DBO
&
Sustaining Arctic Observing Networks (SAON)
&
Arctic Observing Summit (AOS):
Opportunities for collaboration & joint action

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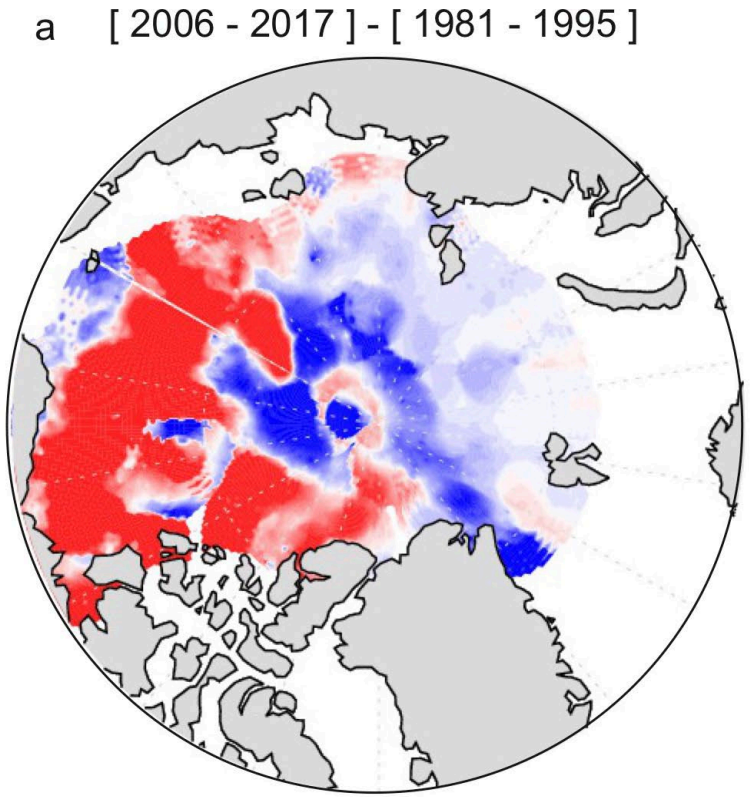
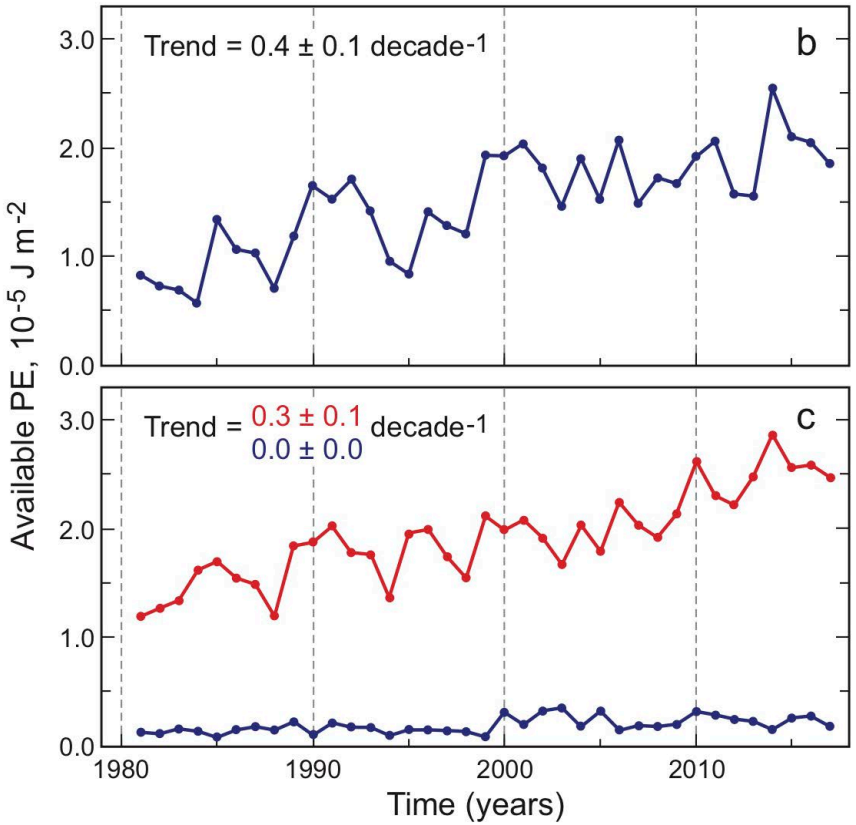
Understanding & responding to change

