

WP 9 – Adapting to Environmental Change



Pic: Nenets reindeer herding in Yamal
EI Turi, ICR/IPY EALÁT, 2007



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How can societies handle rapid and profound change? (Resilience)

$$V = I - AC$$

Vulnerability = Impacts - Adaptive Capacity



Picture by herder Sven Skaltje



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ACIA, 2004 (Arctic Council AMAP)

Oskal et al, 2009 (IPY EALÁT)

Magga et al, 2011 (IPY EALÁT)

Mathiesen et al, 2013 (Arctic Council ARR)

Benjaminsen et al, 2016 (RCN Dávvgas)

Mathiesen et al, forthc. 2018 (RCN Rievdan)

About Yamal and Science

- Scientific expeditions to Yamal and White Island in 1928-1929
- Included indigenous knowledge, as the first place in the Arctic to do so (Pika, A. (1929), in Evladov V.P. (1992))

Helped preserve reindeer herding traditions



Aim of WP 9: Adapting to environmental change

The overall aim of this WP is:

To develop a deeper mutual understanding of how to work together to build integrated local observation systems

Enabling local communities to respond to the challenges of present and predicted environmental change

Produce an **inspirational guide book** for **research station managers and local/ indigenous communities**



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Deliverable of WP 9

Guide Book (Deliverable) Contents:

General section

- key steps in the process for developing a dialogue between local communities, researchers and station managers,
- identifying perceptions of what is driving the need for adaptation, what information is needed to adapt, and
- how to develop an integrated local monitoring strategy
- practical/ ethical guidelines on how to work with indigenous peoples

Thematic case studies

- contrasting communities
- presented in a (partly) standardized format



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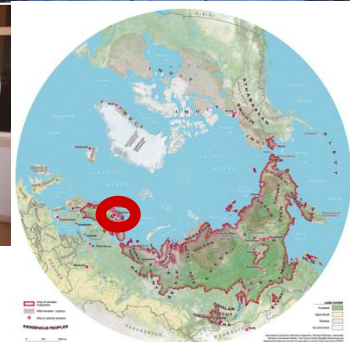




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Ассоциация «Оленеводы Мира»
Association of World Reindeer Herders

