



HOKKAIDO UNIVERSITY

Title	Northern research and innovation platform : Promoting cooperation between Finland and Japan
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Description	Concluding Session: Challenges for Cooperation
Relation	北方圏の環境研究に関するシンポジウム. 2011年10月31日(月). 北海道大学学術交流会館 小講堂. Northern Environmental Research Symposium (Hokkaido-Finland Days: A Bridge for Northern Cooperation). Monday, 31 October, 2011. Hokkaido University Conference Hall.
Issue Date	2011-10-31
Doc URL	https://hdl.handle.net/2115/47653
Type	conference presentation
File Information	concluding_Iskanius.pdf





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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*



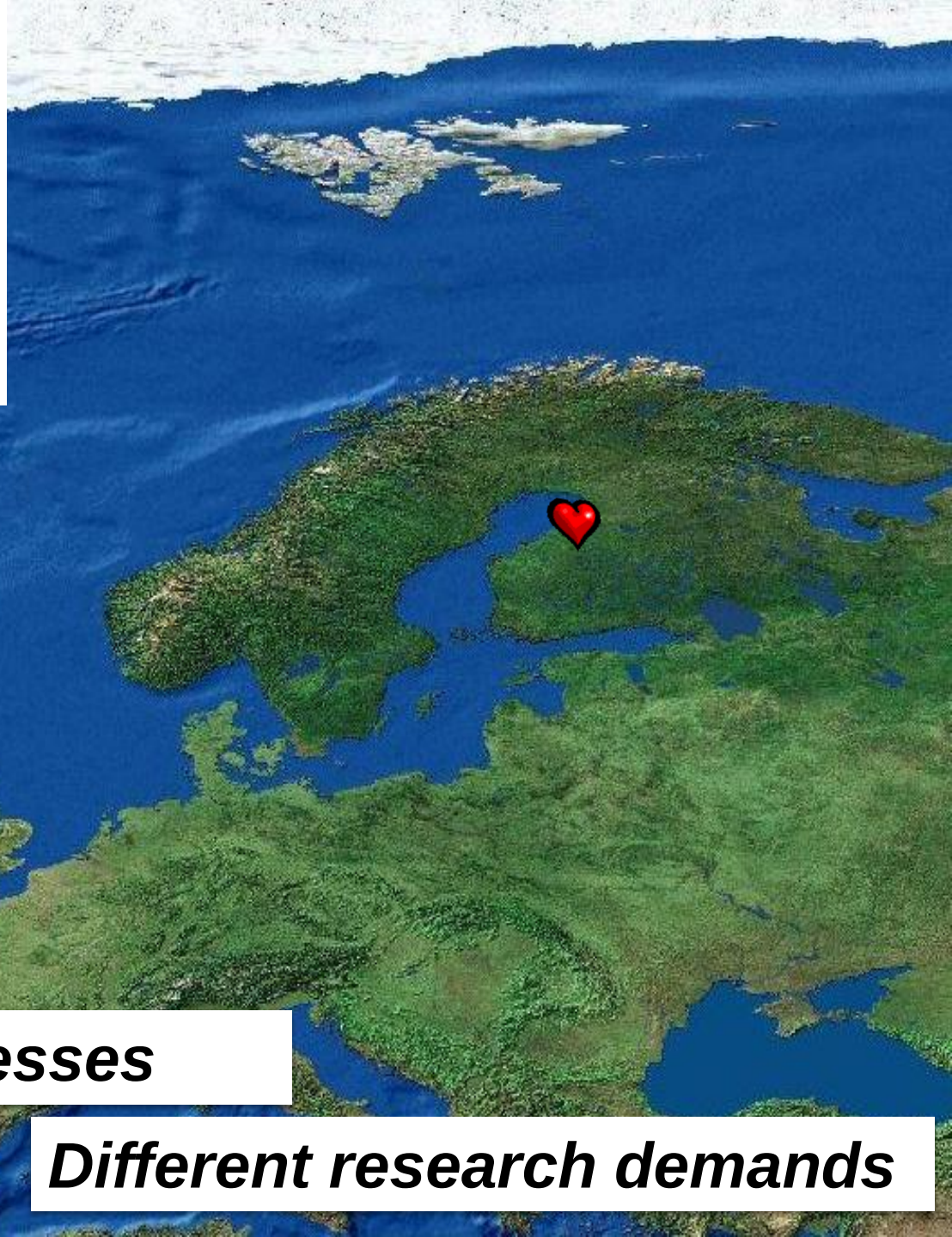
Promoting research cooperation between Finland and Japan



My second visit in the Hokkaido University - in Japan

NORTHERN PART OF EUROPE:

