



Cultural impacts of climate change: indigenous people and climate change

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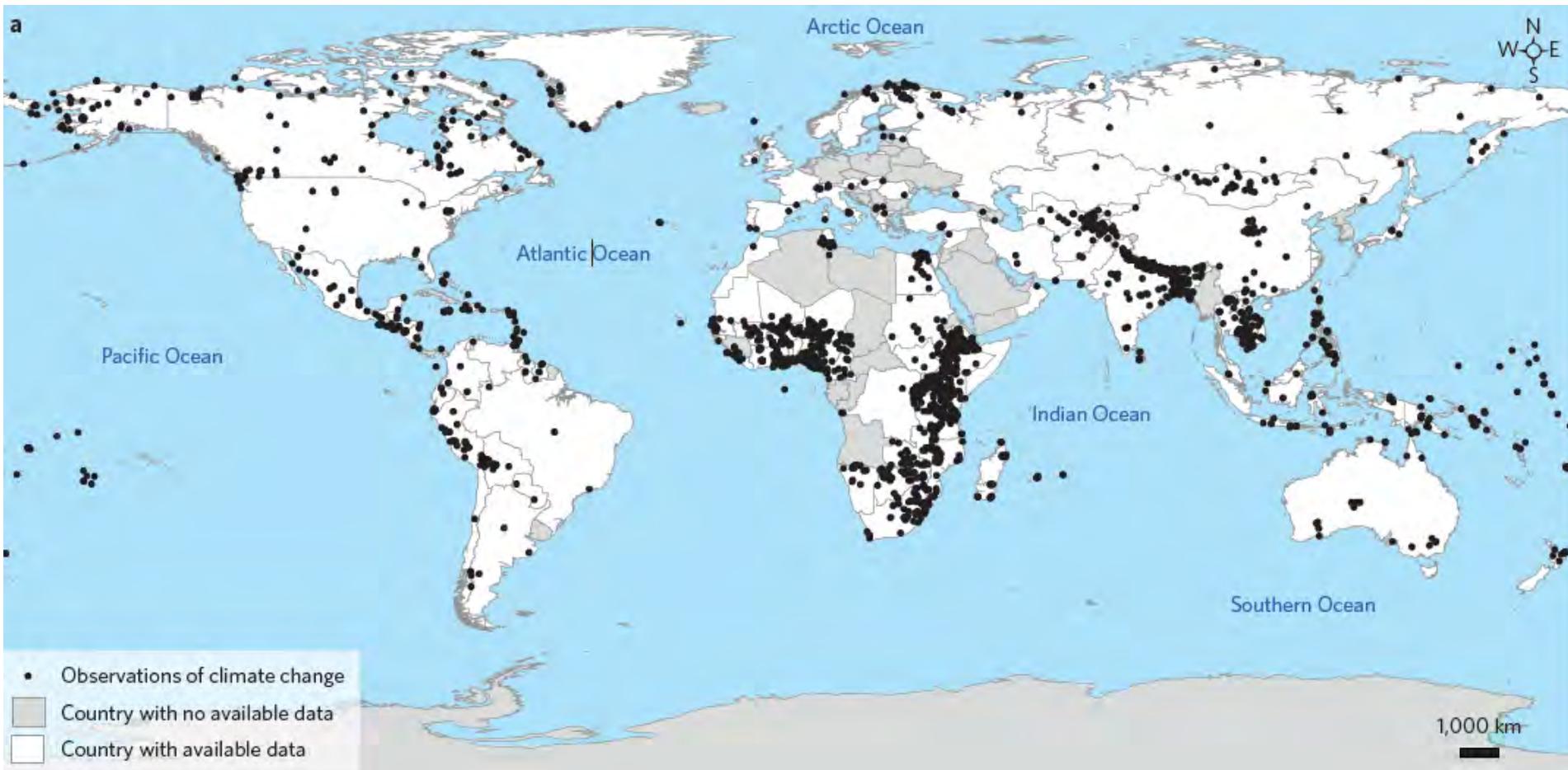
Post doc researcher on
indigenous people



