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Author(s)	Iskanius, Päivi
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# Dr Päivi Iskanius

University of Oulu, Thule Institute

## - Project Manager

*Northern Research and Innovation Platform*

## Research and collaboration interests:

- *IEM, SCM, logistics, business networks (SMEs)*
- *Virtual networks, agile networks*
- *Innovation networks, innovation systems*
- *International cooperation in Northern research*



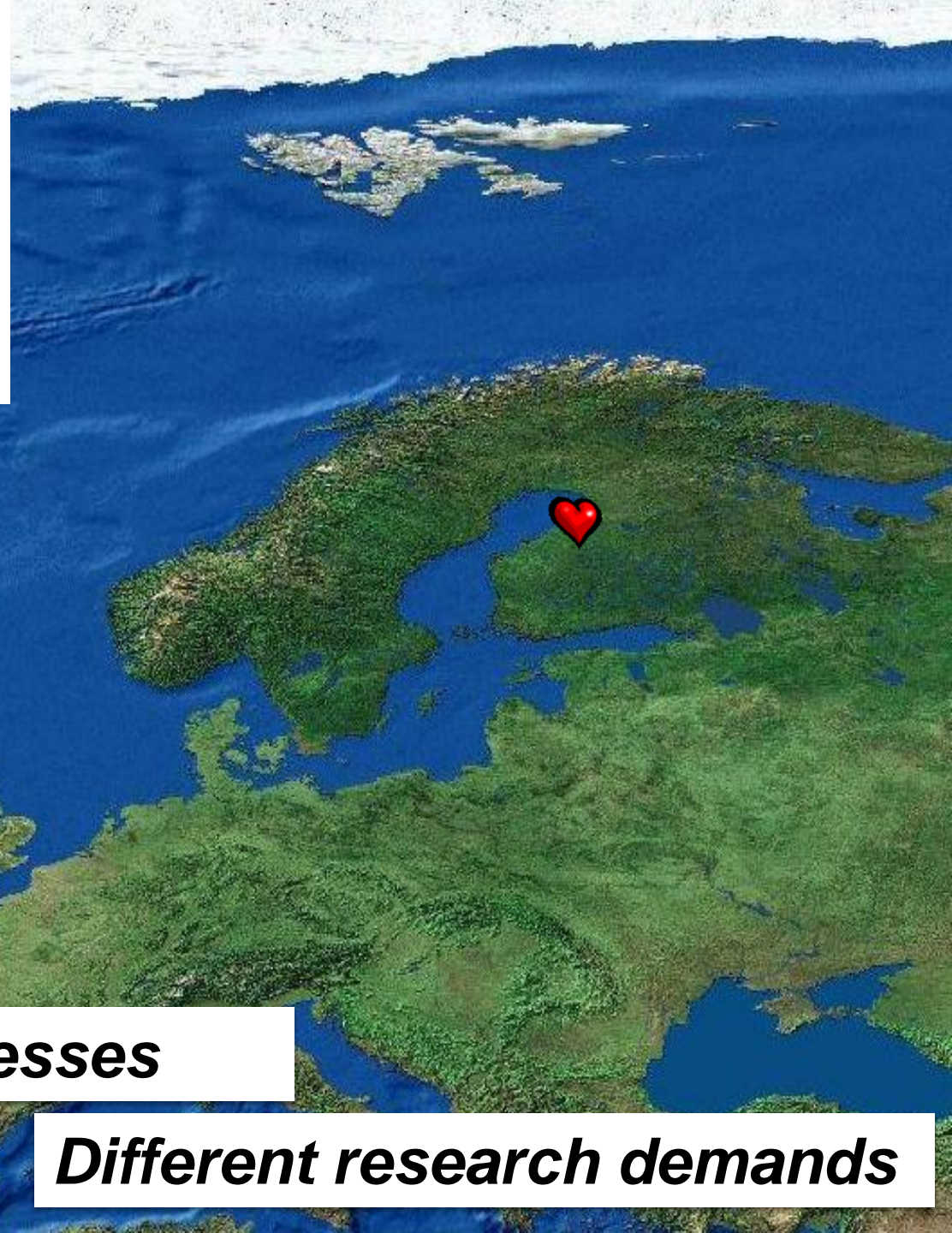
# Promoting research cooperation between Finland and Japan



***My second visit in the Hokkaido University - in Japan***

## **NORTHERN PART OF EUROPE:**

- Far away from markets
- Long logistics routes
- Peripheral location
- Harsh climatic conditions
- Sparsely populated
- Rapidly ageing population



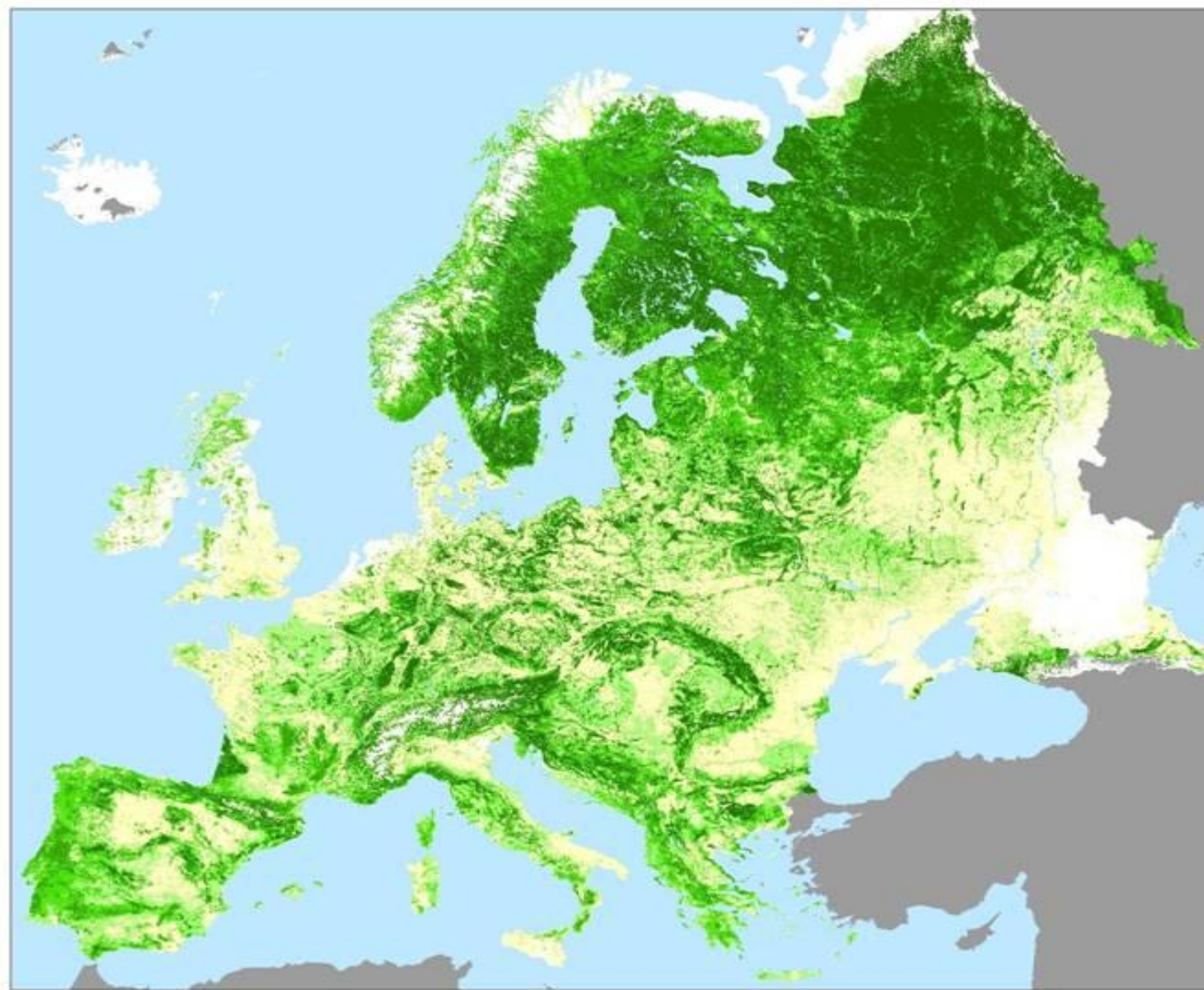
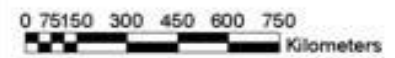
***Natural resources***

***New businesses***

***Different research demands***

**Proportion of total forest  
from total land area  
(% at 1 km x 1km resolution)**

- 0 - 1
- 2 - 10
- 11 - 25
- 26 - 50
- 51 - 75
- 76 - 100
- No data
- Water
- No data



