

September 28, 2016

# Joint Statement of Ministers

**On the occasion of the first White House Arctic Science Ministerial**

**28 September 2016, Washington, DC, USA**

We, the Ministers representing the eight Arctic States (Canada, the Kingdom of Denmark, Finland, Iceland, Norway, Russia, Sweden, and the United States), fourteen additional States (China, France, Germany, India, Italy, Japan, Republic of Korea, Netherlands, New Zealand, Poland, Singapore, Spain, Switzerland and the United Kingdom), and the European Union, in partnership with Arctic Indigenous representatives, have gathered to assert the importance of improving collaborative science efforts in the Arctic. Ours is the first-ever convening of science ministers from around the world to focus on the potential of increased cooperation on Arctic science. Recognizing the significance of environmental, social, and economic change in the Arctic region and its impacts on the rest of the planet, we owe this legacy of cooperation to future generations.

The Arctic is experiencing environmental and climate change faster than any other part of the planet, creating significant challenges for the people who call the Arctic home, and multiplying impacts around the globe. We also recognize the importance of growing public interest in Arctic matters and express our interest to increase scientific and public understanding of the region. Together, we have already made progress that we can build upon to make invaluable and never-before possible contributions to Arctic science. These changes can also create opportunities for innovation and sustainable development. We recognize the importance of traditional and local knowledge and the sharing of scientific and technological information to advance well-informed, timely, and constructive decision-making. We come together to

commit to developing shared, long-term goals, and to identify specific steps and short-term actions for achieving them.

This effort is aimed at challenges that transcend national borders, and, accordingly, requires a higher level of cooperation and collaboration in the region. Recent and rapid advances in the capabilities of land-based, ocean-based, airborne, and space-based observing platforms and sensors; community-based observing; data analytics; and web-based tools for engagement and collaboration offer a compelling opportunity to address Arctic science and to share data globally. Through this meeting, we are developing joint contributions for new collaborative activities under four themes:

## **1. Identifying Arctic Science Challenges and their Regional and Global Implications**

The rapid warming of the Arctic and the subsequent retreat of glaciers and melting of the Greenland ice sheet; warming and thawing permafrost; and a loss of multi-year sea ice, resulting in a thinner and less extensive sea-ice cover are a few examples of the changes that are affecting Arctic peoples and ecosystems, but also have significant global implications. These changes pose challenges for coastal and inland communities—including impacts on subsistence hunting and fishing, accelerated coastal erosion, and damage to infrastructure resting on permafrost—while also contributing to global sea-level rise, the increase of the global atmospheric burden of greenhouse gases, and, potentially, changes in weather patterns across the Northern Hemisphere. At the same time, some of the changes are expanding opportunities for navigation, marine fisheries, and resource development. We intend to enhance collaborations that will increase understanding of the causes and consequences of rapid Arctic climate and environmental-system change; improve Arctic and Earth System observations, data, models, and projections; inform strategies and actions for sustainable development, and for regional and global climate change mitigation and adaptation; and enhance studies of the

impacts of Arctic change on extreme weather and climate processes outside the region.

## **2. Strengthening and Integrating Arctic Observations and Data Sharing**

Many areas of the Arctic are data-sparse, and in some parts the paucity of observations is compounded by the lack of universal access to data. These shortfalls hinder scientific progress, the development of value-added products and services, and the formulation of innovative strategies for managing social and environmental changes in the Arctic and beyond. We commit to the shared development of a science-driven, integrated Arctic-observing system that has mechanisms to maximize the potential of community-based observing and to draw on traditional and local knowledge; a design for sustained observations of vital variables and comprehensive studies of Arctic climate processes; technology development; and actions to provide enhanced and open access to data, products, and services. In this context, we see a critical role for the Sustaining Arctic Observing Networks (SAON) initiative—a joint responsibility of the Arctic Council and the International Arctic Science Committee—and encourage continued cooperation in other international science organizations that contribute to Arctic observing and data-sharing, and building a network of community-based observation.

## **3. Applying Expanded Scientific Understanding of the Arctic to Build Regional Resilience and Shape Global Responses**

Many Arctic communities face long-standing challenges in providing education, health care, water and sanitation services, energy, communications, infrastructure, and access to transportation networks. These challenges are now being compounded by rapid environmental, climatic, and socio-economic changes, many of which originate from outside the Arctic. Achieving progress in these areas will be critical for the region's sustainable development. The policies and programs to strengthen the resilience of, and adaptation by, Arctic communities can benefit from expanding our

understanding of ecosystem changes and technological opportunities; promoting research to enhance human health and well-being; by utilizing traditional and local knowledge in observation, monitoring, analysis, decision-making; and disseminating information. Understanding the rapidly changing Arctic climate and its worldwide impacts is a global responsibility that requires enhanced research partnerships. The declines in snow cover and sea and land ice are having broad regional and global effects on temperature, sea level, ecosystems, and weather patterns throughout the northern hemisphere. Further thawing of permafrost could also result in a rapid release of greenhouse gases. For the sake of the future of Arctic residents, and to improve our understanding of how changes in the Arctic will affect the rest of the planet, we intend to contribute to and enhance a shared understanding of the causes, implications, and future changes to the Arctic environment. We also intend to work to ensure that this increased understanding informs our national policies and decisions concerning Arctic development, commercial activity, stewardship, and the needs of the region's residents, including Indigenous peoples.

#### **4. Empowering Citizens through Science Technology, Engineering, and Mathematics (STEM) Education Leveraging Arctic Science**

STEM education is vital for citizen empowerment, civic engagement, and sustainable development everywhere. The people of the Arctic, and public and private planners affecting its future, will benefit most directly from enhanced engagement in Arctic science, which will inform decision-making in response to evolving Arctic challenges and opportunities. But the multifaceted combination of traditional and local knowledge, and the science of Arctic change should also be a vehicle for advancing interest in and understanding of science for people of all ages everywhere. We intend to work together to more fully understand and build upon the benefits of advancing Arctic science for lifelong learning via formal and informal STEM education both in the Arctic and beyond.

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Through this Arctic Science Ministerial, we demonstrate the importance our respective governments, the European Union, and Arctic Indigenous representatives place on supporting science cooperation in the vast, diverse, and globally-relevant Arctic region. The Arctic Council celebrates its twentieth anniversary this year, and we recognize the leading role it has played in facilitating Arctic scientific cooperation. We welcome the fact that the Arctic States have reached consensus on a draft text of a legally binding agreement on enhancing international Arctic scientific cooperation under the auspices of the Arctic Council. We resolve that all nations conducting research in this region must work together to enhance and deepen scientific knowledge and understanding of the Arctic.