

Connecting top-down and bottom-up approaches in environmental observing

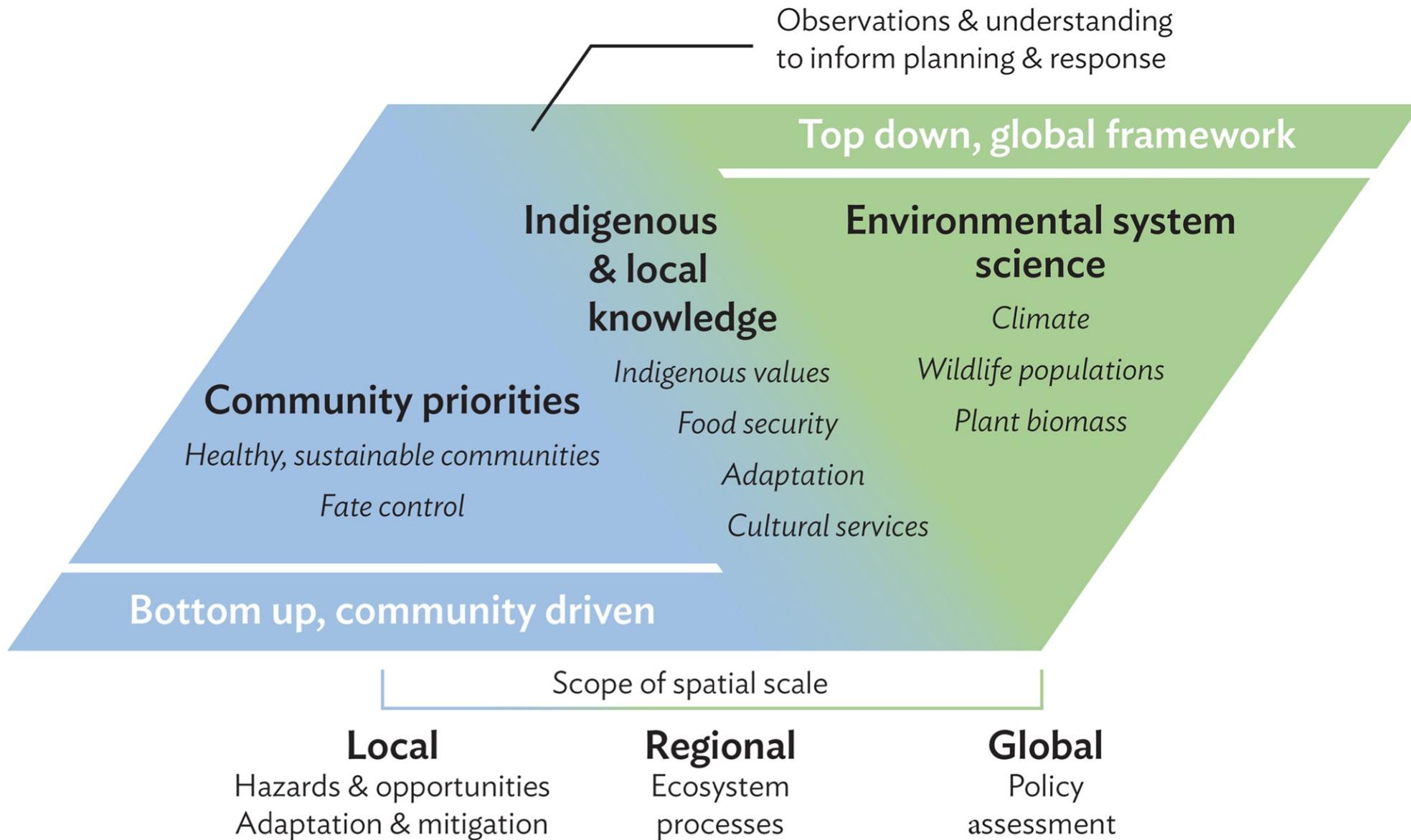
Lessons for the Arctic and a review of programs across the globe

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Observations inform responses to rapid Arctic change

1. How to foster better linkages between bottom-up, community-driven and top-down, regional/global-scale observing?
2. Review of 124 sustained observing activities across the globe
3. Workshops & surveys of 30 Arctic community-based monitoring programs