- Long-term observations

→ Understanding & predicting Arctic system change





$$\mathrm{APE} = \int_{z_2}^{z_1} g(\rho - \rho_{\mathrm{ref}})zdz$$

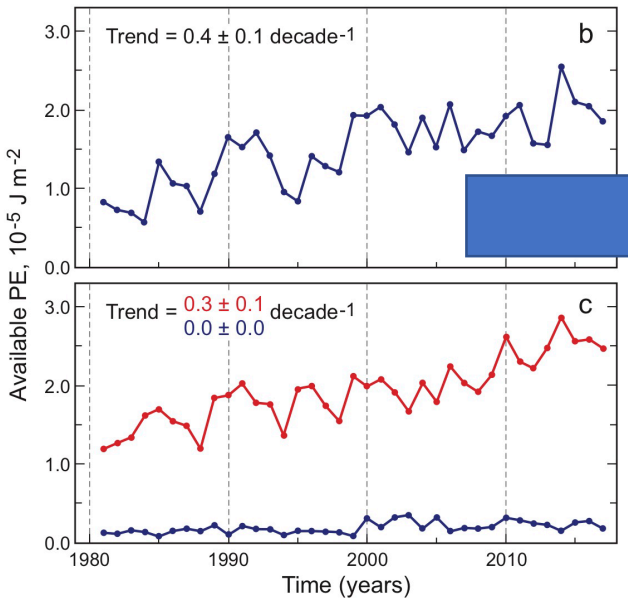
Polyakov et al., 2018, ERL

Understanding & responding to change

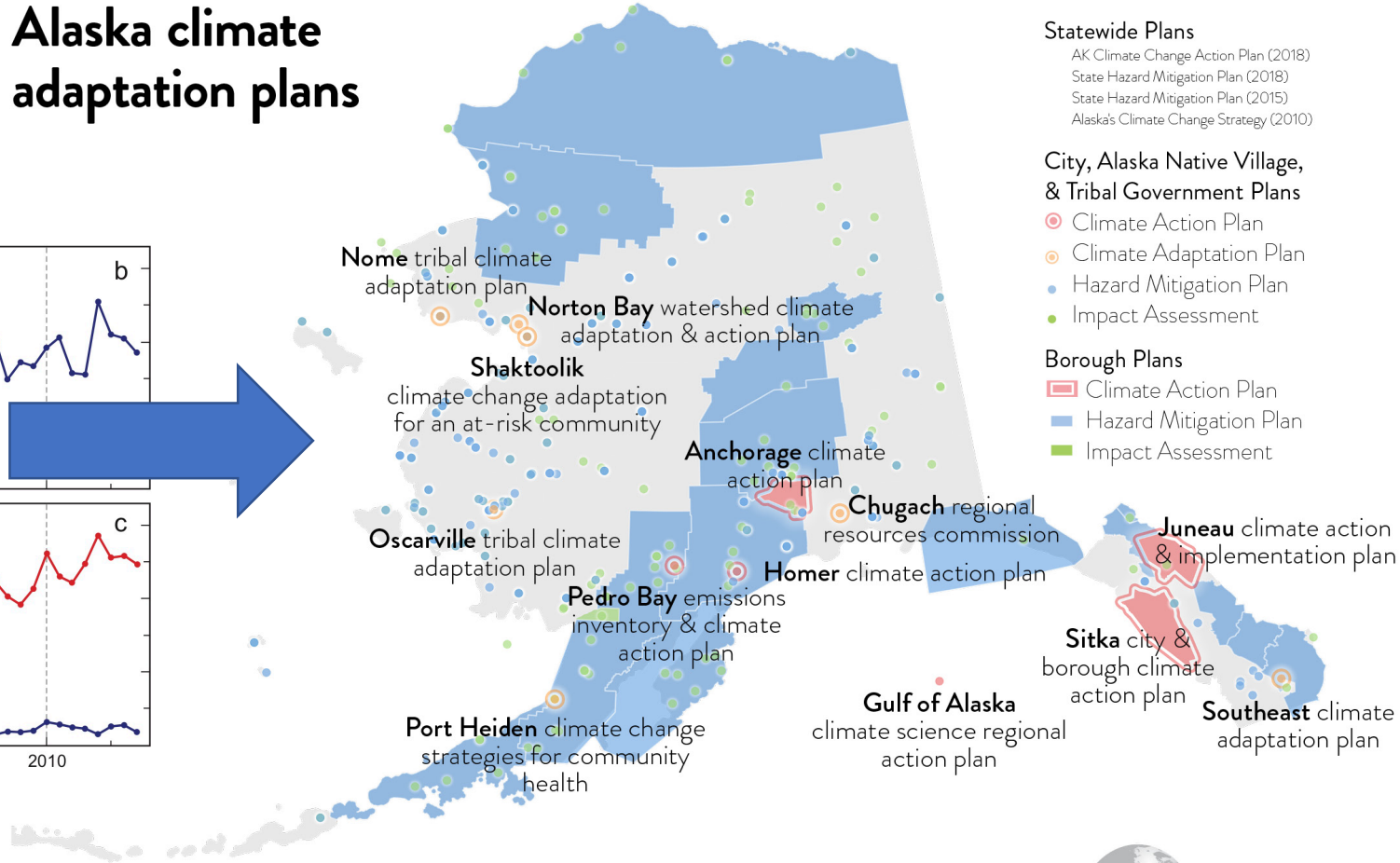
- Long-term observations

→ Understanding & predicting Arctic system change

→ Informing responses to rapid change



Alaska climate adaptation plans



Credit: Kelsey Aho, Center for Alaska Policy Studies.

Data source:s DEECD; Meeker and Kettle, 2017

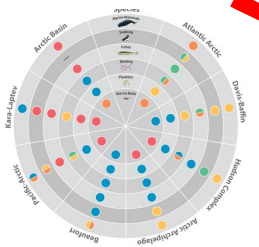
IARC International Arctic Research Center
University of Alaska Fairbanks

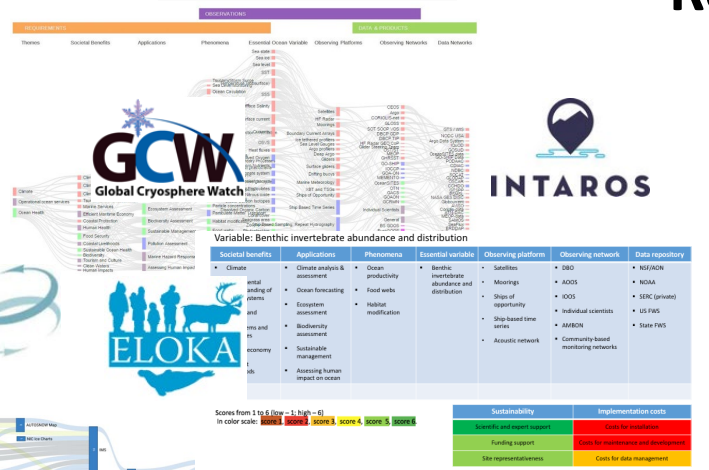
Understanding & responding to change

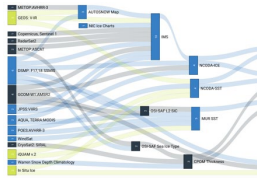
- How do we ensure shared benefits of sustained observations
  - both for research community & other information product users?
- How do we observe what is relevant, in a manner that meets requirements of data users?
- How do we share data and information products to reach relevant data users?

Integrating sustained observations

Broad range of themes, interests, mandates, concepts, champions







SAON
SUSTAINING ARCTIC OBSERVING NETWORKS

2nd ARCTIC SCIENCE MINISTERIAL

