

REXSAC

ARCTIC RESOURCES & COMMUNITIES

**Nordforsk NCoE Arctic Futures
Strategic Advisory Board meeting
Umeå, 13 June, 2017**

www.rexsac.org

Facebook: REXSAC - Resource Extraction and Sustainable Arctic Communities

Twitter: @RexsacArctic

A network of 15 partner institutions

CORE PARTNERS



PARTNERS



Point of departure: global processes of change

Climate change



Ilulissat, Greenland

Point of departure: global processes of change

Demand for resources



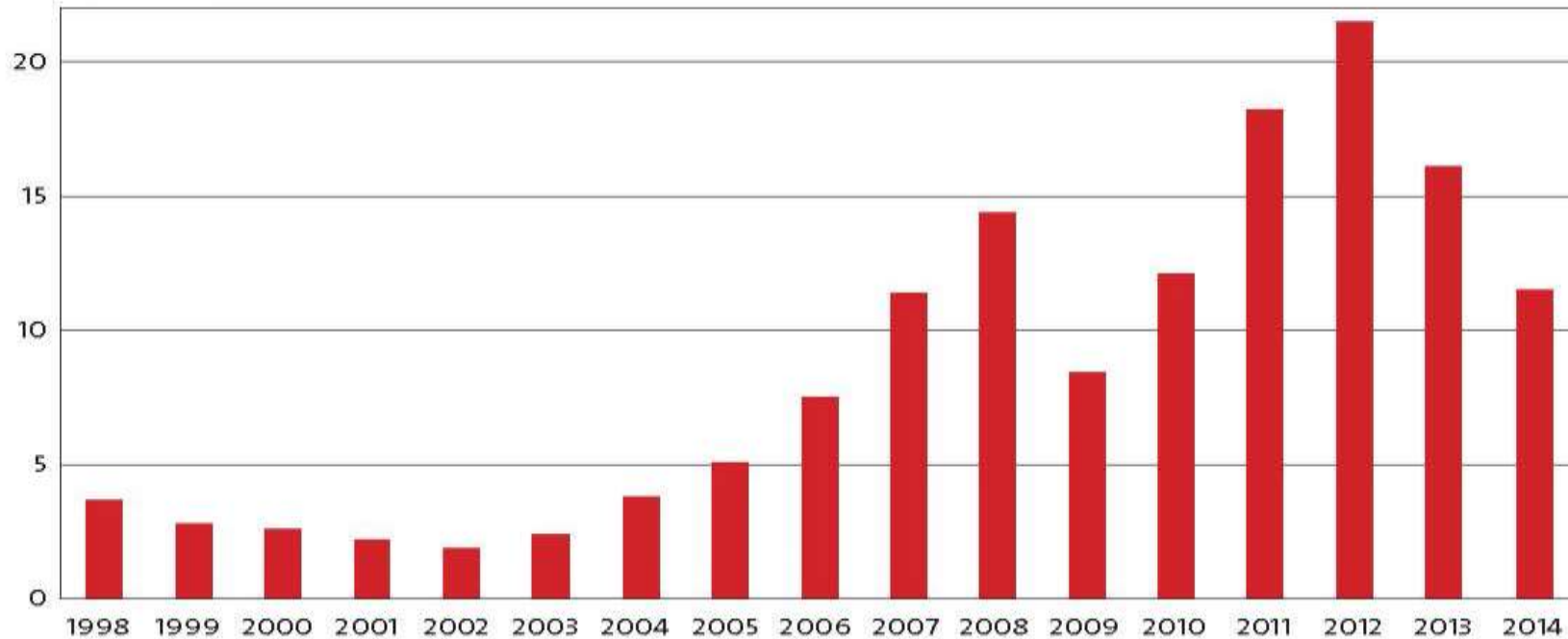
Kiruna, Sweden

Point of departure: global processes of change

The mining boom 2003-2013

Diagram 1. Prospekteringskostnader i världen 1998–2014 (löpande priser). Inkluderar inte prospektering efter järnmalm och uran.
Global exploration costs, 1998–2014 (current prices). Exploration for iron ore and uranium not included.

Miljarder USD



Increase in prospecting globally 1998-2014. Source: SGU

Staff and activities

- Network of 60+ researchers in Sweden, Denmark, Norway, Iceland and Finland, Canada and Russia
- Multidisciplinary
- Collaboration with local communities
- REXSAC Funds:
 - 6 core PhD students + 2 or more additional
 - 1 post-doc
 - 11 senior researchers
 - Researcher schools
 - Mobility
 - Outreach
 - Conferences, workshops etc.

Management

- Executive committee
 - Director, PI, scientific coordination Sverker Sörlin, KTH
 - Co-director, operational scientific leadership Gunhild (Ninis) Rosqvist, SU
 - XO + PhD training coordination, Dag Avango, KTH
 - Outreach coordination, Annika E. Nilsson, SEI
- Coordination board
 - Representative from each consortium member
 - Research task leaders
 - Chaired by program director (Sörlin)

Timeline



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Pyramiden mine entrance, Svalbard. Photo A. Nilsson

**Resource Extraction and Sustainable
Arctic Communities REXSAC—A Nordic
Centre of Excellence**



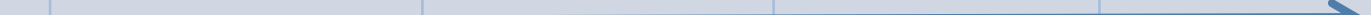

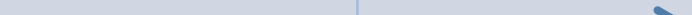
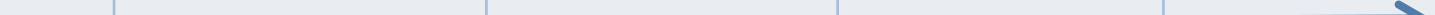

