The First Basic Plan for the Promotion of Polar Activities of the Republic of Korea (2023-2027)

The First Basic Plan for the Promotion of Polar Activities of the Republic of Korea (2023-2027)

***Background***

In April 2021, the government of the Republic of Korea (ROK) enacted the “Act on the Promotion of Polar Activities” (hereinafter referred to as the “Polar Act”). The purpose of this Act is to promote the activities of the Korean Polar Program in the Arctic and Antarctic, and to increase Korea’s contribution towards addressing the global challenges faced by humanity, such as climate change.

To achieve the goals laid out by the Polar Act, the Korean government has established the first “Basic Plan for the promotion of Polar Activities (hereinafter referred to as the “Polar Plan”)” in November 2022. The purpose of the Polar Plan is to systematically promote activities in the polar regions. The Polar Plan contains a comprehensive and detailed five-year action plan concerning the following objectives; investigating the unexplored regions, joint international science research, climate change, environmental protection, participating in sustainable economic development, building up multi-layered cooperative channels, nurturing human resources, and designing new outreach programs.

***Vision and Goals***

|  |  |
| --- | --- |
| **Vision** | A pioneering role in polar activities and endeavours : A Challenge Toward the Unexplored Polar regions, a Leap Forward to the Future |
| **Goals** | 1. Chart the unexplored regions 2. Respond to climate change 3. Lay the foundation for sustainable development in the polar regions |
| **Strategy 1**  Expand investigation into the unexplored regions in the Arctic and Antarctic | 1-1. Conduct future-driven research in the unexplored regions  1-2. Investigate climate change and its impact on the ecosystem  1-3. Develop polar technologies to support safe exploration |
| **Strategy 2**  Resolve climate and environmental issues | 2-1. Enhancing prediction capabilities for extreme weather events originating from the polar regions  2-2. Reinforce competency for protecting the polar environment  2-3. Predict changes in the polar ecosystem caused by climate change |
| **Strategy 3**  Lay the foundation for sustainable development | 3-1. Develop cutting-edge technologies for navigating the Arctic shipping routes  3-2. Develop specialized technologies for construction and equipment used in cold climate  3-3. Facilitate sustainable use of marine and bio resources in the polar regions |
| **Strategy 4**  Build multi-layered cooperation channels | 4-1. Establish channels for pan-government and social consultation  4-2. Expand bilateral and multilateral cooperation with the stake holders in the Arctic and Antarctic  4-3. Diversify international partnerships in public and private sectors |
| **Strategy 5**  Enhance interactive communications with domestic stakeholders | 5-1. Establish a joint research platform and safety control system  5-2. Nurturing future generations of polar experts  5-3. Implement outreach programs for the wider public |

Table 1 – Vision and goals of the First Basic Plan for the Promotion of Polar Activities of the Republic of Korea.

The first Polar Plan outlines the direction of the Korean Polar Program for the next five-years, from 2023 to 2027. The Korean government has set five strategies and 15 objectives for policy-driven implementation. To identify priorities in polar sciences and to encourage involvement from wider domestic audience, the government sets nine “Frontier projects” that needs to be addressed in five years, including; Constructing the second ice-breaking research vessel operated by the Korean Polar program, establishing a third research station in the Antarctic, and strengthening observation in the Arctic and Antarctic to effectively predict and respond to climate change.

* Strategy 1. Expand investigation into the unexplored regions in the Arctic and Antarctic

1. To increase the Korean contribution to scientific research in the Arctic and the Antarctic, the Korean government will expand its scientific investigation into the unexplored polar regions. The details of the plan includes (1) construction of the second ice-breaking research vessel and designing joint international research program to investigate the Arctic Ocean; (2) establishment of the third research station in Antarctic inland to take part in investigating the Earth systems; and (3) strengthen bilateral partnership to conduct joint observation in the field of ecosystem, atmosphere, permafrost, and glaciers in the high Arctic.
2. To enhance the accuracy of predicting changes in the Arctic and Antarctic, the Korean scientific community is conducting a research to restore past climate change cycle through ice core, blue ice, and seabed coring samples from the Antarctic. Sub-glacial lake drilling program will be launched to conduct research on isolated ecosystems.
3. For safe Antarctic exploration on both land and sea, the Korean polar program will develop an airborne exploring system to obtain an accurate spatial information of a sub-glacial topography, and investigate the seas near its research station to create nautical charts. Microsatellites will be developed to observe the change of sea-ice in the Arctic.

