

# New Japanese Arctic Research Project “Arctic Challenge for Sustainability (ArCS)” and related activities

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It has become a well-known fact that changes in the Arctic environments are closely connected to the weather /climate system in regions other than the Arctic. Also, the rapid environmental changes in the Arctic raise new socio-economic activities on a global scale fumbling a new and appropriate relationship among Arctic and non-Arctic states. Now, issues arising in the Arctic environment are nothing other than global issues.

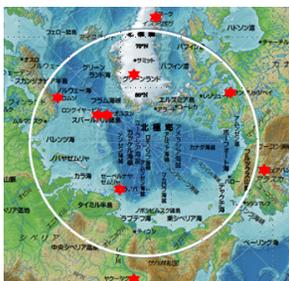
New Japanese Arctic research project “Arctic Challenge for Sustainability (ArCS)” started in the summer of 2015. The gist of the project is as follows;

1. To enhance research system of Arctic science in order to assess the rapidly changing environment in the Arctic through projections with least ambiguity as possible under strong and close international collaboration.
2. To provide necessary and sufficient information, not only from the viewpoint of natural science but also of social science, to domestic and international policy-makers actively for tackling to “Arctic problems” and also to strengthen Japan’s contributions to the Arctic and the international community.

These points will provide a scientific basis for Arctic policies of national and international responding by helping to grasp the present state of the Arctic environment and to improve future projections of various items, which enables sustainable development in the Arctic and contributes to secure the resilience of the Arctic.

Aiming at the gist, ArCS has started. The ArCS project is composed three pillars, namely, “Reinforcement of research base on foreign countries”, “Dispatching experts to Arctic meeting and human resource development”, and “Enforcing international research cooperation”. At the same time, ArCS is aiming to have much dialogue as possible with stakeholders (government officials, private sectors, mass-media, etc.) who make advices concerning the possible research direction of the project. Also, ArCS has a plan to organize International Advisory Board in near future.

## Reinforcement of research base/stations



Improving the basic research facilities for long-term stay and/or monitoring studies, which can be used by inter- national collaborative studies.

## Dispatching experts and young scientists and Human resource development



Long-term research cooperation through the exchange of young researchers. Interdisciplinary human resource development. Sending experts to International committees and meetings.

## Enforcing international research cooperation



Carrying out the international joint research project in the Arctic. Considering the social and cultural impacts, providing information appropriately.

New Japanese initiative ArCS project will integrate the current ability of research and international collaborations. ArCS is also willing to give the idea to fill the gaps of observation networks of weather/ocean, technologies of sensing/platforms and simulating, and data interoperability.

Some trials have been already initiated: JAMSTEC is developing automated vehicle to conduct observations efficiently in the Arctic Ocean, especially under the sea ice. Micro-satellite technologies are also waiting their missions for low-cost and focused Arctic observing systems. Ocean Observation Camera (OOC) was developed as one of the scientific instruments installed on micro satellite RISESAT by Hokkaido University, Tohoku University, National Taiwan Ocean University, and other research and corporate partners. The launch of RISESAT planned next year, and start providing new Arctic data. Arctic Data archiving System (ADS) initiated by GRENE Arctic project will look for the requirement from Arctic scientific partners and possible improvement to respond them.