A Roadmap for Arctic Observing and Data Systems

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A changing Arctic

In recent decades, sustained observations of Arctic environmental and socio-economic systems have revealed a pace, magnitude, and extent of change that is unprecedented by many measures. These changes include rapid depletion of the cryosphere, shifts in ecological communities that threaten biodiversity and increasing challenges to food security and resilience across northern communities.

The Sustaining Arctic Observing Networks (SAON)

SAON is a joint initiative of the Arctic Council and the International Arctic Science Committee (IASC). It was created to strengthen multinational engagement in and coordination of pan-Arctic observing. SAON's intent is to unite Arctic and non-Arctic countries and Indigenous Peoples in support of a systematic network of activities through structured facilitation.

A Roadmap for Arctic Observing and Data Systems (ROADS)

In its recent strategic plan, SAON identified the need for a Roadmap for Arctic Observing and Data Systems (ROADS) to set a course for the needed system and to specify how the various partners and players are going to collectively work towards getting it there. The purpose of ROADS is to stimulate multinational resource mobilization around specific plans with clear value propositions, to serve as a tool for the joint utilization of Indigenous Knowledge and science, to coordinate engagement and to ensure that maximal benefits are delivered. A well-defined assessment process is required to establish a communal view of “societal benefit”, and a key tool for such assessment will be The International Arctic Observing Assessment Framework (IAOAF) following the First Arctic Science Ministerial.

Continuing multinational coordination through SAON was endorsed by the Second Arctic Science Ministerial in their Joint Statement with an emphasis on: “moving from the design to the deployment phase of an integrated Arctic observing system”.
Essential Arctic Variables

SAON has identified the essential variable strategy as a best practice for supporting network development. The approach is conceptually holistic, yet can proceed step-wise as essential variables achieve readiness. ROADS will be organized around Essential Arctic Variables (EAVs). These are conceptually broad observing categories (e.g. “sea ice”) identified for their criticality to achieving Arctic societal benefit. EAVs are defined by their observing system requirements (e.g. spatial resolution, frequency, coverage, accuracy), which are technology-neutral and should transcend specific observing strategies, programs or regions. They are implemented through specific recommendations based on best available technology and practices.