Current situation

- Indigenous people are aware of climate change
- Have observed changes in weather, snow and nature
→ are concerned
- Communities have been relocated in the Arctic because their habitat has become inhabitable (erosion, rise of sea level)
- Uncertainty and fear for the future
- Globalization, pressure for uniform culture and economical pursuit to arctic resources are part of challenges indigenous people face in changing climate

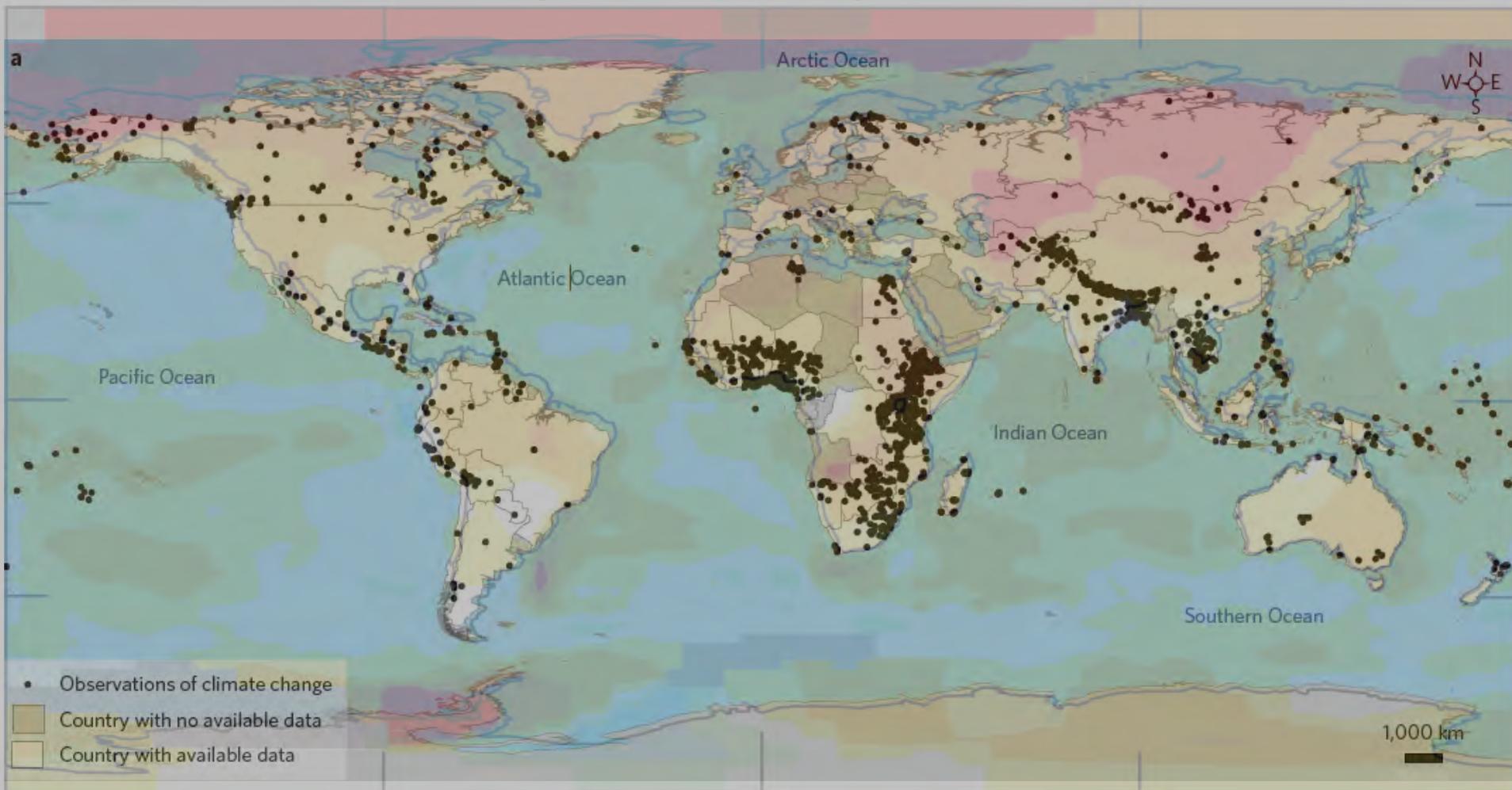
Observations of climate change by localities



Observations of localities recorded by researchers in black dots.

