

# BEAC JWGER

**Peter Sköld**  
**SWEDEN**



UMEÅ UNIVERSITY

# SCIENCE INFRASTRUCTURE STRENGTHS

Complete research systems

Academic and Barents identities

Research facilities

Field stations

Digital infrastructures

Barents outreach

International drivers



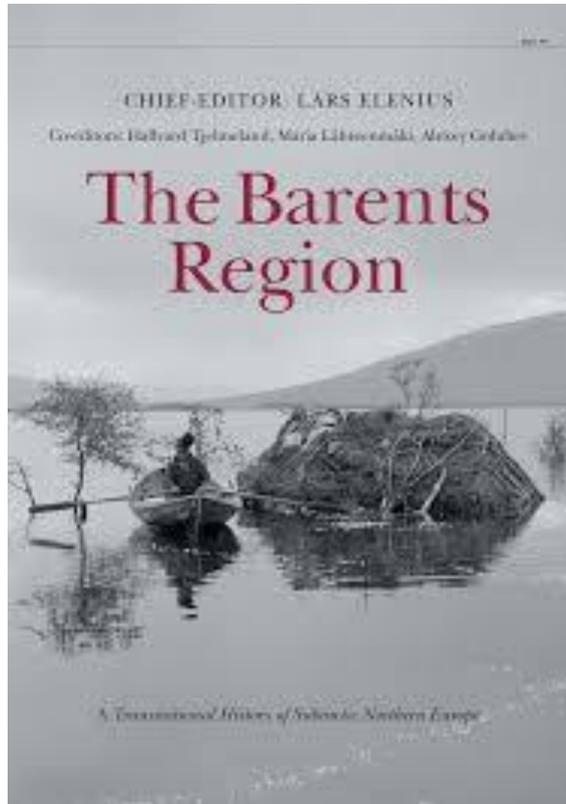
# BARENTS SCIENCE COOPERATION

- **PROJECTS**
- **CONFERENCES**
- **WORKSHOPS**
- **MOBILITY**
- **EDUCATION**
- **POSTDOCS**
- **PUBLICATIONS**



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# GRAND BARENTS PUBLICATIONS



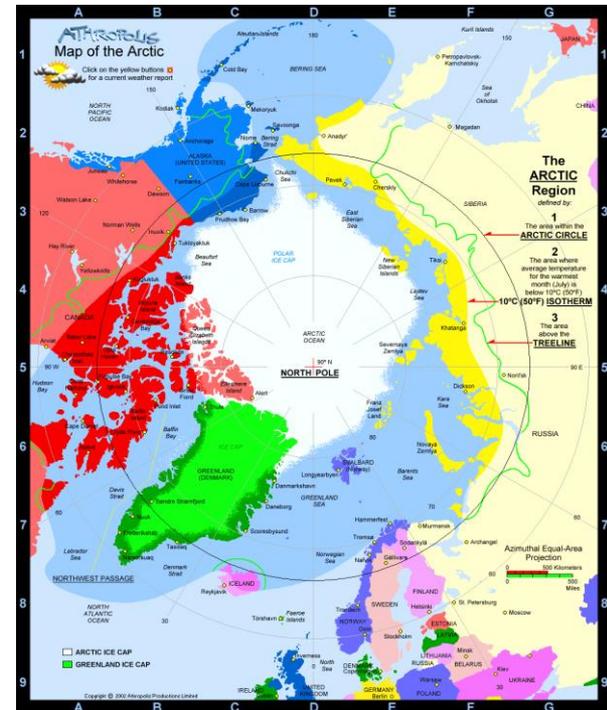
ENCYCLOPEDIA OF  
**THE BARENTS REGION**  
VOLUME I A–M

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Co-editors: Fredrick Backman, Alexey Golubev,  
Björn Norlin, Lars Olsson



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# BARENTS VS ARCTIC





# DIVERSE BARENTS REGION



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# REGIONAL DEVELOPMENT IN INTERNATIONAL COLLABORATION





# SUSTAINABLE DEVELOPMENT GOALS

1 NO POVERTY



2 ZERO HUNGER



3 GOOD HEALTH AND WELL-BEING



4 QUALITY EDUCATION



5 GENDER EQUALITY



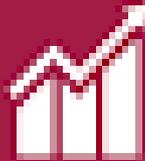
6 CLEAN WATER AND SANITATION



7 AFFORDABLE AND CLEAN ENERGY



8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



10 REDUCED INEQUALITIES



11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



13 CLIMATE ACTION



14 LIFE BELOW WATER



15 LIFE ON LAND



16 PEACE, JUSTICE AND STRONG INSTITUTIONS



17 PARTNERSHIPS FOR THE GOALS



  
SUSTAINABLE  
DEVELOPMENT  
GOALS



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# IS THIS WHAT WE ARE DOING WRONG?



