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The impact of economic activity on the Arctic environment and legal problems of the protection of its natural resources

P P Battakhov¹, S S Zankovsky¹, Y E Budnikova¹, M S Lizikova¹

¹The Institute of State and Law, Russian Academy of Sciences, Moscow, Russia;

E-mail: sppigp@yandex.ru

Abstract. The article discusses the economic, environmental and legal problems arising during the industrial development of the Arctic region of Russia. The prevailing environmental management system in certain areas of the Arctic and vigorous economic activity, together with the harsh climatic conditions, which are characterized by slower ecosystem restoration, led to an extremely critical environmental situation. The solution of the existing problems and the prevention of the new ones are possible only under the condition of the use of effective legal mechanisms both in the environmental sphere and in the regulation of business relations. In order to achieve a balance between economic interests and preservation of the unique Arctic ecosystems, the authors propose to develop a special federal law that will provide state regulation of economic activity in the Arctic zone of the Russian Federation.

1. Introduction

The Arctic zone with its harsh climatic conditions is undoubtedly the worst region in terms of economic activity. The Arctic tundra does not have proper conditions for crop farming, animal breeding, nor in general for agricultural production. However, this unique region is rich in huge reserves of natural resources, both developed and unexplored. After all, it is not by chance that the Arctic has attracted increased attention for several decades.

At present, one tenth of the global oil volume and one fourth of the natural gas volume are produced here. Studies show that the Arctic possesses a significant part of the yet unexplored world oil reserves [<https://ru.arctic.ru/resources/> (reference date: 11/16/2018)].

Most of the unique and large hydrocarbon deposits discovered in Russia are concentrated in the Arctic. To date, 594 oil deposits, 159 gas deposits, 2 nickel deposits and more than 350 gold deposits have been discovered in this macro region. Initial recoverable total resources of the Russian Arctic as a whole are estimated at about 258 billion tons of conventional hydrocarbons (HC), which accounts for 60% of all hydrocarbon resources in Russia. The unexplored hydrocarbon potential of the Arctic accounts for 91% offshore and 53% onshore. Concerning the composition of hydrocarbons in the Arctic, the predominance of the gas component is predicted (81%), including 80% onshore and 85% offshore [1, p. 541].

Furthermore, the development of the Arctic is not limited to the interest in hydrocarbons. Rich deposits of nickel, copper, coal, gold, uranium, tungsten and diamonds are also concentrated in the most studied part of the region - Russian Arctic. Siberia has almost all valuable metals: gold, silver, nickel, molybdenum and zinc. In addition, the largest gypsum, coal and diamond deposits are located there. About 25% of all diamonds in the world are mined in the Republic of Sakha (Yakutia).



No less generous is the Arctic for biological resources, one-fifth of the world's total freshwater reserves and several of the largest rivers on Earth are located here. Unique representatives of hundreds of flora and fauna species that are not found anywhere else in the world live in this area. The largest populations of commercial fish - salmon, cod and pollock - are found in the Arctic seas [<https://ru.arctic.ru/resources> (reference date: 11/15/2018)].

2. Discussion

Certainly, such abundant natural resources could not fail to attract attention. Active economic development of the region began in the 1930-1980s. However, in the USSR, work was carried out mainly with individual fields. At the present time, according to Basic Principles of State Policy of the Russian Federation [2], the Arctic zone is a strategic resource base of Russia, in connection with which the extractive industry is developing especially dynamically.

In addition to the oil and gas sector, the Arctic also opens up new opportunities for merchant shipping (non-traditional shipping routes appear due to ice melting). The development plan of the Northern Sea Route (NSR) suggests an increase in cargo traffic by 2024 to 80 million tons per year [<https://ru.arctic.ru/infrastructure/20181115/804243> (reference date: 11/16/2018)]. Since the NSR is the shortest sea route between Europe and East Asia, it marks the transport and economic independence of Russia.

Another important and profitable direction of the Arctic economy is fishing, both traditional and industrial. Currently, the waters of the Arctic seas are used very intensively for catching (extracting) aquatic biological resources (ABR), and this region accounts for about a third of all Russian catch in the World ocean. Today it is the second largest fishing region after the Far Eastern seas [3, p. 47].

Thus, it should be noted that in modern conditions of the Arctic development, in the context of increasing economic activity throughout the Arctic, the main task for the development of this northern region should be to ensure a balance between profit from the exploitation of natural resources and the preservation of the natural potential of the Arctic.

As is rightly noted in the scientific literature, the economic activity leads to the destruction of natural ecosystems [4, p. 23]. 80% of the enterprises extracting and processing natural resources emit pollutants and thereby lead to strong anthropogenic changes in the environment. These effects are of particular importance when it comes to such an environmentally sensitive region as the Arctic.

