Open Lecture at Europa House

3rd ARCTIC SCIENCE MINISTERIAL

ASM3 Science Process and Recent Developments in Arctic Science in Japan

Today's Talk

1. ASM3 and its Science Process — Hajime KIMURA (MEXT), Tetsuo SUEYOSHI (NIPR / MEXT)

2. Recent Developments in Arctic Science in Japan — Hiroyuki ENOMOTO (NIPR), Takashi KIKUCHI (JAMSTEC)

Government of Iceland
Ministry of Education, Science and Culture

MEXT MINISTRY OF EDUCATION, CULTURE, SPORTS, SCIENCE AND TECHNOLOGY-JAPAN

国立極地研究所
大学共同利用機関法人 情報・システム研究機構

JAMSTEC 国立研究開発法人 海洋研究開発機構
JAPAN AGENCY FOR MARINE-EARTH SCIENCE AND TECHNOLOGY

The 3rd Arctic Science Ministerial Organizing Committee
Hajime KIMURA, Ministry of (MEXT)
Tetsuo SUEYOSHI, National Institute of Polar Research (NIPR) / MEXT

3rd ARCTIC SCIENCE MINISTERIAL

Introduction to the ASM3 Process

Government of Iceland
Ministry of Education, Science and Culture

MEXT
MINISTRY OF EDUCATION, CULTURE, SPORTS, SCIENCE AND TECHNOLOGY-JAPAN

Review of ASM1

First Arctic Science Ministerial

ASM1

Washington DC, USA, September 2016



Hosted by the United States

Themes

1. Arctic science challenges and their regional and global implications
2. Strengthening and integrating Arctic observations and data sharing
3. Applying expanded scientific understanding of the Arctic to build regional resilience and shape global responses
4. Arctic science as a vehicle for science, technology, engineering and mathematics (STEM) education and citizen empowerment

Review of ASM2

Second Arctic Science Ministerial

ASM2

Berlin, Germany, October 2018



Hosted by European Commission, Finland & Germany

Themes

1. Strengthening, integrating, and sustaining Arctic observations, facilitating access to Arctic data, and sharing Arctic research infrastructure
2. Understanding regional and global dynamics of Arctic changes
3. Assessing vulnerability and building resilience of Arctic environments and societies

3rd ARCTIC SCIENCE MINISTERIAL

Third Arctic Science Ministerial

ASM3

08 - 09 May 2021

Toranomon Hills Forum
Tokyo, Japan

Government of Iceland
Ministry of Education, Science and Culture

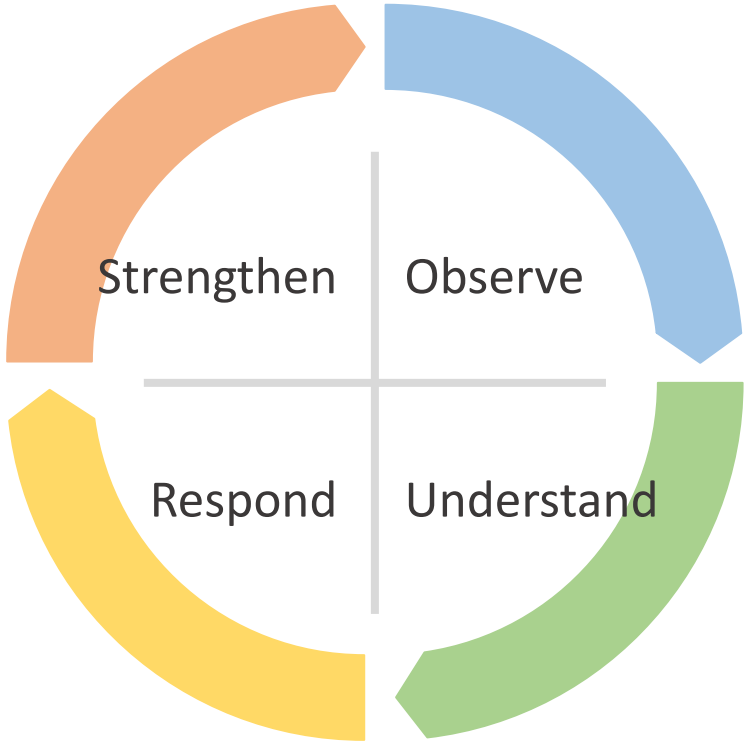
MEXT MINISTRY OF EDUCATION, CULTURE, SPORTS, SCIENCE AND TECHNOLOGY-JAPAN



ASM3 Themes

"Knowledge for a sustainable Arctic"

Observe, Understand, Respond, and Strengthen: 4-step iterative cycle



1. **Observe**
   implementing observing networks; data-sharing
2. **Understand**
   enhancing understanding and prediction capability for Arctic environmental and social systems, for the global impact of these changes
3. **Respond**
   operationalizing sustainable development, evaluating vulnerability and resilience, and applying Knowledge
4. **Strengthen**
   preparing the next generation through capacity building, education, networking; and resilience

ASM3 Participants

Participants of the Ministerial

28 Countries/governments representatives: Austria, Belgium, Canada, China, Czech Republic, Denmark, Faroe Islands, Finland, France, Germany, Greenland, Iceland, India, Italy, Japan, Netherlands, Norway, Poland, Portugal, Republic of Korea, Russian Federation, Sweden, Singapore, Switzerland, Spain, United Kingdom, United States, European Union

6 Arctic Indigenous representatives: Aleut International Association (AIA), Arctic Athabaskan Council (AAC), Gwich'in Council International (GCI), Inuit Circumpolar Council (ICC), Russian Association of Indigenous Peoples of the North (RAIPON), Saami Council

3rd ARCTIC SCIENCE MINISTERIAL

Program

8 May 2021

19:00-22:00 JST
10:00-13:00 UTC

DAY 1

19:00	**Opening**
	Welcoming address • HAGIUDA Koichi, Minister of Education, Culture, Sports, Science and Technology, Japan • Lilja Alfreðsdóttir, Minister of Education, Science and Culture, Iceland Reporting from Science Advisory Board
19:40	**Theme 1: Observe**
	Introduction by Science Advisory Board Countries/ Indigenous Peoples' Organizations statements General discussion
20:50	**Theme 2: Understand**
	Introduction by Science Advisory Board Countries/ Indigenous Peoples' Organizations statements General discussion
21:50	**Closing of Day 1**
	Group Photo