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# AMAP – BARENTS REPORT (2018)

## CLIMATE CHANGE

FLORA & FAUNA

REINDEER HERDING

INVASIVE ALIEN SPECIES

DISEASES

## GLOBALIZATION

LOCAL ECONOMIES

TRADE PATTERNS

GOVERNANCE

MIGRATION / MULTI-CULTURES



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# INTEGRATING INTERNATIONAL COOPERATION



**IASSA**  
INTERNATIONAL ARCTIC SOCIAL  
SCIENCES ASSOCIATION



UNIVERSITY  
OF THE ARCTIC



**IASC**



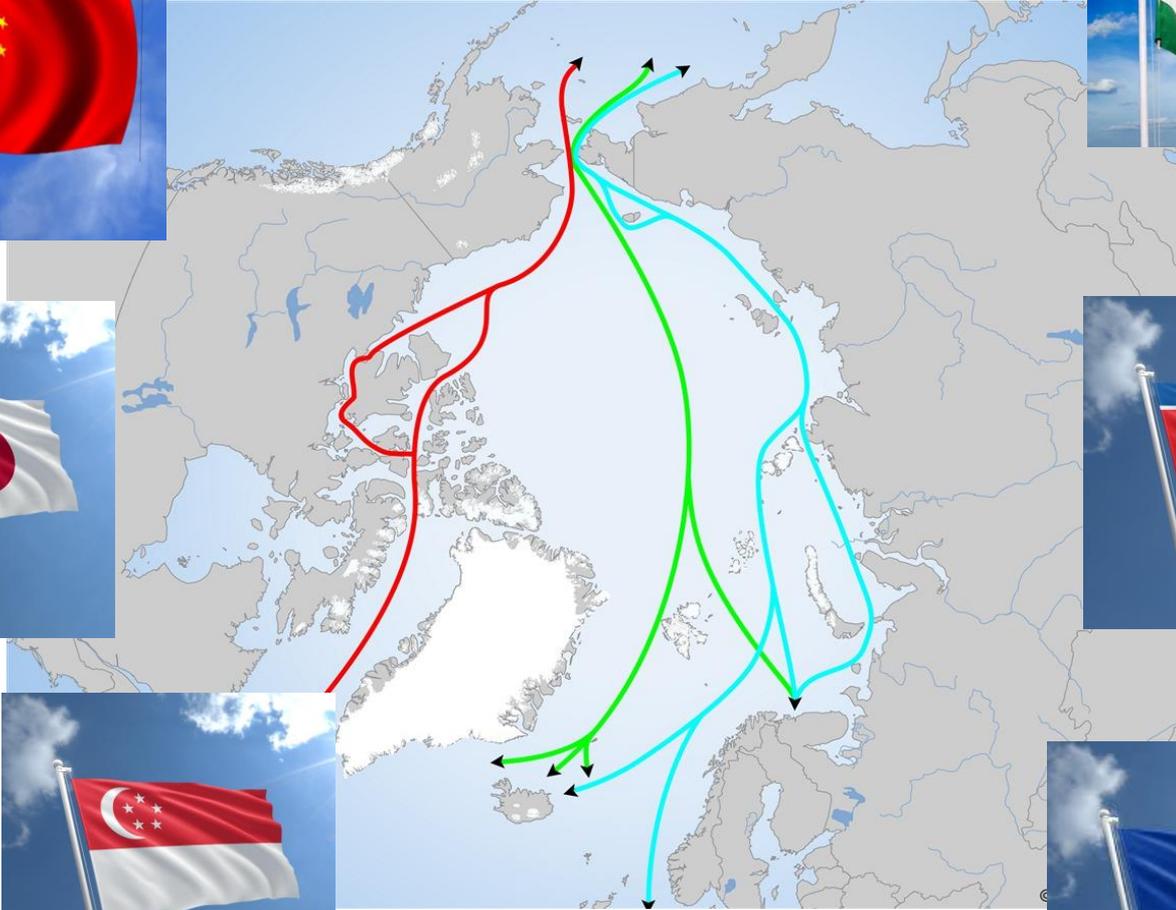
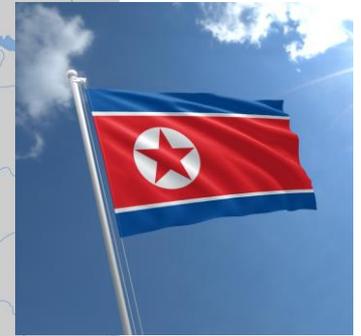
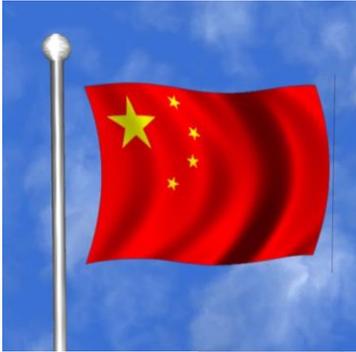
**THE BARENTS EURO-  
ARCTIC REGION**