***We locate in the European forest belt***



***Pulp and paper and bio diesel – in the same site***







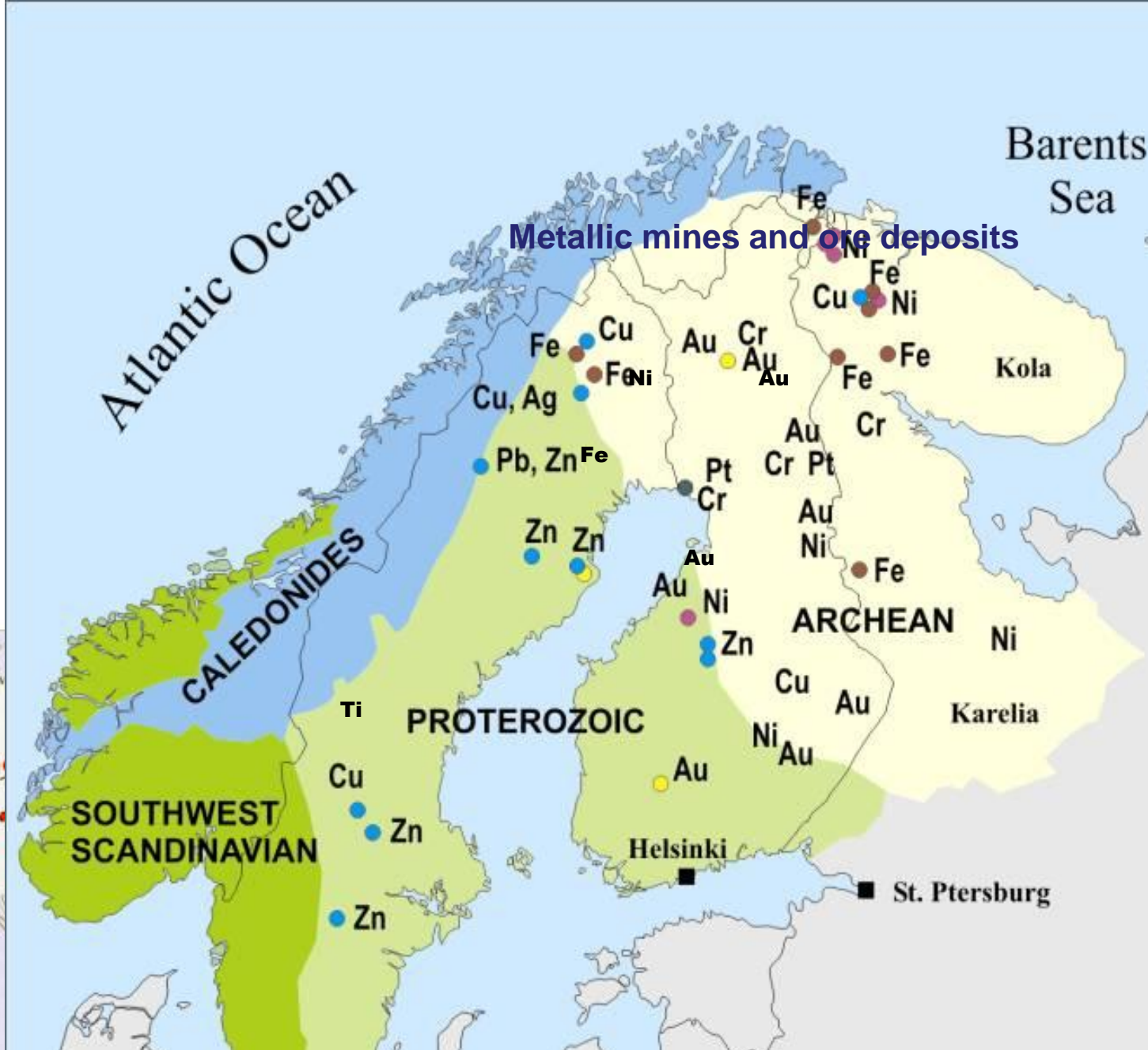
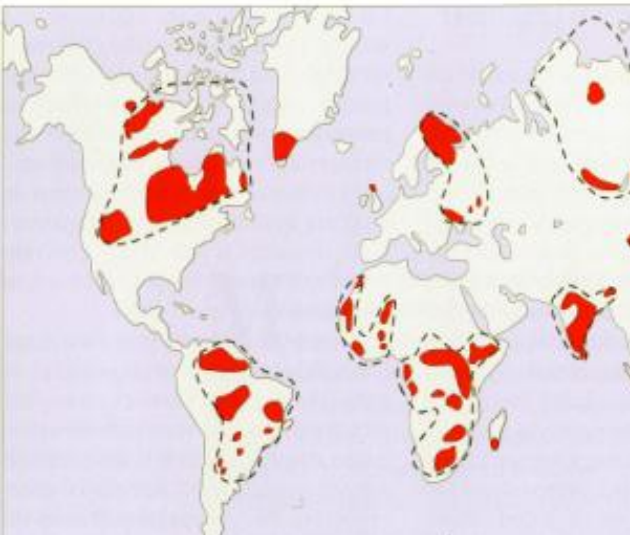






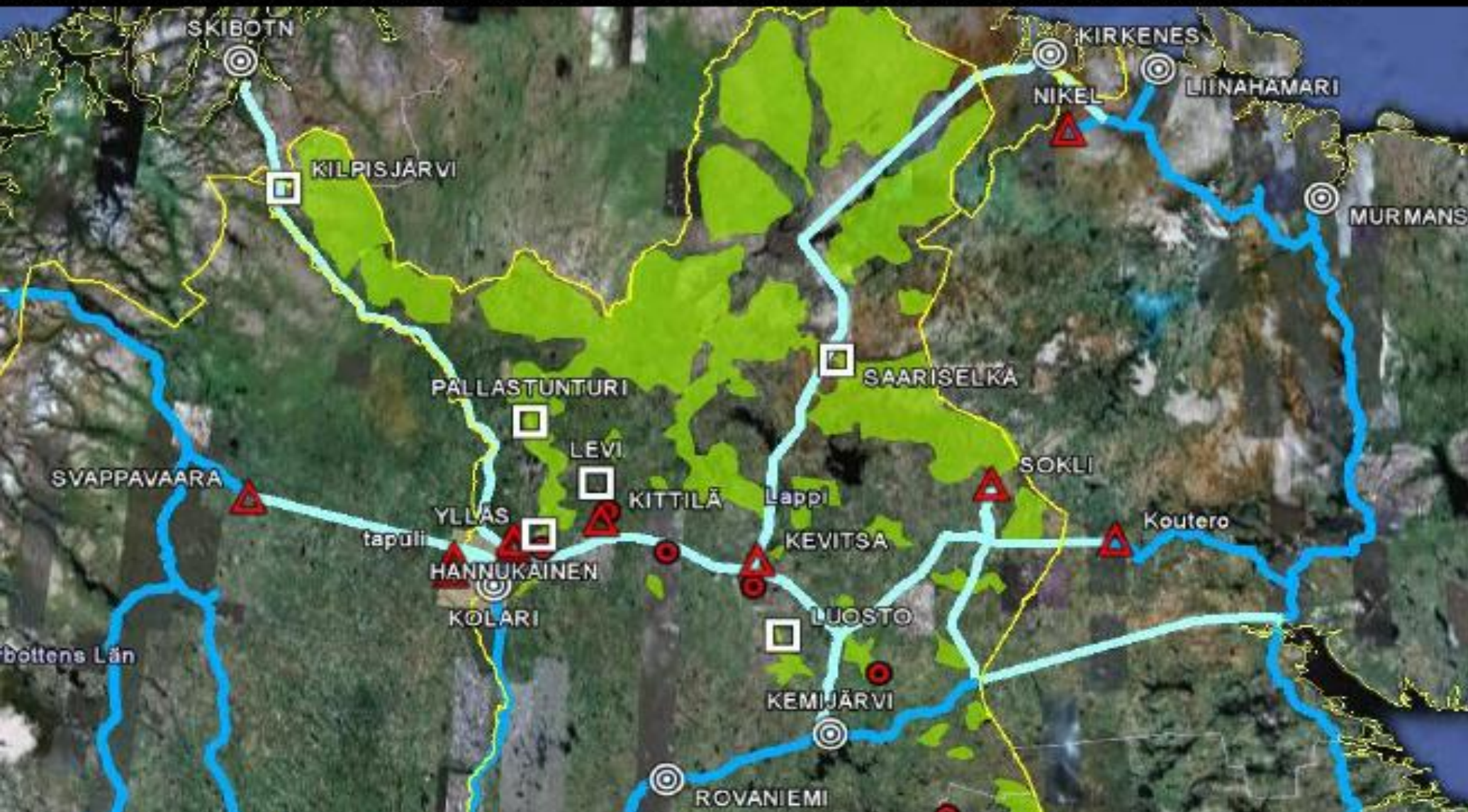
***Nuclear power station in Northern Finland***