REXSAC – Resource Extraction and Sustainable Arctic Communities

- Objectives: study extractive industries in the Arctic as **cultural, social, economic, and ecological phenomena**
- Analysis of why resource extraction commences,
- What consequences it has for communities in the Arctic and beyond
- What opportunities exist for transitioning toward post-extractive futures



Long term outcome: a set of best practices for sustainable development in Arctic mining regions

Timeline

Activity	2016	2017	2018	2019	2020
Research in RTs	Start June 				
PhD students	Start autumn 				
Post-doc	Start autumn 				
Program worksh.		1	1		1
Coordination board worksh.	1	2	2	2	1
Mobility					
PhD courses					
Outreach, dissemination	Start May 				
Workshops (decision maker, scenario)					

Resource Extraction & Sustainable Arctic Communities

Extractive industries as cultural, social, economic, and ecological phenomena



Pajala, Sweden

Why resource extraction commences



Gällö/Kallak, Sweden

Consequences for communities in the Arctic and beyond



Pyramiden, Svalbard

Opportunities for transitioning toward post-extractive futures

Adding (Nordic) value – an ongoing learning process

- **Synergies** – through collaboration
- **Expectations** – inspiration to renewal
- **Scale** – resources allowing us to be bold and think big



PhD courses

Enhanced funding opportunities

Globalization/de-exceptionalization

Networking with networks

Networking with networks – MinErAl



ABOUT ▾ PROJECTS ACTIVITIES ▾ KNOWLEDGE SHARING FOR MEMBERS



The Ballande and Gemini mine, New-Caledonia
Photo credit : Christine Demmer



EVENTS & NEWS

June 10 2017

FIRST ANNUAL MEETING FOR THE MINERAL NETWORK IN UMEA

The Network held its first annual meeting in parallel to the ICASS annual congress that took place in Umea from June 8th to 12th. The network also held a session on the teams projects.

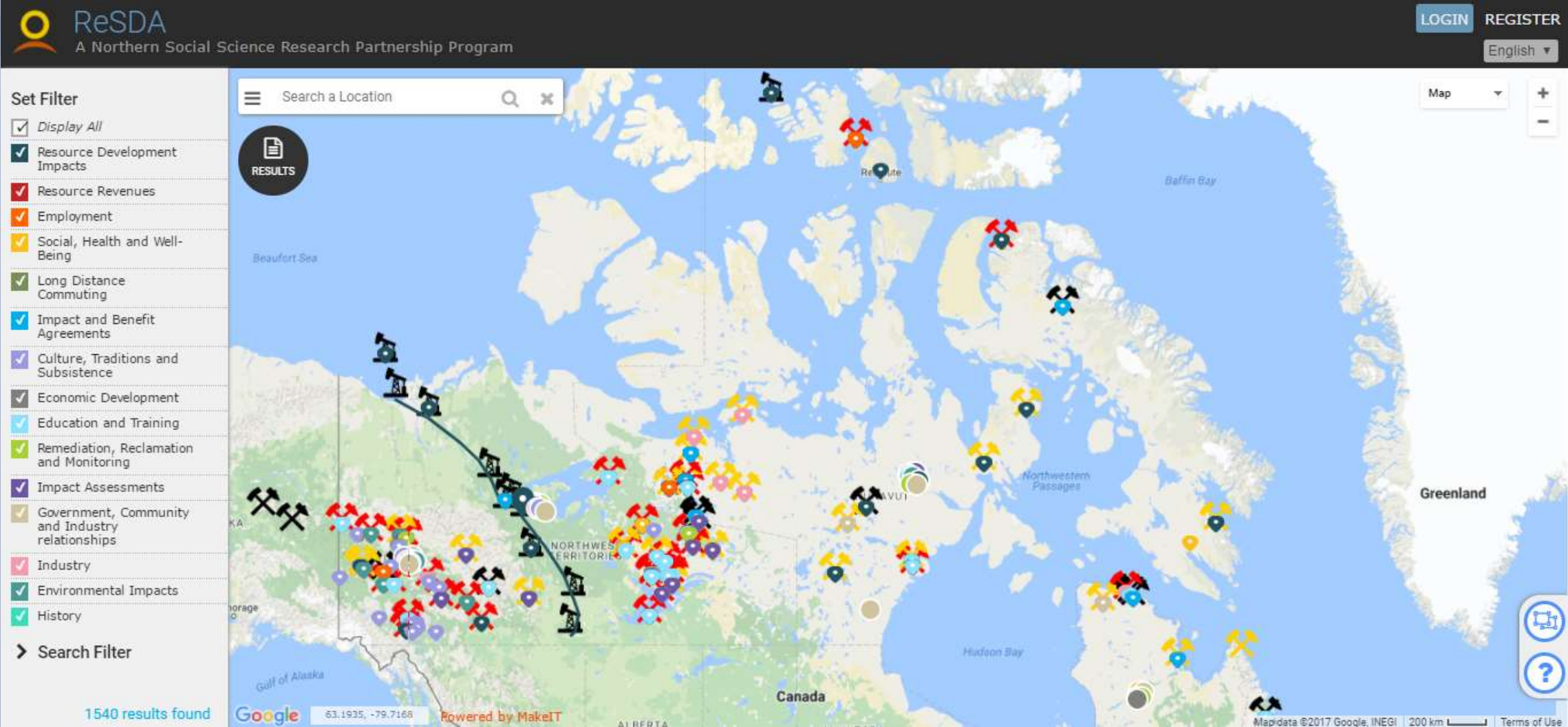
May 01 2017

May 06 2017

LAUNCH OF THE DATABASE "NORTHERN VOICES IN ENVIRONMENTAL IMPACT ASSESSMENT"

Created by Christopher Fletcher, professor at Université Laval, this database identifies the different concerns voiced by citizens during the public...