3rd ARCTIC SCIENCE MINISTERIAL

Program

9 May 2021

19:00-22:00 JST
10:00-13:00 UTC

DAY 2

19:00	**Opening of Day 2**
	Keynote speech
19:25	**Theme 3: Respond**
	Introduction by Science Advisory Board
	Countries/ Indigenous Peoples' Organizations statements
	General discussion
20:30	**Theme 4: Strengthen**
	Introduction by Science Advisory Board
	Countries/ Indigenous Peoples' Organizations statements
	General discussion
21:35	**Closing**
	Joint Statement presentation
	Signing of the Joint Statement
	Closing remarks
22:00	**End of the Ministerial**

Ministerial Meeting









Photo: ASM3 Organizing Committee

Ministerial Meeting

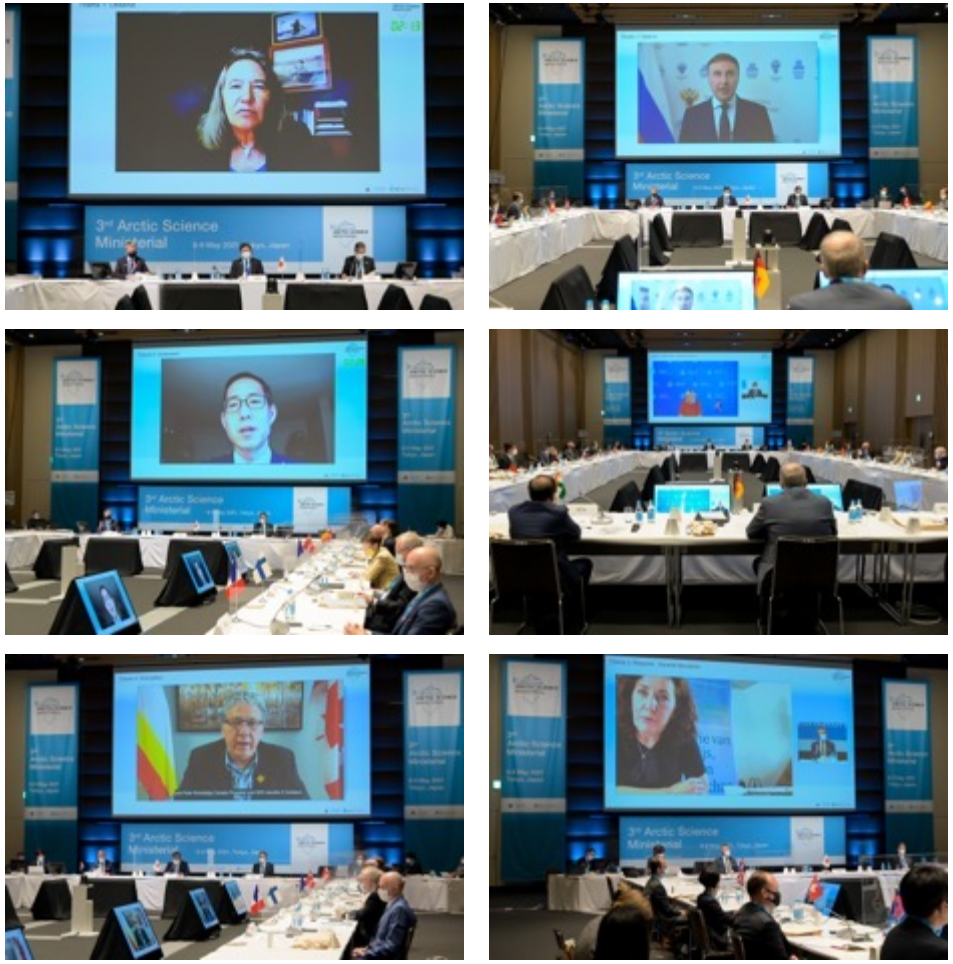


Photo: ASM3 Organizing Committee

Observe:
India, Inuit Circumpolar Council (ICC), Italy, Japan, Republic of Korea, Portugal (pre-recorded video), Russian Federation (pre-recorded video), Sweden, United Kingdom

Understand:
Austria (pre-recorded video), Belgium (pre-recorded video), China (pre-recorded video), Denmark, France, Germany, Gwich'in Council International (GCI), Switzerland, United States

Respond:
Arctic Athabaskan Council (AAC), Faroe Islands, Finland, Greenland (pre-recorded video), Poland, Russian Association of Indigenous Peoples of the North (RAIPON), Spain

Strengthen:
Aleut International Association (AIA), Canada (pre-recorded video), Czech Republic, European Union, Iceland, Netherlands, Norway, Saami Council, Singapore