Map: Savo et al 2016 DOI: 10.1038/NCLIMATE2958

IPCC report on global warming vs. local observations



Black dots: Savo et al 2016 DOI: 10.1038/NCLIMATE2958

Base map: Finnish Meteorological Institute

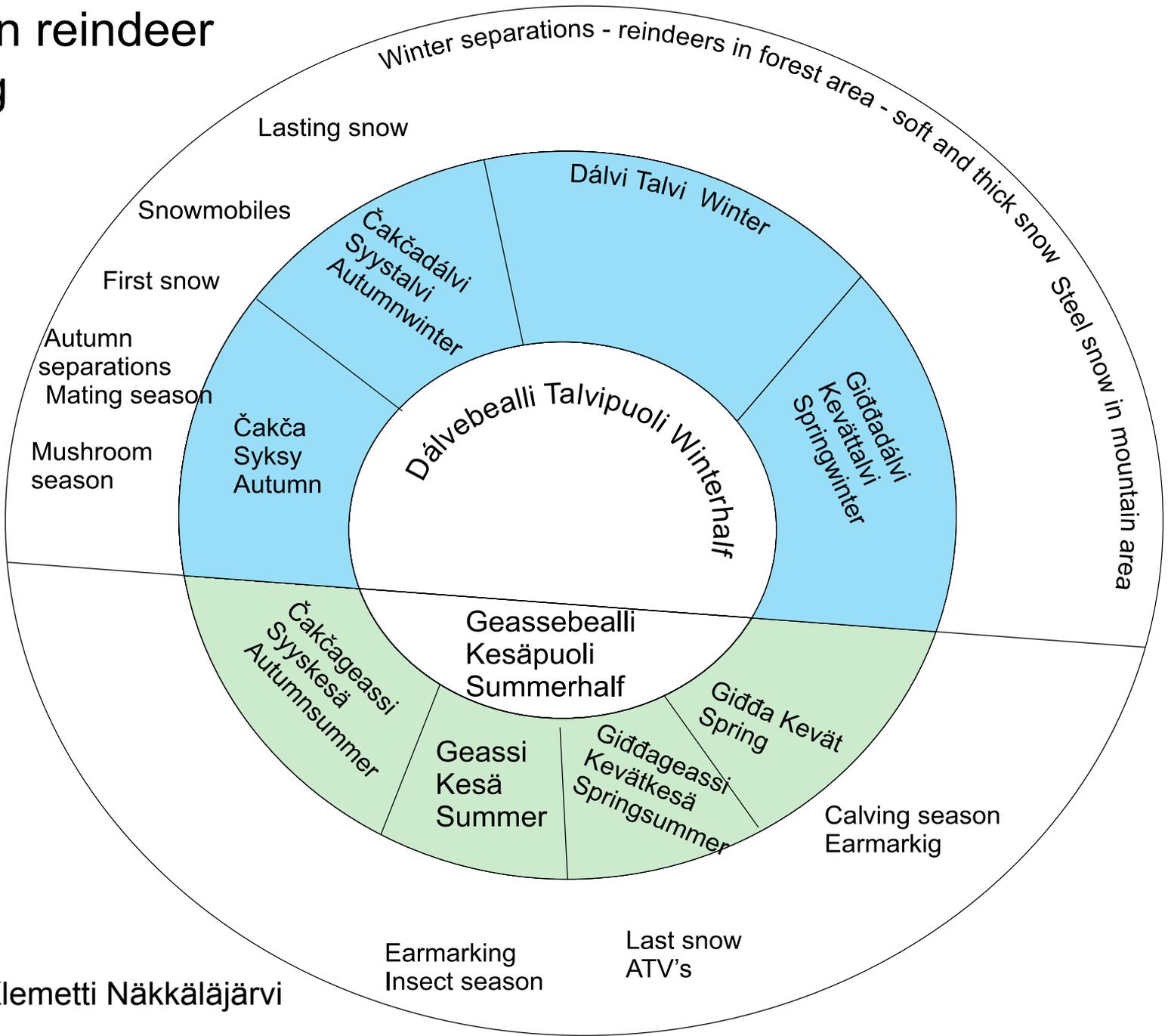
-1 -0.5 -0.2 0.2 0.5 1 1.5 2 2.3(°C)