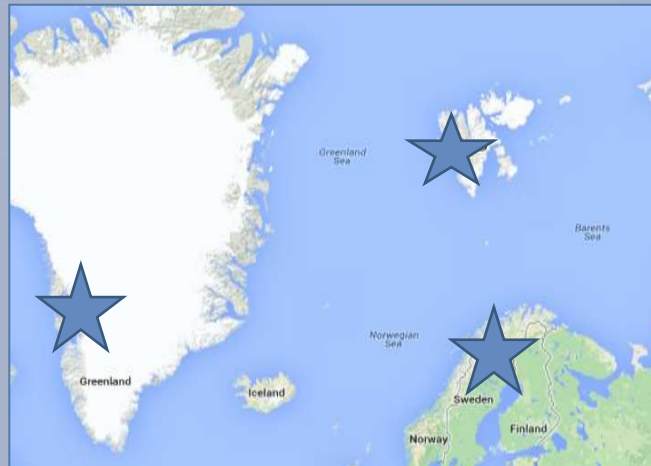
Networking with networks – ReSDA



ReSDA Atlas of Arctic Resource Development

How we work

- Interdisciplinary: Humanities · Social sciences · Natural sciences
- Case study areas and community engagement
- Education: PhD programme



10 interlinked research tasks

Defining sustainable development: Indicators and assessment

Joan Nymand Larsen

Impacts of multiple pressures on Arctic landscapes and societies

Gunhild Rosqvist

Governance structures for extractive industries: Identifying path dependencies

Mark Nuttall

Transnational companies, indigenous peoples – the politics of Arctic mining

P Roberts & R Lawrence

Affective economies: How are places, communities and identities constructed?

Kirsten Thisted

Rewilding: The science and politics of environmental remediation

Dolly Jørgensen

Material legacies as resources for sustainable futures: Tourism, infrastructures, heritage

Dag Avango

Co-existences: Recoding natural resources for future livelihoods

Marianne Lien

Scenarios as a tool for co-production of knowledge

Annika E Nilsson

Comparative global learning: Theorizing transitions to sustainable futures

Sverker Sörlin

Our key guiding value concepts

Interdisciplinary – RTs = x 10 composite teams; common field work; cross-cutting PhD courses; publishing alliances, ex 1: common theorizing on systems theory, ex 2: Petrov/Nilsson et al on Arctic sustainability):



Integrative – common sites/shared issues; shared resources (stations, expeditions, methods); shaping integrative environments/institutions; shaping careers (mixing individual/cooperative)

Co-productive/ Community based – co-producing knowledge; community participation in environmental and social monitoring; openness to different ways of knowing

Transformative – embracing and promoting directional change; problematizing gender; exploring post-extractive futures; expanding 'resources'; making use of heritage

Base line: sharing = making use of resources for transforming research & enhancing quality

Material legacies as resources for sustainable futures



Abandoned mines, re-economized as heritage and visitors sites

Material legacies as resources for sustainable futures



© Dag Avango

Former transport system for mining – now heritage and resource for tourist economy

Material legacies as resources for sustainable futures



Preserving the memory of a disappearing mining town – Malmberget, Norrbotten

Bolatta Silis-Høegh

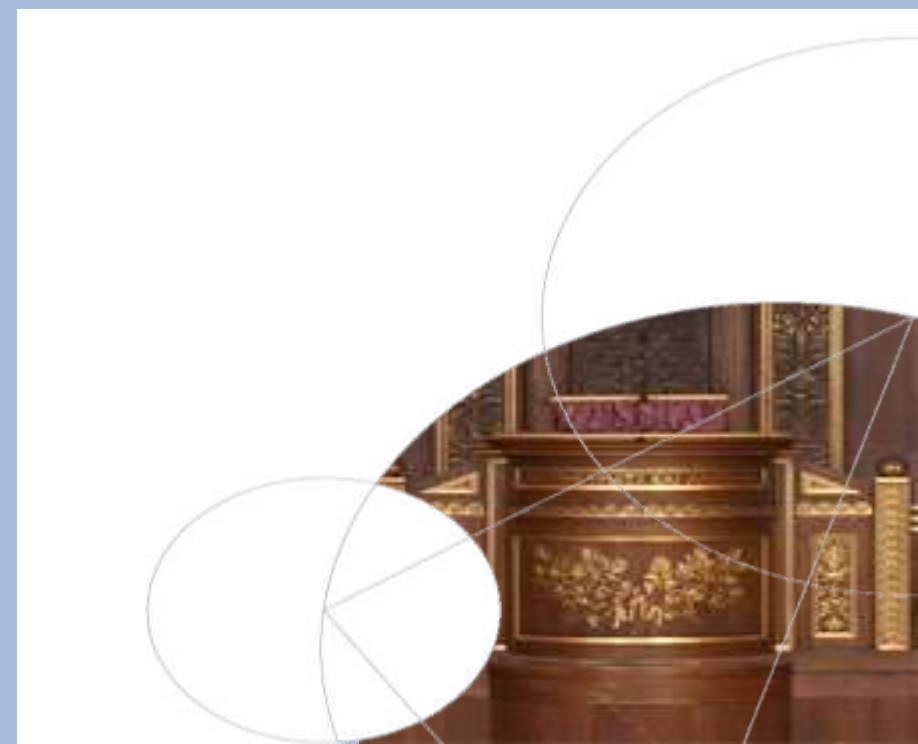




REXSAC – RT 5

AFFECTIVE ECONOMIES

Kirsten Thisted
Minority Studies



Naamik qujaannarpunga campaign



DEADLINE October 27, 2013



DEADLINE 2013.10.27 29:20



Martin Krasnik:

