Adaptation solutions and best practices around the Arctic

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How to Survive in the Arctic – Collaborate!

The final seminar of the ACAF project 15th November 2021
Korundi House of Culture, Rovaniemi

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Climate change adaptation – learning from peers in the Arctic

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- Adaptation to climate change induced changes in the environment requires essentially local and regional level activities
- Lessons can be learned and developed together
- Best practices identified in the seven bilateral ACAF webinars with Arctic countries in April-June 2021
- Here highlights from the bilateral ACAF webinars are introduced; not a comprehensive list

Barriers to adaptation

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Awareness does not lead to action; too short perspectives in many cases; more coping from day to day than strategic planning.

Focus on other issues than climate adaptation (e.g. corona pandemic, economic problems etc.)

Short planning horizon in the aquaculture industry.

Reactive adaptation (rather than proactive, planned)

Too much reactive adaptation with no planning and proactivity; possibly maladaption (helps in the short term, but accelerates climate change due to increasing GHG emissions)

Some adaptation measures can lead to unsustainable solutions (cruiseship tourism, snow-making).

Lack of adaptive governance in reindeer management

Still lack of understanding or knowledge about climate change adaptation in practise

"Being adaptive" by culture is both a good thing and a barrier - seems to be an Arctic thing! But there comes a point when you cannot adapt without a proper long-term plan

Agree! — NIMETÖN

Improving awareness and the knowledge basis for adaptation related decision-making

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Course on Climate

Dissemination of research results in the layman's language

Increase in public discussion on climate change

Collecting Knoweldge

Is there a way to strengthen how we share knowledge, tools and resources so that we can both learn about/from people but to also try out other people's techniques.

Co-production and other ways of involving the practitioners / end-users can lead to good and usable science-based adaptation support solutions

Increasing collaboration between researchers and communities helps communities identify adaptation needs and actions proactively e.g. in research projects

Particapatory methods for gathering relevant information in terms of climate change and adaptation to it

Increase in researh on social aspects of climate change

Sharing network data and other info (e.g. webcam images) to improve spatial coverage of data

Climate services can help fisheries, tourism enterprises etc. to adapt to climate change by better prediction of climate and weather conditions

use of drones

Canadian government installed new weather stations in the Arctic in anticipation of the melting which opens up the shipping channel in Northwest Passage

Climate services tailored for different industries

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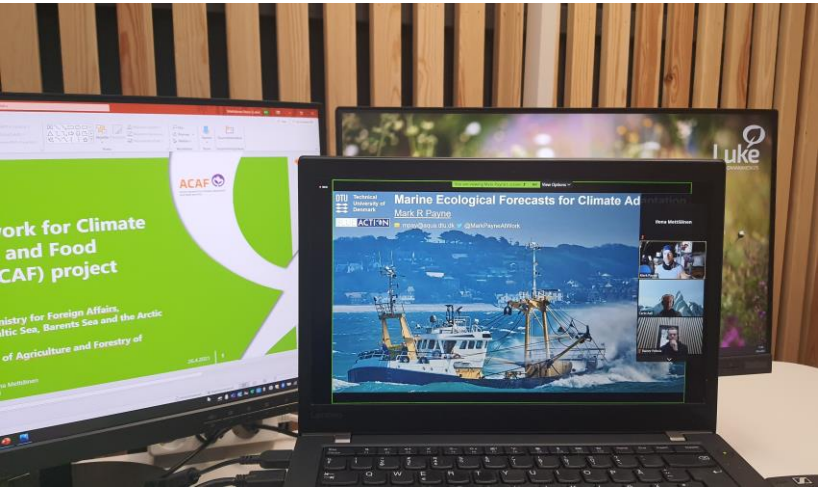
- Climate services are ways to provide relevant climate and climate change related information for end-users in user-friendly ways, for supporting decision-making



Online activities and digital solutions

Virtual tourism has been developed intensively in the Covid time

Map-based solutions for engaging citizens

how can map-based solutions can be measured? – NIMETÖN

Virtual tourism

Telecommunication - a lot of travel has been saved in the last year because of Zoom, etc.