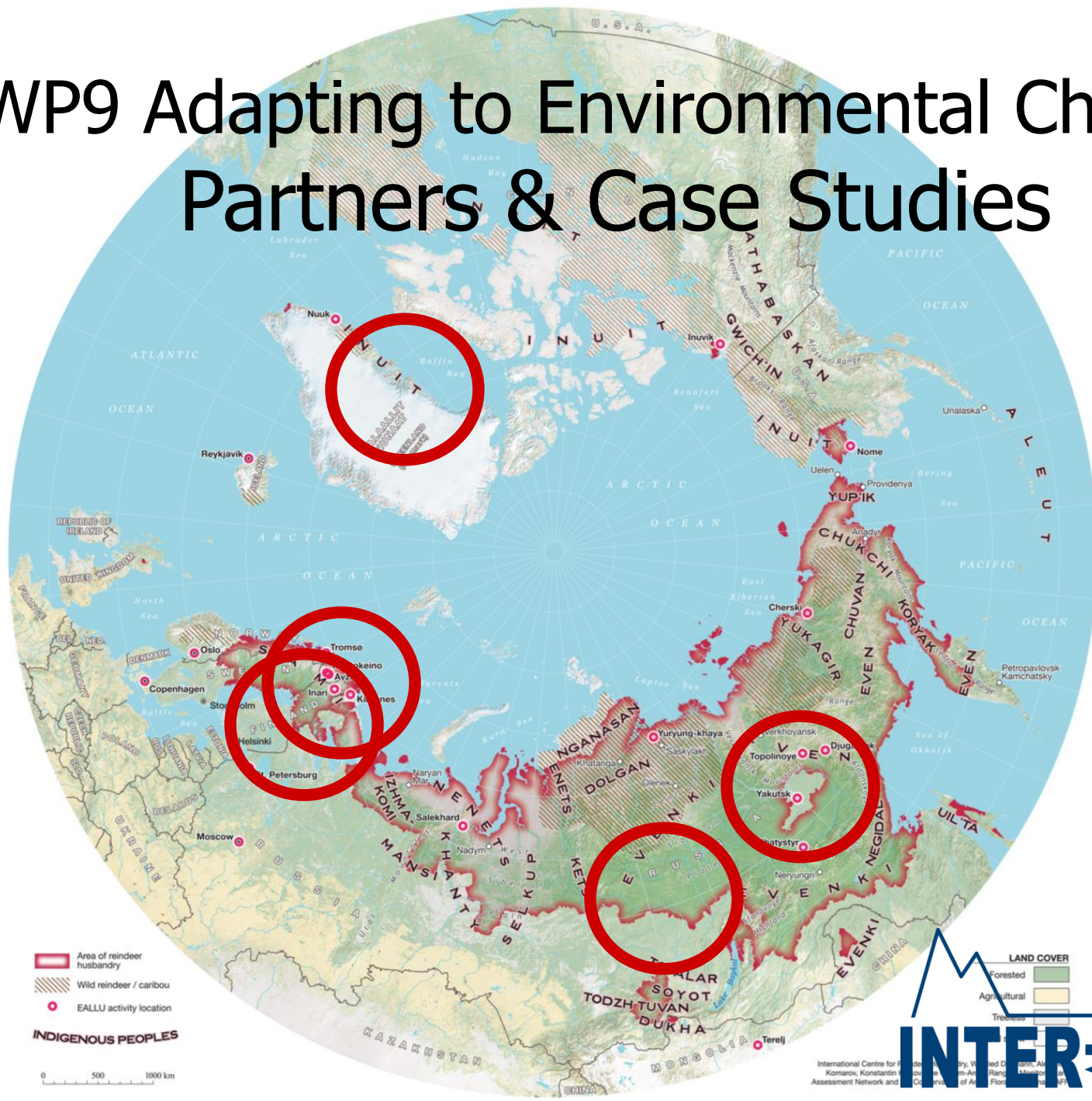


Secretariat of Assn. of World
Reindeer Herders

UArctic EALÁT Institute,
Member of UArctic since 2006



WP9 Adapting to Environmental Change Partners & Case Studies





Tasks of WP 9

WP 9: We aim to

- identify best practices for local communities, station managers and researchers to work together to
- identify drivers of environmental/ecosystem change that require adaptation and to
- develop a standardised process based on contrasting case studies that can be generally applied to local communities in the vicinity of research stations

Task 9.1 Leading the design of standardized procedures to guide the case studies, to supervise the consultations and to compile case studies into the guide book. (Leading partner: ICR)



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Arctic Station, West Greenland

The case study in Greenland is connected to task 9.2

Adapting to climate change and ensuring sustainable use of living resources. Location, Arctic Station, West Greenland. This case study would focus on marine and terrestrial resources. (Leading Partner: AU)



Kevo Station, Finland

The case study in Finland is connected to task 9.3

Adapting reindeer husbandry to vegetation change and snow cover changes. Location, Kevo Station. (Leading partner: ICR).



Kaibosovo Research Station, Siberia, Russia

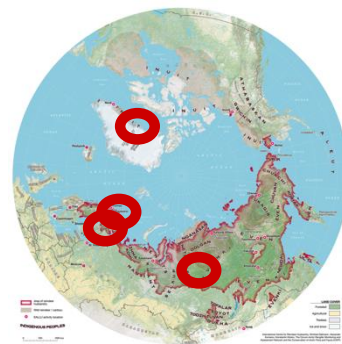
The case study in Siberia is connected to task 9.4

Forestry, hunting and fishing tourism, agriculture and potential new land uses in a warmer climate. Kaibosovo Station, Siberia. (Leading partner: TSU)