You simply say: The divorce is already underway. So, you're already on the way out of this relationship. Are you so sure that the other part of the relationship - although it is not the happiest marriage in the world - that *we in Denmark* are equally prepared for that?

URANIUM

To be or not to be nuclear.....



EDITED BY DOLLY JØRGENSEN AND SVERKER SÖRLIN

NORTHSCAPES

HISTORY, TECHNOLOGY, AND THE MAKING
OF NORTHERN ENVIRONMENTS



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BECOMING SALMON



AQUACULTURE and the
DOMESTICATION of a FISH



MARIANNE ELISABETH LIEN

Copyrighted Material

Mining and Communities in Northern Canada

History, Politics, and Memory



EDITED BY | Arn Keeling and John Sandlos

Grønlandske fortællere

Nulevende fortællekunst i Grønland

KIRSTEN THISTED



MATERIALE INDSAMLET AF KAREN LITTAUER

ASCHEHOUG

Impacts of multiple pressure on Arctic landscapes and societies



Gunhild Rosqvist, Stockholm University

Impacts of multiple pressure on Arctic landscapes and societies

Why?

The combined effects of mining activities and rapid climate and environmental change are poorly understood.

What?

Develop models that integrate the effects of climate change and disturbances associated with land use changes and pollution.

Provide new best practices and processes for scientifically robust impact assessments.

Support political decision-making processes.

Enhance the capacity of communities to respond to change..

