

A Research Networking Activity to facilitate convergence of independent observing efforts

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Sustained observations of Arctic social-environmental systems provide local-to-global societal benefits. To realize these benefits and inform responses to rapid Arctic change, coordination and convergence of observing efforts is needed. The Sustaining Arctic Observing Networks (SAON) Roadmap for Arctic Observing and Data Systems (ROADS) seeks to promote interoperability, serve different user groups, provide shared societal benefits, and foster alignment of observing system components. The Research Networking Activity for Coordinated Arctic Observations (RNA CoObs) supports ROADS by linking different activities and communities of practice. The Food Security Working Group (FSWG), emerging from the Arctic Observing Summit, guides this effort, identifying benefits and essential variables that represent the holistic context of Indigenous food security and sovereignty. The FSWG established that sustained observations have to be relevant in a decision-making context and adaptive to address emerging events or threats. This guidance highlights a key challenge: Both observing location and scale need to fit the decision-making and research context. RNA CoObs addresses this requirement by

- 1) framing the broader questions and information needs,
- 2) developing a Shared Arctic Variable framework that helps channel observing activities into essential measurements,
- 3) capturing and sharing information about the distribution of observing assets to inform deployment of observing infrastructure and serve Arctic Indigenous communities,
- 4) drawing on observing system simulations and inverse modeling in ways that incorporate benefits and retain the holistic food security perspective, and
- 5) capturing requirements that can inform the engineering design of observing systems and support interoperability of independent, aligned observing efforts.