* Strategy 2. Resolve climate and environmental issues

1. Global climate change influences the polar regions, which in turn affects the global climate system. The Republic of Korea recognized that meteorological disasters and the rising sea level caused by the changing polar regions could affect the Korean Peninsula. The Korean scientific community will develop model for predicting meteorological disasters caused by the decreasing Arctic sea ice. To predict how quickly the Antarctic glaciers are melting and the extent to which the sea level will rise, the ROK will expand the scope of the research and consolidate cooperative research activities through international network.
2. In the Antarctic, the Republic of Korea will continue expanding our contribution to monitoring and protecting the Marine Protected Area (MPA) and the Antarctic Specially Protected Area (ASPA) No. 171 and No.178. In the Arctic, its effort to monitor changes in Arctic sea ice, marine environment, permafrost, atmosphere, and ecosystem will be strengthened. Efforts will be made to contribute to newly emerging issues such as ocean plastic litters and ocean noise caused by shipping activities.
3. The thawing permafrost in the Arctic may pose unique threats to the environment as it can release biological and chemical materials that can be harmful for health and the environment. To contribute to identifying and predicting ecological changes in the polar regions, technologies are being developed for an unmanned observation systems and analysis using artificial intelligence.

* Strategy 3. Lay the foundation for sustainable development

1. To pursue potential opportunity that may arise with the loss of sea ice in the Arctic, while taking into account the importance of environmental protection, the Korean government will support the development of eco-friendly technologies that can be applied to commercial vessels operating in the Arctic. The eco-friendly ice-breaking container vessel and autonomous ship based on digital technology will be developed to navigate Northern Sea Route and ensure the safe operation of the vessel.
2. Korea will develop construction technologies, platforms, and systems that can be used in the extremely cold environment. Ultimately, these technologies will contribute to safety and sustainable development of polar communities, and also be applied for exploring other extreme regions such as the deep sea and the space in the future. There are concerted efforts in Korea to take part in green and renewable energy projects in the Arctic region.
3. The government encourages fishing operators to adopt sustainable fishing practices in the Antarctic and obtain relevant certification. There are research being conducted to understand unique properties of the living organisms in the Arctic and Antarctic, and if it could be useful to humankind.

* Strategy 4. Build multi-layered cooperation channels

1. To systematically coordinate and consult diverse issues related to the polar regions, the Korean government will organize a “pan-government consultative committee” consisting of the Ministry of Oceans and Fisheries, Ministry of Foreign Affairs, Ministry of Science and ICT, and other related ministries. To encourage economic development and industrial partnerships, the government will encourage research institutes, universities and industries to expand their work with Arctic counterparts by operating a consortium that would facilitate cooperation and increase information accessibility.
2. The Korean government will expand bilateral and multilateral discussions with in the Arctic and Antarctic community, to embrace diverse agenda and strengthen the cooperative relationship. In addition, Korea seeks to contribute to facilitating discussion on polar issues by hosting international conferences and meetings.
3. The Korean government will launch the Antarctic Forum to facilitate discussions between domestic and international audiences, which involve different layers of stakeholders including government officials, researchers, and the public. With regard to the Arctic, the Arctic Partnership Week, is held annually to discuss diverse issues from scientific to socio-economic and industrial issues related to the region.

* Strategy 5. Enhance interactive communications with domestic stakeholders

1. The government is building a cooperation research center which would include a facility to recreate polar environment for joint research purposes. There are plans to increase the accessibility of resources for polar research, by implementing integrated polar information system and setting up platforms that would facilitate shared use of polar infrastructure.
2. For the future, the Korean government aims to focus on nurturing future polar experts in diverse areas, such as scientific research, international cooperation, marine transportation, and ship operation.
3. The Korean government recognizes the importance of public consensus and support. A new outreach program is being developed to engage with the public and deliver materials that is tailored to the target group. The Korean government plans to promote campaigns that would reach wider audience and develop experiential learning tools to enable better understanding of Korean polar activities.

***Future of Korea’s Polar Activities***

The Republic of Korea will expand its scientific and social contributions to the global polar community by achieving milestones specified in the Polar Plan. Seeking for an expanded role as a responsible member of global polar community, the Korean polar program plans to explore and investigate uncharted polar regions utilizing the current infrastructure (*King Sejong* and *Jangbogo* research station in the Antarctic, *Dasan* station in *Ny-Alseund*, and IBRV *Araon*), and by obtaining an Antarctic inland station and a second ice-breaking research vessel. This will enable Korea to take more expansive role and responsibility in dealing with global climate and environmental changes. Korea will continue to be a reliable partner in scientific research and sustainable development in the polar region, and stand together with other Parties in responding to emerging issues such as climate change and environment