Virtual platforms for participatory co-production of knowledge? Would be interested in learning about experiences of others.

map-based solutions LEOnetwork

Lot's of new digital tools

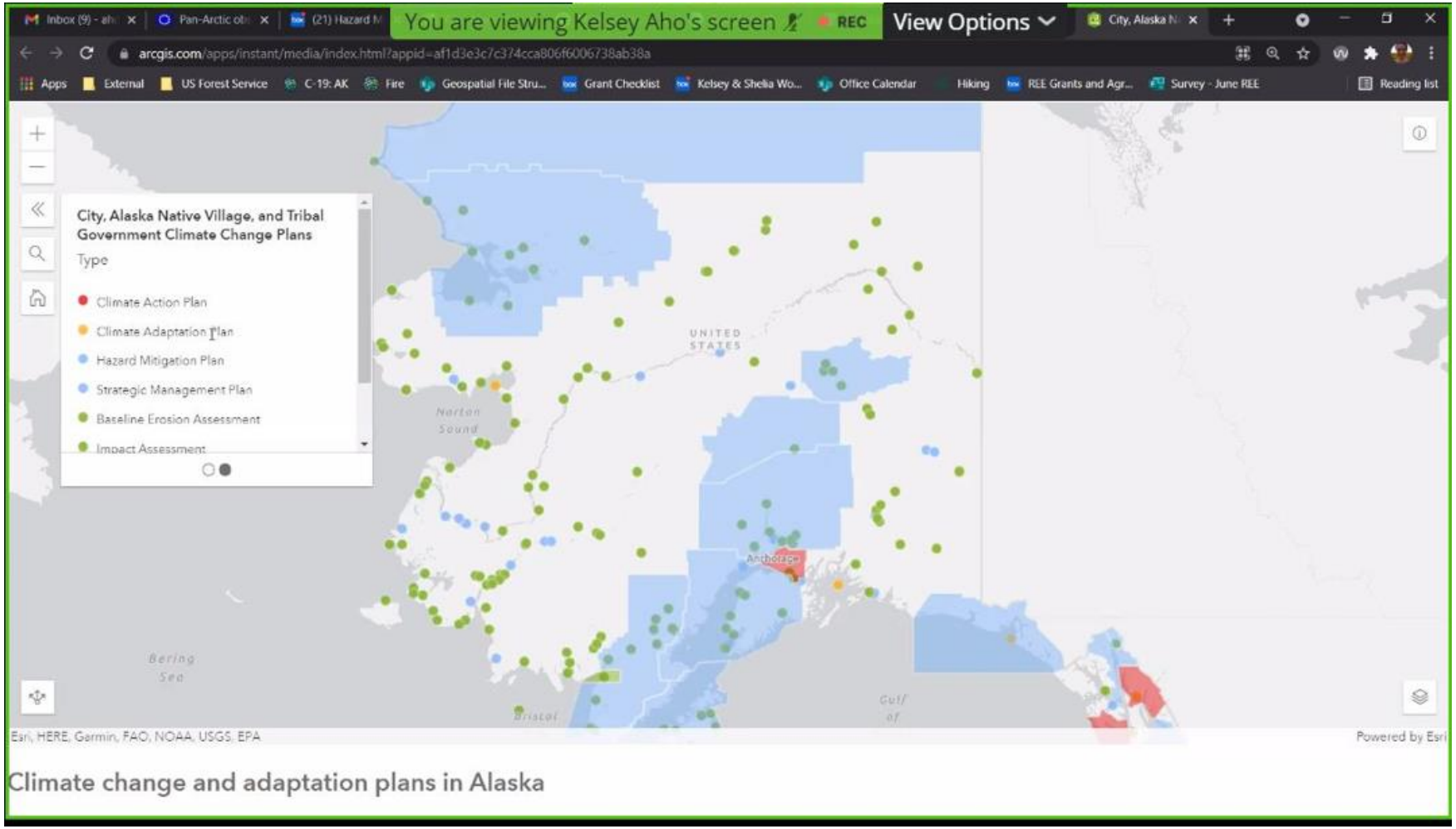
Digital platforms

They seem to help in getting citizen's views and thus giving ideas of social needs

Citizen/community science & phone apps offering tools to improved community level monitoring of all kinds of data & storis

To utilize different data bases from satellite to citizen GIS-data. Collaboration to strenghten resilience eg. Arctic Resilience forum and this webinar

Map based service on climate change and adaptation plans in Alaska (U.S. Forest Service)



Kelsey B. Aho, US Forest Service
(Webinar with Alaska 16th June 2021)

LEO Network

Submit a Post
Members can also make Observations. When you have an event to share, click 'Submit Your Own Observation', and a series of prompts will help you build your post. Similarly, if an unusual environmental event was covered in a local new source, you can also share it on LEO.