ARCTIC OBSERVING SUMMIT
AOS

Roadmap for Arctic Observing and Data Systems (ROADS)

- Priorities
- Essential Arctic Variables (EAV)

- Well-defined requirements for EAVs
- Societal benefits (shared)

- Co-design/implementation/integration of observing system components

- Bundling of efforts insufficient → Development of coherent set of observations drawing on requirements guided by shared benefits
- Identify commonalities, link requirements & implementation across narrow efforts that fit into common thematic framework

Shared benefits – Relevance – Data use

Supporting the ROADS process

Coordination | **Design Development** | **Information Infrastructure**

Societal benefit areas & concerns:

- Healthy, sustainable communities
- Indigenous Knowledge & Values
- Climate change adaptation
- Blue economy
- National security
- ….

Thematic concern

- Food security

EAVs

- Ice concentration
- Wave height
- Fish abundance
- …

Observing requirements

- Type
- Accuracy
- Location
- Sampling rate

Observing platforms/sensors

- PM satellites
- Community-based monitoring
- Vessel surveys
- ….

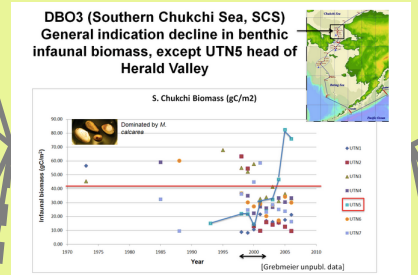
Data & information products:

- Safety advisories
- Decadal sea ice trends
- Fish stock assessments
- ….

