

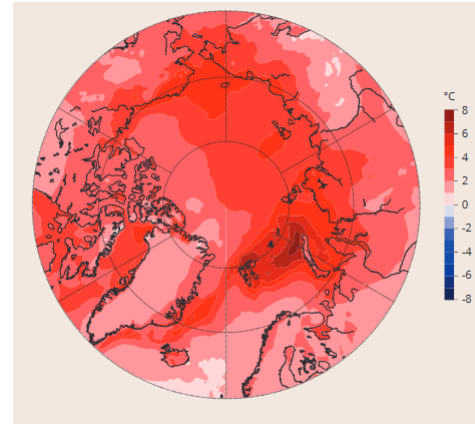
# Arctic PASSION and the Shared Arctic Variables (SAVs)

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Jan Rene Larsen, Maribeth Murray, Mikko Strahlendorff, Sandy Starkweather, Katriina Veijola



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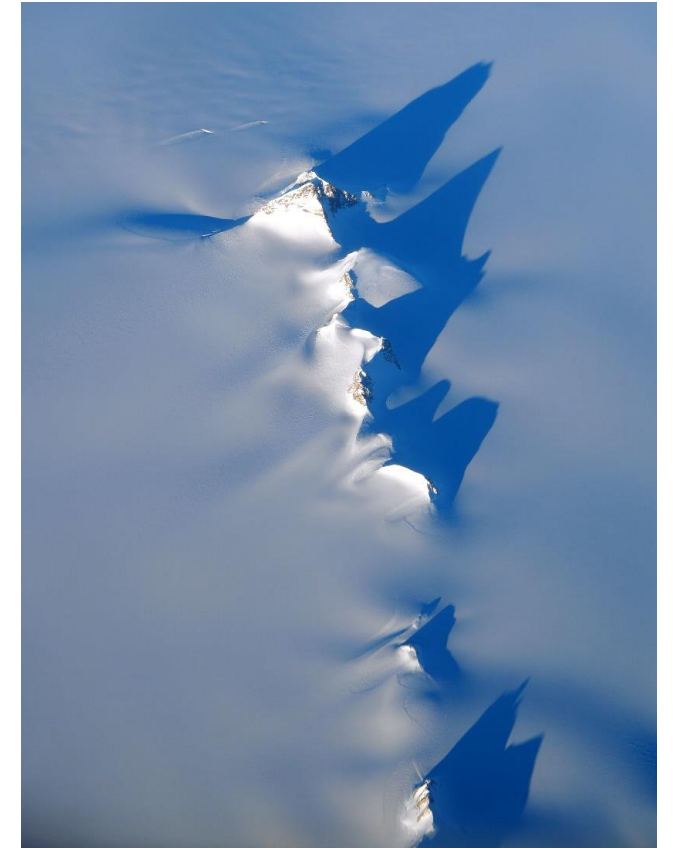
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# ARCTIC PASSION

Pan-Arctic Observing  
System of Systems:  
Implementing Observations  
for Societal Needs

- European Commission H2020 Program
- 4 years, 15 Mio Euro, 18 countries
- 35 partner organizations and 6 Indigenous Communities
- July 2021 – June 2025
- Website: [www.arcticpassion.eu](http://www.arcticpassion.eu)
- Coordination: Alfred Wegener Institute for Polar and Marine Research