Same kind of sources only in Canada, Australia, South Africa



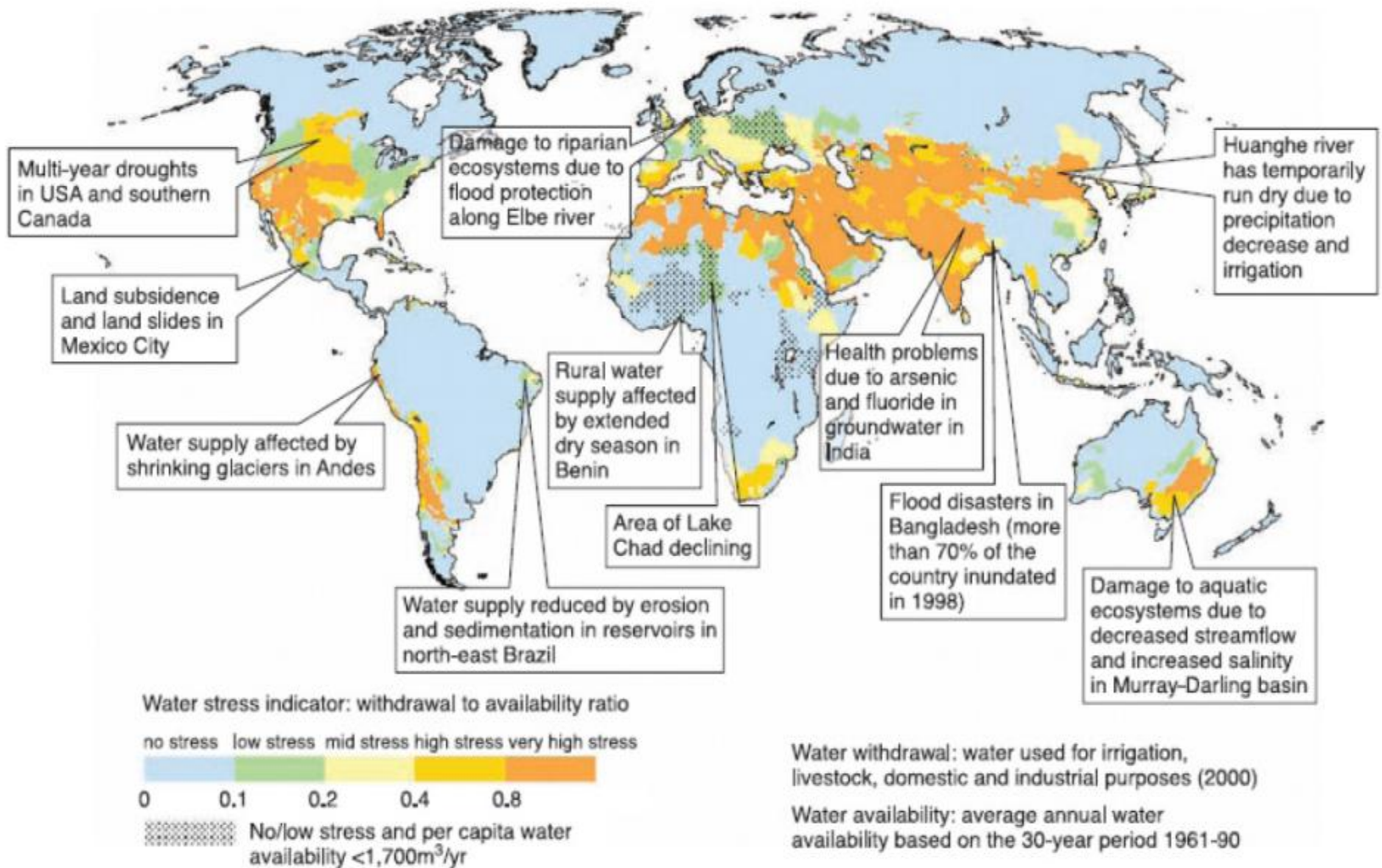
***Fennoscandian shield - European promising mineral area***

Kysymys on mahtavasta kehitysvyöhykkeestä, joka vaikuttaa koko Suomeen. Luonto, luonnosta nauttiminen ja tuotanto ovat siinä rinnakkain. Kansainvälisyys on tuotannon ja logistiikan kannalta avainsanoja. Aikaa ja kärsivällisyyttä vaaditaan. Jatkuvaa innovaatiota ja tutkimusta edellytetään. Haaste on ennenkuulumaton ja ihana! Kuvassa matkailukohteet valkoisella neliöllä, kaivokset punaisella kolmiolla ja kupariesiintymät pampulalla.



***Mining and tourism industries – Friends or enemies?***

Figure 2: Examples of Current Vulnerabilities of Freshwater Resources



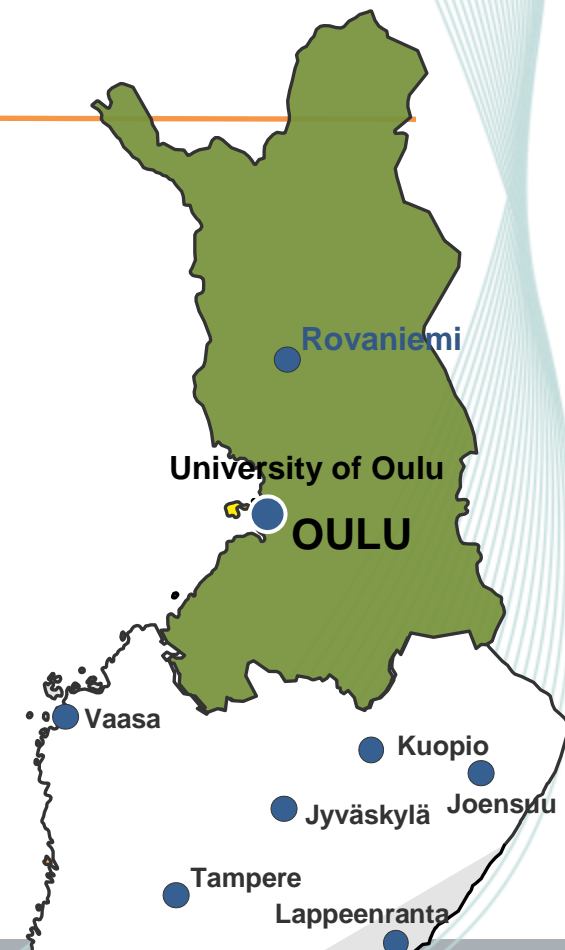
***Water – the most important natural resource***



# Universities in northern Finland

## University of Oulu

- Founded in 1958
- 16 000 students, 2900 employees, budget: EUR 226 million
- **6 faculties:** Humanities (2278), Education (1735), Science (3932), Technology (4128), Medicine (2161), and Economics and Business Administration (1427)
- **Research focus areas:**  
**Information Technology**, Biosciences and Health, Cultural Identity and Interaction, **Environment, Natural Resources and Materials**
- **New initiatives:**  
Advanced steel research, international business, geo- and mining engineering, science-based education



***Good start for multidisciplinary research and innovations***

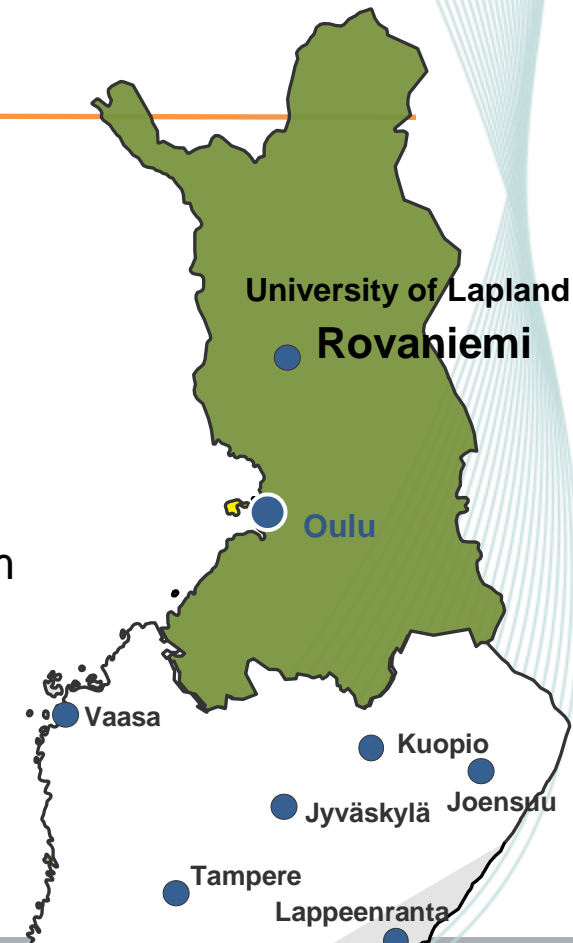
➤ ***e.g. 6 patents, 40 spin-offs***



# Universities in northern Finland

## University of Lapland

- Founded in 1979
- 4 600 students, 626 employees, budget: EUR 54,1 million
- **4 faculties:** Art and Design, Education, Law, and Social Sciences
- **Profile areas:**
  - International research on the Arctic and northern issues, Tourism
- **Focus areas:**
  - Service design
  - Northern welfare and changing work
  - Sustainable development
  - Law and justice