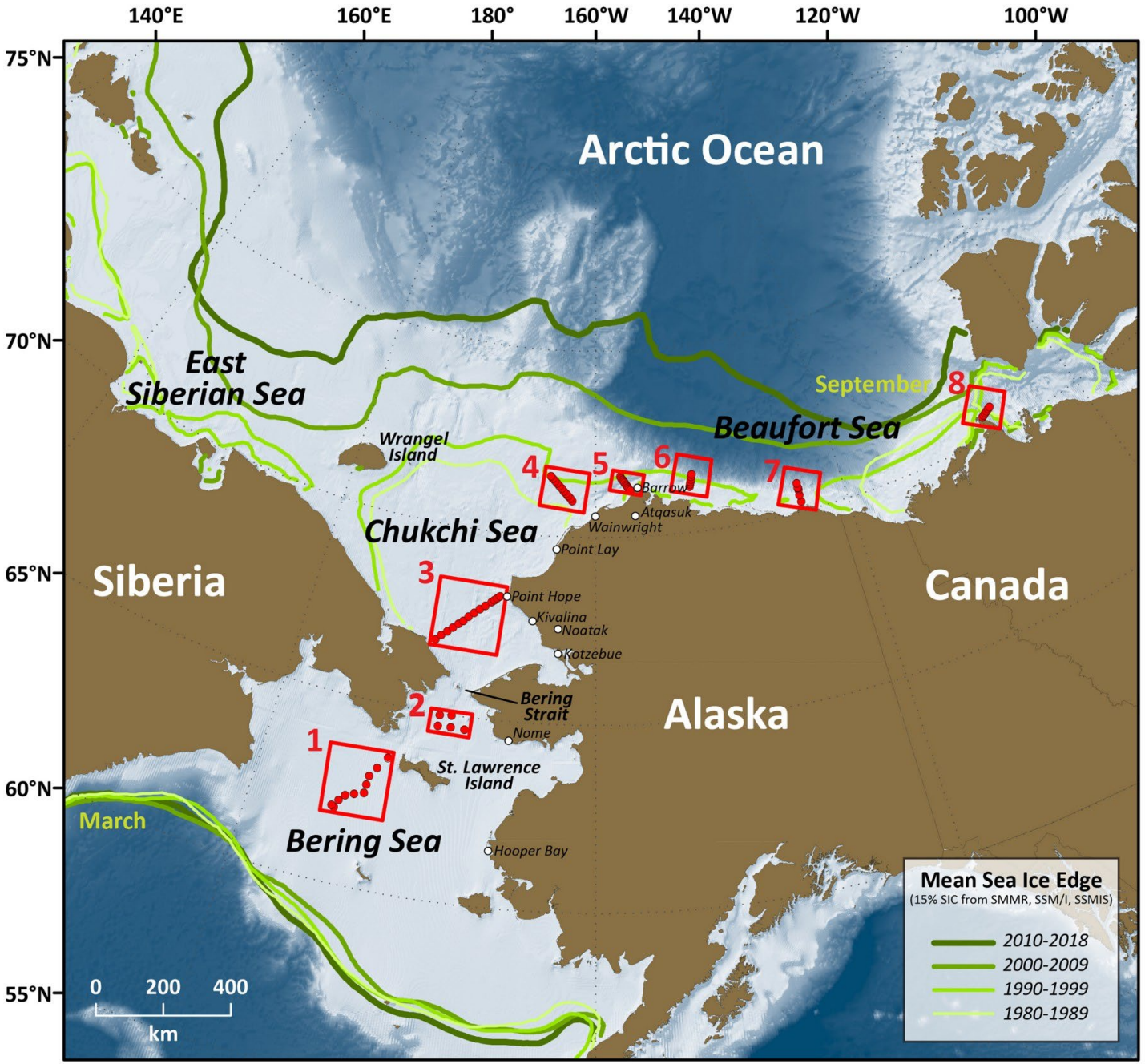
Example (C. Eaton, UConn): User base for observing system & end-to-end network

Variable: Benthic invertebrate abundance and distribution

Fundamental Understanding of biological response to physical/environmental change in the Arctic