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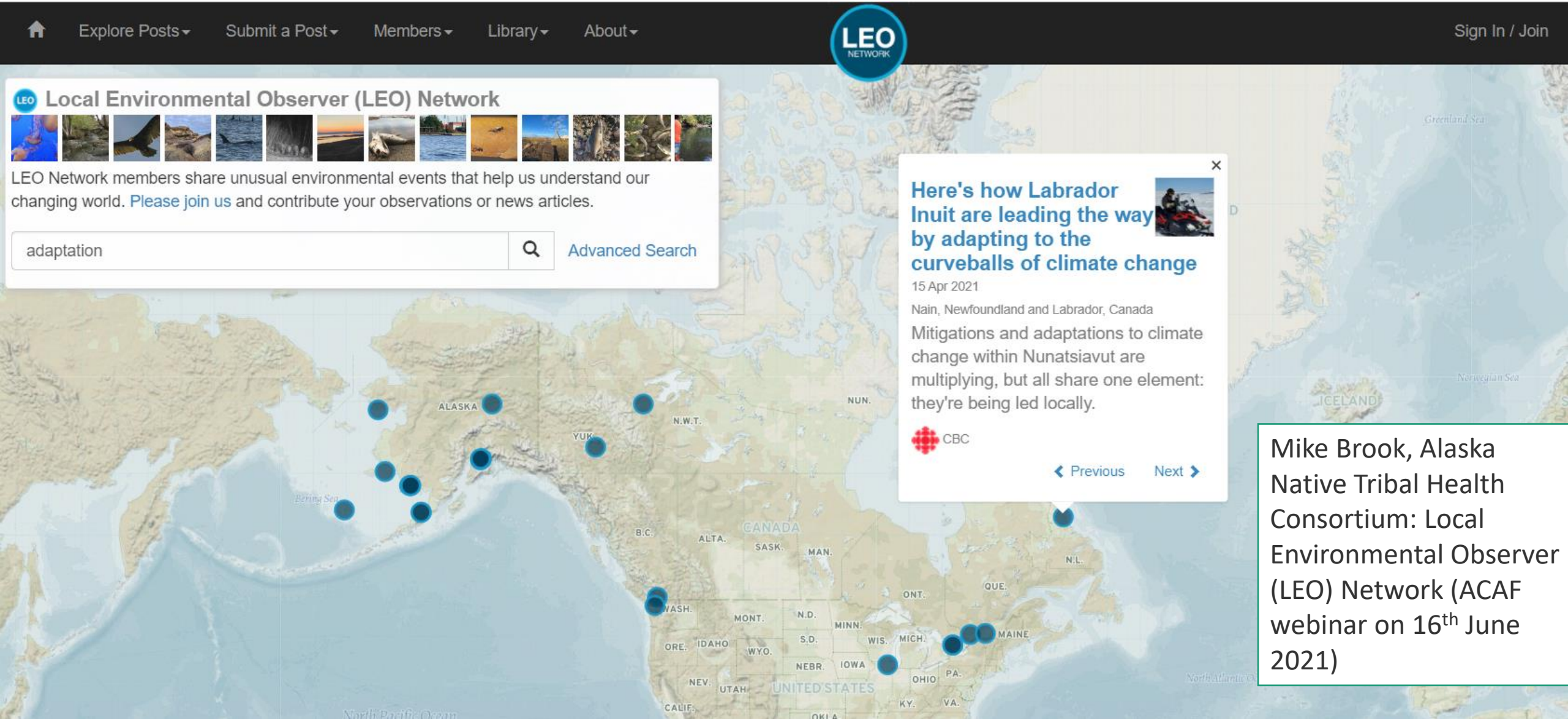

Mike Brook, Alaska Native Tribal Health Consortium: Local Environmental Observer (LEO) Network (ACAF webinar on 16th June 2021)

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Reindeer herding related adaptation practices

The main "adaptation" in reindeer herding to "bad winters" has been the expansion of supplmental feeding in e.g. Finland since 1970's/80's

