Arctic should be considered the development and increase of human capital - increasing the population, the level and quality of life of people, economic progress, the creation of favorable conditions and incentives for business, improving the mechanisms of distribution of income derived from the development of Arctic resources, increasing Northern guarantees and compensation to all categories of the population, modernization of social infrastructure and services[16, 17, 18, 19]. As a result, The Russian Arctic should become a zone of high living comfort, increased social security and stability.

3.4. Environmental code

The growing pace of development of Arctic resources put forward among the priority environmental problems of the region. It is known that the stability of natural systems in the Arctic is very low and reacts even to minor external influences[18, 20]. In this situation, the preservation of the natural environment of high latitudes becomes no less important than economic considerations. The fact is that environmental problems threaten not only the violation of the natural balance, but also the enormous costs of ensuring the necessary balance.

The main natural reason for the vulnerability of the Arctic nature is the ubiquitous presence of ice in the upper horizons of the lithosphere. Ice as the most unstable low-temperature mineral easily appears in a thermodynamic state of phase transformations at technogenic influences or owing to specificity of natural processes (especially at predicted climatic warming). Intensification of rates and scales of development of natural resources of a cryolithozone
already in the XX century led to a serious aggravation of the ecological state of the Arctic, the transformation of many northern territories in the badlands, not suitable for life. It took a grand "general cleaning" of the North, but also the development of new methods and techniques for the development of natural resources of the Arctic lands and ways to prevent destructive phenomena in permafrost geosystems.

The waters of the Arctic are also being involved in economic development at an increasing pace. The spectrum of their use is formed by biological and fossil resources, but also by possibilities of transport and other use. These circumstances generate an increase in environmental risks and man-made pollution. The arrival and distribution of pollutants are largely influenced by objective conditions. These include sea currents, atmospheric circulation, river runoff, which determine the transboundary transfer of pollutants from Western Europe and continental Asia to the Arctic marine basins. Contribute to regional issuers operating in the waters of the seas and the territory of the watersheds. It is impossible not to mention the islands of Novaya Zemlya nuclear weapons test site and radioactive waste disposal in the Kara sea. Norilsk and Kola mining complexes are also regional sources of pollution of sea and air masses. Oil and oil products spills are a significant danger [21, 22].

It should be noted that the transformation of the marine environment and marine hydrocarbon resources of the Arctic to the most important object of the global natural management and intergovernmental relations promises not only to further aggravate explicit or latent processes "division" of the riches of the Arctic, but also to present a presumptuous Board the mankind harsh bill for not always justified environmental risks by the underwater extraction of oil [23]. Dangerous clashes of geopolitical and economic interests of individual States, on the one hand, and the interests of "environmental security" around the world, acquiring in the beginning of XXI century is not hypothetical, but quite visible.

Some authors believe that the effects of known environmental tragedy that occurred in 2010, 80 km from the coast of Louisiana in the Gulf of Mexico on the Deepwater Horizon oil rig is somewhat exaggerated. However important the fact that "thanks" was she aware of potential disasters already "universal" scale, especially if it happens in the Arctic. The increased scope of subsea production of oil, literally, "lifted up" the ecological community of the world, triggering a protest reaction of the most influential ecologists of the world [24].

Unfortunately, to date there is still no guarantee that the collision of geopolitical, economic and environmental interests, preference will be given to the latter. This is due to the fact that oil is becoming a critical component of geopolitics, finding the functions not only of goods, but also a powerful leverage that can significantly change the geopolitical balance of the world map. Assessment of hydrocarbon resources of the Arctic are constantly changing as, for objective reasons (known difficulties of exploration operations), and widely practicing Xia the privacy of the data oil companies. But in any case, these huge resources, remained intact and played the role of "spare tank", are now becoming a tool for the management of the global environment facility and bilateral relations.