Challenges & Interventions

- Surveyed 30 Arctic community-based programs & held workshops
- Recognizing good practice helps address challenges (2 out of 6 approaches shown here)



Community based observers

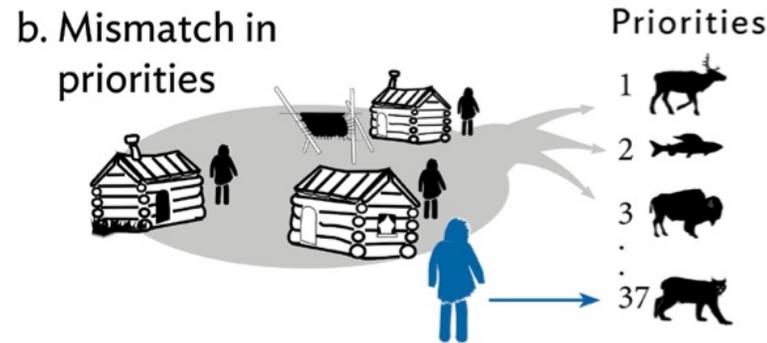
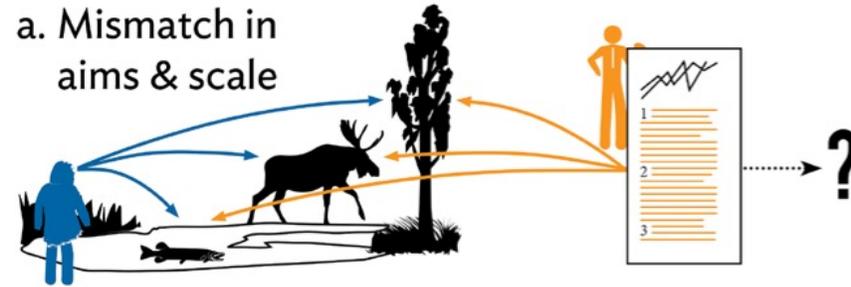


Management authorities

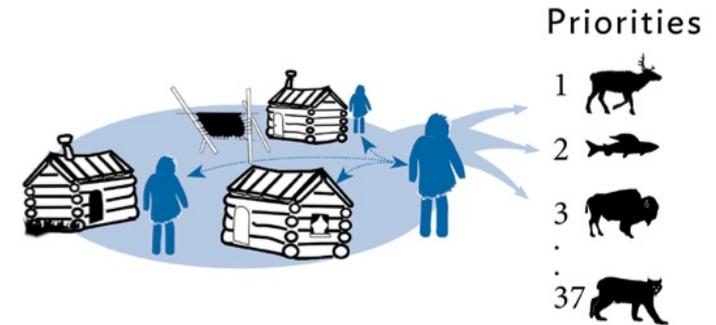
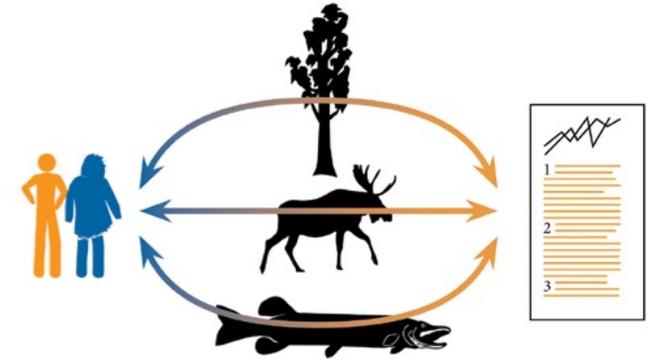


Regulations

CHALLENGE



INTERVENTION





Linking bottom-up & top-down
frameworks
enhances information products,
observing program efficiency &
sustainability

Further details

FUNDING SUPPORT

- EU Horizon 2020 – INTAROS Project
- U.S. National Science Foundation
– RNA Arctic CoObs Project

FURTHER READING

Special section in *BioScience* on Environmental Monitoring:

“The Theory, Practice, Application and Results of Locally- Based Monitoring of the Environment” – Danielsen et al.

“Connecting Top-Down and Bottom-Up Approaches in Environmental Observing” – Eicken et al.

“Digital Platforms for Community-Based Environmental Monitoring” – Johnson et al.

“Citizen Science and Indigenous and Local Knowledge Systems” – Tengö et al.

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