Supplmental feeding in reindeer management has successfully helped buffer against mortality in Nordic reindeer management, but is expensive and has implications for reindeer behaviour and survival instincts according to herders

Lack of adaptive governance in reindeer management

In the title we have herding, forestry and agriculture. Could these sectors be brought together to discuss - the pressures are rather similar and what is done e.g. in forestry affects herding

”Renoducts” in Sweden

- Due to climate change, e.g. during difficult snow conditions, reindeer cross railway lines and major roads as they search for food on larger areas
  - Risk of being hit and killed
  - Earlier, traffic had to be stopped for moving a large flock of reindeer across
- ”Renoduct” bridges for reindeer in Norrbotten and Västerbotten counties in Northern Sweden as a solution

-> Reindeer can cross roads and railways safely

Sweden to build reindeer bridges over roads and railways

‘Renoducts’ will help animals who have to roam further for food due to global heating

▲ Herding reindeer in Parki hydroelectric reservoir, Jokkmokk, Sweden. Photograph: IBL/REX/Shutterstock

Sweden is to build up to a dozen bridges so reindeer can safely cross railway lines and major roads in the north of the country as global heating forces

https://www.theguardian.com/world/2021/jan/20/sweden-to-build-bridges-for-reindeer-to-safely-cross-roads-and-railways (20.1.2021)

Food security related adaptation practices

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Commercializing production of northern berries and other specialty crops

New crop species for agriculture in warming climate

Gardening and food security

Great projects with comprehensive knowledge being generated about agriculture, food security, growing food locally.

Increase in cod quota as the stock increase due to habitate expansion

Local and ecological produce and consumption network (Co-operative idea)

Emergence of idea about importance of local food production for food security

Exploitation of new resources / fishing opportunities

e.g. Red mullet in North Sea, Sea Bass in UK, Mackerel in Iceland (!!) :-)

GHG free, climate robust and bio-diversity sound food systems

Off-shore aquaculture?

Lack of cultural and emotional alignment with food security strategies.

Food security: Food logistics is overefficient - no room for local food production

Fort Albany First Nation's community garden has improved food security in Arctic Canada

Dr. Meaghan Wilton, University of Toronto: Adapting to a Warming Climate: Subarctic Gardening in Remote Indigenous Communities (Webinar with Canada on 20th May 2021)

Forestry related adaptation practices

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Snow storage of timber

If there is huge storms or Barkbeetle outbrakes and large amount of timber need to be harvest in very short time, it is possible to stor them under snow to increase the quality of the timber until it is possible to transport it to the next step of the processing of the timber.

there are plenty of technological innovations that can boost green economy development in Arctic regions (biofuels, wooden houses and constructions, wood-based textilze etc)

Biofuels - a big and important area of activity and potentially huge markets

Co-Foam

We created biobased alternative to CO2 intensive and polluting EPS and shared this bioeconomy approach with ACAF network

biobased alternative to CO2 intensive and polluting EPS

In Arctic Russia, Alaska and Finland a common biome of the boreal forest but the social systems are very different

Smart forestry is still a big issue in Russia

Governance related best practices

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Lack of adaptation plans and only having reactive adaptation

Reactive adaptation, no adaptation plans

Reactive adaptation instead of planned, proactive adaptation

Guidelines for creating Climate Adaptation Plans for fisheries and aquaculture

Tested methodology for creating climate adaptation plans (CAPs) for fisheries and aquaculture, developed within ClimeFish project.

The EU voluntary standard: Guidline on how to make Climate Adapatation Plans

CWA 17518:2020

Successful suggestion to create a Saami panel on climate change

National adaptation strategy in Russia requires regional and sectoral strategies to be developed in 2021 and 2022

Some Arctic regions in Russia have strategies for adaptation, though still weak

NB! Adaptation governance related best practices were identified in the new report by Kati Berninger, Maria Tiusanen and Oras Tynkkynen (2021)

International standard - Guidelines for creating Climate Adaptation Plans (CAPs)

European Committee for Standardization

CEN Workshop Agreement CWA 17518:2020

Good practice recommendations for making Climate Adaptation Plans for fisheries and aquaculture

Assess risks and opportunities	1	1. Evaluate current status 2. Forecasts 3. Risk assessment
Identify adaptation measures	2	4. Vulnerability assessment 5. Adaptation needs 6. Adaptation measures
Operationalize CAPs	3	7. Implementation plan