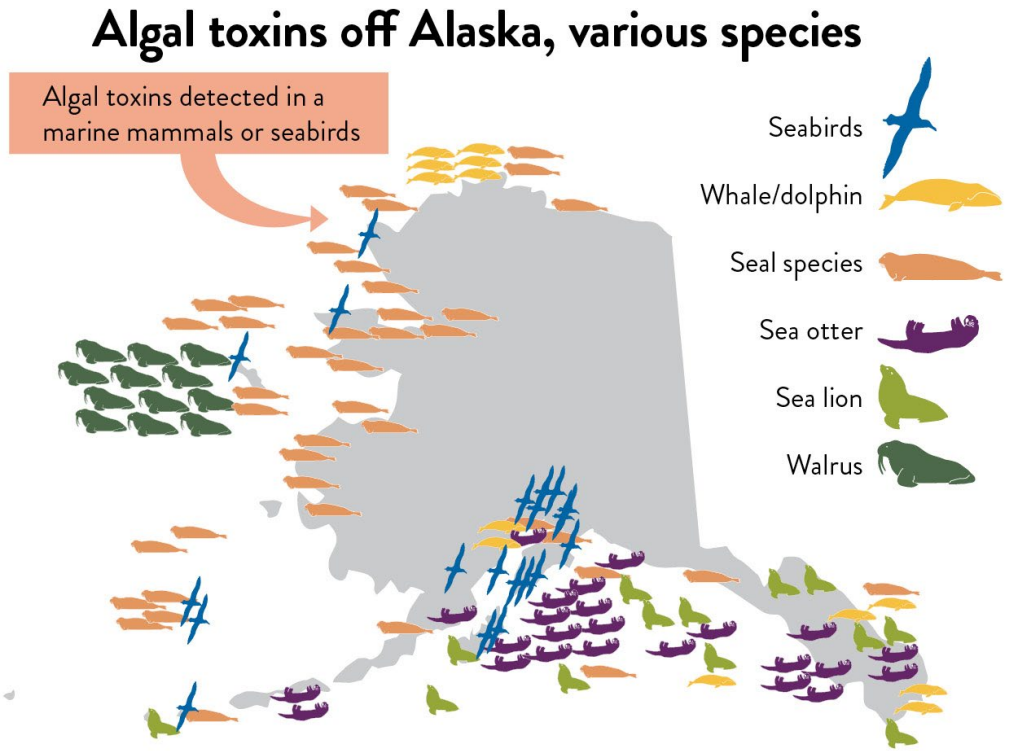
Arctic Societal Benefit Areas	Applications: End Users	Application Products: Time series data	Parameter "Phenomena"	Observing System
CLIMATE	RESEARCH		Ocean productivity	DBO
FUNDAMENTAL UNDERSTANDING OF THE ARCTIC SYSTEM	FEDERAL AGENCIES (e.g., NOAA)			AOOS
MARINE/COASTAL ECOSYSTEMS	STATE AGENCIES (e.g., FWS)	Output: abundance, biomass and composition of benthic fauna (both infauna and epifauna)	Food webs	IOOS
MARINE ECONOMY	LOCAL & SUBSISTENCE COMMUNITIES		Habitat modification	Individual scientists
RESILIENT LIVELIHOODS	NATURAL RESOURCE MGMT			AMBON
				CBM Networks