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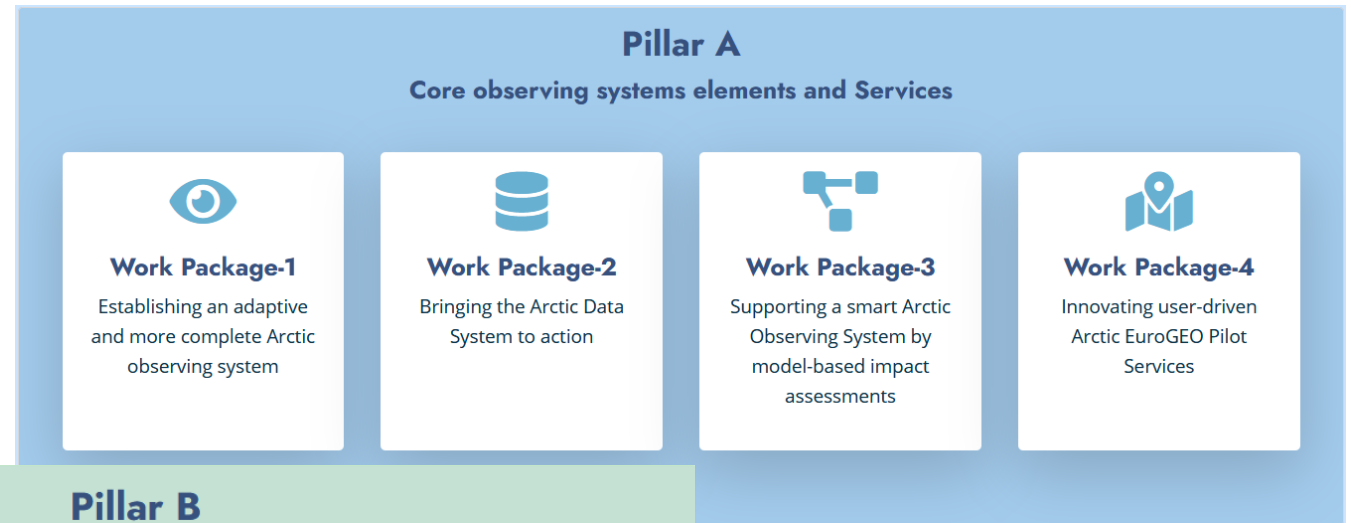
# Overall Project Objectives

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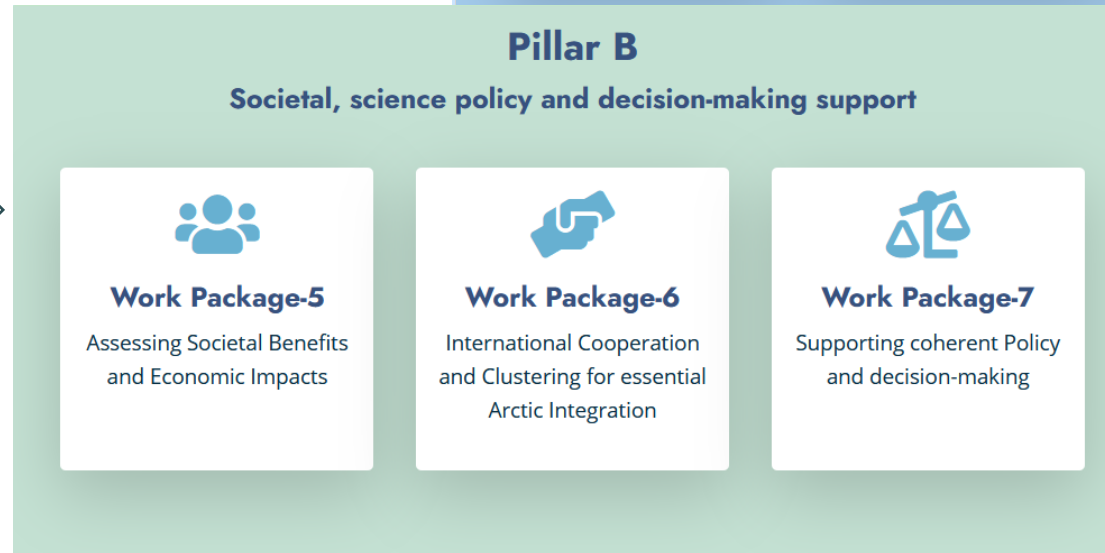
- Co-create a **coherent, integrated and sustainable pan-Arctic Observing System of Systems**
- Meaningful collaboration with **Arctic communities, Indigenous Peoples and organisations;**
- **Expand monitoring capabilities**, also through **broad inclusion of Indigenous Knowledge and Local Knowledge;**
- Improve **data interoperability** and simplify access to 'application-ready' environmental data for the benefit of all users;
- **Improve monitoring to support predictions, risk assessment, inform and guide mitigation and adaptation and sustainable development**
- Develop **EuroGEO Pilot Services and support SAON to upgrade Arctic GEOSS into a 'GEO initiative'**
- Initiate **SAV Expert Panels** and develop SAVs in support of SAON's ROADS program