Workplan and progress

- Drafting structure of guide book
 - for common template for the case studies
- *Gathering practical/ ethical guidelines for research*
- *Interactions with Arctic Council Permanent Participants*
- Start Case studies



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Photo: Ole-Ante Turi 2018

- **Ex: Case 9.3 - Adapting reindeer husbandry to vegetation change and snow cover changes**

- ***Adaptation needs:***

- Science observations and predictions
- Indigenous observations and understanding
- Consultations between scientists and herders
- → from research objects to co-production of knowledge

- ***Identifying chains of causality/ needs:***

- Preliminary ex: climate change; rain-on-snow; loss of animals; herd structuring & management; geographical room for adaptation; land use planning

- ***Identifying actors***

- Identifying roles and developing relevant contacts among research stations, indigenous peoples and their own institutions, communities, and organisations, stakeholders, local authorities, relevant NGOs, other organisations

- ***Planning the adaptation process***

- Data availability, needs and gaps (eg. down- scaled models and predictions), refining methodologies for acquiring, analyzing and utilizing data.
- Adaptation *leadership*

- ***Implementing adaptation methodologies***

- How knowledge and data feed into decision-making processes

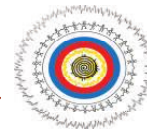




Achievements so far

- *Internal process*
 - *There have been meeting with the different partners on Webex*
 - *Agreed on writing the structure of guidelines first, then test it on case studies*
- *Collection of best practise guidelines on ethics and partnerships initiated, ongoing*
- *Academic Seminar in Oulo, Finland:*
 - *Breakout session at the University of the Arctic Council Meeting*
 - *Consultation and process with the different Arctic indigenous peoples/ PPs*
- *World Reindeer Herders' Congress in Sweden 2017*
- *Etc.*





OTTAWA TRADITIONAL KNOWLEDGE PRINCIPLES

WORKING DEFINITION – TRADITIONAL KNOWLEDGE: ¹

Traditional Knowledge is a systematic way of thinking and knowing that is elaborated and applied to phenomena across biological, physical, cultural and linguistic systems. Traditional Knowledge is owned by the holders of that knowledge, often collectively, and is uniquely expressed and transmitted through indigenous languages. It is a body of knowledge generated through cultural practices, lived experiences including extensive and multigenerational observations, lessons and skills. It has been developed and verified over millennia and is still developing in a living process, including knowledge acquired today and in the future, and it is passed on from generation to generation.

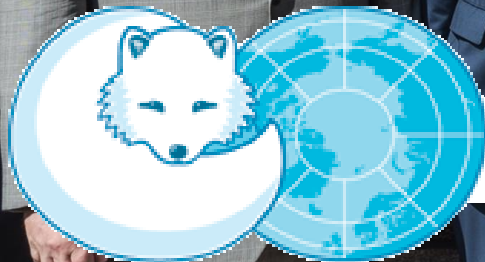
PREAMBLE

These fundamental principles on Traditional Knowledge will strengthen the Arctic Council and advance its objectives by supporting the active participation of Permanent Participants. Traditional Knowledge has been formally recognized by the Arctic Council as important to understanding the Arctic in numerous Ministerial Declarations, including the 1996 Ottawa Declaration on the establishment of the Arctic Council. The "...role of Arctic indigenous peoples and their Traditional Knowledge in the conservation and sustainable use of Arctic biological resources" was also emphasized in the Tromsø Declaration (2009). Furthermore, in 2013 the Kiruna Declaration called for the Arctic Council to "**recognize** that the use of traditional and local knowledge is essential to a sustainable future in the Arctic, and **decide** to develop recommendations to integrate traditional and local knowledge in the work of Arctic Council." Permanent Participants represent Traditional Knowledge holders and are integral to the inclusion and use of Traditional Knowledge in the work of the Arctic Council. These fundamental principles represent the foundation for the long term vision and framework for incorporating Traditional Knowledge in Arctic Council activities.