NSF ARCTIC DATA CENTER, NOAA, FWS

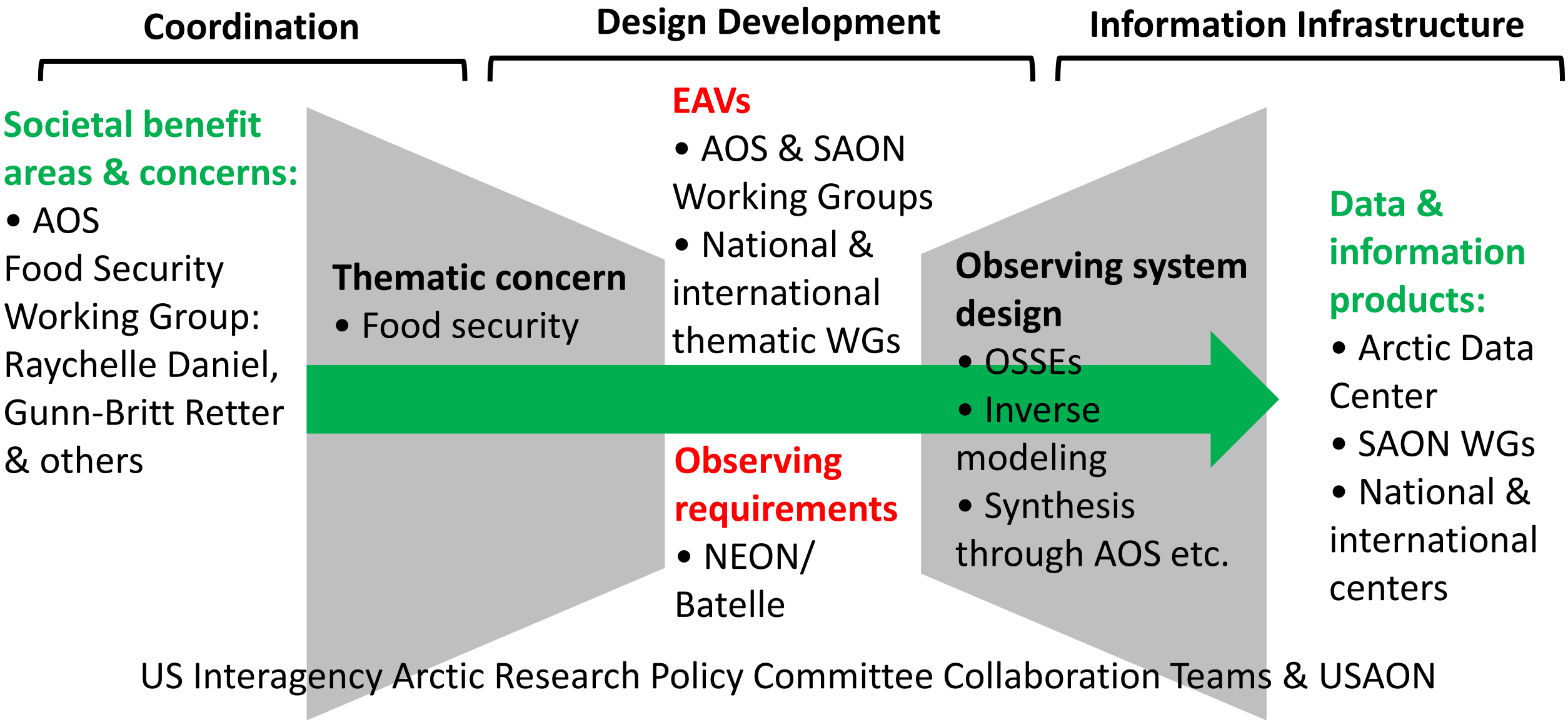


DBO & SAON ROADS

→ Potential for new data & information products



Shared benefits – Relevance – Data use: Entry points for DBO involvement



US Interagency Arctic Research Policy Committee Collaboration Teams & USAON

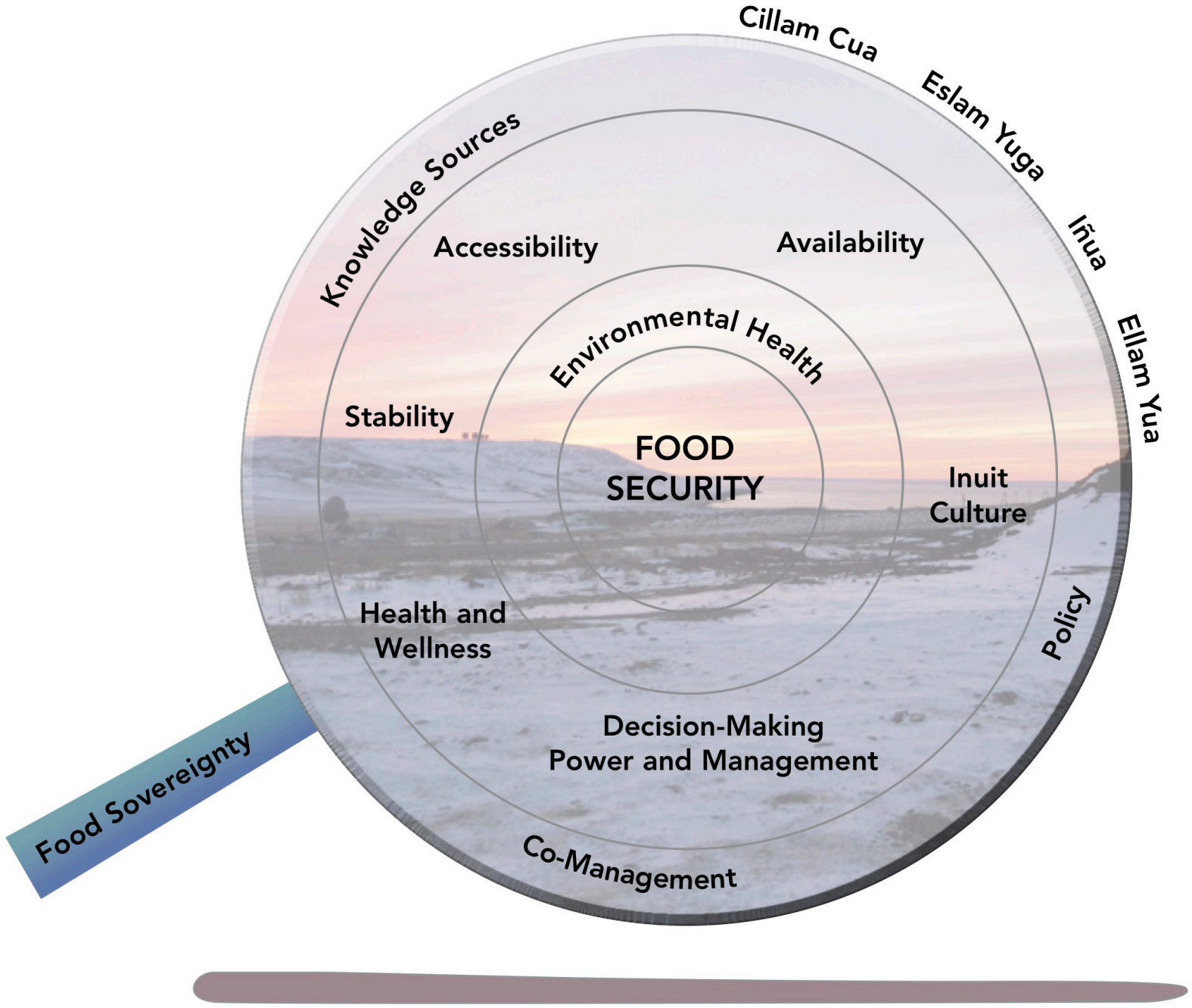
Alaskan Inuit Food Security Framework (ICC-AK, 2015)