Ministerial Meeting







Photo: ASM3 Organizing Committee

ASM3 Science Advisory Board

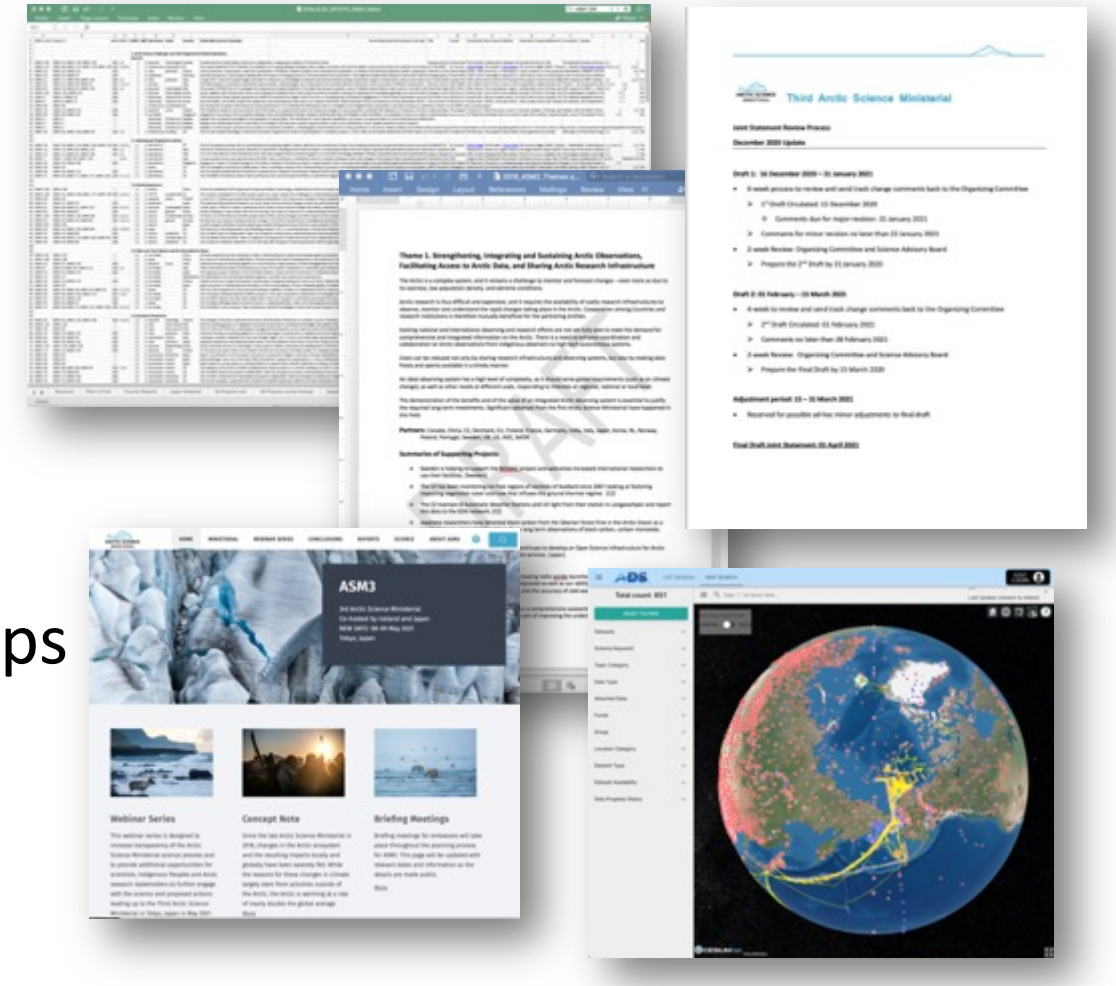
1. Icelandic Representative: Embla Eir Oddsdóttir
2. Japanese Representative: Hiroyuki Enomoto
3. AOS Representative: Hajo Eicken
4. APECS Representative: Mia Bennett
5. ASM1 Representative: Fran Ulmer
6. ASM2 Representative: Karin Lochte
7. IASC Representative: Henry Burgess
8. IASSA Representative: Andrey Petrov
9. Indigenous Arctic Knowledge Holder Representative: Liza Mack
10. Indigenous Science Representative: Eva Kruemmel
11. SAON Representative: Sandy Starkweather
12. UArctic Representative: Arja Rautio

Ex Officio

- Jenny Baeseman (Science Consultant)
- Hajime Kimura (MEXT)
- Lindsay Elizabeth Arthur (MRN)
- Þorsteinn Gunnarsson (RANNÍS)
- Yuji Kodama (NIPR)
- Tetsuo Sueyoshi (NIPR)

ASM3 Science Process

- Country / Organization Participants
  - Arctic Research Overviews
  - ASM2 Project Updates
  - New Projects in Support of ASM3
  - Collaboration and Cooperation Survey
- Online Feedback Forms
- ASM3 Research Community Workshops (IASC/IASSA/APECS), ISAR-6, AOS



ASM3 Science Process

Governments + European Union; Indigenous Peoples Organizations

International Organizations for Arctic Science and Educations

International Arctic Research Community

- Research Community Workshop (IASC/IASSA/APECS)
- ISAR-6 Online Meeting
- Arctic Observing Summit

Project Information (Survey Form)

Project Information (Survey Form)

Meeting Statements

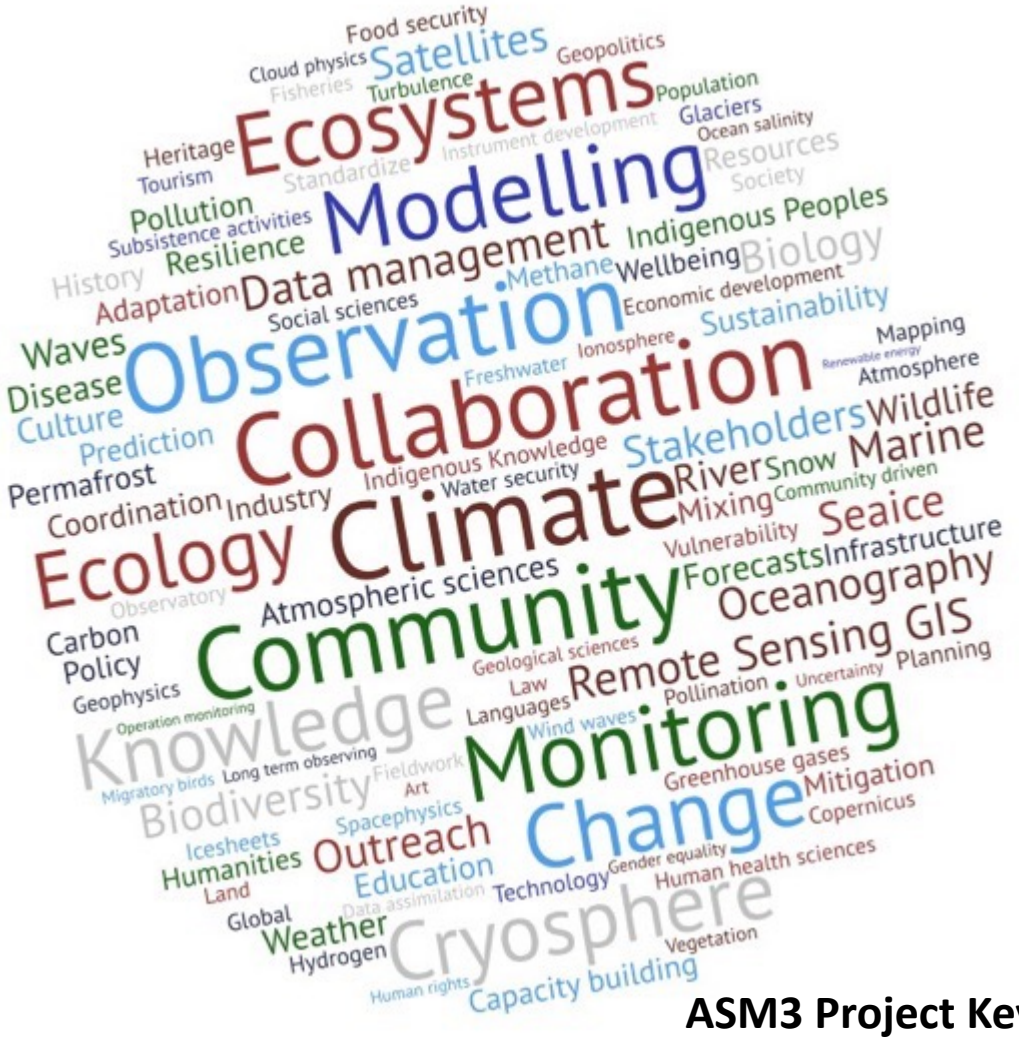
ASM3 Science Summary
ASM3 Project Database