The inclusion, promotion and use of Traditional Knowledge in the work of the Arctic Council is a collective expression of Arctic Council States in supporting the domestic and international rights, roles, and place of indigenous peoples in the circumpolar Arctic; and will address a collective need to produce information that are of use to Arctic indigenous peoples, decision makers and scientists of all cultures from a community level to international governments.

Agreement on Enhancing International Arctic Scientific Cooperation

Article 9: Traditional and Local Knowledge



ARCTIC COUNCIL

Achievements so far

University of the Arctic Council Meeting, Finland Side event with Arctic Council Permanent Participants (PPs, indigenous organisations of the Arctic Council) September 5, 2018, Oulu

Science-Policy seminar:

Involvement of indigenous peoples in research and governance, including a special focus on the *Arctic Science Collaboration Agreement Article 9: Traditional and Local Knowledge*

Participation:

Inuit Circumpolar Conference, Saami Council, RAIPON, Arctic Athabaskan Council, Gwich'in Council International, Aleut International Association
Arctic Council Indigenous Peoples' Secretariat
Association of World Reindeer Herders
UArctic EALÁT Institute at ICR (coordinator)
UArctic Members, invited experts etc.



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Achievements so far

Jåhkåmåhkke Declaration, on the occasion of the 6th World Reindeer Herders Congress, Sweden, August 16-20, 2017:

*“...**Acknowledge** positive contributions of scientists and national research and educational institutions to world reindeer herding, while at the same time **underline** the need for sustainable science, that is building relevant knowledge and capacity in local societies, as opposed to research driven merely by institutional economic agendas, individual career goals, or research shopping, and **welcome** a Code of Ethics for research in world reindeer herding communities.” (own highlight)*



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Scientists
ученые

Reindeer herders
оленьеводы





Achievements so far

New article in Nature Climate Change (due in October)

“...Indigenous reindeer herding is threatened by multiple drivers of environmental and social change across the circumpolar North, which affect the sustainability of traditional family-based nomadic use of pastures. These impacts on indigenous peoples are exacerbated by their lack of voice in the development of governance strategies, management and adaptation responses.”

Eira, Inger Marie Gaup, Anders Oskal, Inger Hanssen-Bauer and Svein D Mathiesen (2018): *Snow cover and the loss of traditional indigenous knowledge*. Nature Climate Change. Accepted for publication.



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Pic: Anne Katja Gaup,
Kautokeino, 2018





Achievements so far

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Pic: Anne Katja Gaup,
Kautokeino, 2018





Deviations from workplan

Our project coordinator MSc Ole Anders Turi is leaving our team, now being replaced.

The decision was made to postpone case study for a period, so we have a similar template to conduct all the case studies.



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Way ahead

- *Recruiting personnel at ICR*
- *Special youth and science session during the Arctic Biodiversity Congress and Arctic Environmental Ministers Meeting, Rovaniemi, October 8-12, 2018.*
- *Side event during the 2nd Arctic Science Ministerial Meeting in Berlin, October 24, 2018 (tbc)*
- *Case study gathering, Norway, January 2019 (tbc)*
- *North Eastern Federal University, UNESCO Intl Department (on Adaptation of Society and Humans in the Arctic Regions in the Context of Climate Change and Globalization): Next gathering?*



