Open lecture at EU House
Arctic research in Japan,
May 21, 2021.



Hiroyuki Enomoto
National Institute of Polar Research
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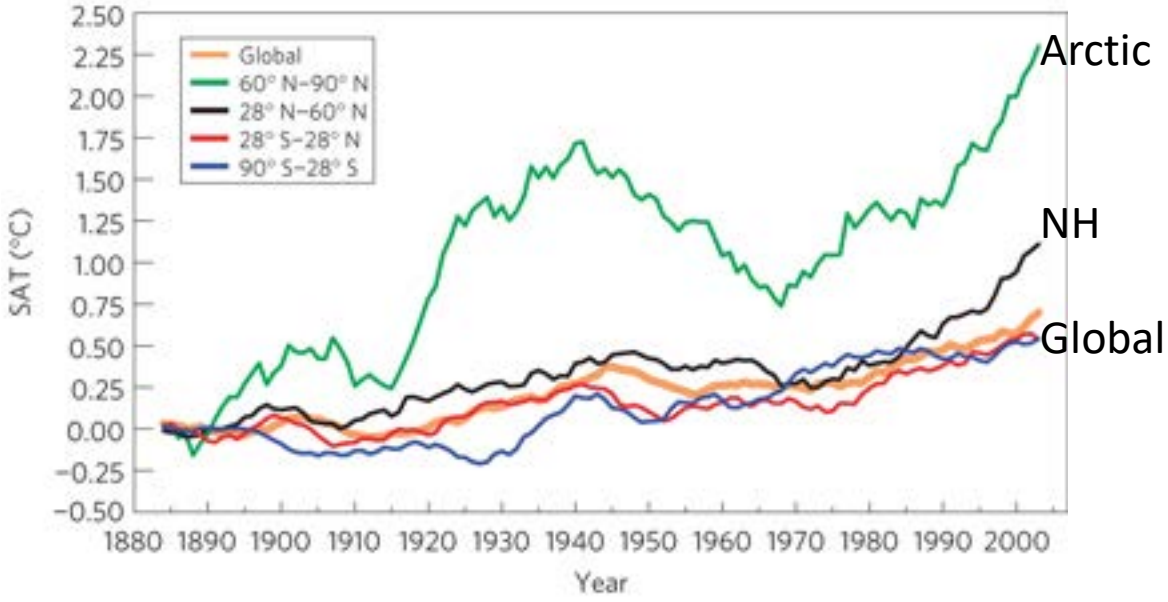
Background of Arctic science and society needs

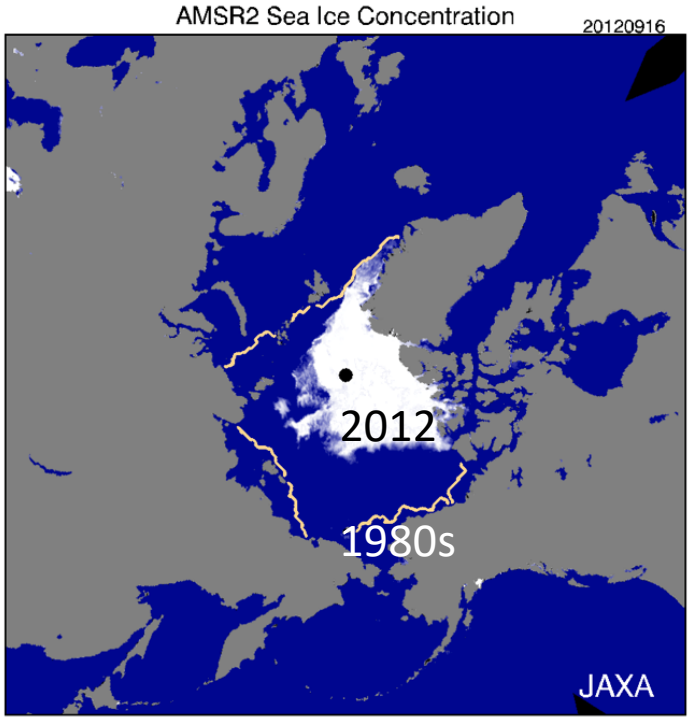
- The Arctic region is where the impact of global warming is most evident.
- Scientific evidence indicates that rapid changes in the natural environment of the Arctic region,