***Universities in northern Finland complement each other***



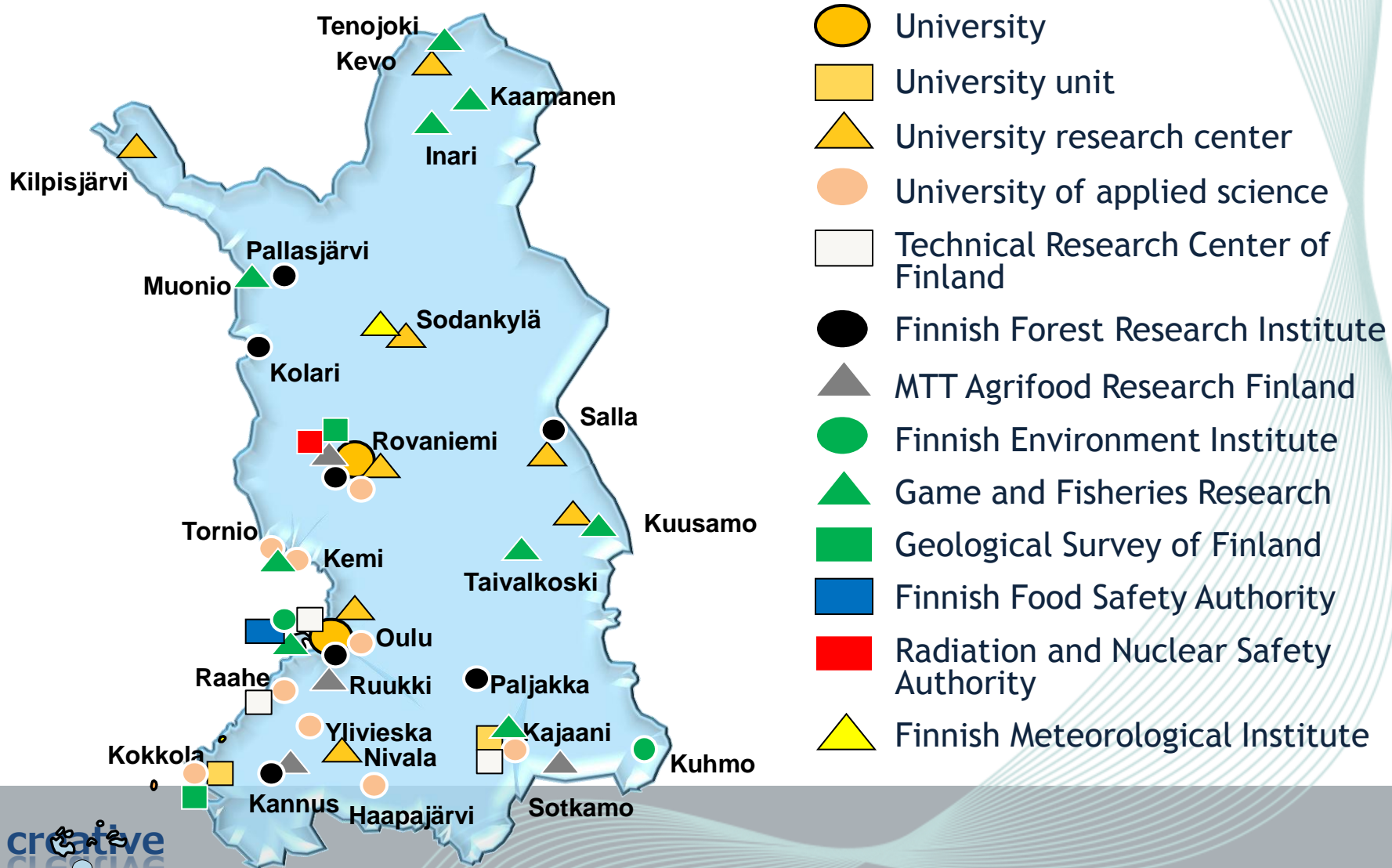


# Top-quality research in the universities

- **Natural systems:** northern ecosystems, adaptation and climate.
- **Environmental research and technology:** natural resources, energy, land use, mining, tourism.
- **The economy and judicial systems, societal and regional development:** changes in the sources of livelihood, social structures and political structures.
- **Art and culture:** northern culture and history, minorities and indigenous peoples, northern art.
- **Health and well-being:** the significance of environmental factors and diet on health and well-being, the indicators of health and well-being, social exclusion and special groups, special circumstances and adaptation.
- **Methods and technologies:** economical and judicial guidance, the interactions of art and technology, the identification and monitoring of changes, remote sensing and geographic information systems, methodological and design-based research.



# Other research institutes in northern Finland





# Networks in the field



Northern Environmental Research Network



The association of research on natural resources and environment

## University Environment House (year 2011)

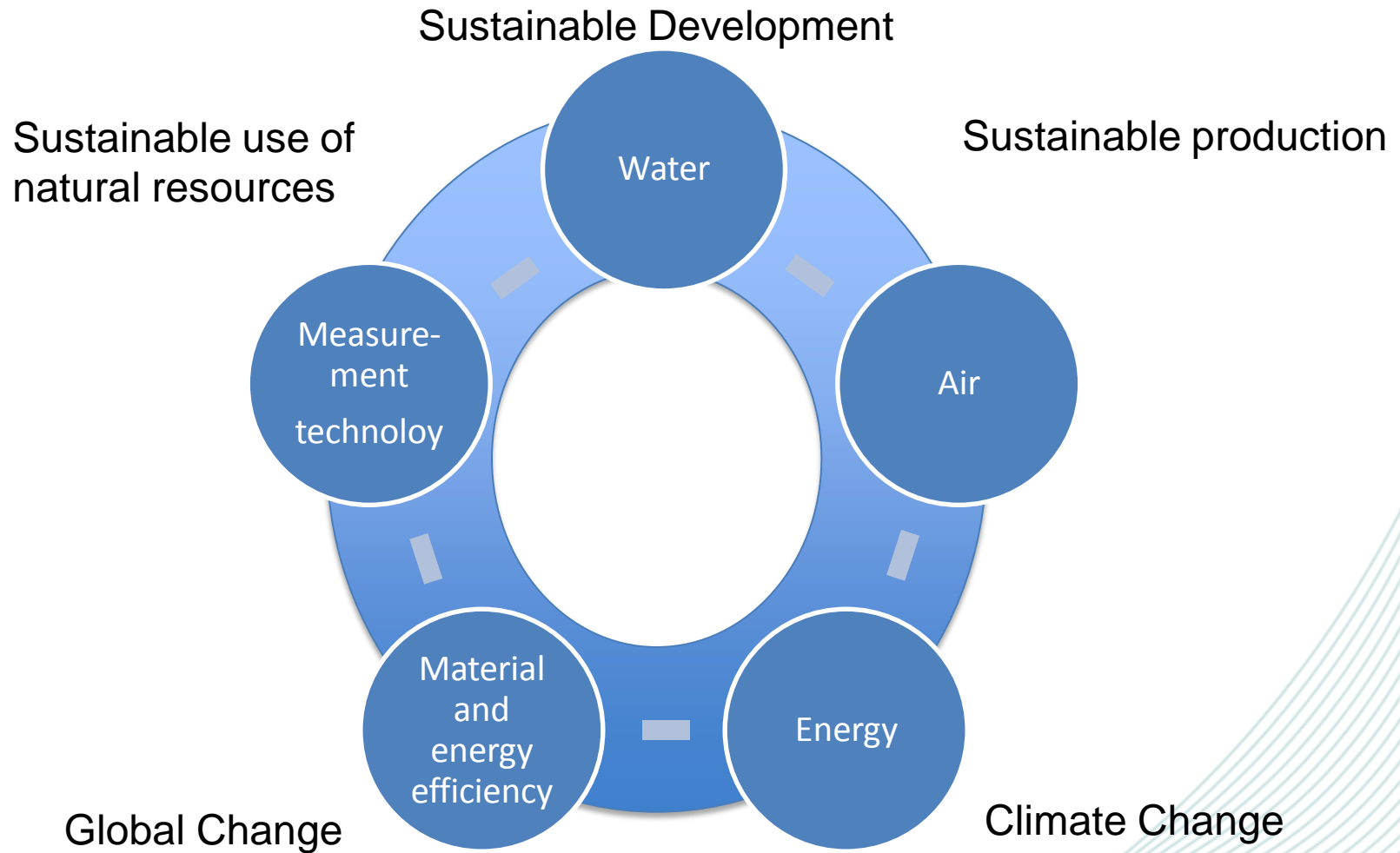
Thule Institute and five national research organisations in the same campus

- About 150 experts
- Cooperation between science, national research institutes and business
  - Synergy
  - Multidisciplinary, large projects
  - Research and research ers education
  - Common innovation actions
  - Common infrastructure.





