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Policy of the Republic of Korea in the Polar Regions in 2023–2033

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Abstract. This article reviews the current state of the Arctic policy of the Republic of Korea, which, like other states, has increased interest in the Arctic region in recent years, as well as its plan of activities in the Arctic and Antarctic for the coming years. The Republic of Korea needs to gradually develop an Arctic strategy at the government level to promote national interests in the Arctic region. The scientific significance of the article is related to the translation into Russian and analysis of the "Polar Activities Promotion Act for 2023–2027", published in February 2023 by the Korean Institute of Marine Science & Technology Promotion. The article discusses the content and timing of the country's 3 main polar policies: research and discovery, climate change forecasting, and polar development. In addition, 5 main strategies for promoting the Republic of Korea in the polar region are discussed, including: expanding the area of research of the territory, developing plans to solve environmental and climate problems, creating a polar industrial base, creating a network of cooperation with foreign countries and between industrial and scientific organizations within the country, developing an interstate dialogue on polar activities.
Keywords: *Republic of Korea, Arctic Council, Arctic policy, Arctic cooperation, Arctic, Antarctic, economic and scientific activities in the Arctic and Antarctic*

Introduction

In recent years, many states have increased their interest in the Arctic region. This is caused by the weakening of geopolitical disputes between the Arctic states and the opening of opportunities for exploration and development of the Arctic for non-Arctic states due to the end of the Cold War; melting glaciers resulting from climate change, which facilitated passage to the Arctic; as well as scientific and technological progress, which made it possible to study and develop a region with complex and harsh natural conditions [1]. The relevance of Arctic research is associated with its strategic importance for the world community. The reasons for the global importance of Arctic research include the growing demand for rare-earth metals and hydrocarbons [2, pp. 40–43], transport and logistics potential of the Northern Sea Corridor and the Northwest Passage, connecting the Pacific and Atlantic oceans [3, pp. 960–973], as well as the impact of global climate change on the Arctic [4, pp. 6–13].

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Among the non-Arctic countries increasing their presence in the region, one of the important players is the Republic of Korea. Its interest in the Arctic region is caused by the geopolitical situation on the Korean Peninsula, which excludes land links with Eurasia. The Republic of Korea is more often seen as an island state dependent on air and sea connections [5]. Due to economic reforms since the 1960s, the country's economy has grown significantly. Its level of dependence on national foreign trade is about 90% and the share of shipping in trade volume is about 99.7% [1]. In addition, the country's economy is 95% dependent on imported energy sources [2]. Obviously, Korea is most interested in the Northern Sea Route, which will allow the country to reduce the cost of transporting goods and the time of their delivery [6]. Korea's highly developed shipbuilding industry has a special economic potential, which can satisfy the demand of other participants of the Arctic development for marine vessels and platforms for mining in harsh Arctic conditions [7, p. 69].

The economic growth of the Republic of Korea, dependent on foreign trade and energy resources, and its geographic location are the reasons why it is beneficial for Korea to increase its presence in the Arctic region.

Plan

In February 2023, the Korea Institute of Marine Science & Technology Promotion published the "Plan for Stimulating Activities in the Polar Regions in 2023–2027", which outlines Korea's prospects and plans for the development of the Arctic and Antarctic until 2033 [8, pp. 2–6]. The plans are divided into 3 areas: research and discovery, climate change forecasting and development of the polar regions.

According to the strategic plan for 2027, the "research and discovery" direction includes the construction and use of a new generation icebreaker with a displacement of 15 thousand tons. In addition, it is planned to select the optimal location of the base and scientific staff for conducting internal research of Antarctica. By 2032, Asia's first initiative for joint international exploration of the North Pole and the opening of a sixth inland base in Antarctica are planned.

The direction of "climate change forecasting" involves increasing the accuracy of meteorological readings at the North Pole to 60% by 2027 and predicting ocean level rise to 70% by 2050, compared to advanced countries. By 2032, it is planned to increase accuracy to 90% and 100%, respectively. By 2025, it is planned to develop ultra-small satellites to monitor changes in ice cover in the Arctic.

The direction "development of the polar regions" implies the creation of a new polar industrial base. By 2027, it is planned to create new technologies for the construction of environmental-

[1] Share of imports and export in gross national income (GNI) in South Korea from 2009 to 2018. URL: https://www.statista.com/statistics/642175/south-korea-foreign-trade-share/ (accessed 10 May 2023).
[2] Explore Korea through Statistics 2018. Statistical Service Planning Division of Statistics s Korea. 2018. P. 33. URL: https://kostat.go.kr/board.es?mid=a20401000000&bid=11777&act=view&list_no=372131 (accessed 10 May 2023).

ly friendly icebreaking container ships, as well as the development of the new medicines for the treatment of dementia and cancer from natural Arctic raw materials.

By 2032, it is planned to build environmentally friendly icebreaking container ships and operate the Northern Sea Route. By this year, it is also planned to create and provide new bactericidal and immunomodulatory drugs.