**THE ARCTIC FIVE**



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# BEAC JWGER COLLABORATION OBJECTIVES

**Cross-border cooperation** as a tool for achieving our own strategic objectives, thereby building long-term institutional capacity

Strengthen **international competitiveness** and facilitate the development of world-leading Barents research environments

Efforts to achieve improved **relevance and society** impact of Barents science

Communication, partners and education



# CLIMATE CHANGE RESEARCH



**ODEN – THE ICEBREAKER**



**ABISKO - THE RESEARCH STATION**



# MONITORING SYSTEMS

Indicators are only useful if the relevant information is collected on sustained, i.e. long-term, basis. This has been a problem for many small-scale research projects, as they typically do not concern themselves with a sustained collection of information beyond the project's duration. This was also a problem with the MDGs where 46% of the data needed were not available for reporting at the end of 2015.



# NORTHERN GOVERNANCE

New Governance for a Sustainable Development in the European Arctic: 36 researchers, mEuro 4,5.

Mining, forestry, oil and gas exploration, fishing, reindeer husbandry, tourism industry and municipal planning.

Expected to increase the understanding of how historical development as well as present governance on different levels both steer and constrain possibilities for improved resource use, governance and planning.

The project ultimately aims to support the capacity of decision makers to make informed decisions related to sustainable development in the area.



# FOOD AND WATER SECURITY IN THE NORTH

The Barents region is in a state of change. These changes occur due to climate change, most and earliest noticeable in the North including involvement of complex feed-back systems, but also to other drivers as increasing political interest of the region.

There is an urgent need to monitor measurable indicators of food and water security in the north over time. Such a quantitative indicator is necessary for actually knowing what reality aspects to monitor in order to accurately understand, quantify and be able to project critical changes to food and water security of both indigenous and non-indigenous people in the Barents region.



# BIO<sub>4</sub>ENERGY

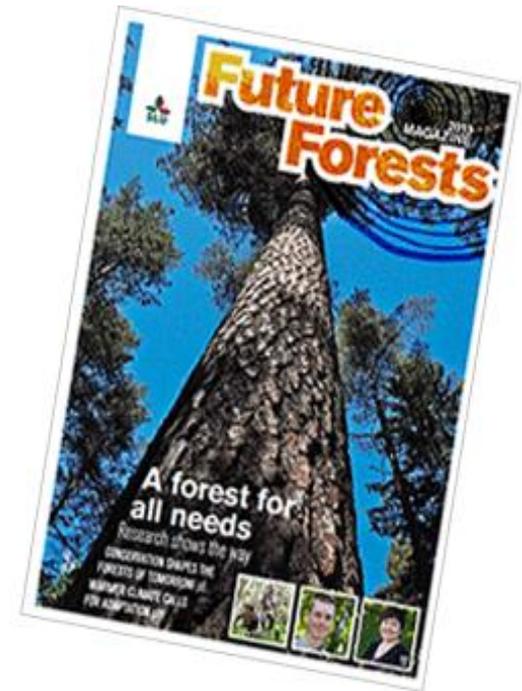
Breaking the dependence of fossil fuels is one of our time's greatest challenges. Bioenergy scientists and entrepreneurs in northern Sweden have joined together to develop green technologies for converting forest-sourced biomass into biofuels and other bio-based products. The internationally leading research covers the entire bio refinery value chain— from developing the seeds for robust trees to grow, to producing renewable fuels and other energy carriers. The "green" chemicals produced could also find uses in the pharmaceuticals, clothing and packaging industries.