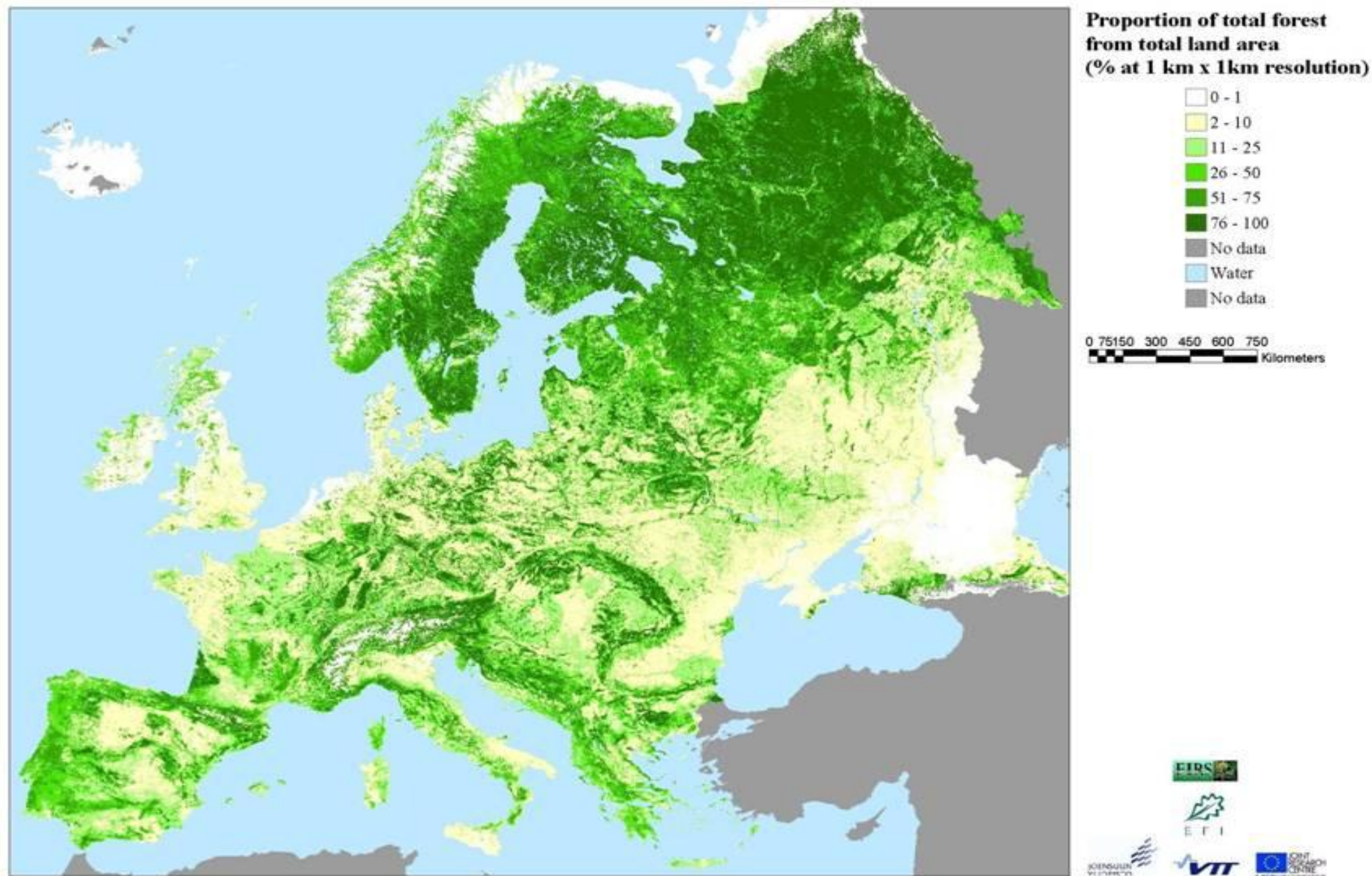
- Far away from markets
- Long logistics routes
- Peripheral location
- Harsh climatic conditions
- Sparsely populated
- Rapidly ageing population



Natural resources

New businesses

Different research demands



We locate in the European forest belt



Pulp and paper and bio diesel – in the same site



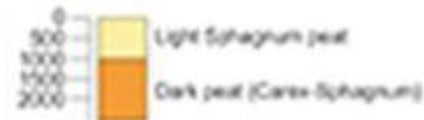
Oil and gas - quite near







Technically suitable peat reserves
(million m³ in situ) (estimated)



Technically suitable peatland area
for industry (%) / total peatland area

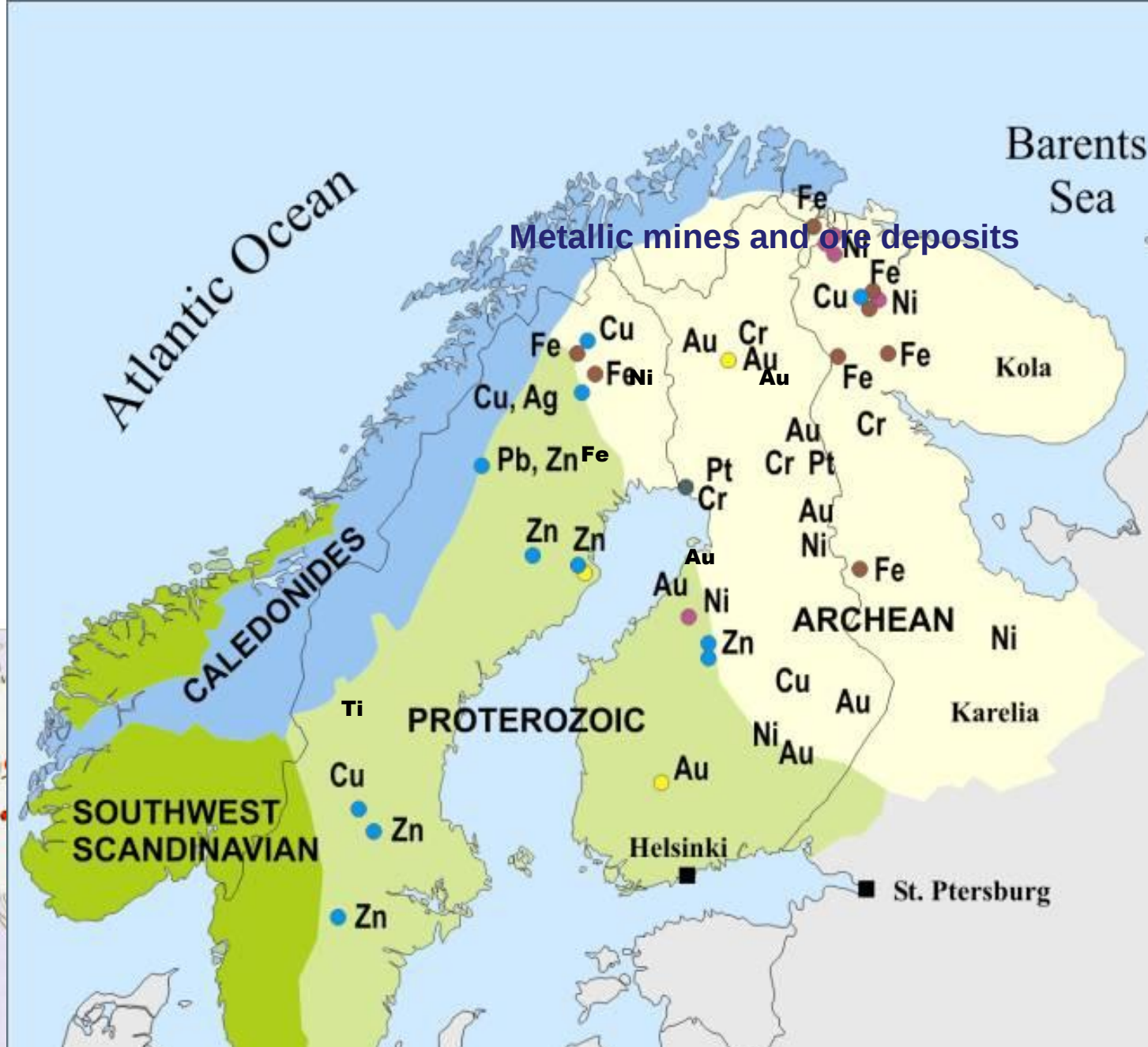
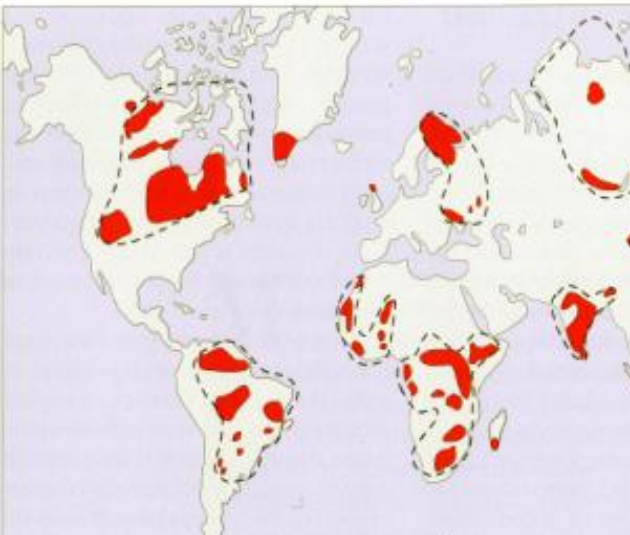