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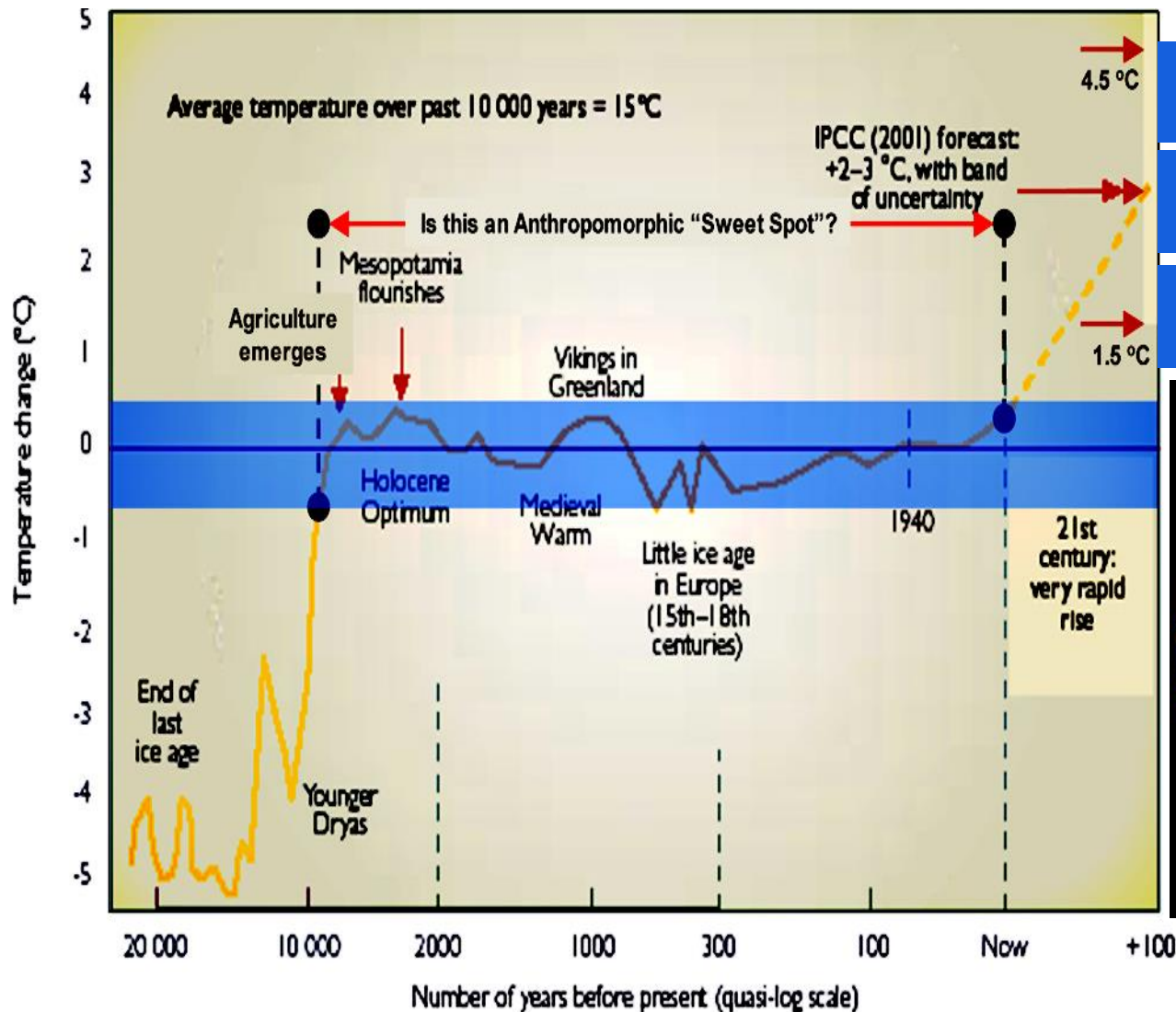


Expected impacts

- *Guide book for cooperation between communities and scientific communities.*
 - *General introduction, including local process management*
 - *Practical and ethical guidelines on how to work with indigenous peoples in the Arctic (in consultation with PPs)*
 - *Case studies, best case examples*
- Towards integrated local observation systems
- Towards new partnerships in science
- Towards increased local society resilience, by better understanding change and how to adapt
- *Foundation for courses*
 - *UArctic, UArctic EALÁT Institute at ICR*