Promotion strategies

In order to achieve the set goals, the document establishes 5 main promotion strategies:

- expansion of the area of study of the territory;
- development of plans to address environmental and climate issues;
- creation of a polar industrial base;
- establishing of a network of cooperation with foreign countries and between industrial and scientific organizations within the country;
- development of interstate dialogue on polar activities.

Expansion of the area of study includes studying the ecosystem of the Ross Ice Shelf until 2024 and promoting the study of new protected natural areas.

Development of plans to address environmental and climate issues involves promoting international exploration of high Arctic waters using new generation research vessels and developing technologies for long-term monitoring of changes in the Antarctic ecosystem and fisheries resources in conjunction with The Arctic Ocean Fisheries Agreement in 2023, as well as promoting international cooperation in order to protect marine biological resources in the Arctic Ocean by 2024. By 2025, it is planned to study the ice cover of Antarctica using aerial reconnaissance, study plastic debris at the South Pole and search for dangerous microorganisms entering the ecosystem from melting glaciers. Polar surveying and mapping, investigating the impact of methane emissions into the atmosphere, contributing to a comprehensive assessment of the ecosystem in Antarctica's marine protected areas and participating in the establishment of new protected areas are expected by 2026. Restoration of climate history and search for unknown life by drilling through ice sheets and marine sediments, development of Arctic Ocean marine ecosystem change scenarios and enhanced response to environmental threats in the Arctic Ocean are planned by 2027, sea ice observation by microsatellite — by 2028, and development of global sea level rise scenarios and coastal inundation risk assessment — by 2031. In addition, there are plans to assess the effectiveness of the conservation of specially protected natural areas, promote environmental protection and study new protected areas in an indefinite period of time.

Creation of a polar industrial base includes the development of information systems for Arctic shipping, the development of modular energy technologies for polar conditions in 2023. By 2024, it is expected to develop technologies for ship maintenance in polar conditions, develop routes for Korean ships to travel the Arctic route, adapt agricultural technologies for Arctic conditions, jointly develop specialized equipment with businesses and Arctic campaigners, and develop

clean energy technologies. Development of antimicrobial agents and immunomodulators using polar bioresources is planned in 2025–2029; and by 2025 — development of small-sized modular reactors as a power plant for ships sailing along the Northern Sea Route; development of cosmetics using algae from the polar seas and cultivation of fish resistant to low temperatures. Development of autonomous research equipment for the study of polar resources is expected by 2026; creation of environmentally friendly ships for shipping in the Arctic Ocean — by 2027. By 2030, it is planned to launch a new generation icebreaker with a displacement of 15 thousand tons and prepare for the construction of the sixth inland station in Antarctica. It is also planned to promote support for the certification of the Mediterranean Shipping Company for fishing in the Arctic for an indefinite period of time.

Establishing a network of cooperation with foreign countries and between industrial and scientific organizations within the country implies the creation of an intergovernmental council on polar policy, strengthening the network of industrial enterprises operating in the Arctic and supporting demand for their products, expanding joint production with Arctic states, strengthening the functions of the polar diplomatic forum “Arctic Club in Korea”, supporting the indigenous peoples of the Arctic and consolidating the status of the three largest Arctic forums within the framework of the Arctic Cooperation Week in 2023. By 2024, expanding bilateral dialogue with Arctic countries and establishing the Seoul Antarctic Forum are planned; promoting a conference with the science ministers of the Arctic states in Korea — by 2026, and holding the 49th Arctic Treaty Conference in the Republic of Korea — by 2027.

Development of interstate dialogue on polar activities implies the expansion of research infrastructure for joint use, the construction of a center for reproduction of the local environment, and the creation of the Polar information system in 2023–2026. In 2023, the development of an annual plan for the training of polar specialists, the creation of an information platform for U-Arctic graduates, and the allocation of scholarships for polar research training are anticipated. Holding the Arctic Council competition, expanding international exchange, and promoting the polar brand are expected from 2024. By 2027, it is planned to create a polar medical center. In addition, it is planned to train masters and doctors of science on the basis of the UST-School, service personnel, provide safety trainings and develop training programs for professional teachers, develop medium- and long-term strategies for promoting polar policy, prepare textbooks, manuals and individual educational programs on polar standards.

Conclusion

The published plan is fully consistent with the Korean Law “On the Promotion of Activities in Polar Regions” adopted in 2021 and is a continuation of previous polar plans. Over the past few decades, the economy of the Republic of Korea has become one of the largest in the Asia-Pacific region, which, coupled with the current geopolitical situation on the Korean Peninsula, is forcing the country to seek new transport and logistics opportunities, as well as a new source of resources

to meet the needs of a rapidly growing economy: the country's access to resources is limited, and the Northern Sea Route will reduce the length of the route and delivery time between the West and Korea. The highly developed Korean shipbuilding industry, which is capable of meeting the demand of other participants in Arctic development, also has economic potential. In addition, the country contributes to environmental conservation and the fight against climate change through research and investment. Korea began working in this direction several decades later than other countries, but the new plan for activities in the polar regions is designed to significantly expand the country's presence in the Arctic and Antarctic and take a place on a par with leading countries.

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