Impacts of multiple pressure on Arctic landscapes and societies



Gunhild Rosqvist, Stockholm University

Impacts of multiple pressure on Arctic landscapes and societies



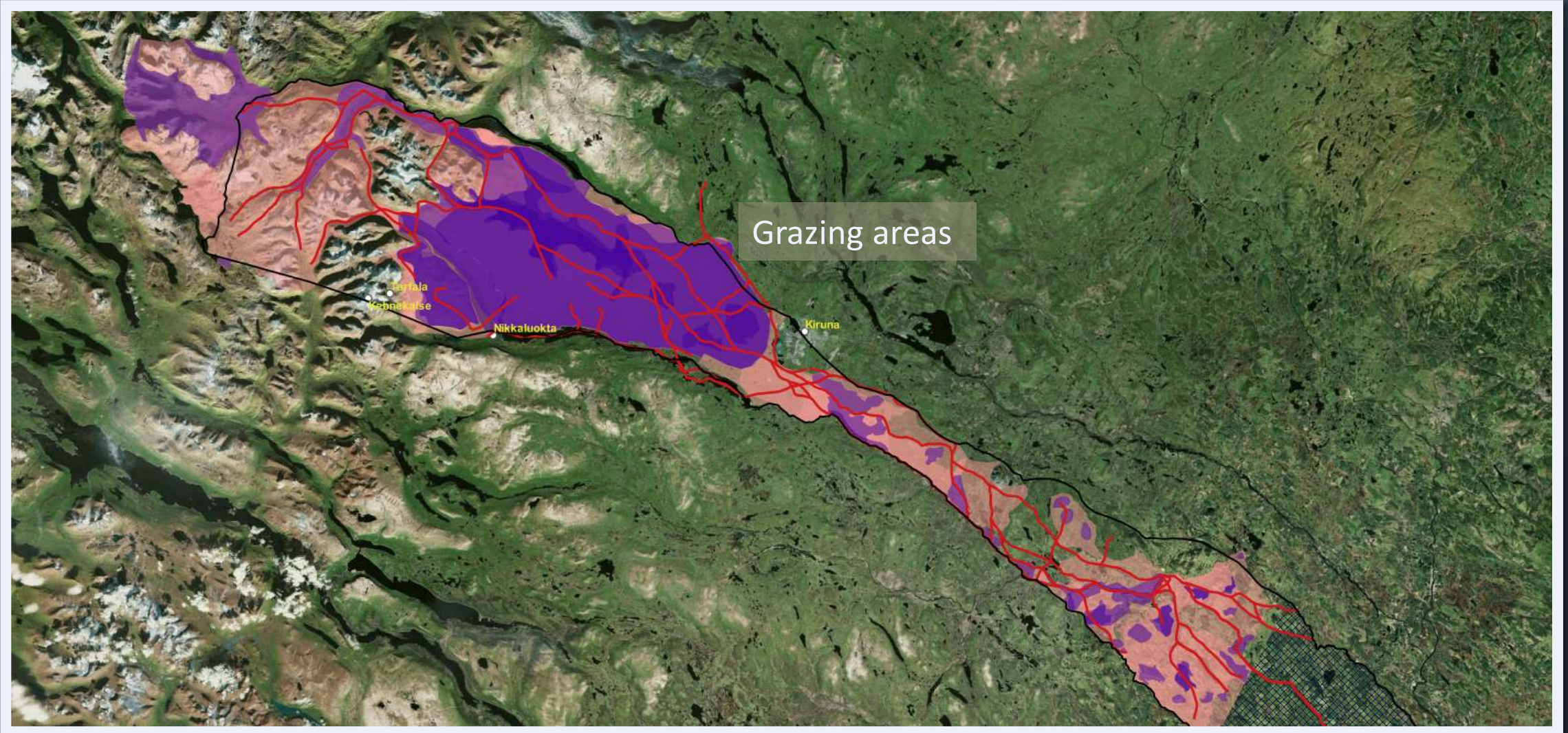
Laevas Sámi community

Impacts of multiple pressure on Arctic landscapes and societies

Ellen Sarri at automatic weather station



Impacts of multiple pressure on Arctic landscapes and societies



Impacts of multiple pressure on Arctic landscapes and societies

Disturbance from infrastructure,
mining, wind power, tourism

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material

Impacts of multiple pressure on Arctic landscapes and societies

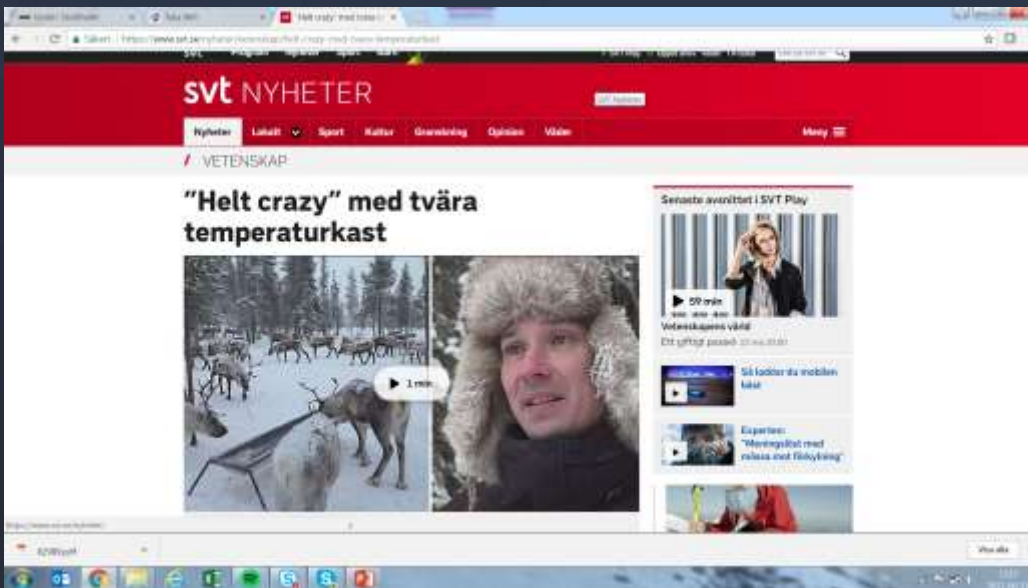


Pathways of pollution



Sandra sampling polluted water at Nautanen





Media cover

Dagens Nyheter, December 2016

Vetenskapens värld, April 2016

Seminar Almedalen, Juli 2016



Impacts of multiple pressure on Arctic landscapes and societies

[Trailer • Future Mountains on Vimeo](#)

Research theme examples from University of Oulu

- Sustainable arctic tourism. Prof. Jarkko Saarinen, Geography.
- Mining history of Saami area. Prof. Vesa-Pekka Herva. Archaeology
- Overlapping land uses and environmental risks. Prof. Hannu I. Heikkinen. Cultural Anthropology.
- **History of utilization of peat lands**, Dr. Esa Ruuskanen. History.
- **History of wellbeing and nutrition in Saami area**. Dr. Ritva Kylli. History.
- Environmental education, at the University of Oulu, a minor in environmental humanities since 2004 <http://www.oulu.fi/humanistisetymparistoopinnot/>

Research example: PITCH project scenario exercise for administration in Finland 2016.

Pre-drafted scenarios visualized in a terms of key uncertainties and policy trends



