

Overview of the Arctic Challenge for Sustainability (ArCS) project (2015-2020)

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Arctic Challenge for Sustainability (ArCS) project has successfully completed with a lot of achievements. In the ArCS project, we promoted international collaborative researches, established research and observation stations in the Arctic region, and dispatched young researchers and experts to Arctic research institutions and conferences. These initiatives were carried out based on Japan's Arctic Policy, adopted in 2015 in order to provide evidentiary support for the policy outlines that Japan contributes to offering scientific solutions to Arctic issues and takes a lead in achieving an orderly and sustainable development in the Arctic region. As another important initiative, we also developed and implemented measures to actively share with society the information on scientific achievements of this project.

The international collaborative researches that serve as a basis for achieving the goals of this project were carried out while effectively utilizing the research and observation stations, the research vessel Mirai, (R/V Mirai) and other research infrastructures. These programs were conducted through collaboration mainly among research institutions in Arctic countries and the following eight research themes designed to gain new knowledge of Arctic environmental changes based on their respective goals: natural science-related themes (Themes 1 to 6), the humanities and social sciences-related theme (Theme 7), and the data management-related theme (Theme 8). We successfully presented our findings at many academic conferences and published a number of research papers. Through the entire project, we achieved distinctive results in the following ways through the entire activity. (A) This project produced internationally recognized results grounded in the accumulated knowledge of the Japan's past Arctic research activities; (B) many findings were obtained in the international observation programs where Japan took a lead in the proposal and discussion process, or Japan played an internationally leading role in research activities, such as adopting Japanese technology as a standard measurement method; and (C) the interdisciplinary research approach became a model case for future research activities, especially in the implementation style conducted while exchanging information with local residents in the Arctic region, the creation of environmental teaching materials, and the development of educational tools.

The project produced many scientific achievements and advanced science to society connection. The project was the flagship project which initiated many challenges of Japanese Arctic science to international contribution.