The role of the Arctic in global positioning global, continental and regional powers is one of the most urgent problems of modernity in the formation of the “Novus ordo mundi” postmodern (New World Order). The situation is complicated by the fact that in conditions of emerging new coordinate post-Yalta-Potsdam system of international relations remains unclear legal status of the Arctic. The dominance of the sectoral approach, under which it is divided between adjacent circumpolar States and in which the North pole is the boundary of all interested States in the early twenty-first century has been widely criticized.. Yes, and the border of the Arctic is still not precisely defined – it is conditional. We photograph the telescope "Hubble" in high
resolution remote galaxies that are millions of light years away, but have a very vague idea about the physical space of the Arctic, its geomorphology and geocryology.

The environmental ("green") economy, in the development of which in Russia there is a noticeable lag, should become widespread in the Arctic. The key content of this economy is the transition to new technologies of waste processing and the creation of waste-free industries. At the same time, the "green" economy is conceptually very close to the traditional culture of the indigenous population of the North [24, 25].

Thus, the environmental situation in the Russian Arctic is of particular importance and requires a set of measures to improve the legal regulation of natural resources, protection and restoration of the environment, expansion of the system of specially protected natural areas, conservation of biological diversity, development of environmental education, promotion of reasonable human behavior and regular implementation of Supervisory measures. Environmental security of the Arctic should be considered an important part of national security [25, 27].

3.5. Recreational code
The unique nature and culture of the Arctic make significant recreational potential of the region. The main direction of its use is considered Arctic tourism. Almost all major analytical reports on the development of the Arctic in recent years mention the relevance and prospects of this direction [25, 26].

Currently, active development in the Arctic has already received sea polar tourism. However, the Russian sector still accounts for a very small share of the total tourist flow to the Arctic. The main reason for this situation is the weak competitiveness of domestic cruise companies. Nevertheless, Russia already has experience in organizing its own cruises to Franz Josef Land, tourist flights from Murmansk to Arkhangelsk on the White and Barents seas with a visit to the Solovetsky Islands. The exclusive product is an icebreaking trip to the North pole. Russia is the only country in the world that delivers tourists to the top of the planet by sea.

The pride of the Russian Arctic can be considered numerous specially protected natural areas, which are an attractive tourist resource. Among them are state nature reserves, national and regional parks. The youngest of them is national Park “Russian Arctic”, which includes the northern part of the Novaya Zemlya archipelago, the Franz Josef Land nature reserve and Victoria island. One of the most popular is the natural and ethnic Park "Beringia", located on the western side of the Bering Strait. The Arctic base "Barneo", drifting in the area of the North pole, is also considered a unique tourist object.

In addition to the natural specificity of the Russian Arctic has a large historical and cultural heritage, motivating the development of cognitive, event and ethnographic tourism. In turn, unique industrial and technical facilities built in the Arctic stimulate industrial tourism, business tourism, congress tourism, etc.

Thus, tourism is a priority project for the Russian Arctic. Its implementation requires the creation of attractive investment conditions and modern infrastructure. World and Russian experience shows that the most effective and rapid form of tourism development is public-private partnership. The strategic objective here is to create a modern competitive tourist complex of the Russian Arctic, providing ample opportunities to meet the cognitive, aesthetic, cultural, recreational and other needs of Russian and foreign citizens. In general, the development of Arctic tourism and optimization of the tourist potential of the Russian Arctic will contribute to the overall development of the Russian Arctic and strengthen Russia's position in this part of the world [25].
3.6. The geopolitical code of the Arctic

The development of the Arctic is currently attracting everyone’s attention. The importance of the Arctic has increased significantly due to the upcoming shortage of world natural resources, but also due to the increased technical capabilities of the development of its geographical advantages. This refers to the shortest trajectories between the largest continents of the Earth, passing through the Arctic. Therefore, each unit of the Arctic space currently acquires a special geopolitical value.

Today, claims for ownership of the Arctic spaces outside the Russian Arctic are put forward by the United States, Canada, Norway, Denmark, an autonomous unit of which is the island of Greenland. Other states that do not have direct access to Arctic resources are also aware of the importance of Arctic resources. These countries are aggressively preparing to participate in Arctic projects. An example is the active Arctic policy pursued by France, Great Britain, Germany, Italy, Spain, the Netherlands, Poland, Brazil, Japan, the Republic of Korea, India, China and even Singapore [27]. These states have already become observers of the Arctic Council and express interest in joining the permanent membership of this organization.