Unregulated markets

Majority rule

Technocratic decision making

Resource boom

Landscape net

Securing economic growth

Securing nature

Economic

regulation

Political

guidance

Localized decision forums

Value barter

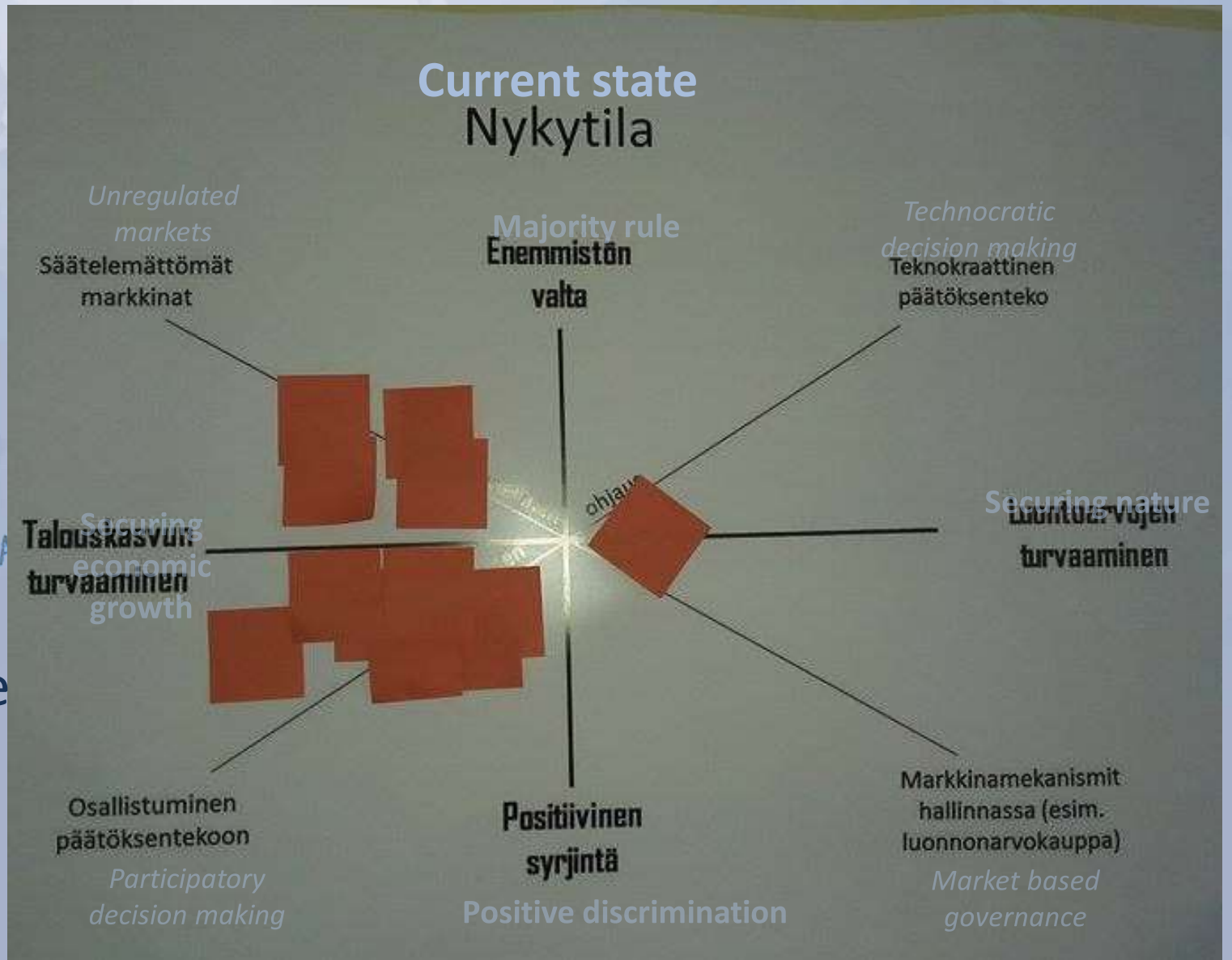
Participatory decision making

Affirmative action
(positive discrimination)

Market based governance
(e.g. PES- Payments for Ecosystem Services)

Votes for "Where we are now?"

Even the scenarios and the basic uncertainties of future trends were questioned, probably all participants recognised some elements and future trends already existing.



REXSAC PhD training

- Four PhD courses (core)
- Courses within PhD schools of REXSAC partners
- Mobility
- Field based learning





Interdisciplinary introduction to Arctic studies (March 2017)

Broad introduction to fields of research in REXSAC
Humanities, social sciences and natural sciences

Learning goals:

- General knowledge about the Arctic: environments, communities, cultures, economies, institutions, history
- Social science (economy, international relations)
- Natural sciences (climate change, cryosphere, hydrology)
- Humanities (history, representations, heritage)
- Ways of integrating disciplines in research on Arctic sustainability



Methods and ethics in Arctic interdisciplinary research (Sept. 2017)

Learning goals:

- Conduct research in Arctic communities
- Allow stakeholders to influence and make use of research
- Design research methods aimed at this
- Implement ethic principles in methodology
- Understand strength & weaknesses of methods
- Discuss and defend their approach/es and research question(s)

Increase student understanding of:

- Role of stakeholder involvement and policy engagement
- How to identify outreach and co-production activities allowing for such engagement

Global comparisons and post-extractive futures: resources and communities in change (2018)

Focus on extraction based regions and communities in transition

Research problems:

- What opportunities exist for communities to transition to post-extractive futures?
- How can Arctic communities deal with legacies of the past?

Themes

- New economies / re-economization, affective economies
- Environmental damage and remediation
- Heritage processes, politics of memory
- Tourism



Mining, communities, and sustainable development (2018-19)

Focus on multiple pressures – social and environmental impacts from:

- Climate change
- Extractive industries

Local encounters with multiple pressures in long term perspective

Classroom and field based education at Kiruna and Gällivare, building on research under way in REXSAC

- Climate science, physical geography, hydrology
- Social- and cultural anthropology
- Human geography
- Historical archaeology
- Heritage studies





PhD student mobility

PhD students spend semester at 2 other REXSAC partner universities, to stimulate

- Broadened intellectual horizon
- Interdisciplinarity
- Increased knowledge for comparative case studies