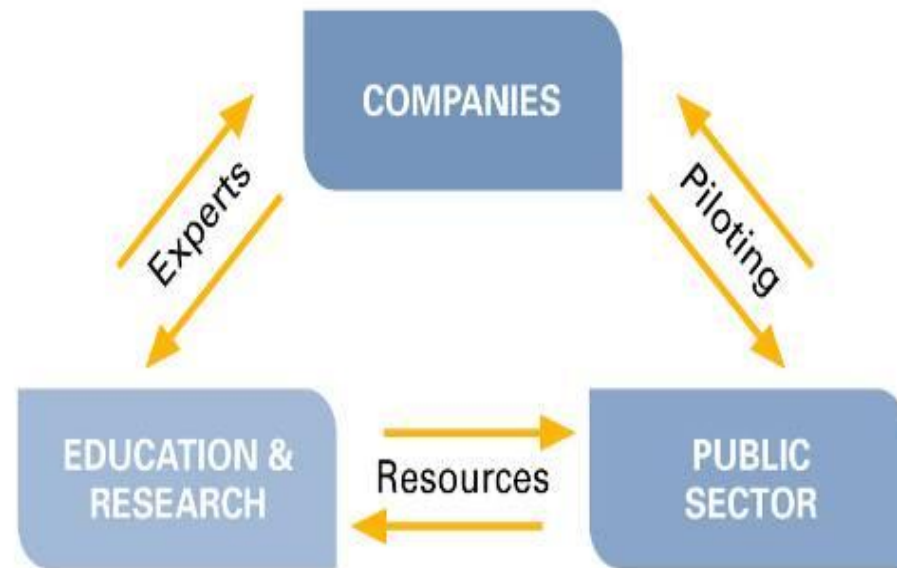
# Main research topics





# Collaboration in Oulu area

- Triple Helix — International research and education environment
  - **City of Oulu**, and other towns and municipalities
  - **University of Oulu** and other research organisations
  - Technopolis, **Chamber of Commerce**
  - Companies





# The Oulu Innovation Alliance

- Formed between the City of Oulu, University of Oulu, Oulu University of Applied Sciences, VTT Technical Research Centre of Finland and Technopolis.
- The ultimate target is to keep Oulu as an internationally acknowledged center for innovation.
- The OIA founding partners have committed
  - To focus their operations, education, research and development activities on agreed innovation areas.
  - To invest in the development of agreed infrastructures.
  - To create and develop mechanisms for mutual use.

Printed  
intelligence

Next generation  
Internet

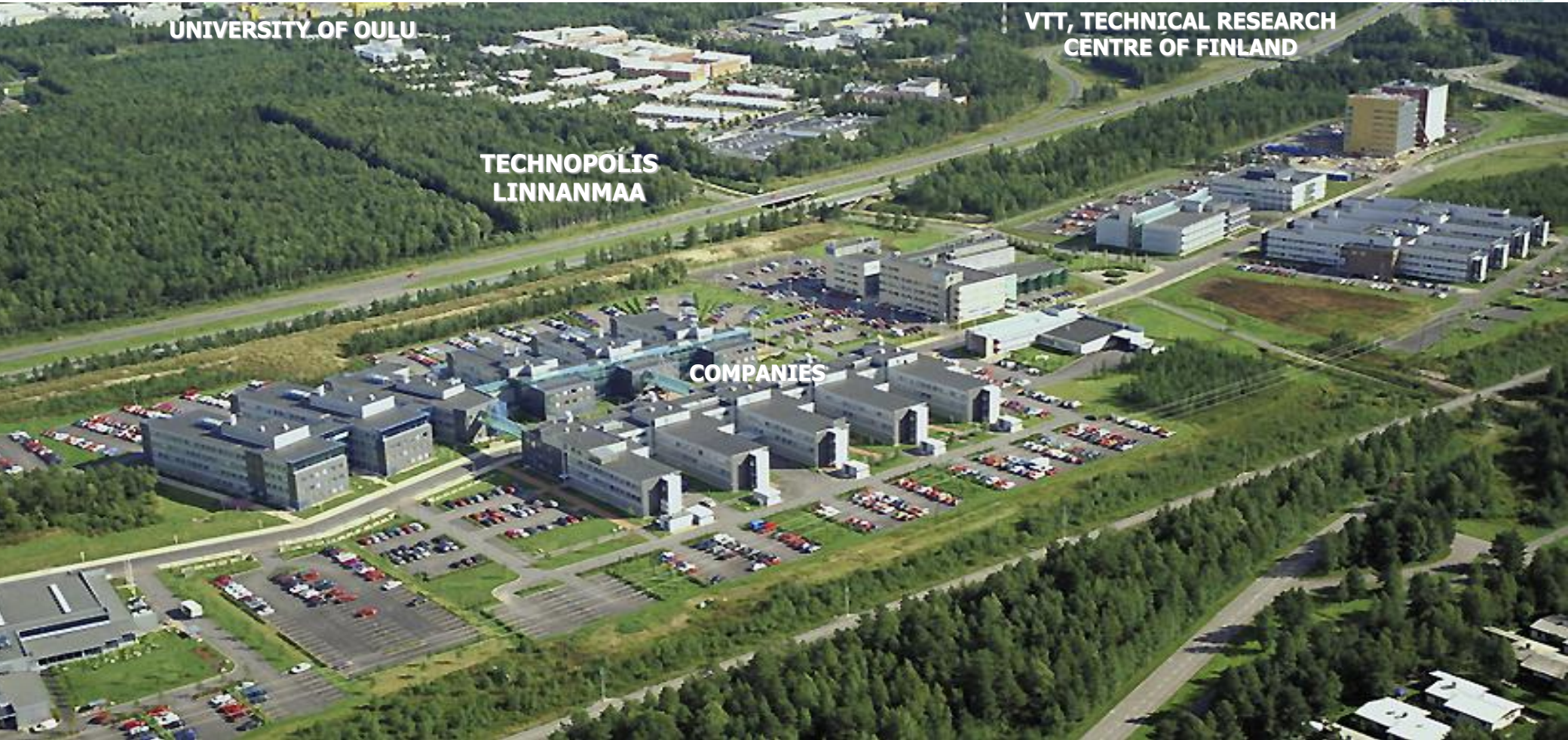
International  
business

Environment

Healthcare



# We are in the same campus area

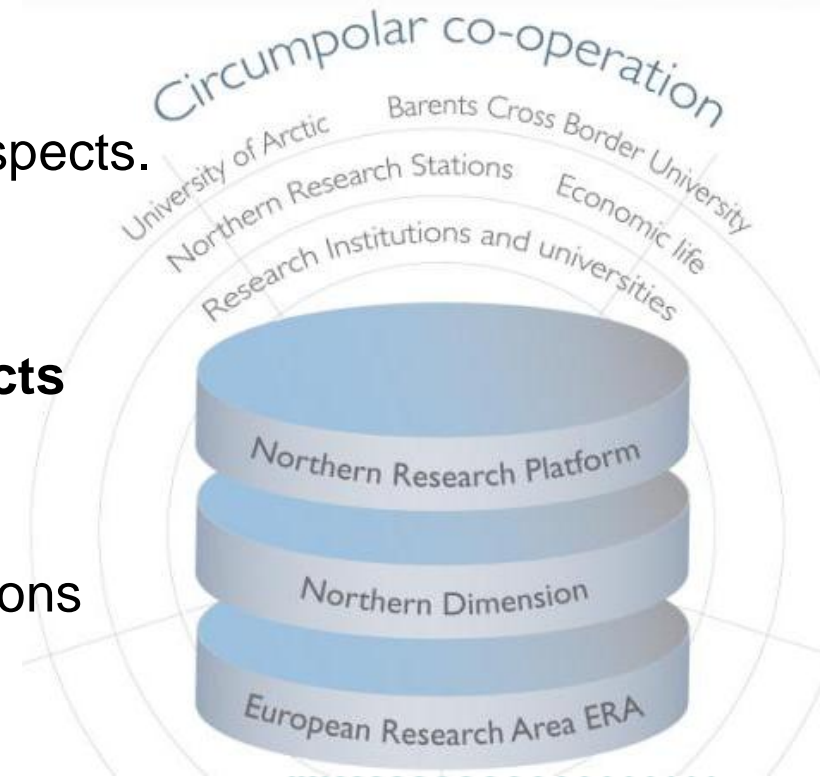




# Northern Research and Innovation Platform

Develop the operational platform for promoting northern research and innovation in the field of the **environment, energy and sustainable use of natural resources.**