- Rapid reduction in sea iceaccelerated

- Ice sheet melting

- impact on the environment and ecosystems





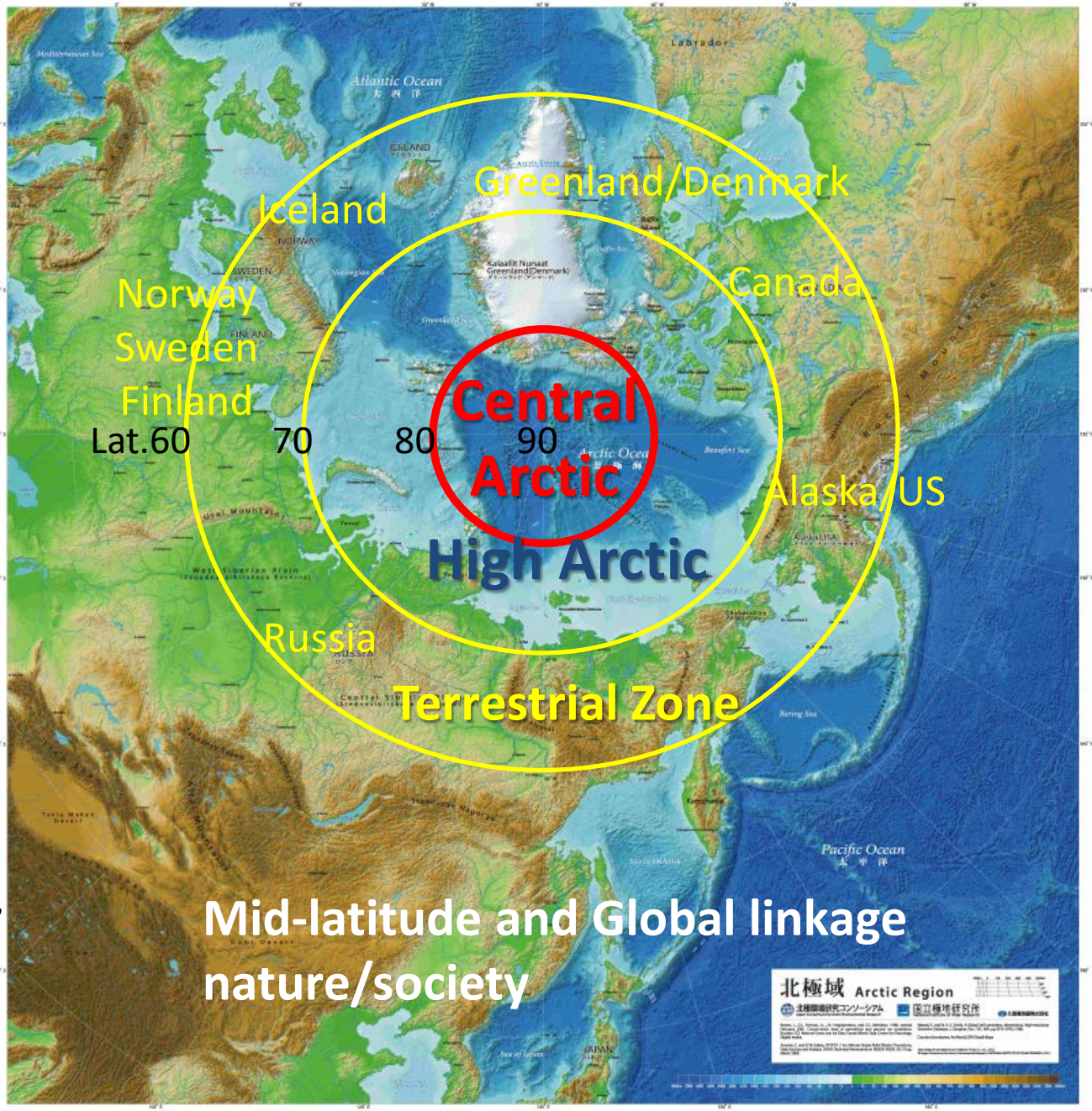
Arctic

Zones, interests, problems and approaches

60-70: Land change, Country, Community Culture/Tradition

70-80: Opening seas, Coastal change, Shipping/resource Governance, Security

80-90: Future change, Disappearing ice, Climate/environment, /Ecosystem/Fishery



Needs of international collaborations, with holistic approach

- International need to accurately understand the impact of changes in the Arctic environment on societal activity from not only a local perspective – including the rights of indigenous peoples and resource development and use – also from a global perspective, and to develop measures in response.
- In order to tackle issues in the Arctic region, it is needed
  - International need for holistic research,
  - including participation by non-Arctic countries,
  with efforts to ensure that international legal and policy order in the Arctic



Japanese contribution through scientific activity

Arctic Challenge for Sustainability Ⅱ

Project Goal

Toward a sustainable Arctic, ArCS II will promote advanced observation of Arctic environmental change and its process, improve weather and climate prediction, assess environmental change in the Arctic and its impact on society, implement the research achievement in the society, and provide local and global stakeholders with scientific knowledge that is the basis of legal and policy responses for the formation of international rules in the Arctic.