Exchanges start in 2018



Field based learning

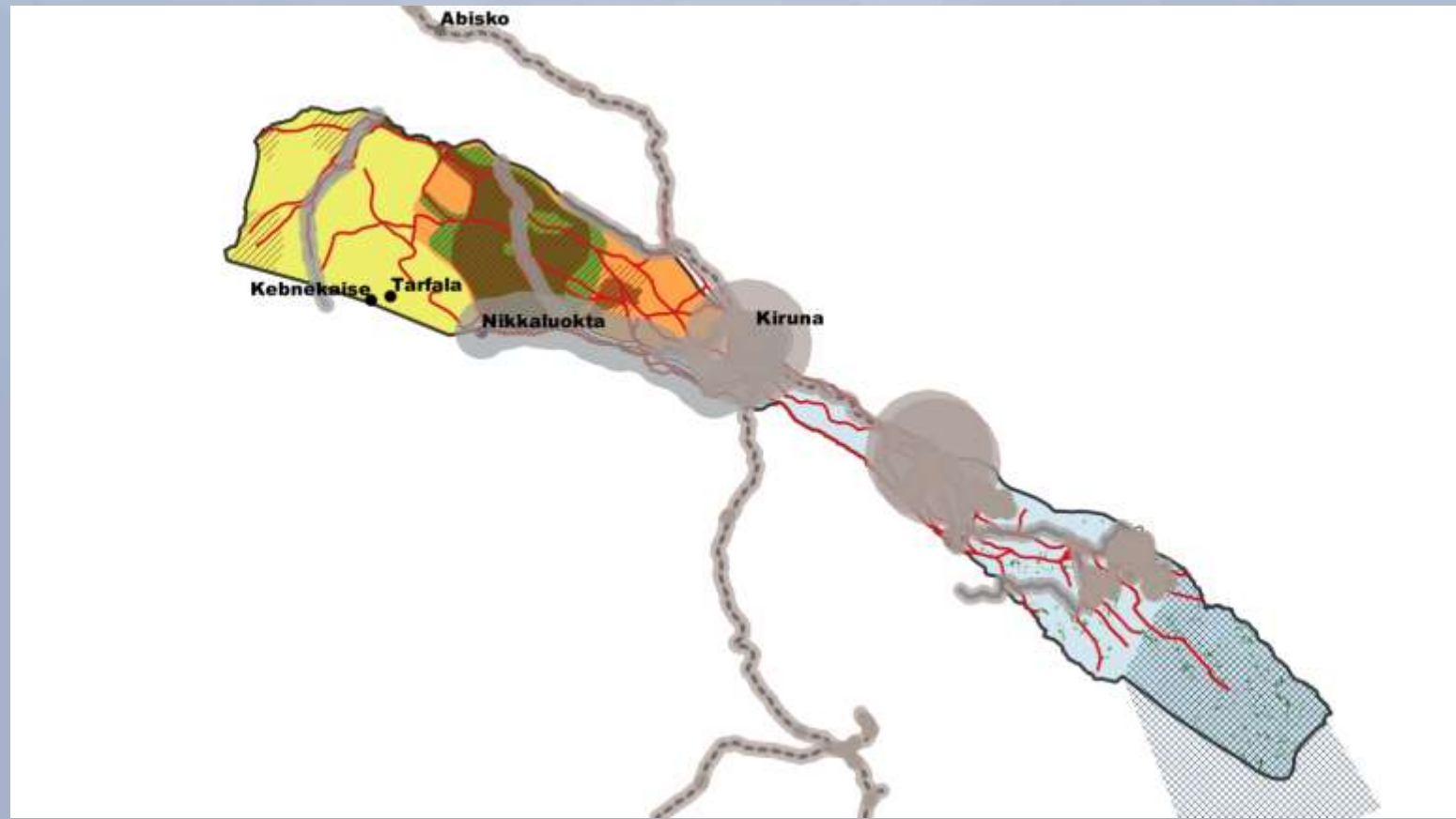
Our method for achieving interdisciplinarity:

- Case study areas
- Field research
- Deal with common research problems by integrating different disciplinary approaches in joint field work
- Done through PhD courses and separate field work campaigns

Nautanen, September 2-8, 2017

- PhD students
- Researchers from all disciplines represented in REXSAC

Global change and Animal movements Towards a socio-ecological predictive framework (RT 2)



Mining legacies in post-extraction futures



© Dag Avango

Camilla Winqvist, KTH-Royal Institute of Technology

REXSAC

Expanding the ecosystem

- Enhanced collaboration with partners outside Europe
- Success rate of new projects based in Sweden
- Strong possibilities for leveraging the network into concrete funding for multiple partners

RT1: Sustainability indicators and RT9: Scenarios

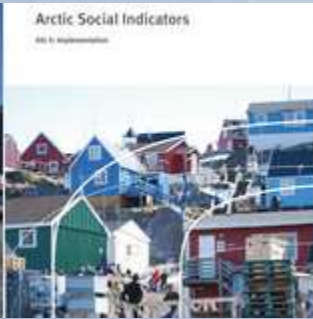
Goal:

Develop tools for monitoring and assessment in context of multiple stressors, cross-scale interactions, and need for long time perspectives

Approach:

Build on a strong base from past research + collaboration with new projects



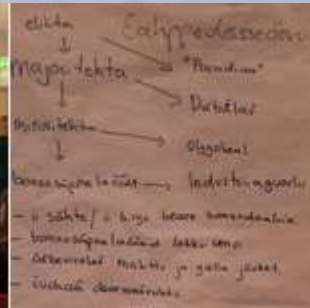


Arctic Social Indicators
2015-2016

Defining sustainable development: Indicators and assessment (RT1)

This research task will develop a set of sustainable development indicators that can be used for integrated environmental, social and economic assessment of the impacts...

[Learn more →](#)



Scenarios as a tool for co-production of knowledge (RT9)

This research task will further develop participatory methodologies for producing locally relevant scenarios that can be used for exploring potential futures. A range of factors...