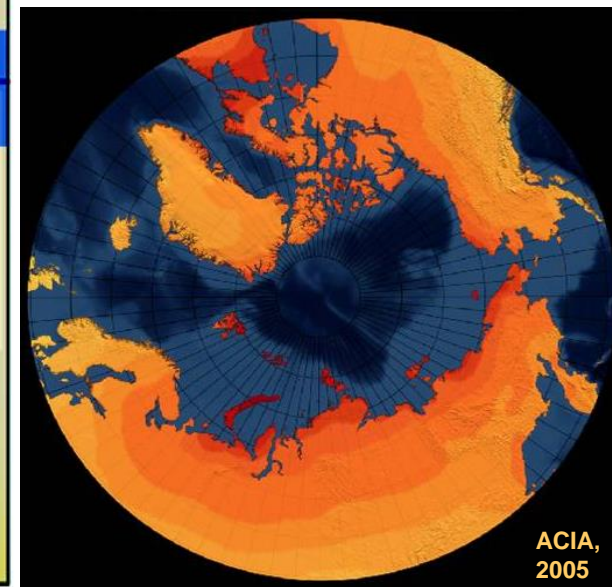
Climate change: Those who are most dependent on nature...



750 ppm ~ 4.3

550 ppm ~ 3

450 ppm ~ 2

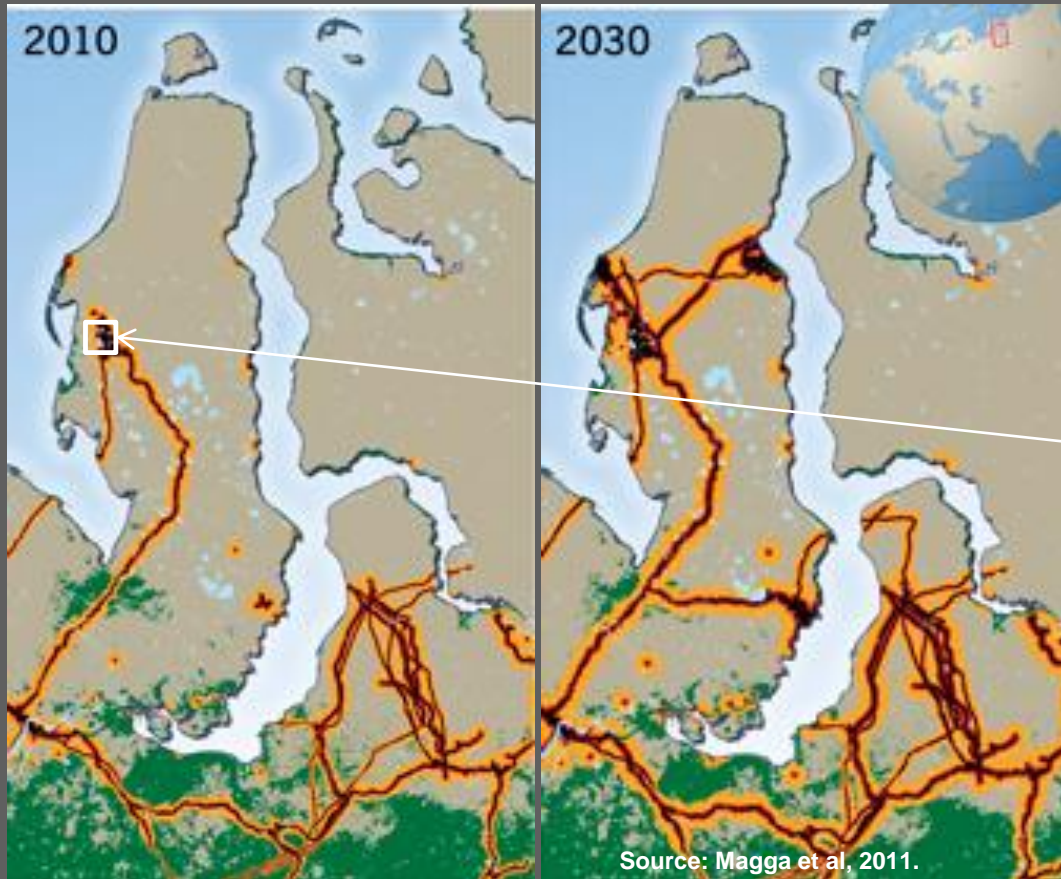
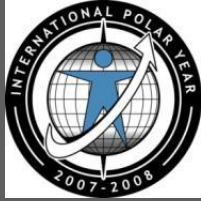