# FUTURE FORESTS

Future Forests is an interdisciplinary research program for the period 2009-2020, involving the Swedish University of Agricultural Sciences (SLU) Umeå University, and the Forestry Research Institute of Sweden (Skogforsk).

The vision of Future Forests is that the program will provide scientifically robust knowledge to enable greater, and sustainable, provision of ecosystem services from forests in a future characterized by climate change, energy transition and altered markets for forest goods and services.



# ENVIRONMENTAL IMPACT ASSESSMENT OF INDUSTRY CONTAMINATED AREAS

Umeå University and Petrozavodsk State University are members of this UArctic Thematic Network that initiate, foster and develop efforts in the fields of environmental impact assessment of industry contaminated areas in the Arctic, with focus on soil and water remediation related to mining, forestry and other industrial and urban circumstances, by bringing together leading universities. Through this network, joint research projects will be initiated between the partner organizations in the northern regions of North America, Europe and Russia.



# SUSTAINABLE BUILDINGS IN THE HIGH NORTH

The objective of the SBHN project is to promote trade between the Scandinavian countries and Russia in the field of sustainable building industry in northern latitudes. The main focus is on the energy efficient renovation of the prevailing building stock, especially multistory buildings in Russia and other countries. Worldwide, buildings are responsible for one-third of the total final energy consumption, and are also among the most significant creators of carbon dioxide emissions.



# MELTING PERMAFROST



The release of methane gas,  
and of infectious diseases...

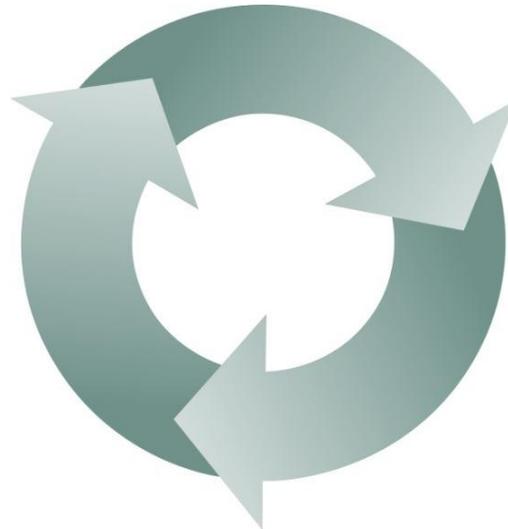


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# TIME PERSPECTIVES



# ARCTIC RESEARCH CENTRE AT UMEÅ UNIVERSITY



UMEÅ UNIVERSITY  
ARCTIC RESEARCH CENTRE - ARCUM

# 12 - 12 - 12



UMEÅ UNIVERSITY

# **AFFILIATED RESEARCHERS**

The Arctic Centre organizes a network of over 300 researchers from Umeå University as well as external partners.



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ARCTIC RESEARCH CENTRE - ARCUM





Kjøttsaus, løk, jalapeños, nachos chips, ost, hvitløksdressing.  
Meat sauce, onion, jalapenos, nacho crisps, cheese with garlic dressing.

21. Arctic Pizza	383,-	242,-	130,-
Klippfisk, rød løk, tomatsalat, purre, grønn oliven, grovkvernet pepper, toppet med chiliolje og maldonsalt. *Fisk			
Stockfish, red onion, tomatosalad, leeks, green olives, sprinkled with chili oil and Maldon salt.			
22. Nansen & Amundsen	378,-		
Kjøttsaus på italiensk vis, ungarsk pepperonipølsalat, parmesan og hvitløksdressing.			
Meat sauce the Italian way, Hungarian pepperoni, red parmesan and garlic dressing.			
23. Midnattsol	326,-		
Skinke og ananas			
Ham and pineapple			
24. Trollpakke	96,-		
Pizza med skinke, juice, ballong og is.			
Pizza with ham, juice, sweets and balloons.			