Distribution of peat land - technically suitable peat resources



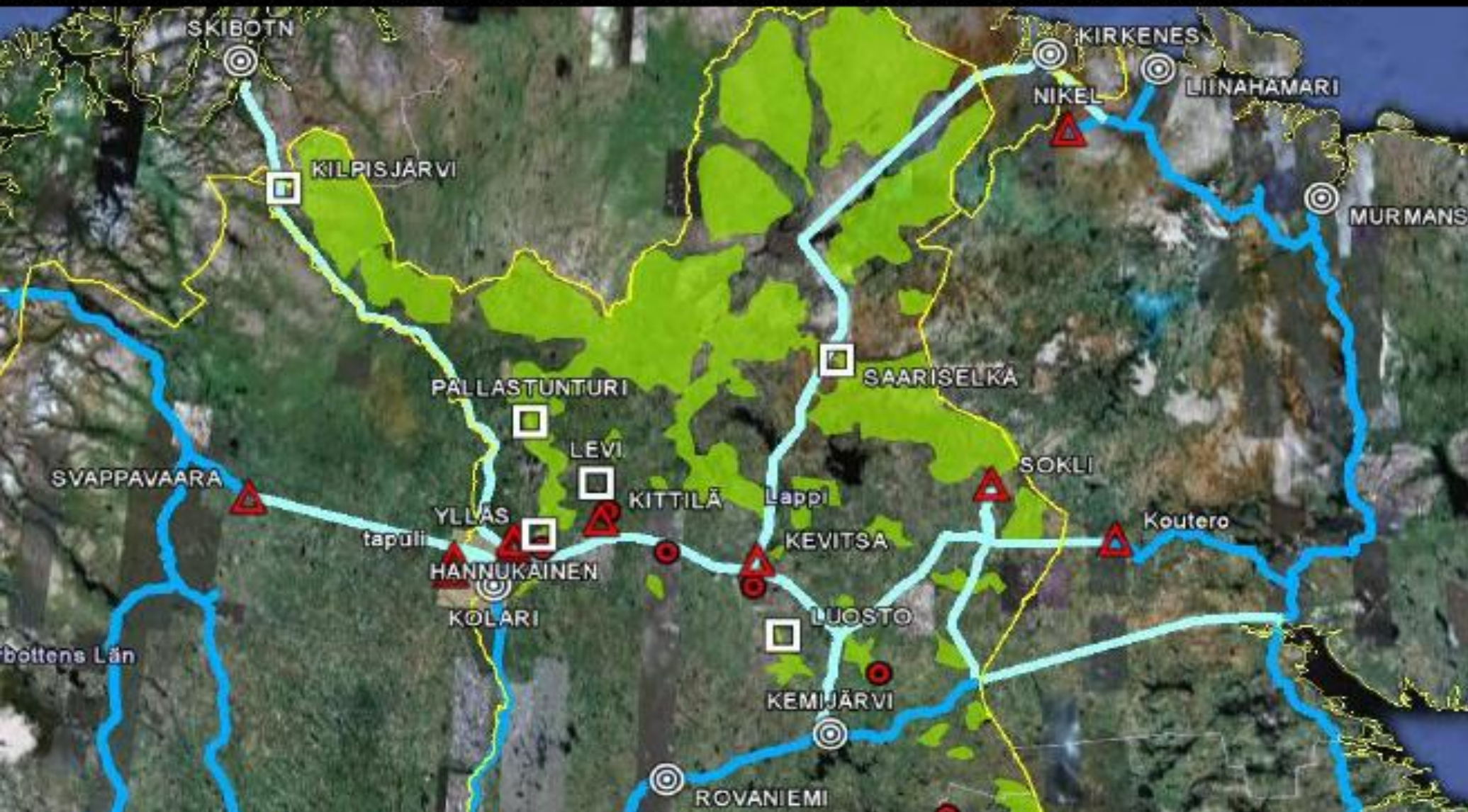
Nuclear power station in Northern Finland

