


Community adaptation in a Northern context: responding to multiple stressors

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Nordic Climate Change Adaptation Workshop: Linking Theory and Practice 3-4 September

Background for today's talk

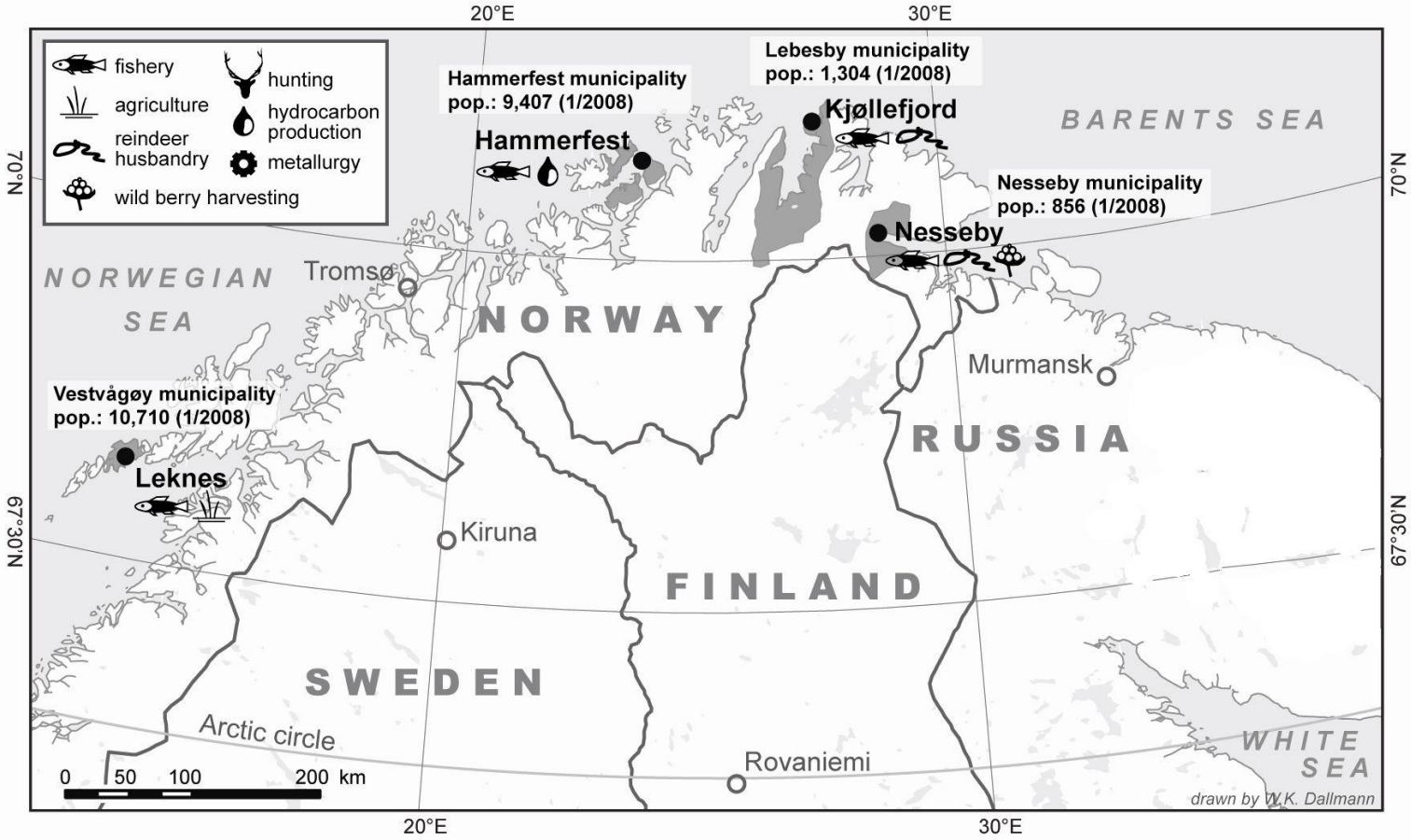
- Research questions, steps and approach
- Vulnerability and adaptation of Lebesby's coastal fisheries.
- What might future climate variability and change mean for coastal fishing activities given ***the wider social context in which fishing activities occur?***
- Cross-scale adaptation challenges

Sub-project 1: Contexts for Adaptation

RESEARCH QUESTIONS

- How do communities respond to the combined effects of climate change and changes in other societal processes?
- What types of local indicators and information can be used to monitor community adaptation?
- What strengths and opportunities at the community level might facilitate adaptation processes
- What are the limits or constraints for community adaptation?