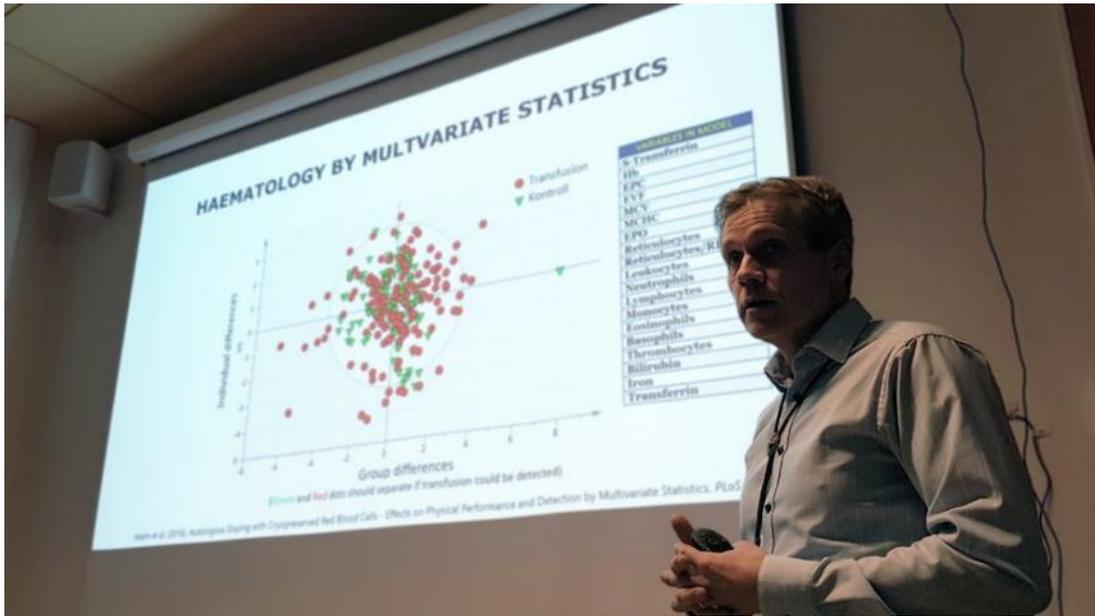


UiT

NORGES  
ARKTISKE  
UNIVERSITET



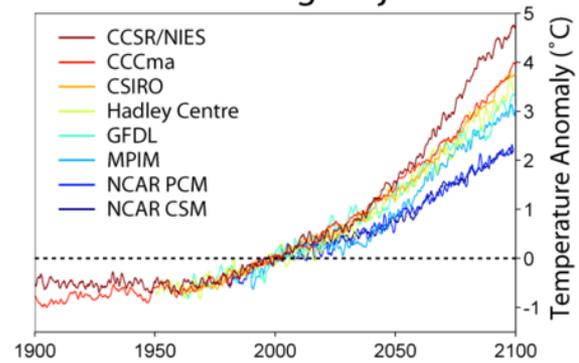
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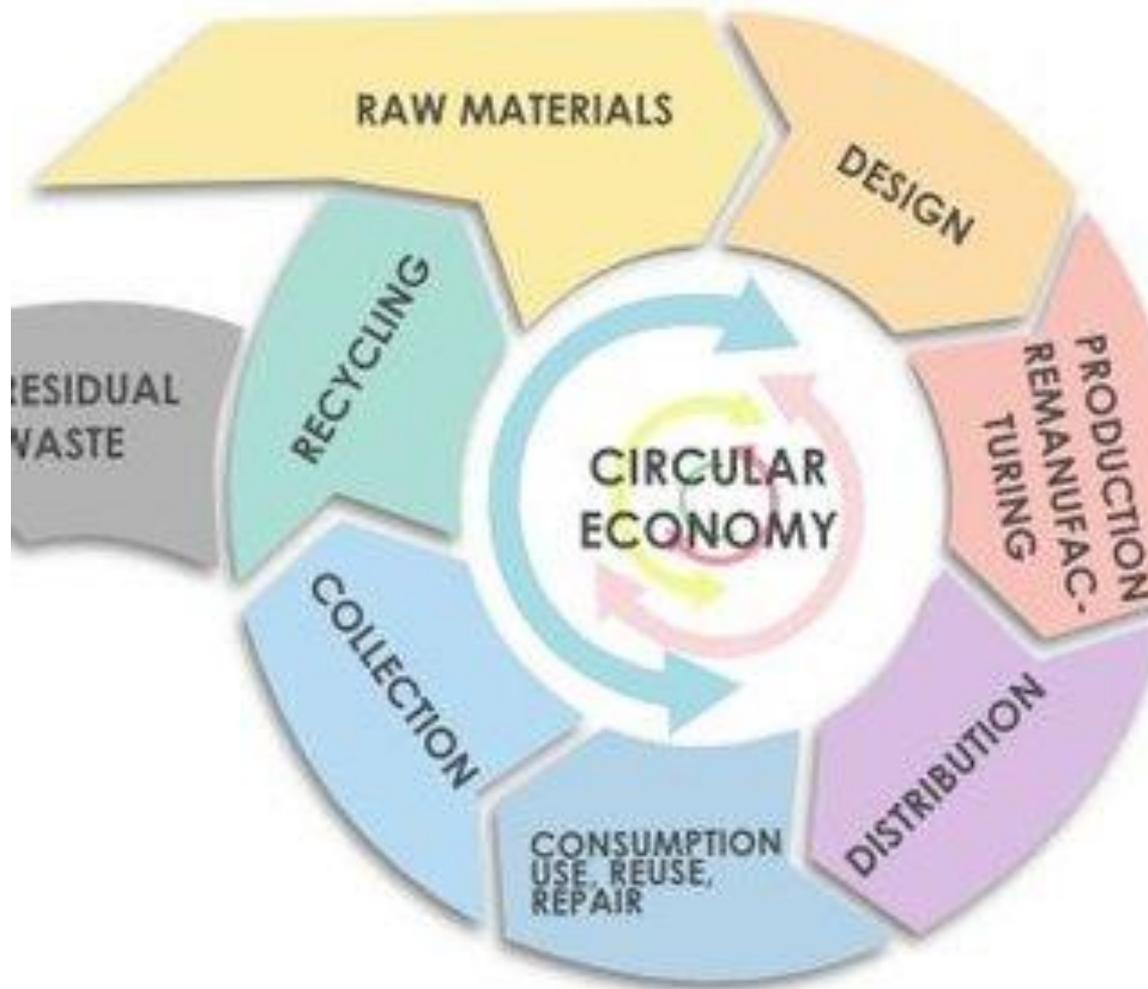
# SUSTAINABILITY, SOLUTIONS & IMPACT