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



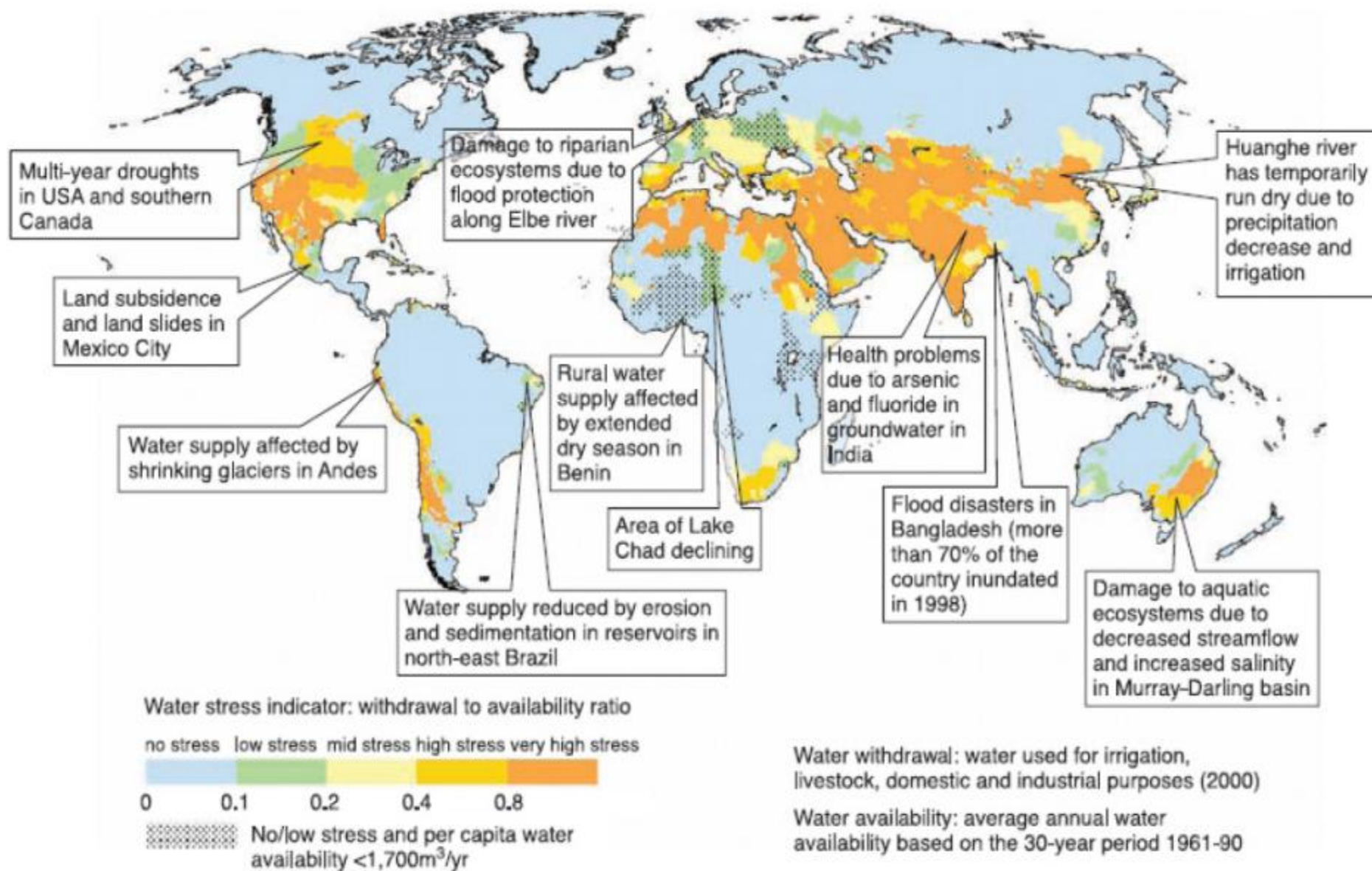
Fennoscandian shield - European promising mineral area

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



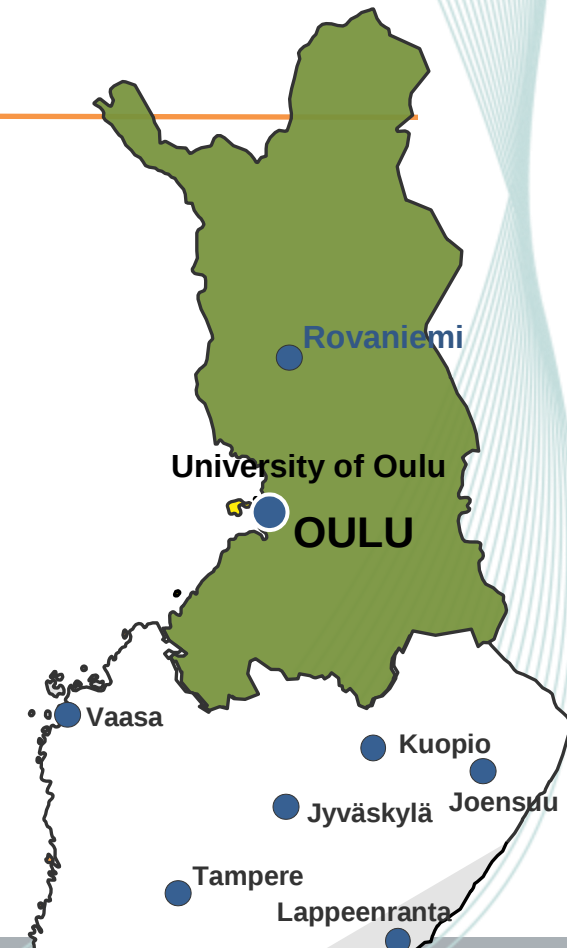
Water – the most important natural resource



