Scientific and Science-related Cooperation with the Antarctic Community and Responses to COVID-19

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Information Paper submitted by Korea (ROK)

Overview

The Republic of Korea has been a Consultative Party to the Antarctic Treaty since 1989, and conducted scientific research in cooperation with other Parties in the spirit of the Antarctic Treaty. This report is prepared to inform the Consultative Parties and the wider Antarctic community of the highlights of the Korean scientific activities during 2022-23 Austral summer season, while providing updates on the sustained management approach against COVID-19 at research stations operated by the Korean Antarctic program.

Research Highlights of 2022-23 Austral summer season

The Antarctic King Sejong Station, located at the tip of the Antarctic Peninsula, remains as the key research site for Korean Antarctic program and its scientific collaboration. During the 2022-23 summer season, the station welcomed 120 Korean and international visitors from 31 research and expert groups, and have supported their research activities on-site.

Ecosystem science was the focus of research in areas nearby King Sejong station last season. Research teams have conducted field studies looking into long-term changes in the terrestrial ecology in the region, as well as vegetation components around the station. This is expected to contribute to identifying the correlation between environmental changes and ecosystem responses in Antarctica. Atmospheric observation were carried out in order to further understand physiochemical properties and processes of atmospheric aerosol in the peninsula.

The Antarctic Jang Bogo Station has become the base camp for scientific research in the Ross Sea and the Northern Victoria Land region for the Korean Antarctic program. This past summer season, 70 scientists and experts from multiple disciplines have visited Jang Bogo to conduct field research activities. The research teams conducted survey of polar benthic communities and marine environment in the waters near Jang Bogo station, installed autonomous space environment observatory in Antarctic inland, and continued its efforts to monitor the cryospheric changes in Northern Victoria land.

Changes in the ocean environment and biodiversity are also being studied to better understand the ecosystems in the Ross Sea Marine Protected Area. Ice sheet retreat and ocean circulation has been, and remains a large part of the Korean Antarctic research efforts.

Sustained Management Approach against COVID-19

Throughout the pandemic, Antarctic research community has seen unprecedented challenges in conducting scientific work in the region. While field activities in the last 2021-22 season were carried out with a semblance of normalcy, the sustained management measures to contain the outbreak continued to prove its effectiveness this past season, and there were minimum effects of COVID-19 to the research activities. The elements of management measures that were put in place were: vaccination, testing and quarantining prior to entering the station or into Antarctica, and strict managed isolation with medical care and treatment.

To reduce the risk of exposing the populations at the research stations to the virus, those who were traveling to Antarctica were required to complete their vaccination. Upon arriving at the gateway city of Punta Arenas, Chile or Christchurch, New Zealand, the Antarctic visitors were quarantined for four days, and need to have two negative rapid antigen test (RAT) results before continuing their travel to Antarctica.

The stations were equipped to deal effectively in case of an outbreak. PCR and antigen test kits, medication for treating COVID-19 (Paxlovid), and personal protective equipment (PPE) were supplied before the start of the season. Personnel were trained on how to use negative pressure isolation quarters and manuals on how to respond to an outbreak was provided to all those operating the station.

The containment plan assisted both stations in operating without experiencing major outbreaks or other threats to the health and safety. King Sejong Station had three positive cases among the arrivals in March, which were contained on time before further transmission. Jang Bogo Station had zero cases throughout the season. As the health and safety of the Antarctic community remains as the highest priority for the Korean Antarctic program, Korea will continue to implement mitigation measures that allows safe operations and science activities for those working in Antarctica.

International Cooperation

The Korean Antarctic program recognizes the importance of international cooperation in research and logistic support, and has closely cooperated with the New Zealand and Chilean programs through the aid of the Korea-New Zealand Antarctic Cooperation Centre in Christchurch, and Korea-Chile Antarctic Cooperation Center in Punta Arenas. Strong collaboration continues with the Italian and US program for logistical support to Jang Bogo Station and the Ross Sea sector.

The Korean program will continue to collaborate with the Consultative Parties in a range of research and logistic activities. During the past season, Korean program has supported and cooperated with 13 scientists who have visited King Sejong and Jang Bogo Station. Station-based collaboration efforts were made with the researchers from Australia, Belgium, Canada, Chile, France, Germany, Lithuania, Portugal, UK, US and Vietnam.

The KOPRI fellowship program, which was on hold for due to the travel restrictions caused by the pandemic, resumed last year. With the aim to promote research collaboration and provide future generation scientists with networking and research opportunities, the program expanded from supporting Asian scientists to incorporate early career scientists from Chile and New Zealand as well. Four early career scientists from Chile, China, and India have been awarded with the fellowship, and were provided with the support that enabled them to visit KOPRI and conduct collaborative research with their Korean host scientists. The selection process for 2023 was held in March and three scientists were selected as awardees, with the possibility of additional call to be open later in the year.