Behe and Castillo, 2015

Alaskan Inuit Food Security Framework

- Dimensions
- Knowledge
- Management
- Sovereignty

(ICC-AK, 2015)



The Arctic Observing Summit

- Provide **community-driven, science-based** guidance for the **design, implementation, coordination** and **sustained** long-term (decades) **operation** of an international network of Arctic observing systems that serves a wide spectrum of needs

- Create a **forum** for coordination and exchange between **academia, government agencies, Indigenous & local communities, industry, non-governmental organizations and other Arctic stakeholders** involved in or in need of long-term observations

2020 Arctic Observing Summit:
Observing for Action

Akureyri, Iceland 31 Mar – 2 Apr 2020

arcticobservingsummit.org

Summit themes

1. Design, Optimization and Implementation
2. **Food Security and Indigenous Needs**
3. Observing in Support of Adaptation and Mitigation
4. Data Interoperability and Federated Search
5. Observing in Support of Global Action

SAON
SUSTAINING ARCTIC OBSERVING NETWORKS

2020 Arctic Observing Summit:
Observing for Action

Food Security and Indigenous Needs WG – Vision, Mandate and Rationale

- Food security observing roadmap emerging from team effort will guide observing activities in Pacific Arctic region and inform broader SAON Roadmap for Arctic Observing at pan-Arctic scale
- International team of Indigenous experts, community representatives, agency personnel, research scientists (both observationalists and modelers)
- Food security WG essential as the only SAON/AOS group focusing on observations for a specific societal and Indigenous benefit area and concern
- Indigenous Food Security Working Group -
  - Helps identify impactful Essential Arctic Variables (EAVs)
  - Provides guidance on EAV assessment process, societal benefit areas & observational requirements

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SUSTAINING ARCTIC OBSERVING NETWORKS

2020 Arctic Observing Summit:
Observing for Action

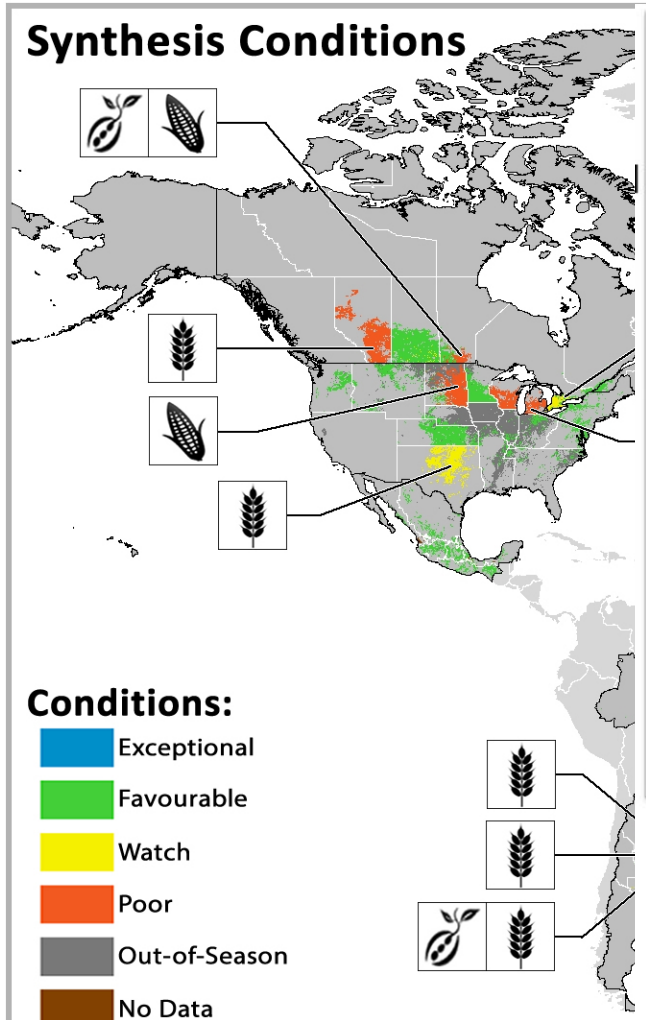
Food Security and Indigenous Needs WG – Vision, Mandate and Rationale