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

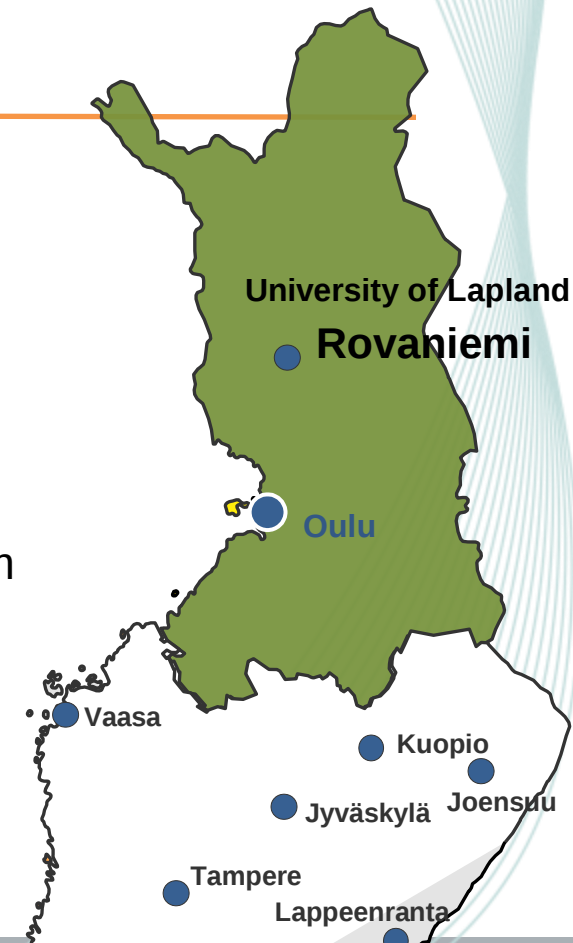
➤ ***e.g. 6 patents, 40 spin-offs***



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

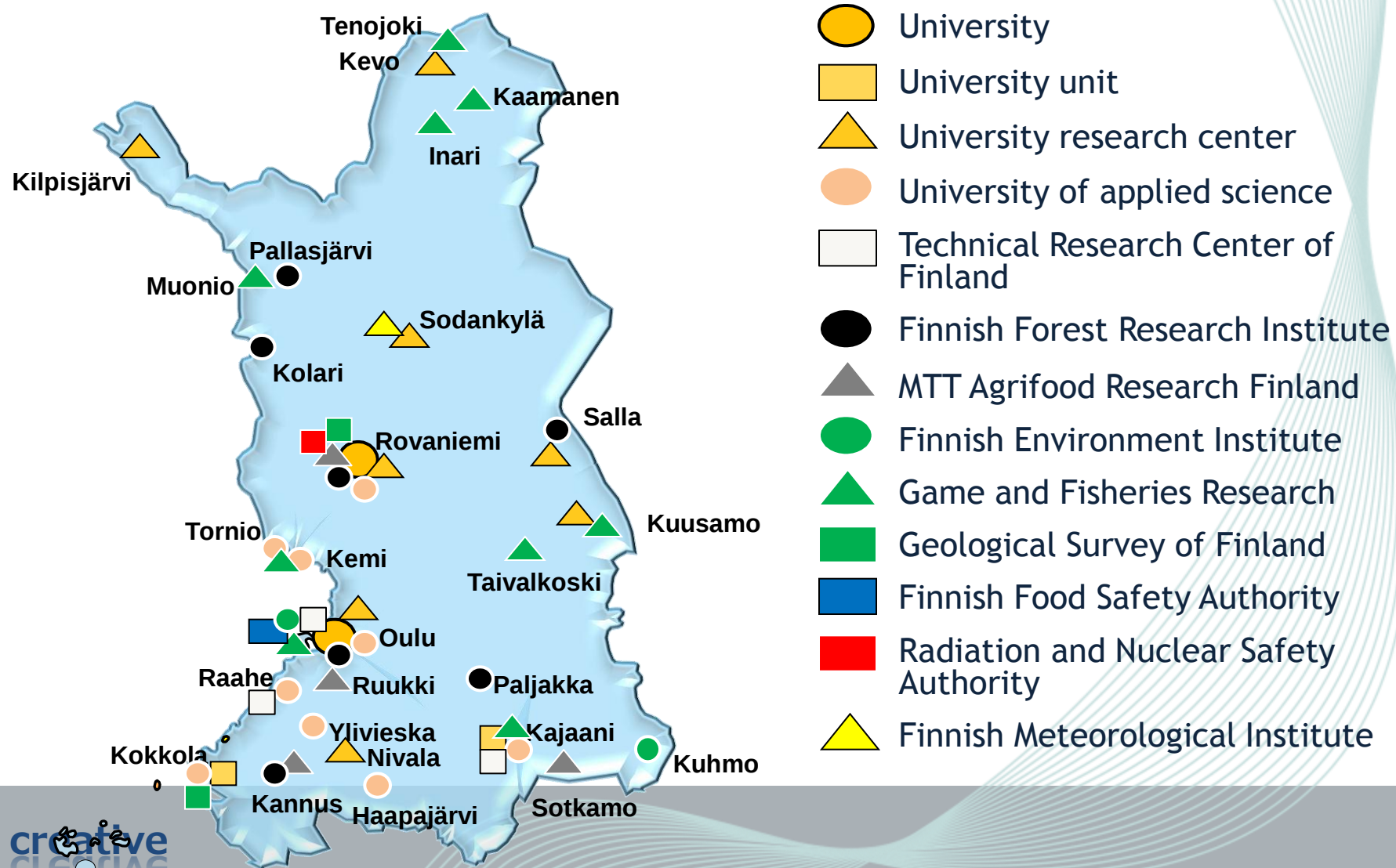


Top-quality research in the universities

- **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)