[Learn more →](#)

= Scenario methods to identify indicators that are relevant for assessing sustainability for future generations

Start: Methods workshop Stockholm 7-8 September 2017

Arctic Youth and Sustainable Futures

Rationale and premise:

The future of the Arctic will be determined to a great extent by today's youth and their choices

- priorities in terms of culture and identities,
- where to study and where to live,
- what occupations and lifestyles to pursue,
- factors affecting their social and physical environment (impacts and responses to climate change and economic and cultural globalization)



Core participation: 25 Arctic scholars from a range of disciplines & from 22 institutions in 10 countries

Secretariat: Stefansson Arctic Institute

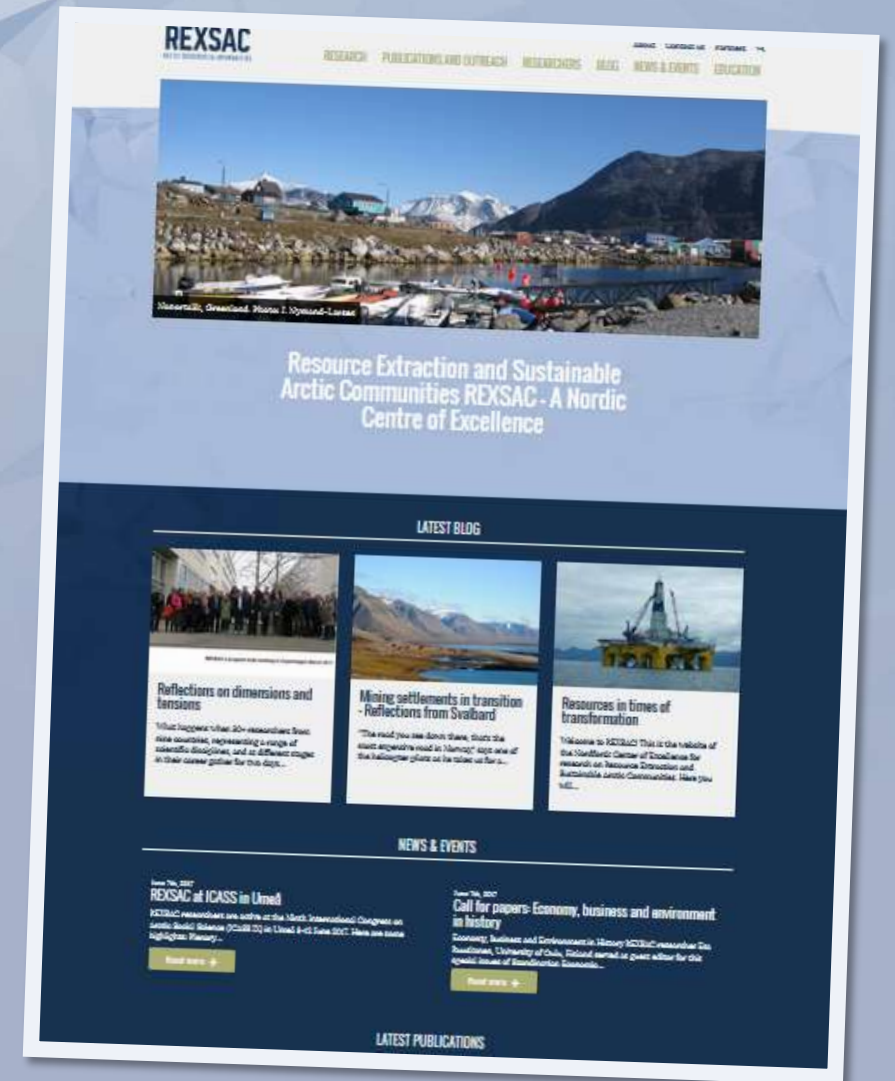
Core funding: Nordic Council of Ministers' Arctic Cooperation Programme (2016-2018)



Communication

- Graphic profile
- Website: Blogs, News, Publications ...
- Media
- Stakeholder meeting 11-13 Dec. 2017
 - Collaboration with Finnish EIA initiative
 - Nordic Council of Minister funding

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Pyramiden mine, Svalbard. Photo A. Nilsson

Resource Extraction and Sustainable Arctic
Communities REXSAC - A Nordic Centre of
Excellence

REFLECTIONS & CHALLENGES

Our *mission* is to study extractive industries in the Arctic in an integrative, comparative and interdisciplinary manner, bringing together insights and tools from across geographic and disciplinary boundaries to develop new tools and support best practices and processes.

WELL UNDER WAY...

Our *vision* is to build a world-leading centre for interdisciplinary research and training that identifies pathways to sustainable futures for Arctic communities.

MUCH REMAINS... HOW TO MAKE THE TRANSITION...?

“These principles will guide the application and development of more established methodologies and data collection tools including climate and weather monitoring, water monitoring, GPS tracking systems, industrial archaeology, cultural heritage studies, many strands of history, cultural and social anthropology, land and urban planning, political science, and security studies.” – **How to make elements work together?**

A particular feature is the integration of Arctic issues with other global issues. – **Requires intensified collaborations outside the region**

TRANSITION-TO-VISION IDEAS...

- Intensify REXSAC wide conversation
- Identify building blocks for the long term
- Associate these with different partners
- Transform collaborations into alliances
- Secure career paths in partner institutions, including for leadership
- Use existing infrastructures and education programs as stabilizers
- Build recognition over the long term through results and trust

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