# The Structure of Arctic PASSION

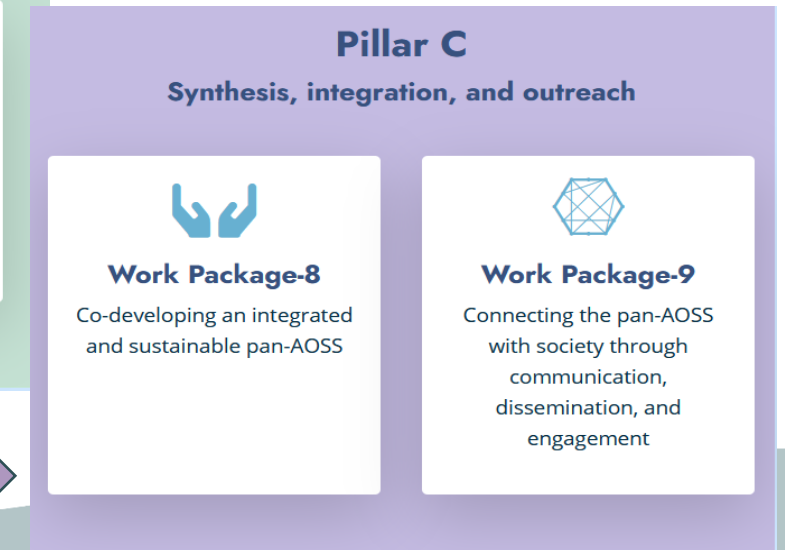
Strengthening  
core observing  
system elements



Decision-making  
support



Synthesis and  
outreach



# Shared Arctic Variables (SAVs)

Concept based on SAON ROADS and Arctic Observing Summit (AOS).

Sets of observables that help tackling local/regional problems (based on science, IK & LK)

Arctic PASSION with Canadian partners and US RNA CoObs first projects to launch SAV processes



*Three SAV themes of relevance*

- *Permafrost (Living on frozen ground)*
- *Wildfires*
- *Sea Ice*

***Why did we pick these?***

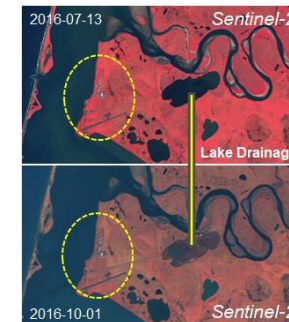


PS1: 'Event Database of CBM Using Oral Histories, IK and LK' (Snowchange)



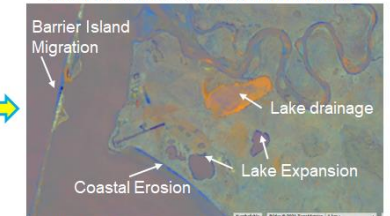
Ph.: Snowchange

PS2: 'Pan-Arctic requirements-driven Permafrost' (AWI)



Impacts on Northern Communities

Google Earth Engine App with Remotely Sensed Trends in 30m resolution from 2001-2020