Vestvågøy, Hammerfest, Lebesby, and Nesseby municipalities



Steps in the research

***Together with communities and research partners*:**

1) Identify the local social-ecological context

2) Collect information about important climate elements

3) Assess relevance and meaning of downscaled climate data provided by researchers

4) Discuss vulnerability and adaptation needs locally

Data Input

Published and grey literature, archival records

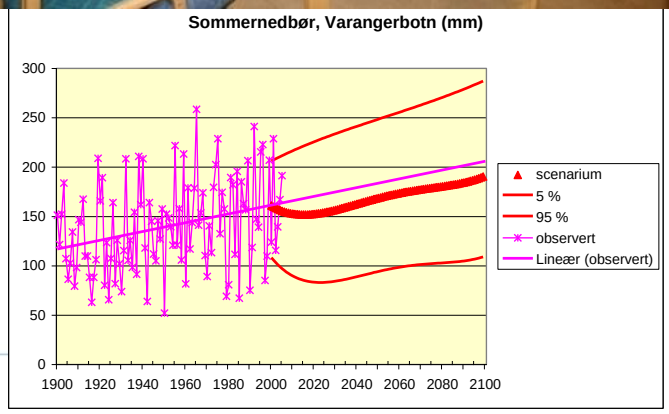
Key informants, focus groups, household interviews

Climate records, downscaled climate scenarios

Traditional/Local knowledge

Relevant natural/physical science data

Participant observation

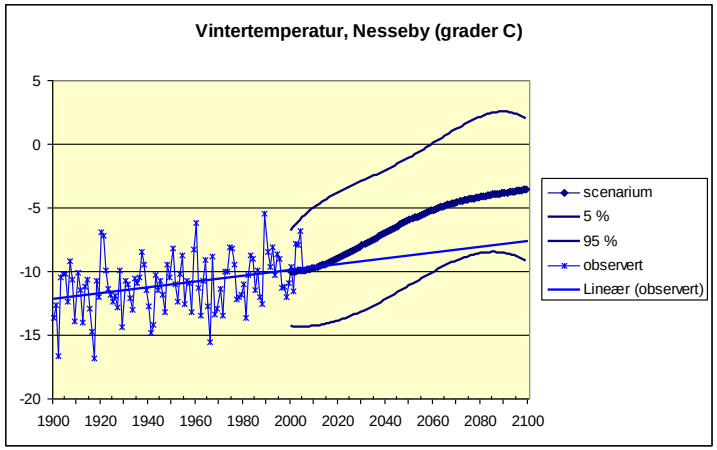


Identification of relevant climate elements for downscaling

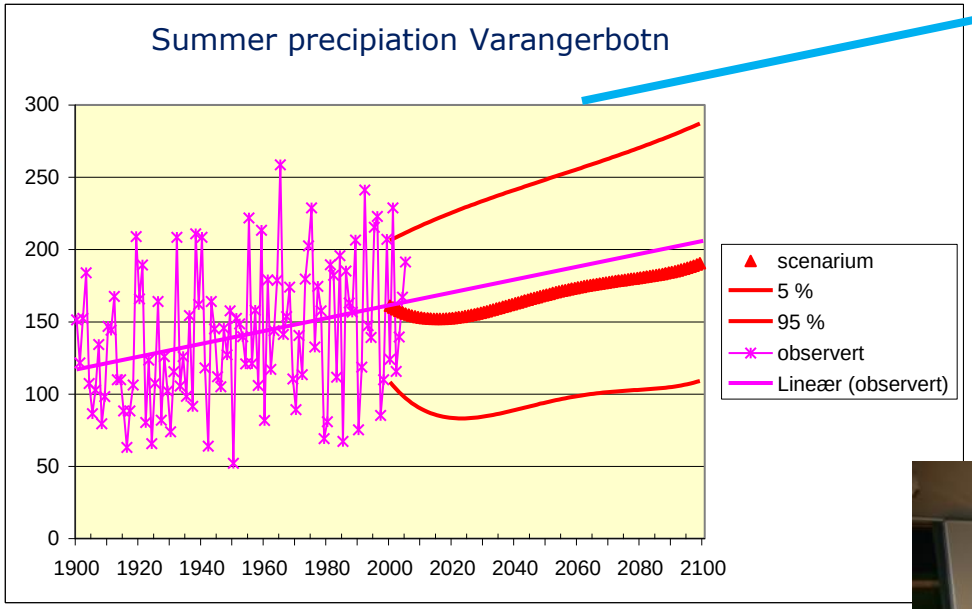
1) Through discussions with local communities