ASM3 Joint Statement

ASM3 Science Process

- ASM1: 229 Projects
- ASM2: 221 Projects
- ASM3: 177 Updates, 257 New Projects

434 Projects submitted for ASM3

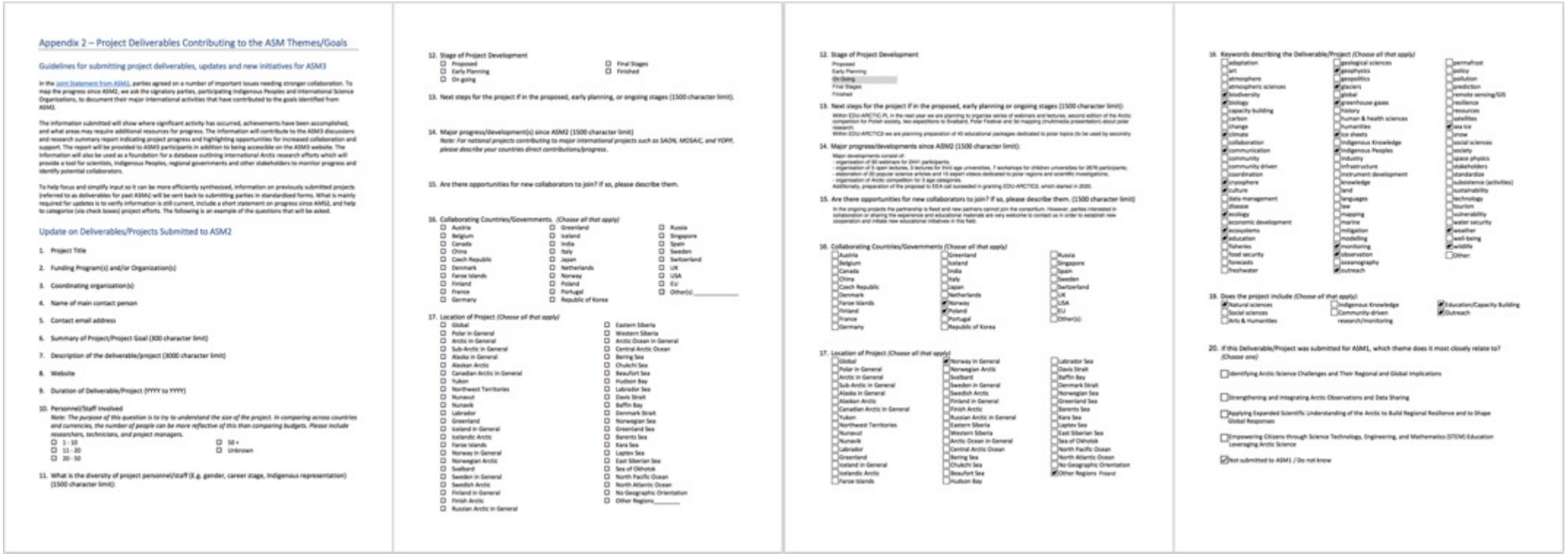


ASM3 Project Key Words

ASM3 Science Process

Each submission includes detailed Project information

- Duration, Staff involved, Keywords, …
- Location, Collaborators, ASM Themes, …



Appendix 2 – Project Deliverables Contributing to the ASM Themes/Goals

Guidelines for submitting project deliverables, updates and new initiatives for ASM3

In the joint Statement from ASM2, parties agreed on a number of important issues needing stronger collaboration. To map the progress since ASM2, we ask the signatory parties, participating Indigenous Peoples and International Science Organizations, to document their major international activities that have contributed to the goals identified from ASM2.

The information submitted will show where significant activity has occurred, achievements have been accomplished, and what areas may require additional resources for progress. The information will contribute to the ASM3 discussions and research summary report indicating project progress and highlighting opportunities for increased collaboration and support. The report will be provided to ASM3 participants in addition to being accessible on the ASM3 website. The information will also be used as a foundation for a database outlining international Arctic research efforts which will provide a tool for scientists, Indigenous Peoples, regional governments and other stakeholders to monitor progress and identify potential collaborators.

To help focus and simplify input so it can be more efficiently synthesized, information on previously submitted projects (referred to as deliverables for past ASMs) will be sent back to submitting parties in standardized forms. What is mainly required for updates is to verify information is still current, include a short statement on progress since ASM2, and help to categorize (via check boxes) project efforts. The following is an example of the questions that will be asked.

Update on Deliverables/Projects Submitted to ASM2

1. Project Title
2. Funding Program(s) and/or Organization(s)
3. Coordinating organization(s)
4. Name of main contact person
5. Contact email address
6. Summary of Project/Project Goal (300 character limit)
7. Description of the deliverable/project (3000 character limit)
8. Website
9. Duration of Deliverable/Project (YYYY to YYYY)
10. Personnel/Staff Involved
    Note: The purpose of this question is to try to understand the size of the project. In comparing across countries and currencies, the number of people can be more reflective of this than comparing budgets. Please include researchers, technicians, and project managers.
    ☐ 1 - 10 ☐ 11 - 20 ☐ 20 - 50 ☐ 50 + ☐ Unknown
11. What is the diversity of project personnel/staff (E.g. gender, career stage, Indigenous representation) (1500 character limit):