Local observations are reliable → but qualitative data on effects of climate change is scattered and regionally unbalanced → and without long-term monitoring



A year in reindeer herding



Picture: Klemetti Näkkäljärvi



- Snow is **IMPORTANT** for the Saami
 - Region is covered in snow for 6-7 months
 - Topography influences on snow cover, depth
 - Wind and sun on structure
 - Snow influences transportation, herding and habitat pattern
- Snow is a indicator on climate change
- Around **210 snow** – related terms in North Saami
- Around **60 ice** related terms in North Saami
 - Compare with Inuit language in Greenland (around 20 words for snow and ice according to Eva Jansson)



- Snow cover
 - spoanas (area with little snow, hard and thin snow)
 - bieggagaikkohat (are with little snow, wind blows the snow away)
- Structure
 - luotkkus (loose and soft snow)
 - sievlla (loose and soft snow in spring where you can easily get caught)



- Structure
 - Činus (hard snow, but doesn't bear human)
 - Ruovdecuoŋu (steel crust, bears both human and reindeer)
- Intact snow
 - Áinnahas (intact snow)
 - Oppas (untouched snow and with lots of snow)
 - Vahca (new and light snow)
- When one has a term for a phenomenon, changes can easily be identified, monitored and remembered
- Sapir, 1912: language bears “the stamp of the physical environment in which the speakers are placed” while reflecting “the interest of the people in such environmental features”