Outcomes

Main risks and opportunities

Main vulnerabilities

Adaptation measures and trade-offs

Implementation plan for adaptation measures

Guidelines for co-creating climate adaptation plans for fisheries and aquaculture

Pham et al. Climatic Change 2021

ClimeFish

This project has received funding from the European Union´s Horizon 2020 research and innovation action under grant agreement no. 677039

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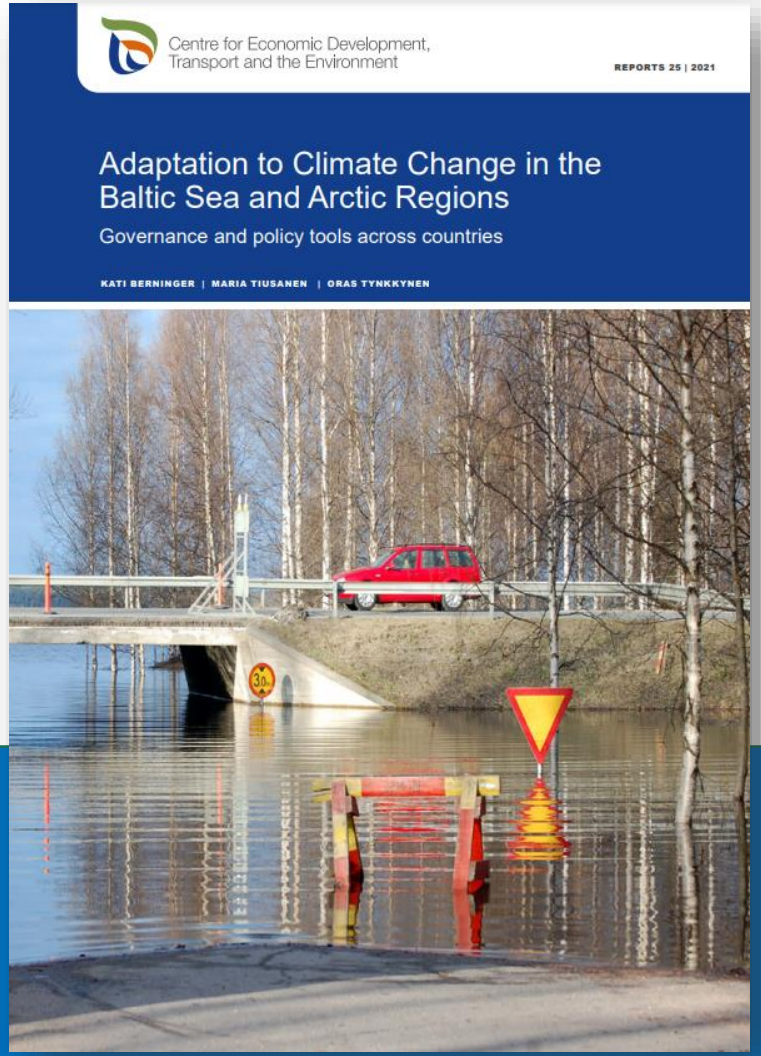
Adaptation to Climate Change in the Baltic Sea and Arctic Regions