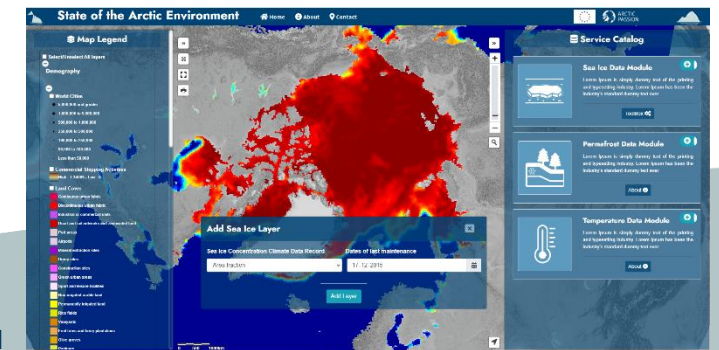


ESA GlobPermafrost + ESA CCI+ Permafrost

G. Grosse & A.Irrgang, AWI

Village of Point Lay, Northern Alaska

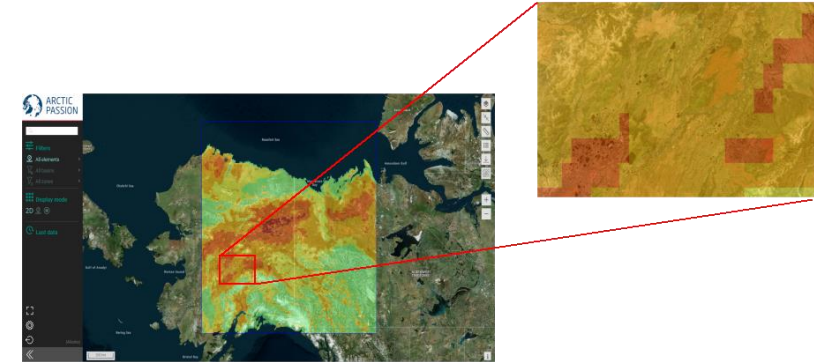
PS3: 'State of the Arctic Environment' (NPI)



A. Sundfjord, NPI



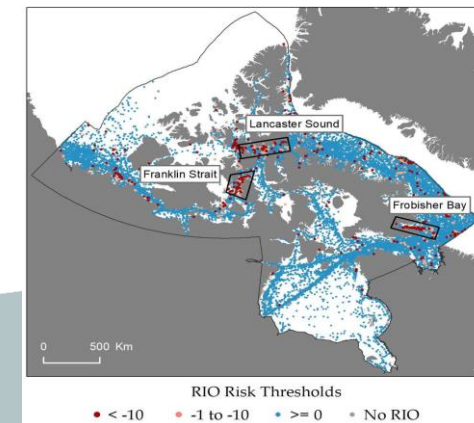
PS4: 'Integrated Fire Risk Management - INFRA' (CNR)



PS5: 'Local Atmospheric Pollutant Forecast Service' (JRC)



PS6: 'Improving Safety for Shipping in the Polar Seas Service' (BAS)

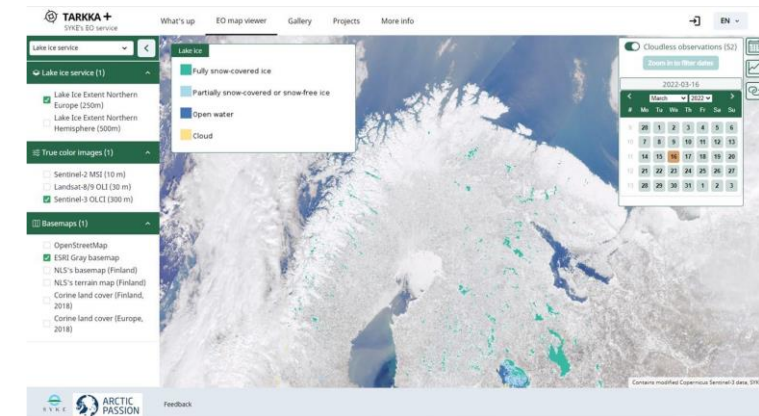


PS7: 'CBM for Arctic marine climate change, noise pollution & impacts on marine living resources' (GINR/DMI)



