

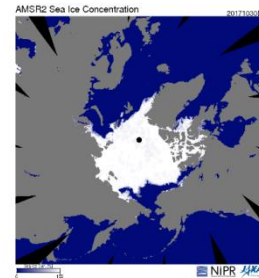
# Achieving Innovative Solutions for Arctic Challenges

Science and technology for the Arctic Japan's role through five "i"s



## 1 Introduction – Science and Technology for the Arctic

- The Arctic is witnessing a decrease of ice sheets, glaciers, and sea ice, which is having an impact on ecosystems and fishing.
- Potentials for the development of petroleum, natural gas, and mineral resources, as well as the utilization of the Arctic Sea Route, are attracting public attention.
- This recommendation offers direction towards achieving solutions to the Arctic challenges making full use of Japan's strength in the area of science and technology.



## 2 Perceptions of the current Arctic

Knowing, preserving, and utilizing the Arctic through four "i"s

- Involving different states (international), covering diverse academic disciplines (interdisciplinary) and various actors such as the indigenous people and corporate enterprises (inclusive)
- Japan's ingenuity: In Japan, abundant valuable data collected through diverse observation technologies and unique observation capabilities have been accumulated. Japan is undertaking the dissemination of knowledge, identification of talented researchers, and early discovery of new challenges on Arctic research.

## 3 Japan's strengths in Science and Technology

Promoting international cooperation and creating innovation through industry-government-academia collaboration

- Japan's science and technology (e.g., sensor technologies) can be a driving force for structuring a cooperative relationship that will promote the creation of the 5th "i," innovation.
- To create innovation with maximized use of Japan's strengths, industrial communities' ingenuity and close collaboration between the science and business sectors are indispensable.

## 4 Future Direction

Encourage ingenuity through enhancement of data-based diplomatic activities and establishment of research infrastructure

- As a core player, Japan should continue activities in establishing the foundation of Arctic research through the accumulation and integration of data via an international network that is collected with high-precision observation technologies.
- Utilizing its advantage of a politically neutral position as a non-Arctic state, Japan is expected to continue to provide reliable objective data to other nations.

## 5 Conclusion – Connecting various actors and disciplines through the ice-drifting Arctic to explore the future

- It is essential to make full use of science and technology to address challenges in the Arctic amidst recent environmental changes in the region.
- Japan should assume an active role in the international community while cooperating with other nations, aiming at connecting various actors and disciplines in the ice-drifting Arctic for exploring the future, with an emphasis on five "i"s: international; interdisciplinary; inclusive; ingenuity; and innovation.