12. Stage of Project Development
    ☐ Proposed ☐ Early Planning ☐ On going ☐ Final Stages ☐ Finished
13. Next steps for the project if in the proposed, early planning, or ongoing stages (1500 character limit).
14. Major progress/development(s) since ASM2 (1500 character limit)
    Note: For national projects contributing to major international projects such as SAON, MOSAIC, and YOPP, please describe your countries direct contributions/progress.
15. Are there opportunities for new collaborators to join? If so, please describe them.
16. Collaborating Countries/Governments *(Choose all that apply)*
    ☐ Austria ☐ Belgium ☐ Canada ☐ China ☐ Czech Republic ☐ Denmark ☐ Faroe Islands ☐ Finland ☐ France ☐ Germany ☐ Greenland ☐ Iceland ☐ India ☐ Italy ☐ Japan ☐ Netherlands ☐ Norway ☐ Poland ☐ Portugal ☐ Republic of Korea ☐ Russia ☐ Singapore ☐ Spain ☐ Sweden ☐ Switzerland ☐ UK ☐ USA ☐ EU ☐ Other(s):_____
17. Location of Project *(Choose all that apply)*
    ☐ Global ☐ Polar in General ☐ Arctic in General ☐ Sub-Arctic in General ☐ Alaska in General ☐ Alaskan Arctic ☐ Canadian Arctic in General ☐ Yukon ☐ Northwest Territories ☐ Nunavut ☐ Nunavik ☐ Labrador ☐ Greenland ☐ Iceland in General ☐ Icelandic Arctic ☐ Faroe Islands ☐ Norway in General ☐ Norwegian Arctic ☐ Svalbard ☐ Sweden in General ☐ Swedish Arctic ☐ Finland in General ☐ Finish Arctic ☐ Russian Arctic in General ☐ Eastern Siberia ☐ Western Siberia ☐ Arctic Ocean in General ☐ Central Arctic Ocean ☐ Bering Sea ☐ Chukchi Sea ☐ Beaufort Sea ☐ Hudson Bay ☐ Labrador Sea ☐ Davis Strait ☐ Baffin Bay ☐ Denmark Strait ☐ Norwegian Sea ☐ Greenland Sea ☐ Barents Sea ☐ Kara Sea ☐ Laptev Sea ☐ East Siberian Sea ☐ Sea of Okhotsk ☐ North Pacific Ocean ☐ North Atlantic Ocean ☐ No Geographic Orientation ☐ Other Regions_____

12. Stage of Project Development
    Proposed
    Early Planning
    On Going
    Final Stages
    Finished
13. Next steps for the project if in the proposed, early planning or ongoing stages (1500 character limit):
    Within EDU-ARCTIC PI, in the next year we are planning to organize series of webinars and lectures, second edition of the Arctic competition for Polish society, two expeditions to Svalbard, Polar Festival and 3d mapping (multimedia presentation) about polar research.
    Within EDU-ARCTIC2 we are planning preparation of 40 educational packages dedicated to polar topics (to be used by secondary
14. Major progress/developments since ASM2 (1500 character limit):
    Major developments consist of:
    - organisation of 90 webinars for 2641 participants;
    - organisation of 3 open lectures, 3 lectures for third age universities, 7 workshops for children universities for 2676 participants;
    - elaboration of 20 popular science articles and 10 expert videos dedicated to polar regions and scientific investigations;
    - organisation of Arctic competition for 3 age categories.
    Additionally, preparation of the proposal to ESA call succeded in granting EDU-ARCTIC2, which started in 2020.
15. Are there opportunities for new collaborators to join? If so, please describe them. (1500 character limit):
    In the ongoing projects the partnership is fixed and new partners cannot join the consortium. However, parties interested in collaboration or sharing the experience and educational materials are very welcome to contact us in order to establish new cooperation and initiate new educational initiatives in this field.
16. Collaborating Countries/Governments *(Choose all that apply)*
    ☐ Austria ☐ Belgium ☐ Canada ☐ China ☐ Czech Republic ☐ Denmark ☐ Faroe Islands ☐ Finland ☐ France ☐ Germany ☐ Greenland ☐ Iceland ☐ India ☐ Italy ☐ Japan ☐ Netherlands ☑ Norway ☑ Poland ☐ Portugal ☐ Republic of Korea ☐ Russia ☐ Singapore ☐ Spain ☐ Sweden ☐ Switzerland ☐ UK ☐ USA ☐ EU ☐ Other(s):
17. Location of Project *(Choose all that apply)*
    ☐ Global ☐ Polar in General ☐ Arctic in General ☐ Sub-Arctic in General ☐ Alaska in General ☐ Alaskan Arctic ☐ Canadian Arctic in General ☐ Yukon ☐ Northwest Territories ☐ Nunavut ☐ Nunavik ☐ Labrador ☐ Greenland ☐ Iceland in General ☐ Icelandic Arctic ☐ Faroe Islands ☑ Norway in General ☐ Norwegian Arctic ☐ Svalbard ☐ Sweden in General ☐ Swedish Arctic ☐ Finland in General ☐ Finish Arctic ☐ Russian Arctic in General ☐ Eastern Siberia ☐ Western Siberia ☐ Arctic Ocean in General ☐ Central Arctic Ocean ☐ Bering Sea ☐ Chukchi Sea ☐ Beaufort Sea ☐ Hudson Bay ☐ Labrador Sea ☐ Davis Strait ☐ Baffin Bay ☐ Denmark Strait ☐ Norwegian Sea ☐ Greenland Sea ☐ Barents Sea ☐ Kara Sea ☐ Laptev Sea ☐ East Siberian Sea ☐ Sea of Okhotsk ☐ North Pacific Ocean ☐ North Atlantic Ocean ☐ No Geographic Orientation ☑ Other Regions Poland