S. Olsen, DMI

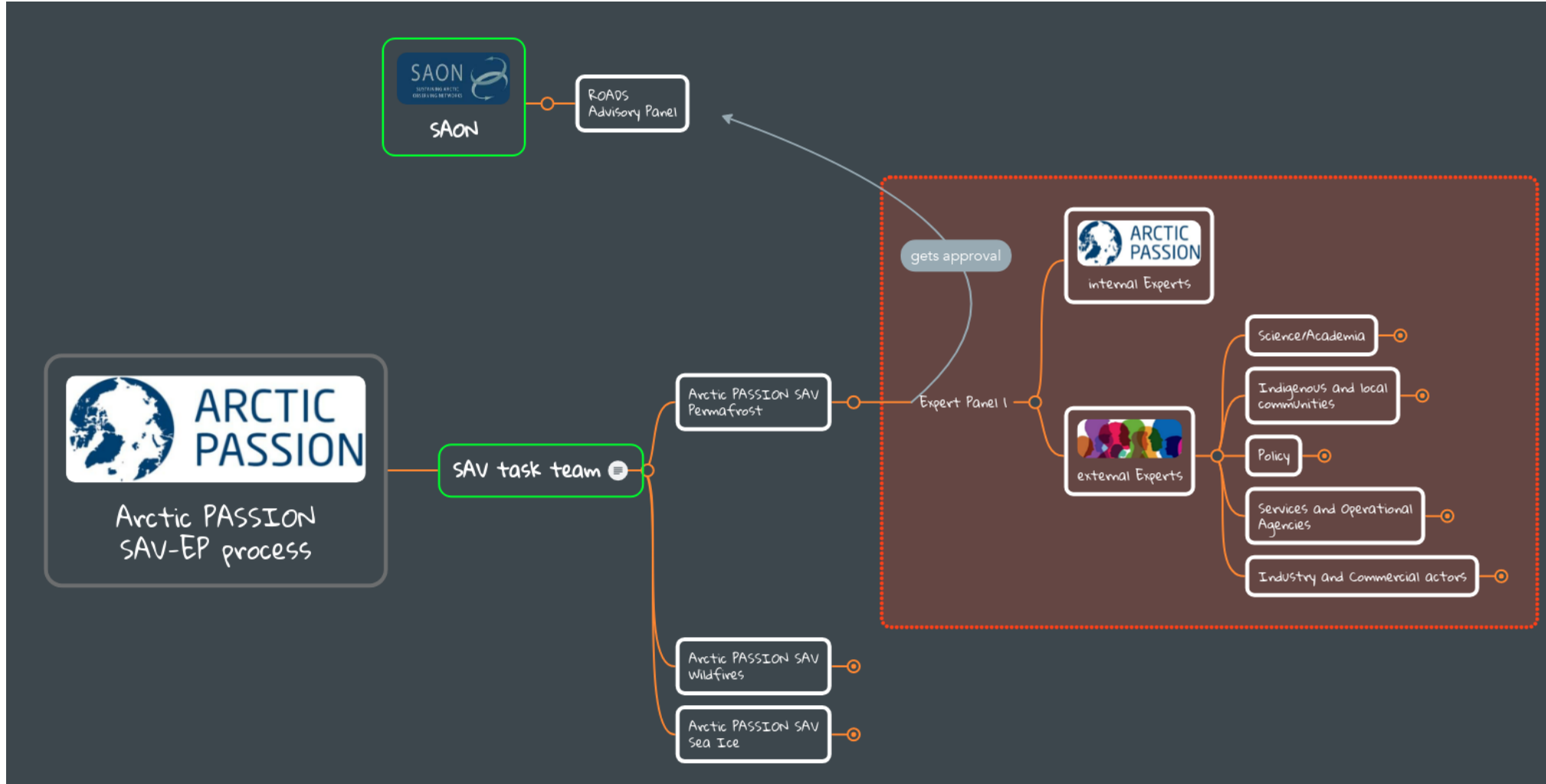
PS8: 'Lake Ice Service for Arctic Climate and Safety' (SYKE)