Arctic Challenge for Sustainability Ⅱ

Project Goal

Promoting advanced and interdisciplinary research on the Arctic, aiming social implement of its results.

4 Strategic Goals

Strategic Goal 1
Advanced Observation of Arctic Environmental Change

Strategic Goal 2
Improvement of Weather and Climate Prediction

Strategic Goal 3
Impact of Arctic Environmental Change on Society

Strategic Goal 4
Legal/Policy Response and Research Implementation for a Sustainable Arctic

2 Priority Subjects

Priority Subject 1
Capacity Building and Research Promotion

Priority Subject 2
Strategic Dissemination of Arctic Information

11 Research Programs

- Atmosphere
- Ocean
- Cryosphere
- Land
- Teleconnection
- Climate Prediction
- Human Society
- Arctic Sea Routes
- Coastal Environments
- International Law
- International Relations

Research Infrastructures

- International Collaboration Site
- Research Vessel
- Earth Observation Satellite Data
- Arctic Data archive System

Research Infrastructures

- ArCS Ⅱ project operates 11 International Collaboration Sites in Arctic countries
- Sites are available for research/observation for the Priority Subject 1 (Capacity Building and Research Promotion).

International Collaboration Sites



Research Vessel



Oceanographic research vessel, the Mirai
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Earth Observation Satellite Data



Arctic Data archive System

ADS
Arctic Data archive System



Priority Subjects 1

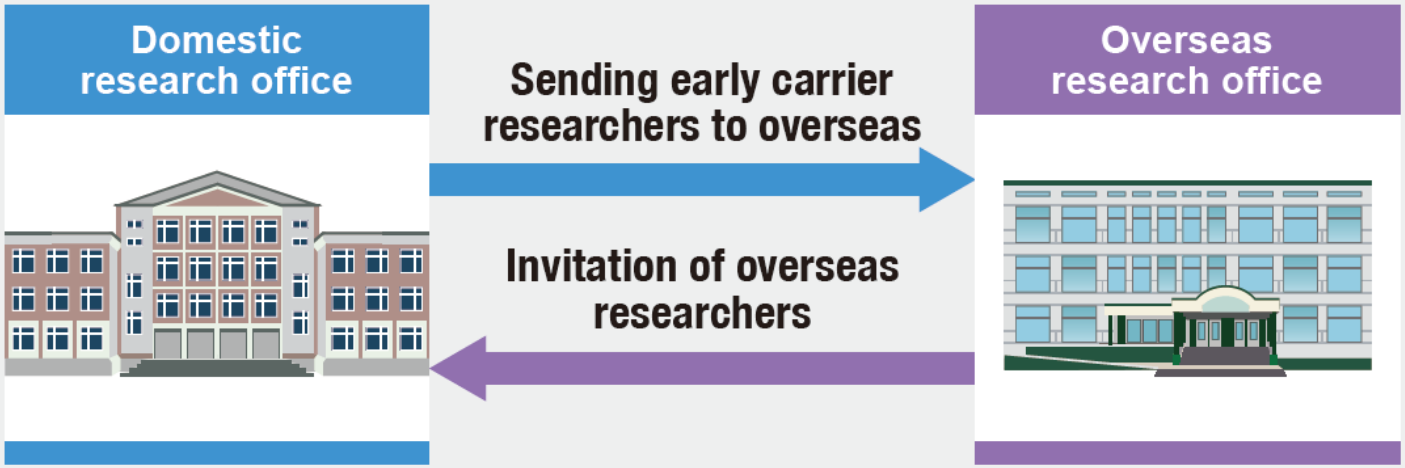
Capacity Building and Research Promotion

- International Research Exchange Program
- Overseas Fellowship Program
- Call for Complementary Research Projects