Extreme weather events – new normal



1.11.2015
Slippery ATV road -
dangerous to drive due to ice



Reindeer fence covered in snow
between Norway and Finland

28.3.2016 – hundreds of reindeers
on a wrong side of the fence



This is where the reindeers find their food



Around 1 meter of soft snow



"Iron snow" with hard crust

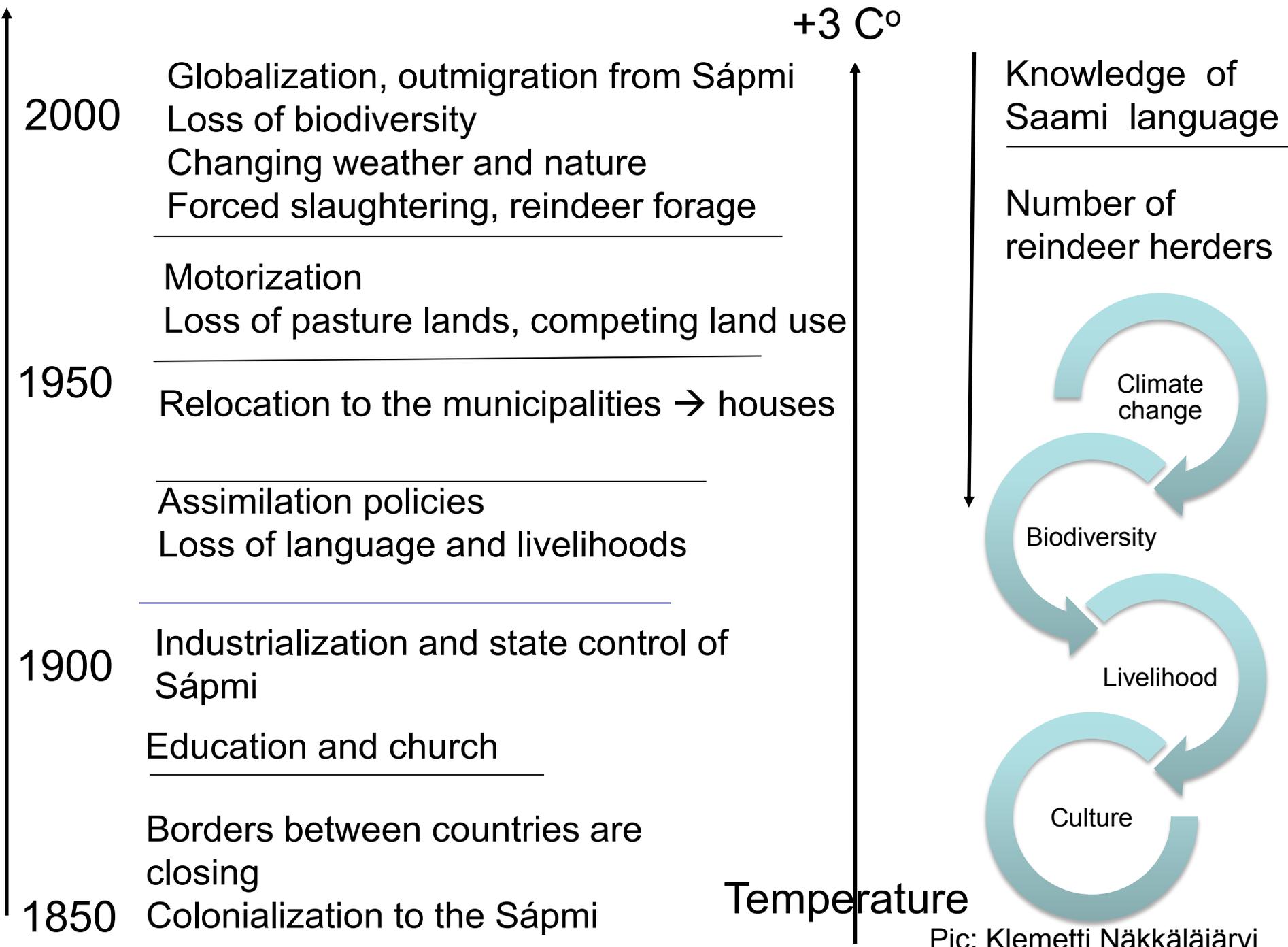


Reports from the herders

- Lasting snow comes generally later
- Snow conditions vary
 - Depth
 - Quality (so called powder snow more common)
 - structure
- Spring comes earlier
- Winter comes later



- Ice conditions vary: heavy snow shatters ice over lakes and rivers
- Uncertainty brings risks: accidents have increased with snowmobiles (changes in snow and ice conditions)
- Expenses: difficult snow and ice conditions increase the pasture work, need to repair fences
 - For example this winter one herder has driven 15 000 km for reindeer herding work
- Changes in biodiversity and tree line
- → powerlessness, less possibilities to influence own future





Cultural aspects of climate change

- Climate change mitigation and adaptation projects are unlikely to succeed without a close understanding of the societies and cultures in which they are to be implemented.
- People are living in changing climate and **the people** must adapt and make decisions to mitigate the effects of climate change
- To protect cultures and biodiversity in changing climate one has to understand them
→ physical science has to meet the cultures



- Both biological and cultural diversity depend on the same environmental factors such as temperature and rainfall
- At global level number of species and languages declined by about 30% since 1970, which suggests that biodiversity and linguistic diversity are being lost at similar rates.
- Global data shows that when language goes extinct, very often and quickly also the culture becomes extinct.
- Krauss (1996) : global linguistic diversity constitutes an intellectual web of life, or “logosphere,” that envelops the planet and is as essential to human survival as the biosphere
- “any reduction of language diversity diminishes the adaptational strength of our species because it lowers the pool of knowledge from which we can draw.” Bernard (1992)



Adaptation and combination of traditions and science is the key!



- A diverse world is a healthy and culturally and naturally richer world.
- Humans are traditionally communal.
- - With less diversity, we lose both the understanding of our roots, heritage, aspects of humanity and biocultural understanding

Thank you for interest!

Olu giitu! Kiitos!

Picture: ESS ro

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