K. Heinila, SYKE



# SAV s in Arctic PASSION



# SAV definition process

- Set up expert panels (EPs) of up to ~12 people
- Development in dialogue with SAON ROADS Advisory Panel
- Assess:
  - Potential impacts
  - What to observe
  - Required commitment for observations
- Include experts on:
  - Local / Indigenous Knowledge
  - Decision-making and policy
  - Scientists
  - Arctic communities
- Costs:
  - Depends on composition of EP (travel and compensation for work): could be about 100k €)
- Output:
  - SAV proposals submitted for review by end of the project

# Legacy of SAVs

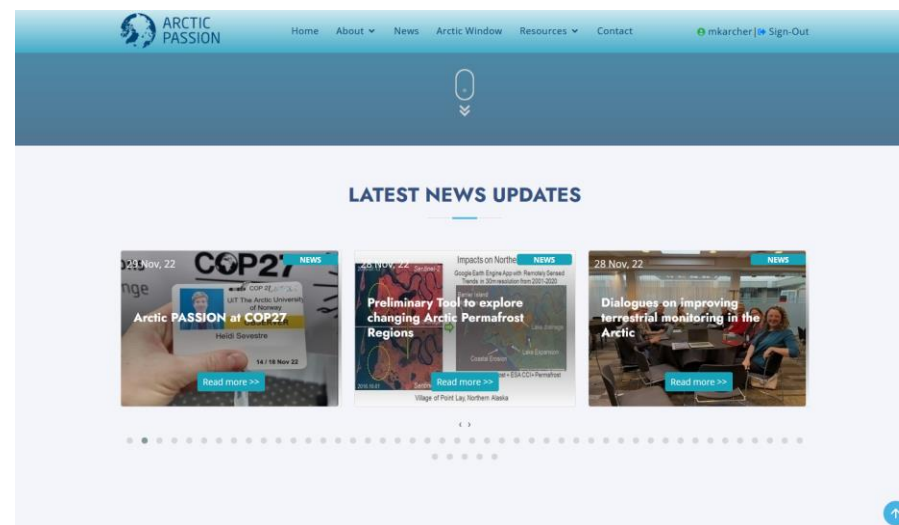
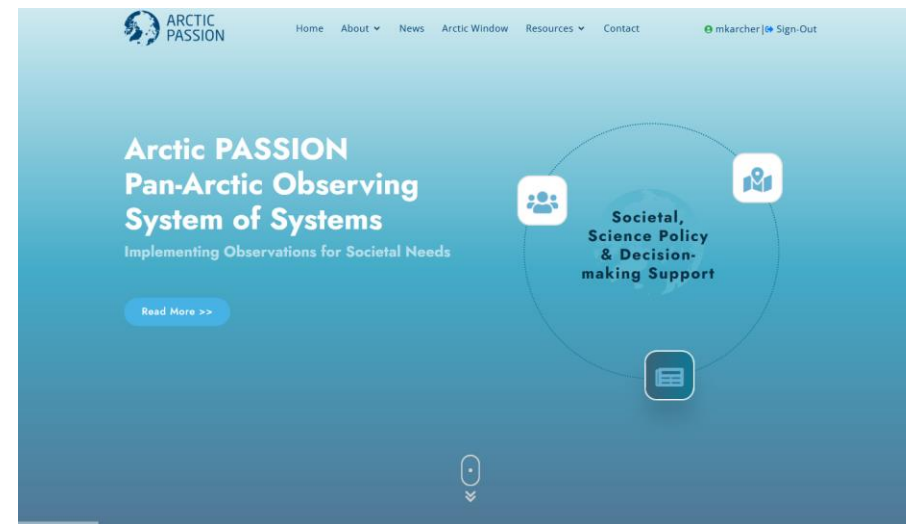
- The process of SAV identification for the three themes by the Expert Panels is meant to be finished during the project duration
- Expert Panels will contribute to identifying stewards for the SAVs
- The further development of the SAVs and our experiences with the SAV process will reach beyond the project
- Shared Arctic Variables can play a key role in guiding the development of a more useful Arctic observing system
- Shared Arctic Variables have the potential to empower Indigenous and local communities



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**Come and visit our website with a  
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Website:

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