Strengthening the system for sustainable international research collaboration

Capacity building to contribute to solving Arctic issues

Building an international human network

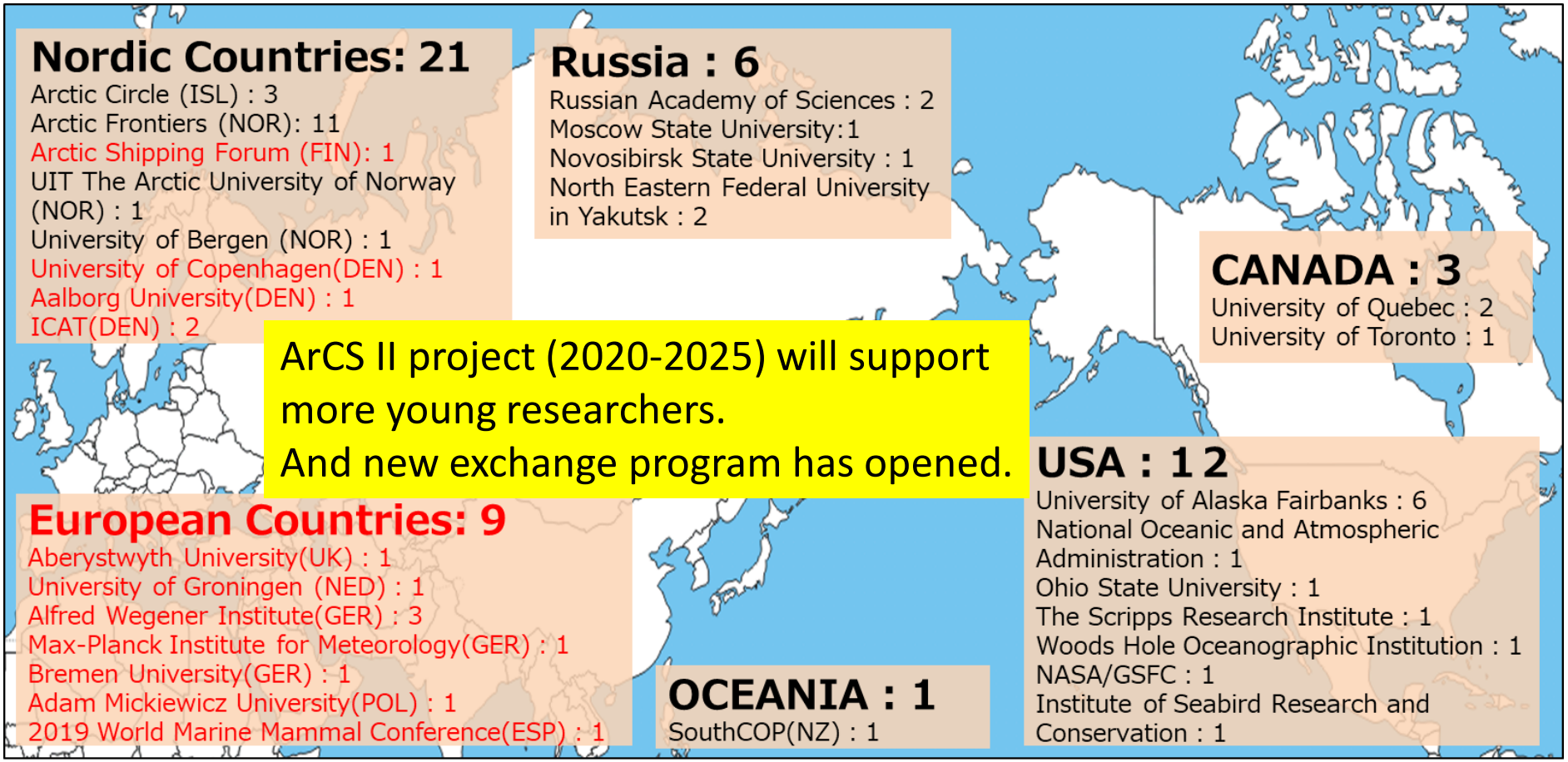


Urgent research proposals based on the trend in international Arctic research

Challenging research topics from young researchers

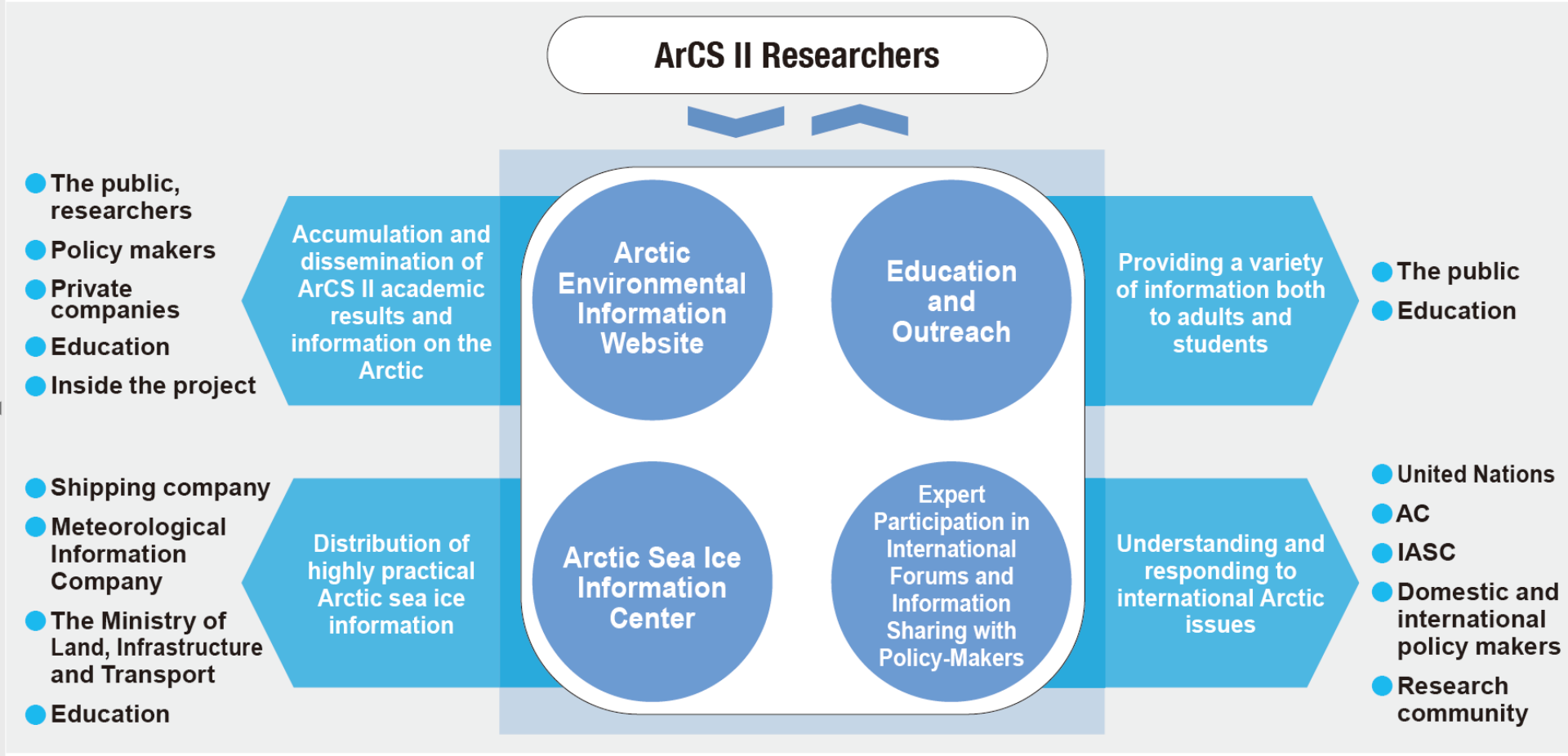
Dispatching Young researchers to overseas (ArCS 2015-2020)

- To develop young human resources who deal with a problem solution in the future Arctic by supporting a study, a research activity about Arctic issues, the project has dispatched talented persons (a young researcher, graduate students, and officials) to overseas.
- Dispatch period: Short term(less than two weeks), Mid and Long term(two weeks-1 year)
- Total number of dispatched persons is 52. Dispatch areas and states can be referred in the following world map (including 7 EU states) (※containing predetermined)



Priority Subjects 2

Strategic Dissemination of Arctic Information



Climate, environment, outreach,
Culture and livelihood,
Sea ice monitor, forecast, safe navigation

Contribution to UN, Arctic Council
International scientific coordination
Governance, Policy making

Looking for more collaborations



Thank you for your kind attention

https://www.nipr.ac.jp/arcs2/e/outreach/arcs2map/