- **Open – informal - forum – way of doing**
  - strong geographical emphasis on arctic aspects.
  - brings together key research actors.
  - better meet the needs of industry.
- **Generate multidisciplinary research projects**
- **Speed up innovations**
  - for mining and new forest industries
  - for environmental changes in northern regions







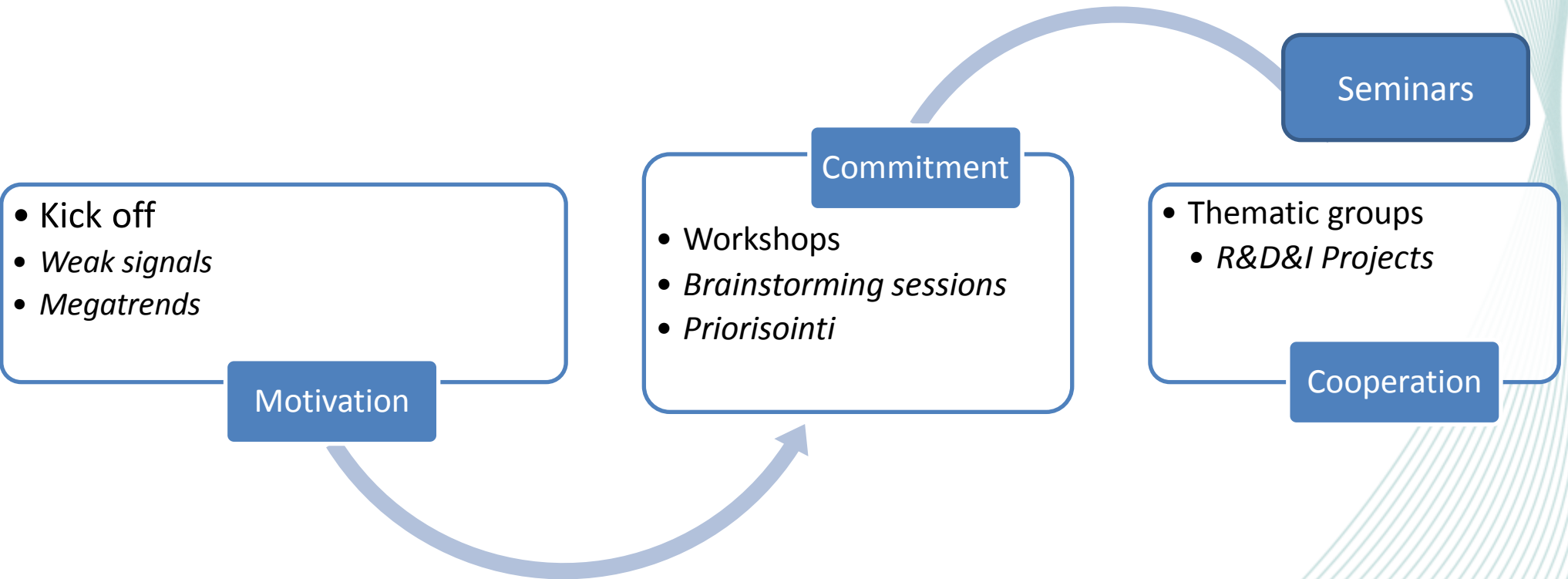
# Main targets

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- promote a **new collaboration culture** between science and industry in the global North (at the circumpolar level)
  - EU, Iceland, Norway, Russia, Canada, USA, Japan
- develop **knowledge, expertise and understanding** in the North for the benefit of the whole of Europe, and thus meet European needs by combining the environmental and social dimensions into technological expertise.
- provide **recommendations and approaches** for the contents of both national and international (EU) programmes,
- generate **large-scale, international, interdisciplinary – EU-funded** - projects.
- improve the **awareness** of the Northern research and innovation



# Development process – trust building





# Multidisciplinary research project ideas

- Energy - distributed solutions for sparsely populated regions
- Energy and material efficiency – sustainable economy
- Tourism – Net marketing - branding
- Ageing people - 4th residence -tourism
- Mining industry – landscape - 3D development – water technology
- Logistics solutions –new financing possibilities
- Environment protection – monitoring and measurement - ICT
- Human health – new radical political decisions
- Construction - eco materials – recycling materials - logistics
- Law – sustainable development - risk management