Increasing anthropogenic pressure has already affected the state of the environment, which is currently characterized by degradation of natural objects, such as surface and groundwater, as well as reduced biodiversity, soil and vegetation destruction as a result of exploration, mining and much more [5]. Onshore solid waste is accumulated in large quantities in the Arctic. One of the most serious environmental problems in the Arctic is marine environment pollution, which occurs simultaneously with the increase shipping.

Considering the issue of the economic activity impact on the state of the Arctic environment, one cannot fail to touch upon the problem of radioactive contamination because it is a "zone of increased nuclear-ecological impact [6, p. 89].

NPPs, power units, naval bases, ports, atomic navigation are far from being an exhaustive list of activities that generate radioactive risks. It is also worth mentioning the consequences of the chemical industry, located far beyond the Arctic, which, along with nuclear heritage sites, radioactive objects and waste buried in the Arctic seas, as well as radioactive waste storage facilities and spent nuclear fuel has already contributed to radioactive contamination of the region and continues to pose risks for the future.

Thus, the range of tasks requiring close attention, the solution of which will help to overcome the identified problems of the Arctic region, include: [7] strengthening the regional emergency response mechanism in the event of a nuclear accident by moving from bilateral to multilateral agreements; development of necessary international legal instruments reflecting the specifics of the operation and export of transportable nuclear power plants; further strengthening of civil liability for nuclear damage; expansion of international cooperation in decision-making regarding the future dumping of radioactive objects in the Arctic marine environment, etc.

In general, it should be noted that the existing environmental management system in certain areas of the Russian Arctic, diverse and vigorous economic activity, along with harsh climatic conditions characterized by slower ecosystem restoration, led to an extremely critical environmental situation. For example, in Lake Mogilnoye on Kildin Island in the Barents Sea, a layer of fresh water disappeared, and the poisonous layer rose by two meters. Lake Mogilnoe has three layers: there is fresh water at the surface, the layer of sea water, and then the poisonous hydrogen sulfide layer. Over the past 10 years, the poisonous layer has risen by two meters, and the freshwater layer, in turn, has thinned and completely disappeared. In this connection, relict populations of animals and plants, including Kildin cod, are reducing [<https://ru.arctic.ru/environmental/20181108/801332.html> (reference date: 11/17/2018)].

The situation is complicated by other factors, such as lack of environmental control, a high degree of latency of crimes in the field of environmental protection and environmental management. Due to the hidden nature of criminal acts aimed at pollution of the marine environment, water, atmosphere, soil and the difficulty of identifying the source of pollution, bringing to legal responsibility is almost impossible [8, p. 94].

The solution of the above problems and the prevention of new ones are possible only under the condition of effective legal mechanisms both in the environmental sphere and in the regulation of business relations. At the state level, attention has repeatedly been drawn to the need to improve the regulatory legal framework that ensures the effectiveness of the state policy of the Russian Federation in the Arctic. Meanwhile, the legal regulation of activities in such an environmentally vulnerable region is limited only by Basic Principles of State Policy and the Strategy for the Development of the Arctic Zone of the Russian Federation [9]. The main mechanisms for implementing the Strategy are the State Program for Social and Economic Development of the Arctic Zone of the Russian Federation by 2020 and other state programs of the Russian Federation, federal and departmental target programs, as well as sectoral strategies, regional and municipal programs.

At the same time, these acts are only a system of strategic planning measures, which are more declarative in nature and do not at all play the role of a legal regulator of specific social relations related to economic activities in the Arctic zone of Russia [10, p. 96].

3. Conclusion

Thus, due to the fact that the Arctic long ago became a special object of environmental and business relations, capable of meeting Russia's needs in hydrocarbon and aquatic biological resources and other types of strategic raw materials, as well as for the purpose of the rational use and development of the resource base of the Russian Arctic and in order to achieve a balance between economic interests and the preservation of the unique ecological systems of the Arctic, the authors find it necessary to develop a special federal law on state regulation of economic activity in the Arctic zone of the Russian Federation. It is necessary to establish a special legal status of the Arctic area of the Russian Federation with the ecological zoning of its territories in order to define a special legal regime for the natural resources management and economic activities in the region in question, to provide forms of state support, etc.

This regulatory act is meant to help solve existing legal problems of protecting the natural resources of the Arctic from negative effects of economic activities, taking into account the emerging international requirements in this area and their implementation, as well as relying on the principles of comprehensiveness and effectiveness of public administration.

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