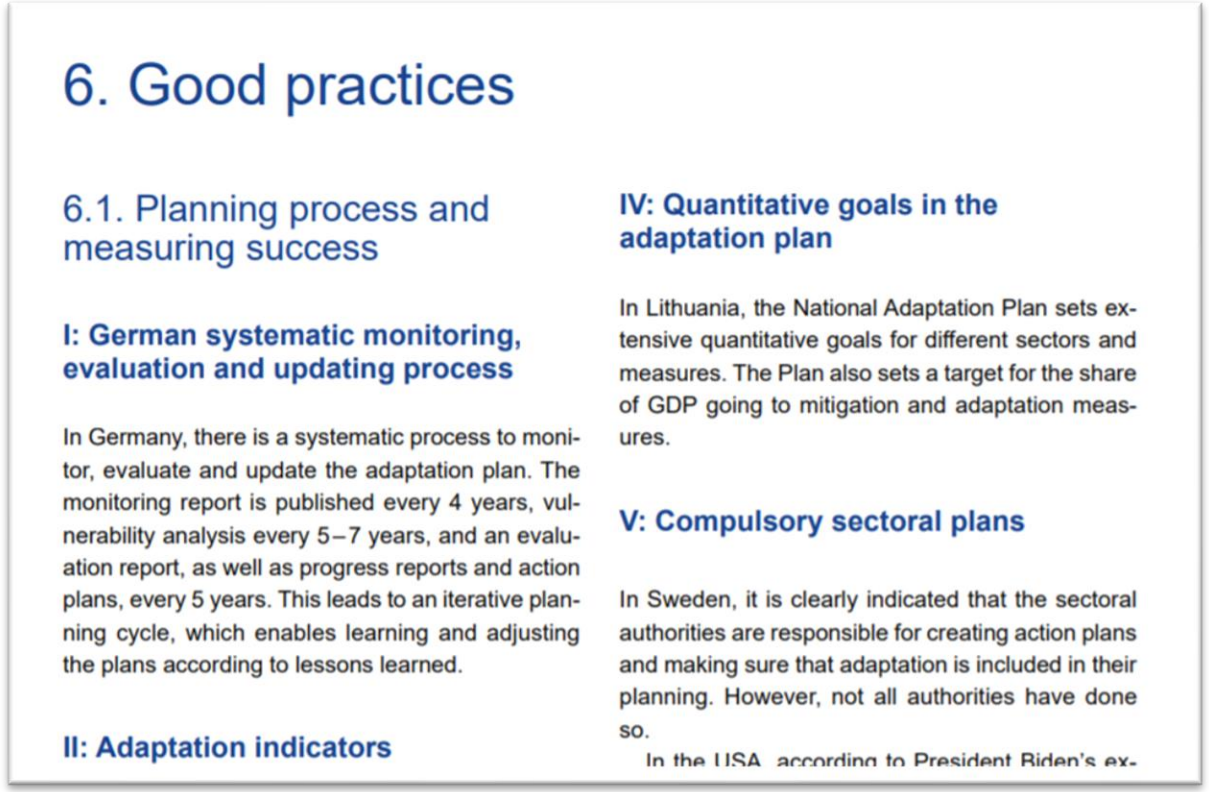
Governance and policy tools across countries

Kati Berninger, Maria Tiusanen & Oras Tynkkynen (2021)



Download the report at https://www.doria.fi/handle/10024/181635

Good practices on climate adaptation governance



6. Good practices

6.1. Planning process and measuring success

I: German systematic monitoring, evaluation and updating process

In Germany, there is a systematic process to monitor, evaluate and update the adaptation plan. The monitoring report is published every 4 years, vulnerability analysis every 5–7 years, and an evaluation report, as well as progress reports and action plans, every 5 years. This leads to an iterative planning cycle, which enables learning and adjusting the plans according to lessons learned.

II: Adaptation indicators

IV: Quantitative goals in the adaptation plan

In Lithuania, the National Adaptation Plan sets extensive quantitative goals for different sectors and measures. The Plan also sets a target for the share of GDP going to mitigation and adaptation measures.

V: Compulsory sectoral plans

In Sweden, it is clearly indicated that the sectoral authorities are responsible for creating action plans and making sure that adaptation is included in their planning. However, not all authorities have done so.

In the USA, according to President Biden's ex-

More information, including Kati Berninger's presentation slides are available at https://www.acaf.fi/2021/08/26/new-report-adaptation-to-climate-change-in-the-baltic-sea-and-arctic-regions/

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Doing things together as a good practice in adaptation

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Approaches that make climate predictions meaningful for communities through knowledge co-production

Citizen science initiatives

Methodology: participatory scenario methods to get local insights about relevant drivers of change and the local-global interlinkages.

Sharing

Opportunities for sharing knowledge, tools, processes that are working well to gather specific kinds of data

Virtual platforms for participatory co-production of knowledge? Would be interested in learning about experiences of others.