Now: The Arctic is quickly becoming an integrated part of the global economy

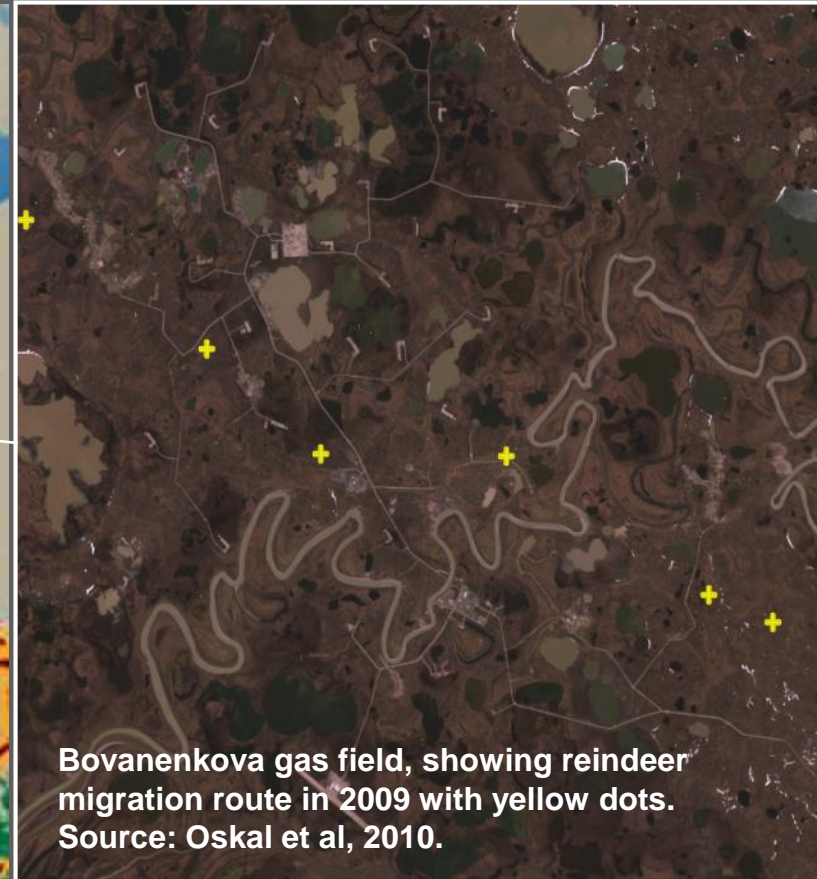


Pic: Nenets Reindeer Herders in Bovanenkova, Yamalo-Nenets AO
S.D Mathiesen, ICR/ IPY EALÁT

Ex: Understanding Land Use Change in Yamalo-Nenets AO, Russia



Source: Magga et al, 2011.



Bovanenkova gas field, showing reindeer migration route in 2009 with yellow dots.
Source: Oskal et al, 2010.



Pics: A.Degteva/ EALÁT, 2009 & E.I.Turi/ EALÁT, 2007



The most promising way forward

Strengthening Arctic indigenous societies' resilience to global change by focusing on

- Sustainable science
- Capacity building
- Interaction with and engagement of 'mainstream' science actors
- Transboundary institutions



EU H2020 Interact II WP9 Adapting to Environmental Change
International Centre for Reindeer Husbandry (ICR)



**An opportunity should
be an opportunity for all**

Pic: El Turi, ICR/EALÁT

A group of people, including children and adults, are riding reindeer in a snowy landscape. The reindeer are standing in a line, and the riders are holding long wooden poles. The background shows a clear blue sky and some evergreen trees. The overall scene is bright and cheerful.

Ollu giitu!

Thank you very much!

reindeerportal.org
facebook.com/icr.wrh

Photo: @Albert Kolesov