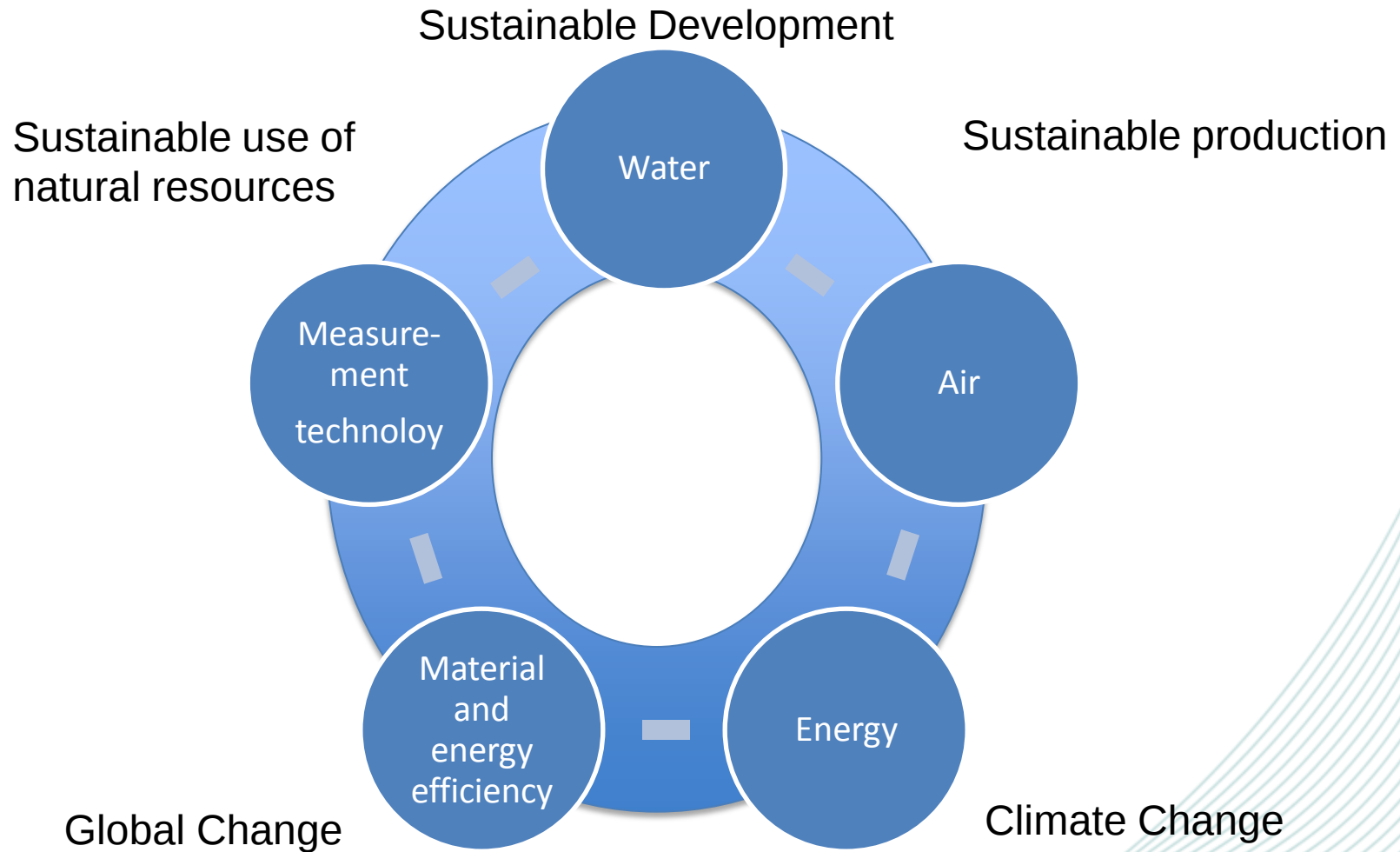
Thule Institute and five national research organisations in the same campus

- 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.