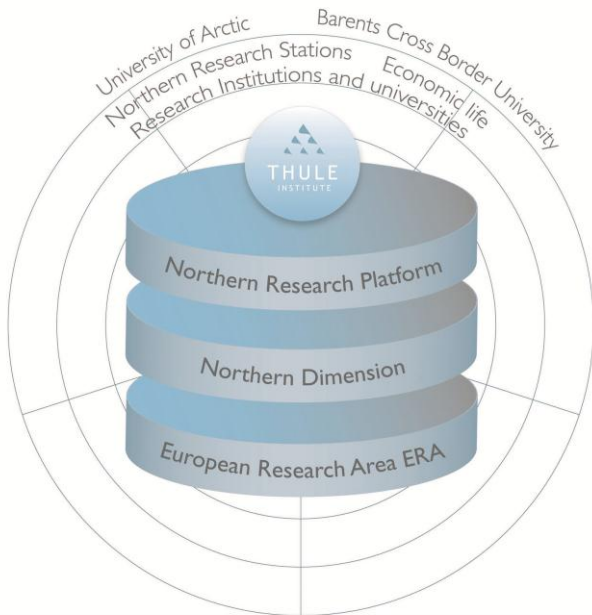


**Over 340 new multidisciplinary project ideas -> 8 projects**



# From local to global – main strategic partners

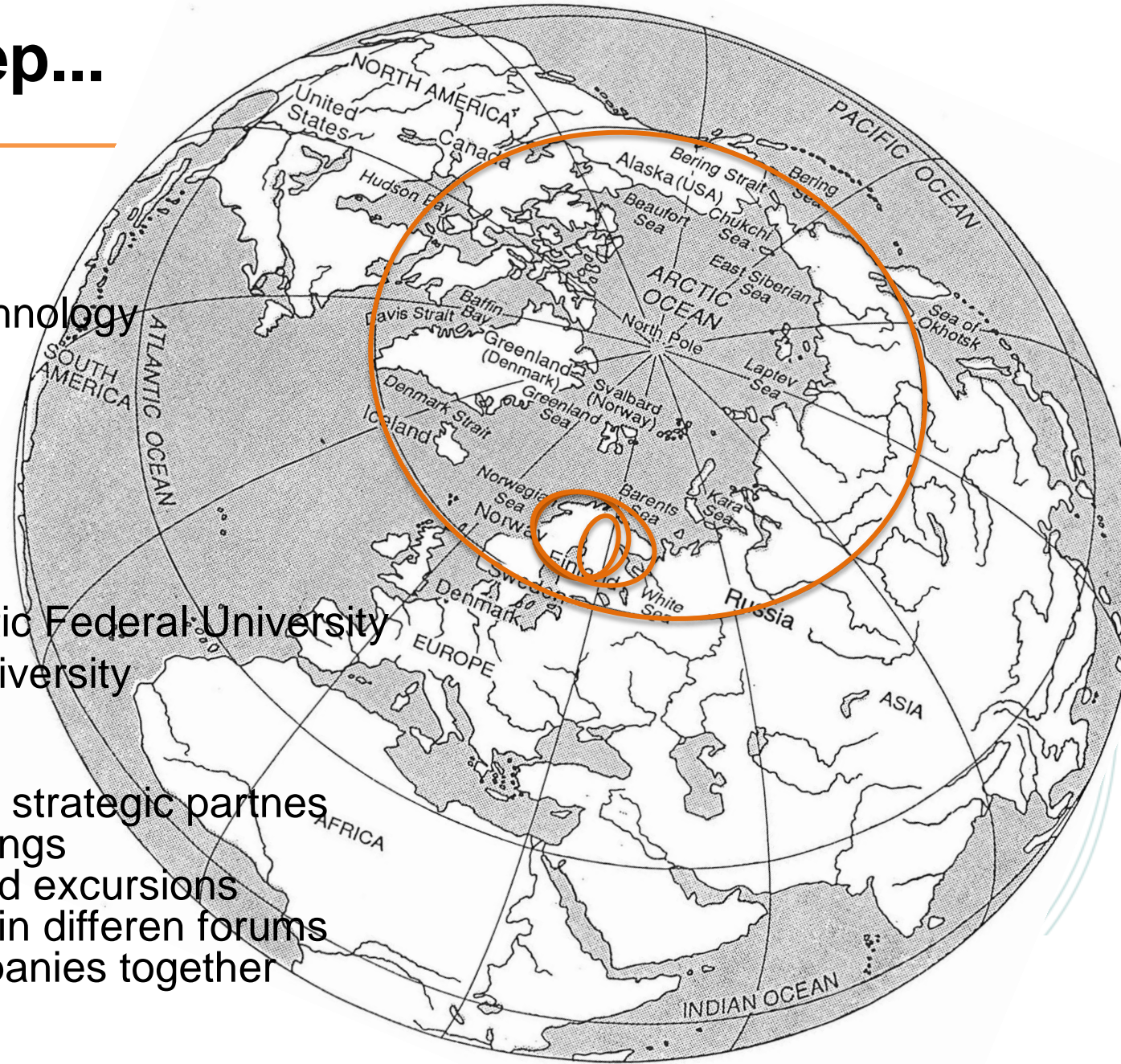
Circumpolar co-operation





# Step by step...

- University of Oulu
- University of Lapland
- Luleå University of Technology
- University of Tromsø
- University of Akureyri
- Hakkoido University
- University of Alaska
- University of Alberta
- NaRFU – Northern Arctic Federal University
- St Petersburg State University
- Mining University
- Active cooperation with strategic partners
- Joint researcher meetings
- Joint research visits and excursions
- Encourage researcher in different forums
- Researchers and companies together



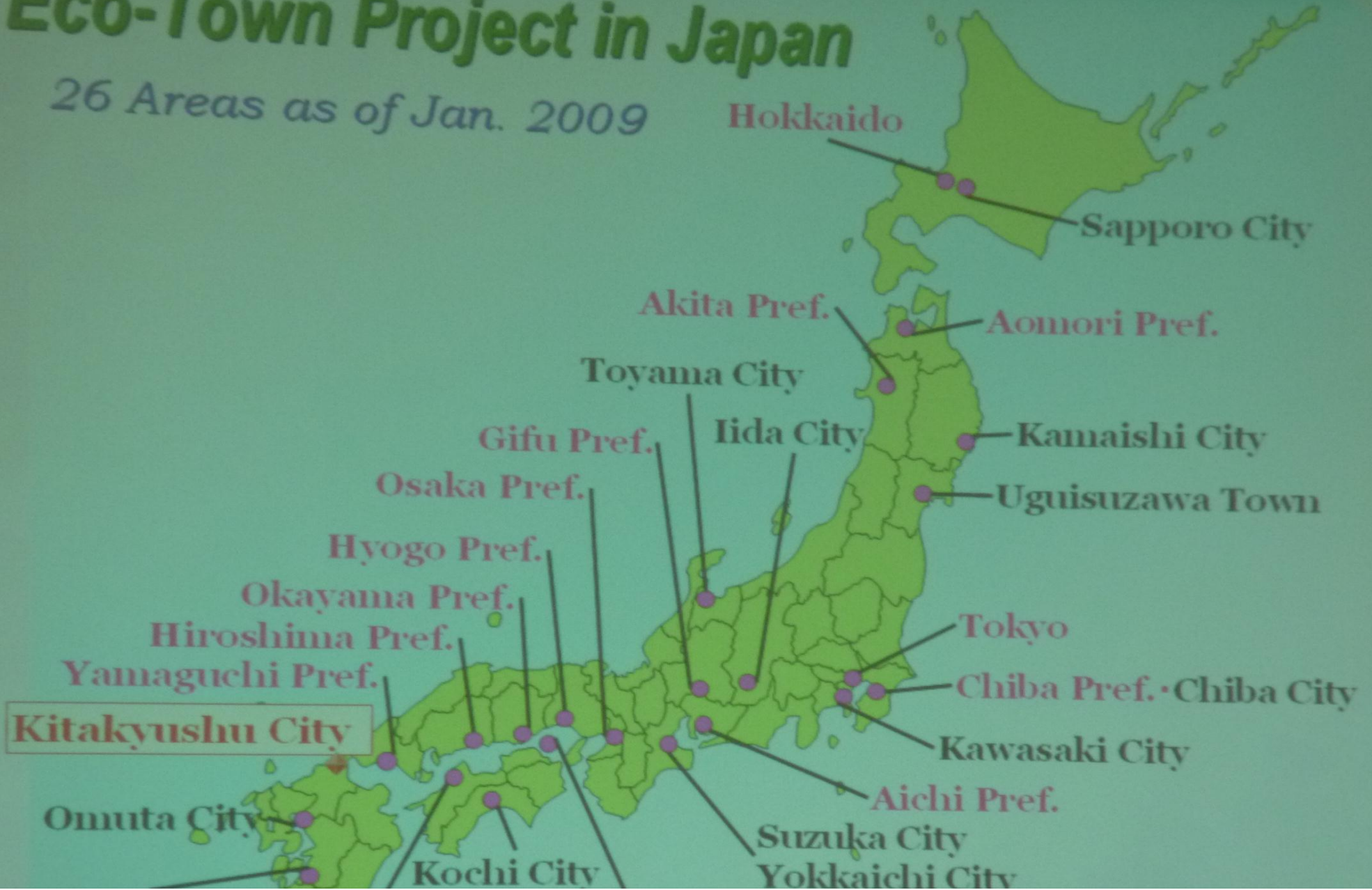


# Cooperation between Oulu and Hokkaido

- **Mobility:** student exchange, research exchange
  - 1-3 months funded by University of Oulu / year
    - More short visit possibilities between Finland and Japan
    - Joint research visits together to other knowledge centers (strategic partners)
- **Joint seminars and researcher weeks**
  - Joint Finnish-Japanese Symposium, Oulu
- **Joint Research projects:**
  - Comparative studies
  - Joint research projects to tackle Russian opportunities
- **Finland Distinguished Professor Programme (FiDiPro)**
  - Every year – please contact feerly!
- **Hokkaido University Office in Helsinki**
  - Only 1 hour to Oulu.
- **Networking agents**
  - Hokkaido / Northern Finland – 1 month -> knowledge feasibility study.