Co-production and other ways of involving the practitioners / end-users can lead to good and usable science-based adaptation support solutions

Local and ecological produce and consumption network (Co-operative idea)

Citizen/community science & phone apps offering tools to improved community level monitoring of all kinds of data & storis

Increasing collaboration between researchers and communities helps communities identify adaptation needs and actions proactively e.g. in research projects

Sharing best practices across the Arctic (and beyond) was warmly welcomed

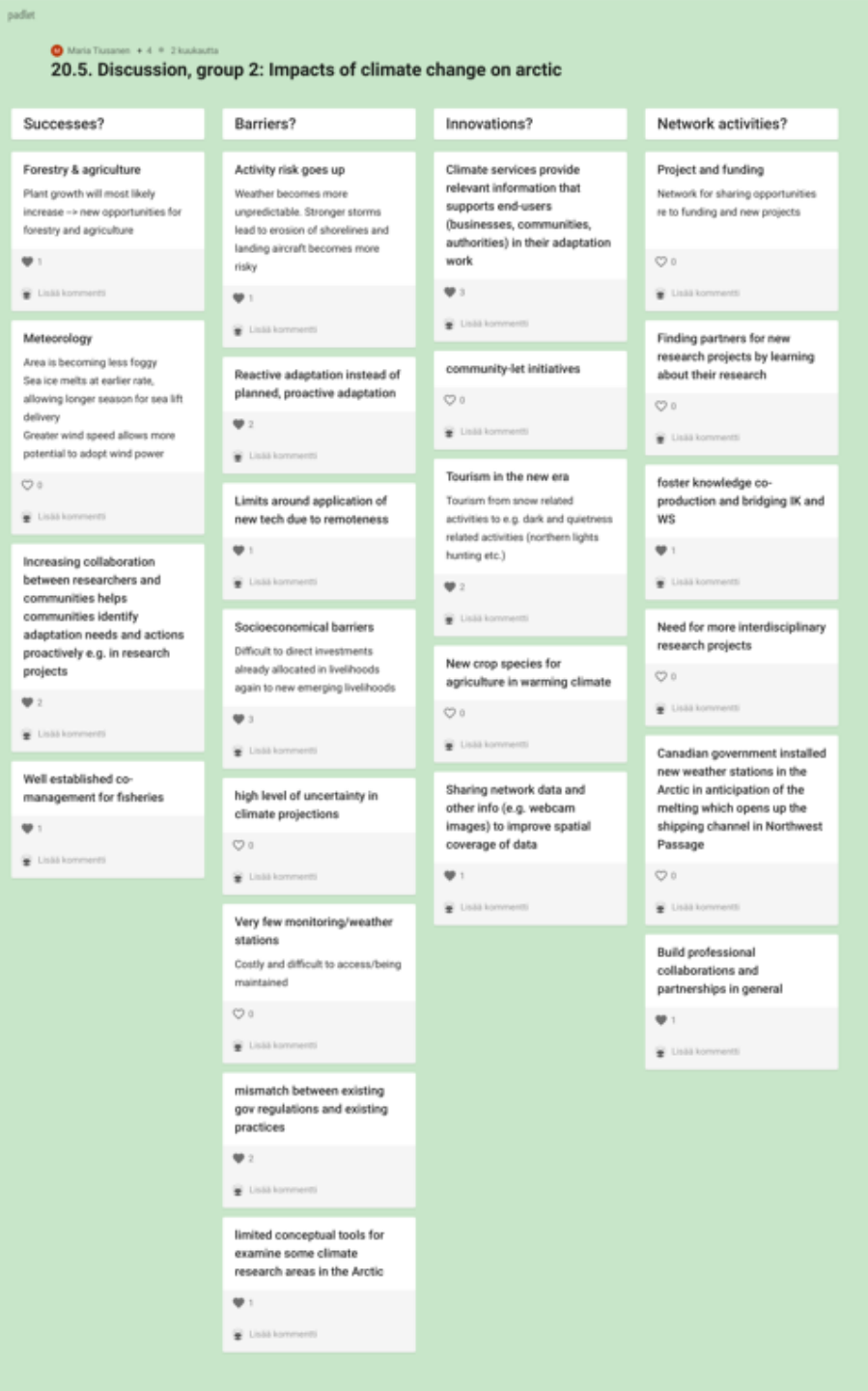
Many of the solutions demonstrated on this webinar would work elsewhere in the world - perhaps there is a way to encourage that. For example, I'd love to apply snowmaking forecasting to ski areas in Alaska.

Sharing best practices and knowledge

ClimeFish results implemented in National adaptation plan of Greece

Virtual platforms for participatory co-production of knowledge? Would be interested in learning about experiences of others.

- More information about all of the bilateral webinars, including most of the presentations: https://www.acaf.fi/networking/international-arctic-adaptation-network/
- See also Twitter @AcaFfinland



Thank you!

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