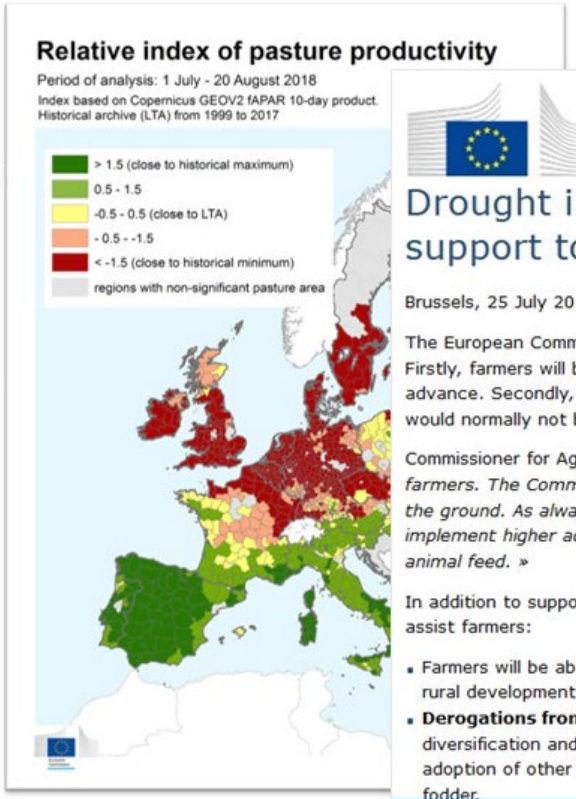
Essential Arctic Variables (EAVs):

- Conceptually broad, phenomenological observing categories (e.g. “sea ice”) that provide a structured interface for coordination and collaboration in support of societal benefit
- Identified as being critical to achieving Arctic societal benefit
- 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.
- Implemented through specific recommendations based on best available technology and practices

SAON
SUSTAINING ARCTIC OBSERVING NETWORKS

Goal: Arctic data & information product suite that addresses key food security concerns through integration of EAV data (in situ, community-based monitoring, remote sensing) & model output





European Commission - Press release

Drought in Europe: the Commission offers further support to European farmers

Brussels, 25 July 2019

The European Commission is offering support to farmers faced with the waves of drought afflicting Europe. Firstly, farmers will be able to receive a higher percentage of their direct and rural development payments in advance. Secondly, to be able to feed their animals, they will be granted greater flexibility to use land that would normally not be used for production.

Commissioner for Agriculture, Phil **Hogan**, has said: «*These prolonged climate conditions are worrying for our farmers. The Commission remains in close contact with the Member States and is evaluating the situation on the ground. As always, we stand ready to assist farmers affected by drought. That is why we have decided to implement higher advance payments and derogations from certain greening rules to make it easier to produce animal feed.* »

In addition to support available under the Common Agricultural Policy (CAP), two decisions have been taken to assist farmers:

- Farmers will be able to receive **higher advance payments.** Up to 70% of their direct payments and 85% of rural development payments will be available as of mid-October to improve their cash flow situation.
- **Derogations from certain '«greening»' requirements** will be allowed. These derogations will apply to crop diversification and ecological focus area rules on land lying fallow. Consideration is also being given to the adoption of other types of derogation from '«greening»', so as to grant farmers greater flexibility to produce fodder.

In addition to continuously evaluating and analysing the drought situation and its impact thanks to the European satellites, the Commission is in contact with all Member States to receive updated information on the impact of the drought on farmers at more local level.

For more information

Monitoring Agricultural ResourceS (MARS) Bulletins