16. Keywords describing the Deliverable/Project *(Choose all that apply)*
    ☐ adaptation ☐ art ☐ atmosphere ☐ atmospheric sciences ☑ biodiversity ☑ biology ☐ capacity building ☐ carbon ☐ change ☑ climate ☐ collaboration ☑ communication ☐ community ☐ community driven ☐ coordination ☑ cryosphere ☑ culture ☐ data management ☐ disease ☑ ecology ☐ economic development ☑ ecosystems ☑ education ☐ fisheries ☐ food security ☐ forecasts ☐ freshwater ☑ geological sciences ☑ geophysics ☐ geopolitics ☑ glaciers ☐ global ☑ greenhouse gases ☐ history ☐ human & health sciences ☐ humanities ☑ ice sheets ☐ indigenous Knowledge ☑ indigenous Peoples ☐ industry ☐ infrastructure ☐ instrument development ☐ knowledge ☐ land ☐ languages ☐ law ☐ mapping ☐ marine ☐ mitigation ☐ modelling ☑ monitoring ☑ observation ☐ oceanography ☑ outreach ☐ permafrost ☐ policy ☐ pollution ☐ prediction ☐ remote sensing/GIS ☐ resilience ☐ resources ☐ satellites ☑ sea ice ☐ snow ☐ social sciences ☐ society ☐ space physics ☐ stakeholders ☐ standardize ☐ subsistence (activities) ☐ sustainability ☐ technology ☐ tourism ☐ vulnerability ☐ water security ☑ weather ☐ well-being ☑ wildlife ☐ Other:
19. Does the project include *(Choose all that apply)*:
    ☑ Natural sciences ☐ Social sciences ☐ Arts & Humanities ☐ Indigenous Knowledge ☐ Community-driven research/monitoring ☑ Education/Capacity Building ☑ Outreach
20. If this Deliverable/Project was submitted for ASM1, which theme does it most closely relate to? *(Choose one)*
    ☐ Identifying Arctic Science Challenges and Their Regional and Global Implications
    ☐ Strengthening and Integrating Arctic Observations and Data Sharing
    ☐ Applying Expanded Scientific Understanding of the Arctic to Build Regional Resilience and to Shape Global Responses
    ☐ Empowering Citizens through Science Technology, Engineering, and Mathematics (STEM) Education Leveraging Arctic Science
    ☑ Not submitted to ASM1 / Do not know

ASM3 Science Process

Compiled all information submitted:

- Project Updates from ASM2
- New Project for ASM3

Country	Project Updates	New Projects	Total Submitted
Canada	10	4	14
China	13	1	14
Czech Republic	0	13	13
Denmark	7	12	19
Finland	8	2	10
France	3	1	4
Germany	5	4	9
Iceland	0	19	19
India	5	0	5
Italy	14	10	24
Japan	12	19	31
The Netherlands	2	2	4
Norway	18	28	46
Poland	3	0	3
Portugal	3	1	4
Republic of Korea	7	0	7
Russia	0	64	64
Singapore	7	2	9
Spain	5	7	12
Switzerland	0	1	1
Thailand	-	1	1
UK	4	10	14
USA	18	18	36
EU	16	9	25

Indigenous Organizations	Project Updates Submitted	New Projects Submitted	Total Submitted
ICC	4	0	4
Saami Council	4	0	4

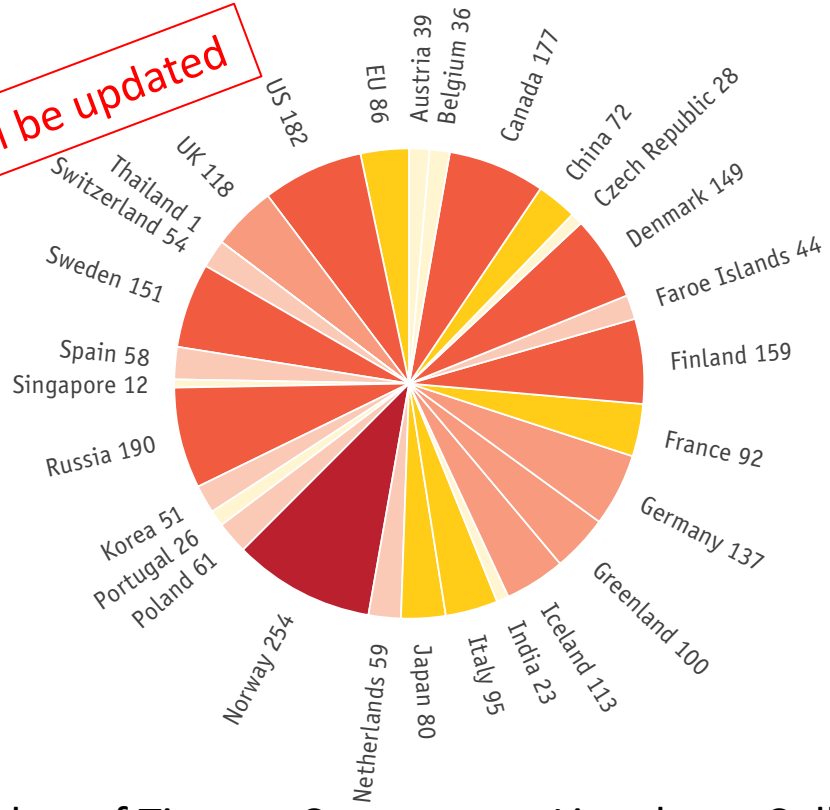
International Organizations	Project Updates Submitted	New Projects Submitted	Total Submitted
AMAP	-	2	2
APECS	0	2	2
CAFF	-	4	4
GEO	0	1	1
IASC	1	5	6
IASSA	2	3	5
ICES-PICES	2	0	2
INTERACT	1	0	1
PEI	-	3	3
SAON	0	1	1
SDWG	0	6	6
UArctic	1	0	1
UNEP	1	1	2
WMO	0	1	1
Total Submitted	177	257	434

Numbers will be updated

ASM3 Science Process

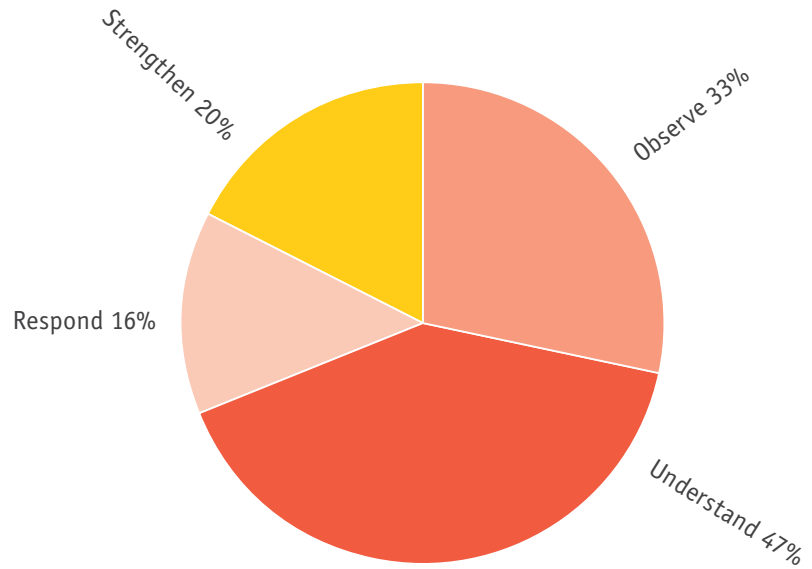
Project Collaborations by country

Numbers will be updated



Number of Times a Country was Listed as a Collaborator on Projects Submitted by Countries/EU to ASM3.