Global Warming Projections



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# ONE HEALTH



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# THE ROAD TO THE DESIRED STATE OF THE SOCIO-ECOLOGICAL SYSTEM

N  
E  
W  
T  
E  
C  
H

## DRIVERS

- Community based participation
- Education
- Risk assessment
- Monitoring
- Action / Policies

HEALTHY ECOSYSTEMS

Ecosystem services (governance ethics) Sustainable livelihoods

DESIRED STATE

Mediated state

Present trajectory (BAU)

STRESSORS: Climate change, demographic shifts, psychological traumas

# CHANGING MIND-SETS





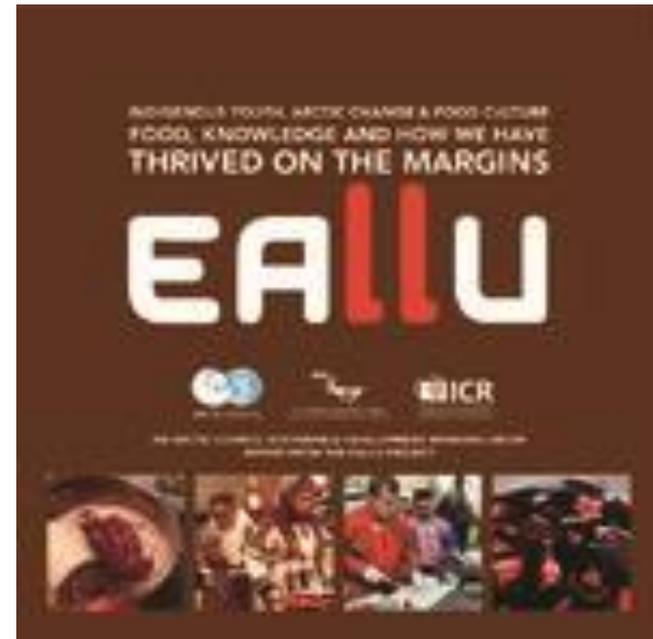
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# LEGISLATION VS INCITAMENTS



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“EALLU - FOOD, KNOWLEDGE AND HOW WE HAVE THRIVED ON THE MARGINS  
WINNER OF “OSCAR OF THE COOKBOOK WORLD”  
AT 2018 GOURMAND WORLD COOK BOOK AWARDS  
CHINA, MAY 2018



# BLENDING BARENTS CAMPUS

**Higher education** is a key factor for a well-developed **labor market** in the Barents region, and the northern universities need to win **synergies** from the development of educational cooperation and compatibility. The main priorities focus on a new innovative curricula, and development of methods and training courses. The overall solution is conceptualized in the **advanced education model** where the priority of international cooperation is very important and met with a blended campus offering an **extensive network of associated partners** in many regions of the Barents region collaborative opportunities. This in turn contributes to the priority **quality** and **relevance** of higher education partner countries, and quality improvement of institutions.

