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To the Organizers and Participants of the 2016 Arctic Science Ministerial

From: Christine Daae Olseng, Chair
On Behalf of the Board of Directors of the Sustaining Arctic Observing Networks

Thank you for your concern and willingness to address the critical science gaps in understanding the Arctic region. Although the scientific importance of the Arctic and the role it plays in influencing global climate dynamics are well-documented, it remains one of the least understood regions on Earth. The cost of this ignorance could be quite high as the Arctic plays critical roles in global sea level rise, thermohaline circulation, Northern Hemisphere weather dynamics, modulating the global temperatures, and can largely impact the sustainable economic development of Arctic regions.

It critically important that one primary conclusion from the Arctic Science Ministerial is that implementing the priorities defined during this meeting will require an investment of resources. Advancing the state of Arctic science requires sustained support of the entities tasked to achieve these accomplishments.

The Sustaining Arctic Observing Networks (SAON) process supports and strengthens the development of multinational engagement for sustained and coordinated pan-Arctic observing and data sharing systems that serve societal needs, particularly related to environmental, social, economic and cultural issues. SAON promotes the vision of well-defined observing networks that enable users to have access to high quality data that will realize pan-Arctic and global value-added services and provide societal benefits. Its goal is to enhance Arctic-wide observing activities by facilitating partnerships and synergies among observing and data networks, and promoting sharing and synthesis of data and information. You may see more about SAON here:

<http://www.arcticobserving.org/>

International support for the establishment and maintenance of Arctic Observing Networks remains a critical obstacle to advancements in understanding and predictability of Arctic environmental, climatic and social systems. Without consistent and sustained long-term monitoring, it is difficult to detect trends or quantify variability.

The international scientific community appreciates and understands your concern and we have met on many occasions to share understanding, resources, data, to develop collaborative research programs, and to define future research priorities. One such example of international cooperation to define the most urgent research priorities occurred in March 2016 at the Third Arctic Observing Summit.

Seven major recommendations emerged from the 2016 Arctic Observing Summit. These are:

Develop international principles and protocols that establish ethical guidelines for research, for the involvement of Arctic Indigenous Knowledge holders, for the use of Indigenous Knowledge and the co-production of knowledge. Develop mechanisms to enable collaborative approaches and building of trust among partners, such as researchers, Indigenous Peoples, private sector entities and others, to define observational needs, and to plan, prioritize, implement, and use sustained observations.

Propose to the highest levels of government, the business case for a comprehensive pan-Arctic observing system. This proposal should assess the costs and demonstrate the benefits for society at various levels, including an Implementation Plan that builds upon the present system and past planning, and that identifies needed resources including infrastructure, instrumentation, human capacity, the pathways to financing, and a strategy for sustained financing.

Create opportunities for stakeholder engagement as a critical component of an effective pan-Arctic observing system that includes strategies for improved communication, takes advantage of existing natural capital, creates avenues for research collaboration, identifies resources for capacity building and participation of local and Indigenous knowledge holders, and resolves jurisdictional, regulation and policy hindrances to active participation.

Coordinate the implementation of a pan-Arctic observing system with regional and global observing initiatives, and organize efforts in securing resources for its sustained operation through the leadership of the Sustaining Arctic Observing Networks (SAON) initiative.

Advance a strategy for international funding, ideally with a single application and review process and contributions of resources from all partner countries, along with established national support mechanisms. Full implementation of a pan-Arctic Observing System requires coordination of funding efforts to support a globally connected and internationally accessible network.

Prioritize, on an ongoing basis, observations that should be started and maintained over the long-term by operational and other relevant agencies. Collaborative, sustained observations need to be implemented through a combined research-operational system that extends across all scales relevant to those it serves, making use of both long-term national/institutional funding and of project based competitive funding.

Work, through the International Arctic Science Committee and Sustaining Arctic Observing Networks (IASC-SAON) Arctic Data Committee, to develop a broad, globally connected Arctic observing data and information system of systems that is based on open access data and standards, in addition to recognizing and addressing ethical use and proprietary rights of Indigenous Knowledge and delivers value to Arctic and global communities.

We believe endorsement of these seven priorities is the essential next step to creating the international partnerships required to address the massive challenges that limit our capabilities to understand the Arctic as a system. Further, as an existing organizing body of international Arctic observations,

SAON is the optimally poised to coordinate monitoring networks, data archiving and distribution and facilitation of Arctic research collaborations and is thus in a position to lead the formulation of the business case (recommendation 2) for a comprehensive pan-Arctic observing system. As the Arctic component of global observing networks, SAON can ensure that complete and accurate data are compiled and that the legacy of major investments in research programs are secured and freely accessible to the international research and development communities.

Developing an Arctic data and information system will require collaboration and long-term investments to enhance our ability to readily share between parts of the system and across different domains and users including research, operations, arctic communities, decision makers and the public. Sharing across diverse domains and users requires better documentation and understanding of data and information to support discovery, evaluation of quality, and effective use of these valuable resources. Long-term preservation of data and information is critical to supporting a sustained arctic observing network.

On behalf of the SAON Board,

Christine D. Olseng