Meanwhile, of particular concern is the US Arctic policy aimed at weakening Russia’s position in this strategic part of the world. Washington is particularly worried about the Northern Sea Route (NSR), which in the coming years may be the main volume of goods traffic between the West and the East. One of the options for American control of the NSR is the planned creation of a checkpoint "gate" in the Bering Strait and in the North of Norway [28].

However, the NSR is a historically established national transport communication of Russia. Attempts of internationalization of this highway have no reason to. In addition, navigation on the Northern Sea Route as a single route can be carried out only with the help of navigation support from Russia. Meanwhile, the challenge to Russia can lead to confrontation not of individual countries, but of entire groups and generate new global threats. In the current conditions, task of Russia is to attract allies of the North Sea Route on both sides of the route and saturate the entire transport artery with the necessary infrastructure, including military [29].

4. Discussion of results

The specificity of the Arctic makes it not only unique, but also subject to many challenges. In the Arctic, there are both climatic and natural, as well as anthropogenic sources of difficult to calculate the risks of emergencies. The main natural causes of their occurrence include the degradation of permafrost, ice movements, snow storms and other dangerous phenomena associated with climate warming. Anthropogenic sources of emergencies are potentially dangerous technical facilities. These are objects of oil and gas production, nuclear power, disposal of containers with radioactive waste, production facilities and transport infrastructure, nuclear weapons test sites.

On average, up to 100 emergencies of one origin or another occur in the territory of the Russian Arctic per year. In General, there is a steady increase in the number of man-made violations: explosions and fires, building collapses, technical accidents.

No less serious source of possible instability of the Russian Arctic should be considered socio-political factors. These include differences in the cultural values of the ethnic communities living here, as well as the discrepancy between the expected quality of life and the practical satisfaction of the entire spectrum of needs. The main causes of inter-ethnic tensions now increasingly include uncontrolled migration, the changing balance of ethnic groups and their influence as a result of newly created diasporas. The economic problems leading to the search for "who is to blame" remain acute, as well as the nationalization of
domestic and social conflicts, which together undermines the "local system", the idea of which is laid down in the new theory of the development of the Russian Arctic [30, 31, 32, 33].

The resolution of existing and potential conflicts requires a balanced policy on the traditional ethno-cultural space and support for the material basis of the existence of the indigenous population of the Russian Arctic. It is necessary to ensure effective access of titular peoples to the use of codified knowledge, cyberspace, the development of multilingualism and training courses in the native language. These and other tasks motivate an increase in investments that ensure the accumulation of human capital of northern societies - investments in education, health, recreation, housing, creativity, skills development and the formation of new professional competencies. Specifically on the ground it is necessary to achieve social cohesion, high employment in the leading sectors of the modern economy for the entire population of the North, including the indigenous. Well thought out budget investment of the state should be combined with a whole range of other tasks to be solved: the use of modern technologies, the development of public-private partnership, support for small and medium-sized businesses, self-government of new type communities, regulation of labor mobility and increasing migration processes.

It is important to emphasize that the Russian Federation is already accumulating a proven experience of maintaining a balance between paternalism and the introduction of the latest technologies of the XXI century. This experience shows that for sustainable development of the Russian Arctic, a balance between established traditions and upcoming innovations is required

5. Conclusion
The sharp increase in Arctic gravity is causing close attention to the Russian Arctic. In modern conditions, constructive steps are needed to consolidate Russia in the Arctic part of the world. It is necessary to deal deeply and attentively with legal issues, social, economic and environmental problems, re-equipment of military-technical facilities. Strengthening Russian positions in the Arctic will increase Russia's geopolitical strength, which will contribute to the creation of a balanced and sustainable world order.

The global Arctic “game”, in which Russia participates, is a long and expensive occupation (according to some calculations, the development of the Arctic zone will cost Russia $ 300-700 billion) [10]. Therefore, now we need scientifically sound long-term macro forecasts of general trends, but also regional medium-term, short-term and operational predictions.

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