Project Submitted to the ASM3 Themes



Percentage of ASM3 Projects Submitted by all Participants to Each Theme

ASM3 Science Process

Science Summary – Summary of 433 submitted project by Themes





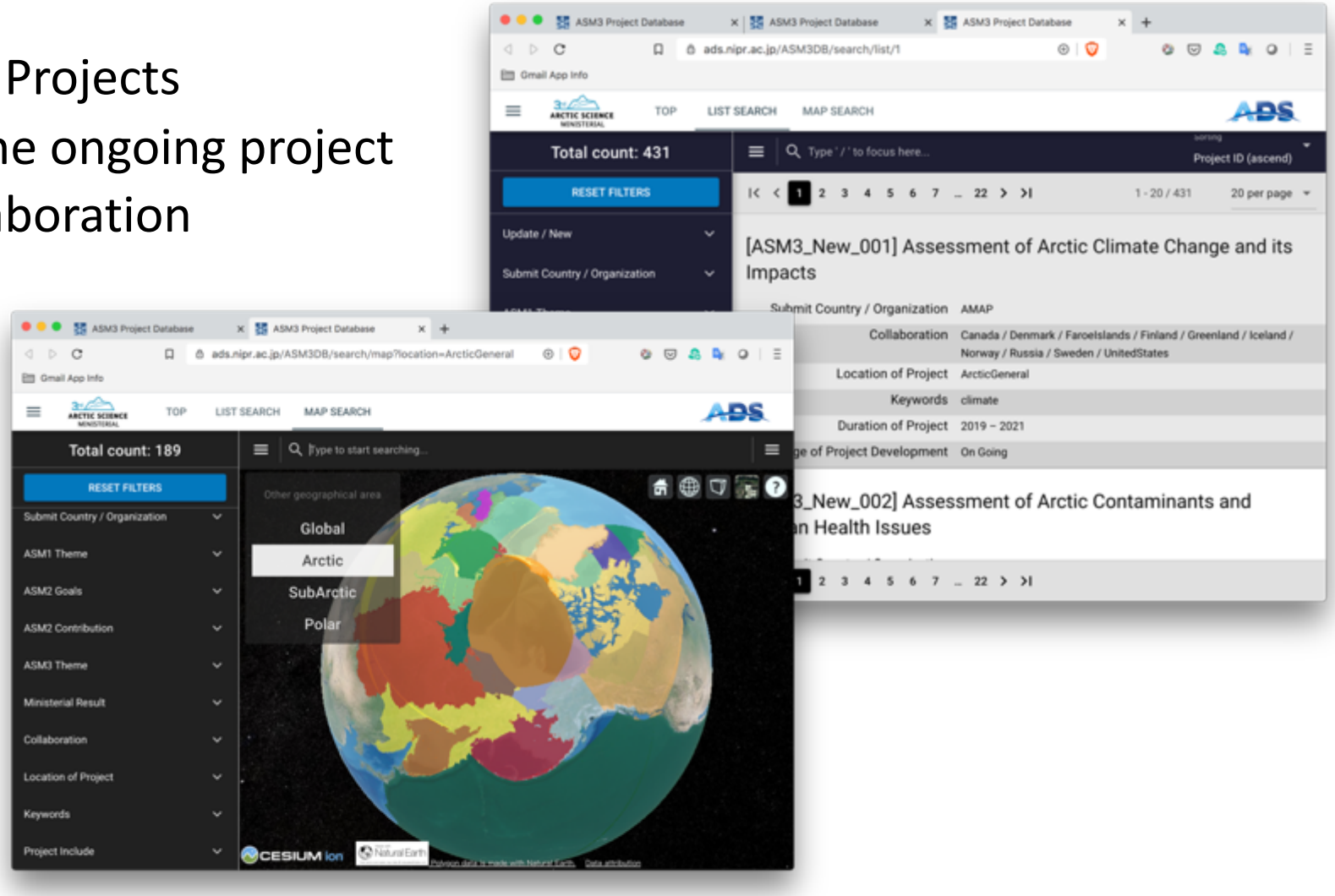


All submitted projects were reviewed by SAB members:

- Evaluate the progress since ASM2, and Highlight some projects under each theme
- “ASM3 Science Summary” includes the summarized information from this process

ASM3 Project Database

- Database of All Submitted Projects
  - Easy/Open access to the ongoing project
  - Tool to accelerate collaboration



https://ads.nipr.ac.jp/ASM3GIS/

ASM3 Joint Statement

Recommended Actions under each Themes,
based on all inputs: Submitted Project and Meeting Statements


JOINT STATEMENT

THIRD ARCTIC SCIENCE MINISTERIAL

Joint Statement of Ministers


JOINT STATEMENT

2

UNDERSTAND: ENHANCING UNDERSTANDING AND PREDICTION CAPABILITY FOR ARCTIC ENVIRONMENTAL AND SOCIAL SYSTEMS, FOR THE GLOBAL IMPACT OF THESE CHANGES