2) With met office to ensure data exist

3) Refine parameters with communities = *iterative*



How to go from here to there? Translation and relevance

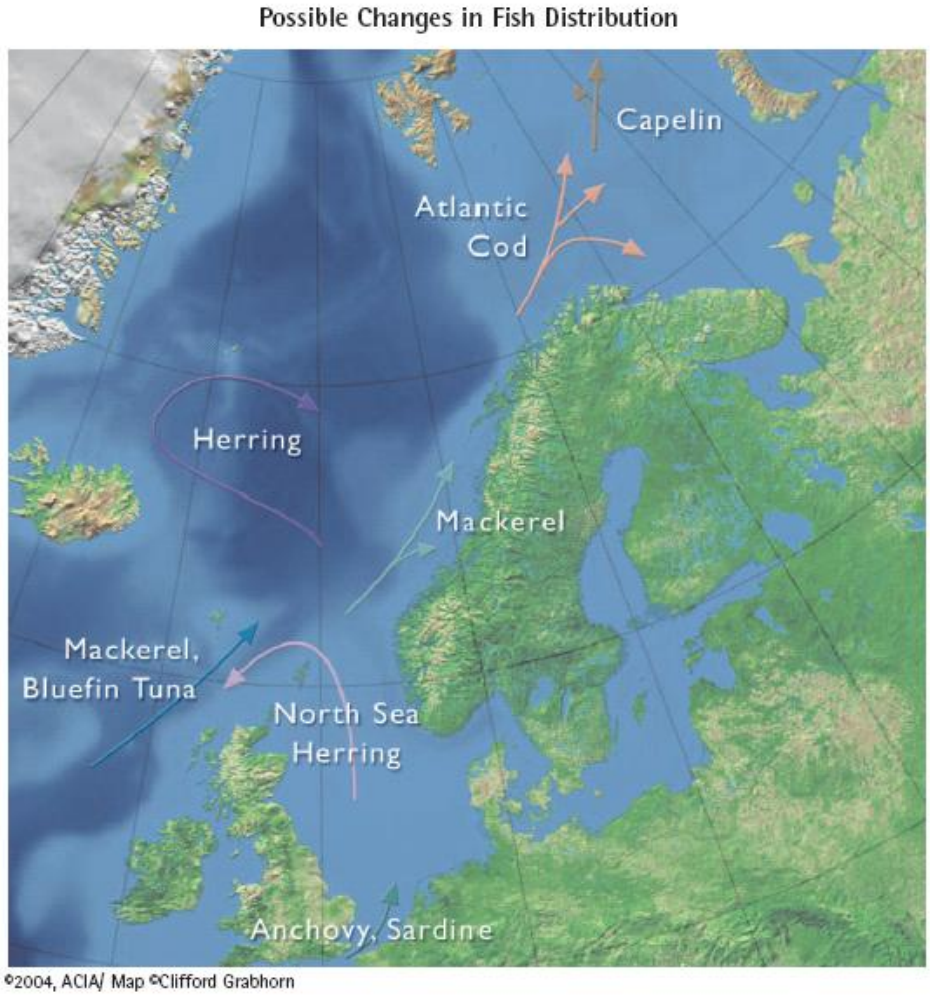


Coastal fisheries in Northern Norway

- Historical basis for settlement, income, culture
- Modern and efficient coastal fleet
- Declining employment and number of vessels, but stable landings and increasing values
- N.A cod, with saith and haddock as by-catch. King crab (an invasive species) is a new fishery
- Highly regulated
- Second largest employer in Lebesby

Coastal fisheries: potential opportunities under climate change

- Larger areas and improved conditions for cod and herring
- Increased growth rates for some species
- Mackerel and other species moving northwards
- New species



Local perceptions of climate change

- Fishermen accustomed to dealing with change and uncertainty
- Warmer ocean temperatures better for fishing?
- New species would require new management rules (quotas)
- Changes in spawning location and timing, and in fish behavior
- Extreme weather creates danger of icing on vessels and lost days at sea (with further implications for land-based processing)

Cross-scale adaptation challenges

SHORT-TERM:

Timely and useful climate information (weather forecasting services)

- Synchronisation between supply of, access to, and demand for, fish (cross-scale environmental, institutional and market linkages)

LONG-TERM

- Center-periphery aspects: outmigration; aging fisher population; fishing infrastructure
- Lebesby's viability as a fishing community
- Fisheries policy: management and regulations
- Multiple uses of marine environment may intensify under climate change

Institutional adaptation

New or modified institutions and governance forms may be needed to assist coastal fishing communities and actors in Northern Norway prepare for and respond to climate change.

Institutional considerations for adaptation in the coastal fisheries

- Changes in fishing areas and fish species may require new fishing regulations and changes to management frameworks
- Societal values reflected in national fishing regulations may create particular local challenges for adapting to climate change
- Trade-offs between adaptive fisheries management, and planning horizons of fishermen *flexibility versus predictability*
- Institutional cooperation for innovation (fishing and tourism)

Conclusions

Non-climatic social factors are and will continue to be decisive for the coastal fisheries sector's ability to adapt to climate variability and change. Roles of:

- *Local and societal values, priorities, perceptions and attitudes*
- ***Institutions, including fisheries regulations and management***
- *Viability of coastal communities*
- *Globalisation and market integration*

It is about people, our livelihoods and well-being