# Eco-Town Project in Japan

26 Areas as of Jan. 2009

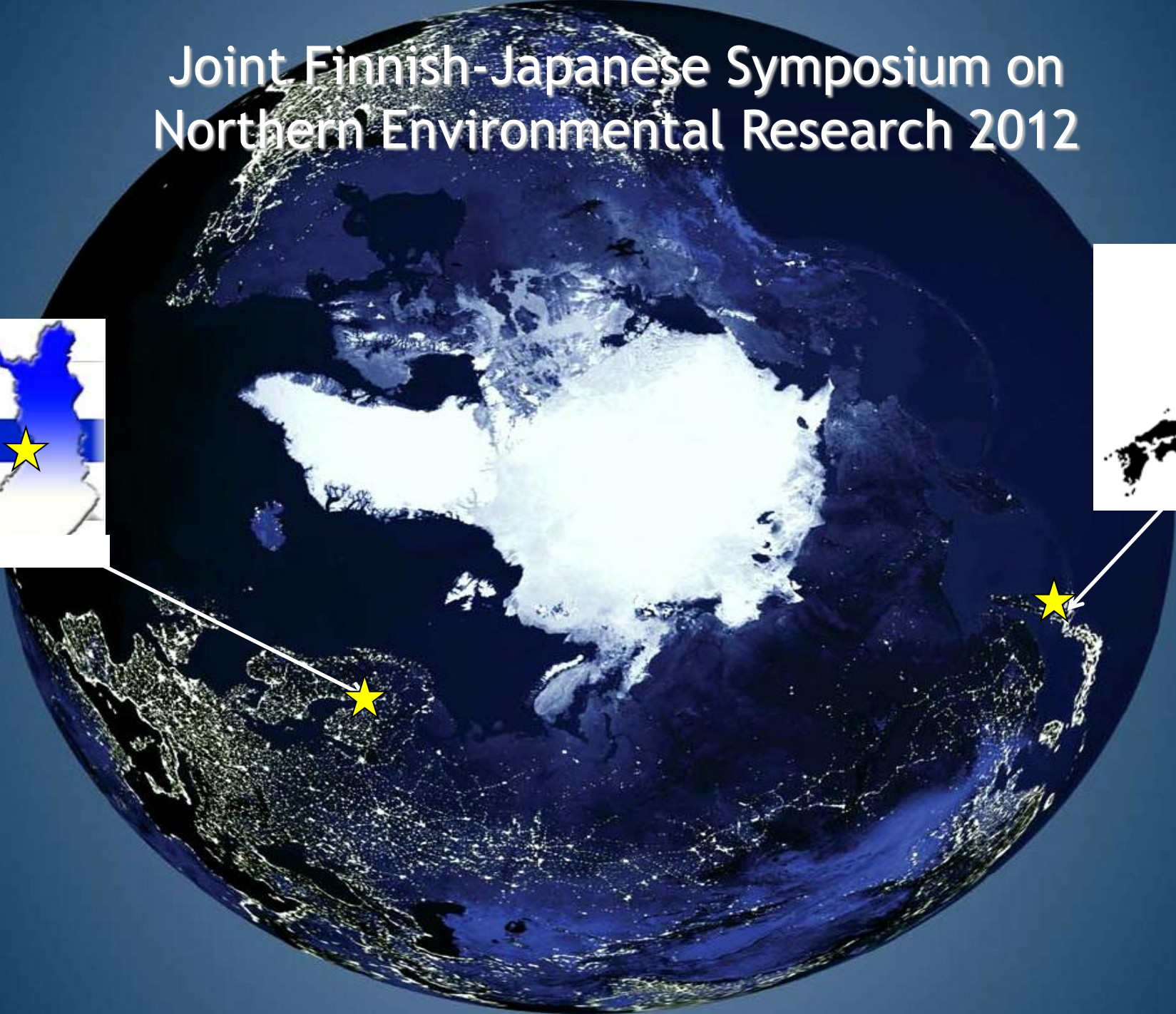


**Benchmarking study : Research & innovation centers**





# Joint Finnish-Japanese Symposium on Northern Environmental Research 2012





# Wellcome to Oulu and Oulanka!

## Joint Finnish Japanese Symposium on Northern Environmental Research 2011

First Day Seminar in Oulu ( 1 day)

Research Field Study in the Oulanka National Park ( 2 days)

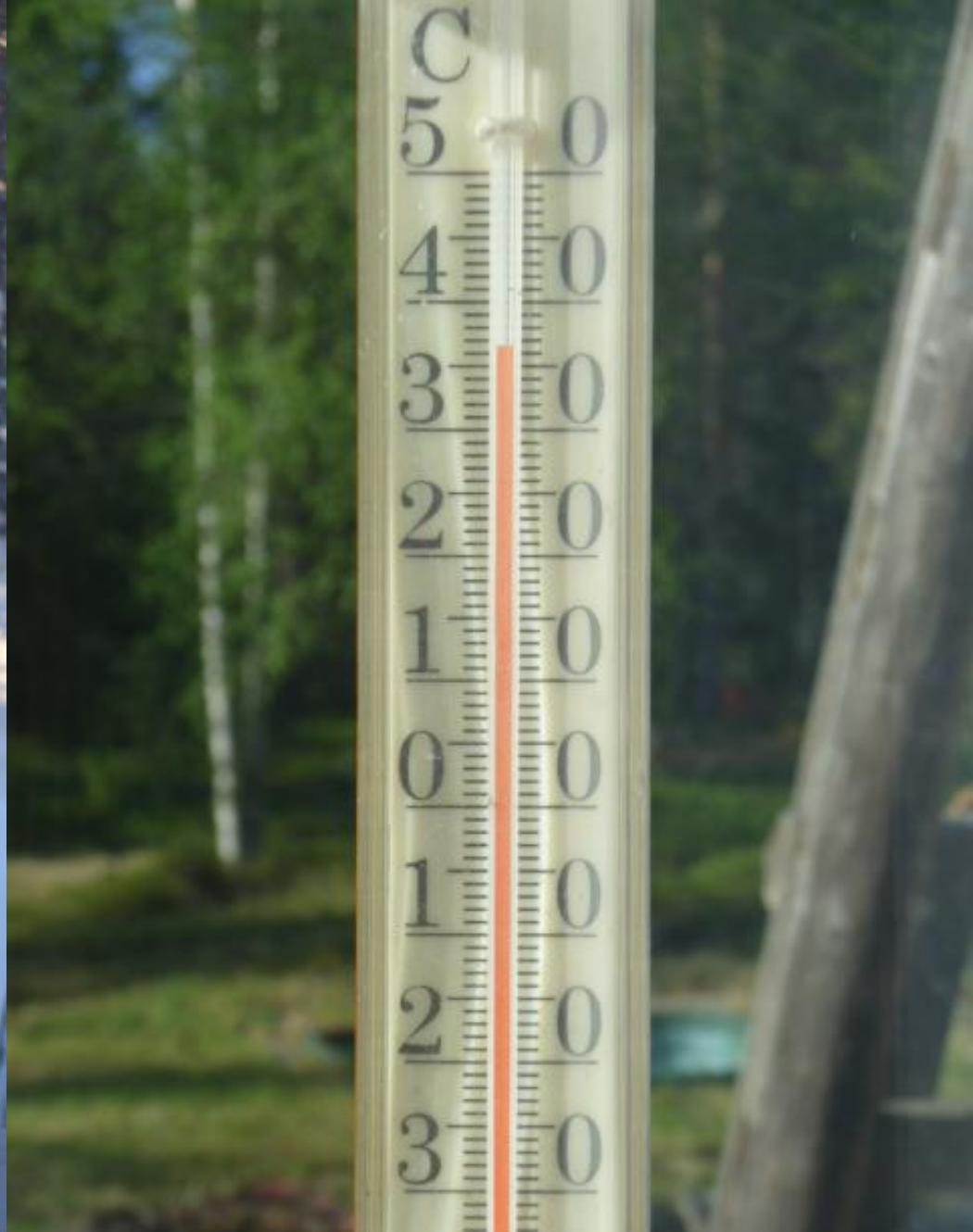
Research Week in Oulanka Research Station (3 days)

Sum Up Day in Oulu (1 day)





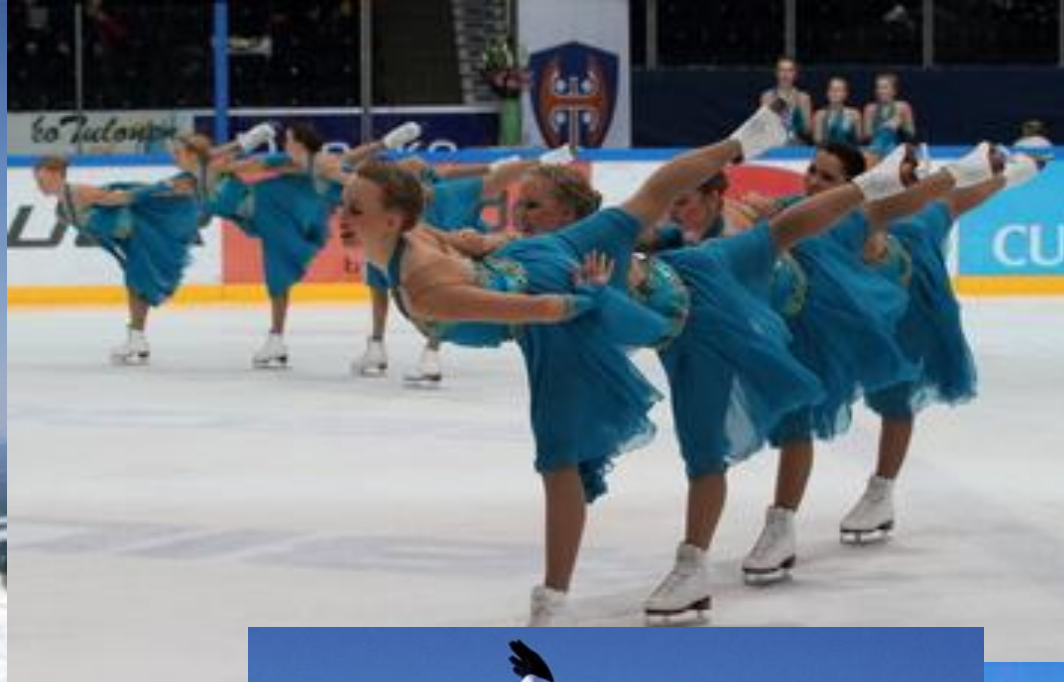
***Because of climate change, we may be closer***



***We have the true living lab created by the Mother Nature***



***Midnight sun - 24/7 visibility – real wireless solution***



***We have snow – ice – air - and fun!***



***Thank you! paivi.iskanius@oulu.fi www.northchallenge.org***