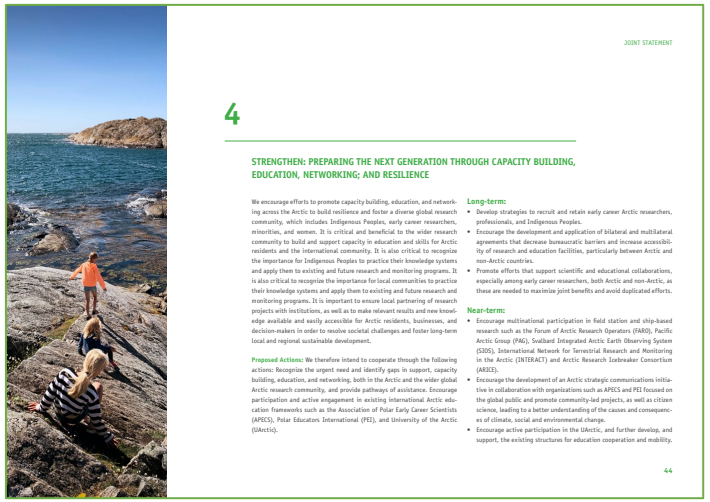
Changes in the Arctic are not only affecting the people who call the Arctic home and are inextricably linked to the Arctic environment and its resources, but actions outside the region continue to impact the Arctic environment and the changes occurring have cascading effects on the rest of the world. The effect of the loss of sea ice is speeding up coastal erosion and marine ecosystem change, which can have broader socio-economic impacts in the Arctic. Globally, changes in the Arctic significantly contribute to sea level rise, trigger extreme events and further accelerate global warming among other things. To understand the structure and dynamics of these complex systems we need focused and cross-cutting research, including Indigenous-led research, as well as long-term and multi-scale observations that fully represent the Arctic. Past climate archives, reliable predictions, and enhanced modelling capabilities for the Arctic are essential for developing effective mitigation and adaptation strategies. To progress from *Observing* to *Understanding* we must understand not only how the patterns are changing, but also how the biological and ecological mechanisms that determine the patterns are changing. We intend to strengthen international collaboration for Arctic science and research to enhance the assessment of ongoing change and to improve prediction for future change.

Proposed Actions: We therefore intend to cooperate through the following actions: Recognize the complexity of the system connecting all environmental and socio-economic components, and encourage further interdisciplinary, systemic approaches and co-production of knowledge. Advance the understanding of processes and mechanisms that underly the changes in patterns and their interactions.

Long-term:
- Encourage societally relevant research and co-production of knowledge on the impacts of thawing permafrost, rising sea levels, melting glaciers, shrinking snow coverage, coastal zone processes, ocean acidification, disappearing sea ice, increase of invasive species, altering biological and ecological systems, as well as effects of pollutants to inform response plans including mitigation of and adaptation to climate change.
- Foster efforts to improve modelling and prediction of Arctic environmental, societal, and economic change, including the role of the Arctic on global systems.

Near-term:
- Building on the success of international activities such as the Multidisciplinary drifting Observatory for the Study of Arctic Climate (MOSAiC) Expedition and the Year of Polar Prediction (YOPP), promote the data analysis and synthesis of these initiatives and encourage similar efforts that require multinational cooperation to succeed.
- Encourage research efforts and co-production of knowledge that informs the prediction and mitigation of risks and hazards associated with Arctic change and that address the impacts of Arctic change such as pollution, infectious diseases, food security through activities of fisheries, and biodiversity, particularly those that impact human health and well-being and ways and means to address those impacts.
- Prioritize projects that investigate linkages and interactions among various environmental components and those that enhance our understanding of complex Arctic socio-ecological systems, including the role of humans as drivers of change.

42


JOINT STATEMENT

4

STRENGTHEN: PREPARING THE NEXT GENERATION THROUGH CAPACITY BUILDING, EDUCATION, NETWORKING; AND RESILIENCE

We encourage efforts to promote capacity building, education, and networking across the Arctic to build resilience and foster a diverse global research community, which includes Indigenous Peoples, early career researchers, minorities, and women. It is critical and beneficial to the wider research community to build and support capacity in education and skills for Arctic residents and the international community. It is also critical to recognize the importance for Indigenous Peoples to practice their knowledge systems and apply them to existing and future research and monitoring programs. It is also critical to recognize the importance for local communities to practice their knowledge systems and apply them to existing and future research and monitoring programs. It is important to ensure local partnering of research projects with institutions, as well as to make relevant results and new knowledge available and easily accessible for Arctic residents, businesses, and decision-makers in order to resolve societal challenges and foster long-term local and regional sustainable development.

Proposed Actions: We therefore intend to cooperate through the following actions: Recognize the urgent need and identify gaps in support, capacity building, education, and networking, both in the Arctic and the wider global Arctic research community, and provide pathways of assistance. Encourage participation and active engagement in existing international Arctic education frameworks such as the Association of Polar Early Career Scientists (APECS), Polar Educators International (PEI), and University of the Arctic (UArctic).

Long-term:
- Develop strategies to recruit and retain early career Arctic researchers, professionals, and Indigenous Peoples.
- Encourage the development and application of bilateral and multilateral agreements that decrease bureaucratic barriers and increase accessibility of research and education facilities, particularly between Arctic and non-Arctic countries.
- Promote efforts that support scientific and educational collaborations, especially among early career researchers, both Arctic and non-Arctic, as these are needed to maximize joint benefits and avoid duplicated efforts.

Near-term:
- Encourage multinational participation in field station and ship-based research such as the Forum of Arctic Research Operators (FARO), Pacific Arctic Group (PAG), Svalbard Integrated Arctic Earth Observing System (SIOS), International Network for Terrestrial Research and Monitoring in the Arctic (INTERACT) and Arctic Research Icebreaker Consortium (ARICE).
- Encourage the development of an Arctic strategic communications initiative in collaboration with organizations such as APECS and PEI focused on the global public and promote community-led projects, as well as citizen science, leading to a better understanding of the causes and consequences of climate, social and environmental change.
- Encourage active participation in the UArctic, and further develop, and support, the existing structures for education cooperation and mobility.

44

Overviews of the actions will be introduced by SAB members in the Session 1-4 during the Ministerial

- Theme 1. Observe — Hajo Eicken
- Theme 2. Understand — Mia Bennett
- Theme 3. Respond — Embla Eir Oddsdóttir
- Theme 4. Strengthen — Andrey Petrov

Final version of the Joint Statement:
https://asm3.org/ministerial-/

ASM3 Final Outcomes

- **Joint Statement** of Ministers
- ASM3 Final **Report**
- Recordings of the all of **webinar series**
- International **Opportunities** Resources
- ASM3 Project **Database**



3rd ARCTIC SCIENCE MINISTERIAL

Thank You

Post-Ministerial Webinar: 9th June 2021 13:00 UTC / 22:00 JST

We are looking forward to seeing you!

Government of Iceland
Ministry of Education, Science and Culture

MEXT MINISTRY OF EDUCATION, CULTURE, SPORTS, SCIENCE AND TECHNOLOGY-JAPAN