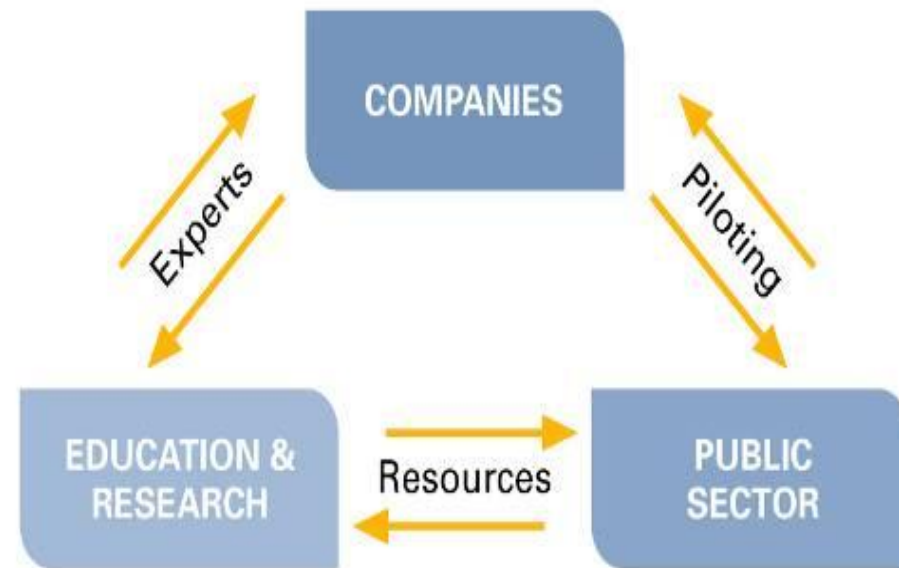
Main research topics





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

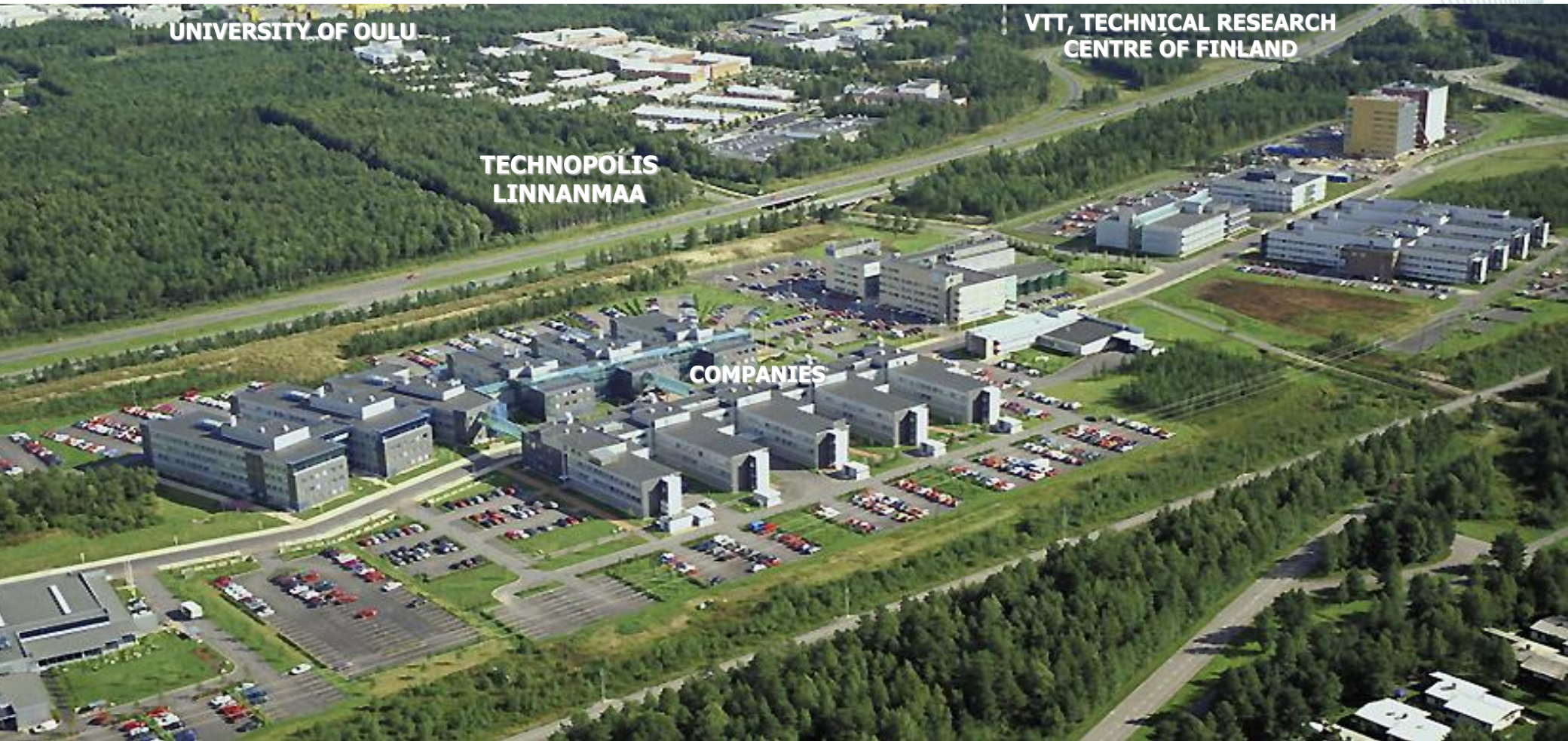
International
business

Environment

Healthcare



We are in the same campus area

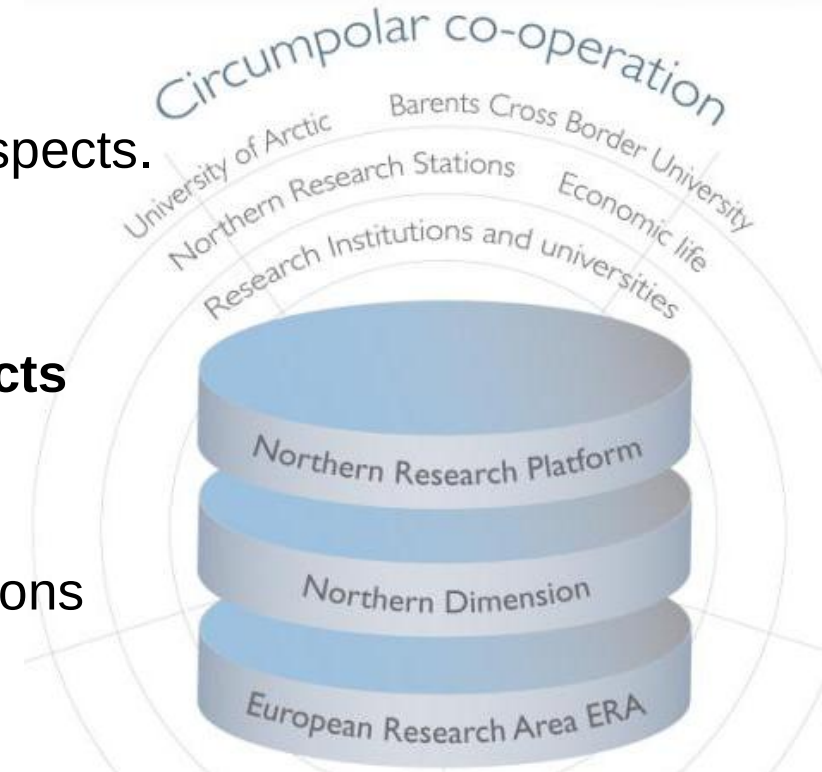




Northern Research and Innovation Platform

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



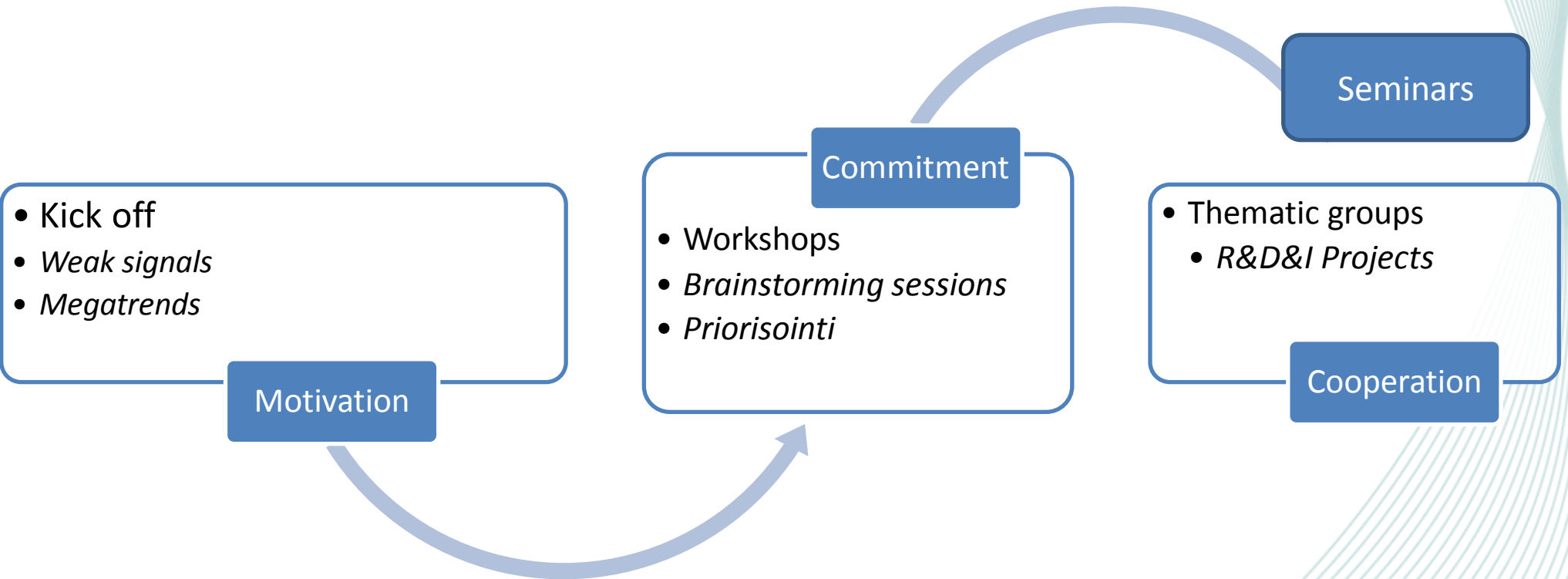


Main targets

- 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

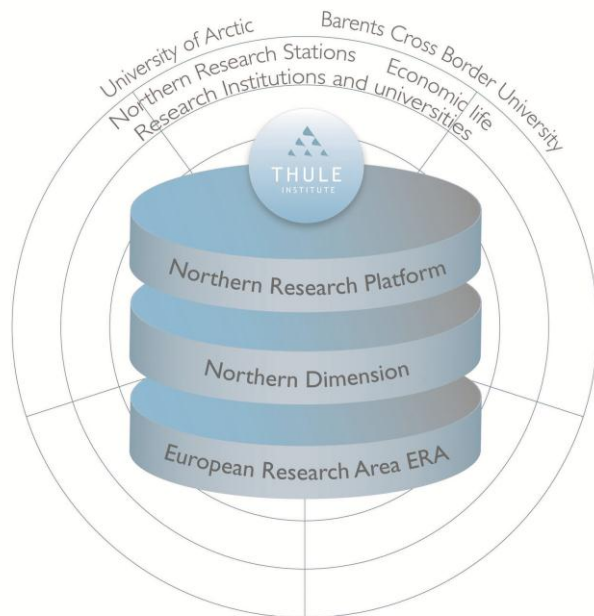


Over 340 new multidisciplinary project ideas -> 8 projects



From local to global – main strategic partners

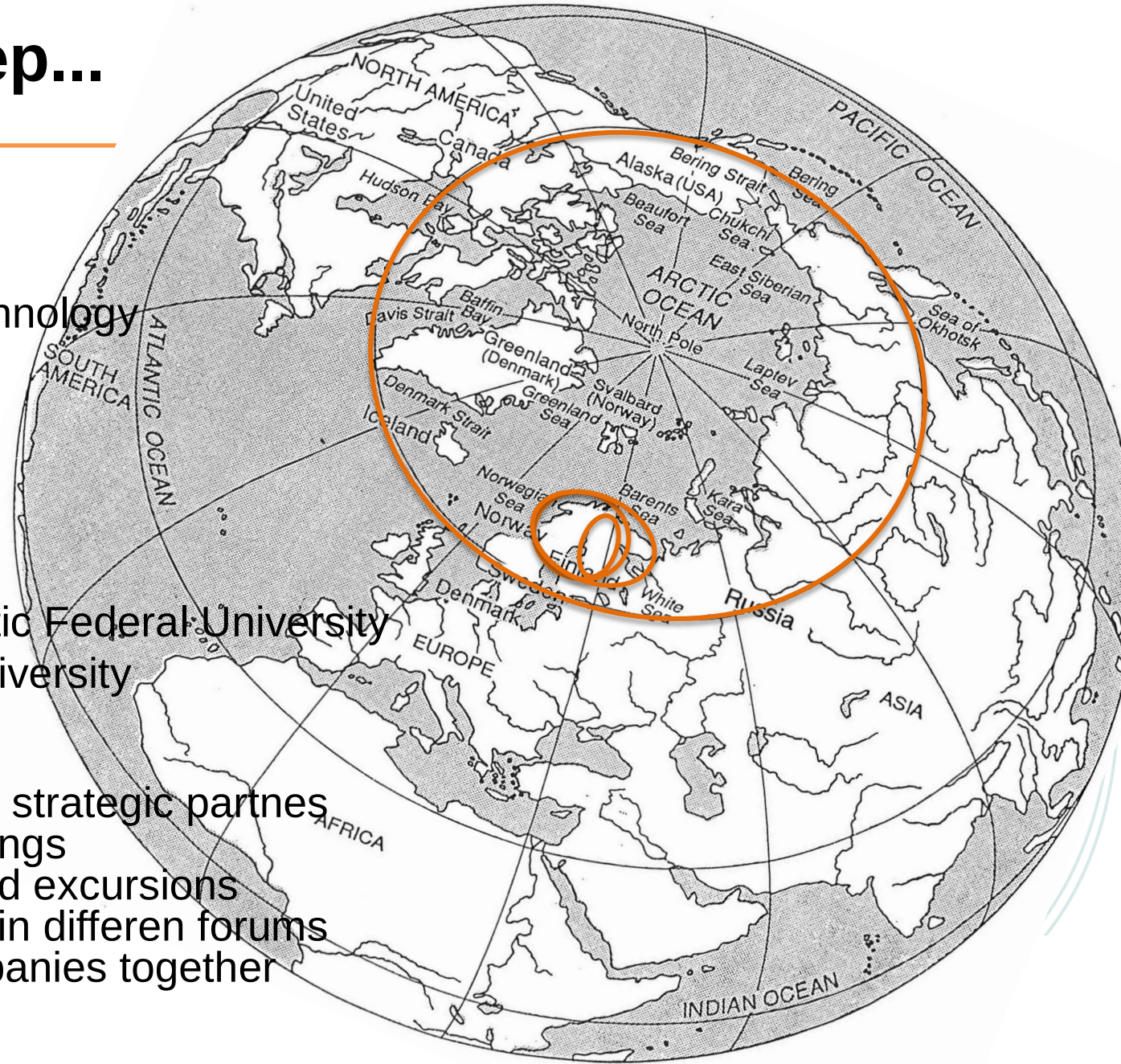
Circumpolar co-operation





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



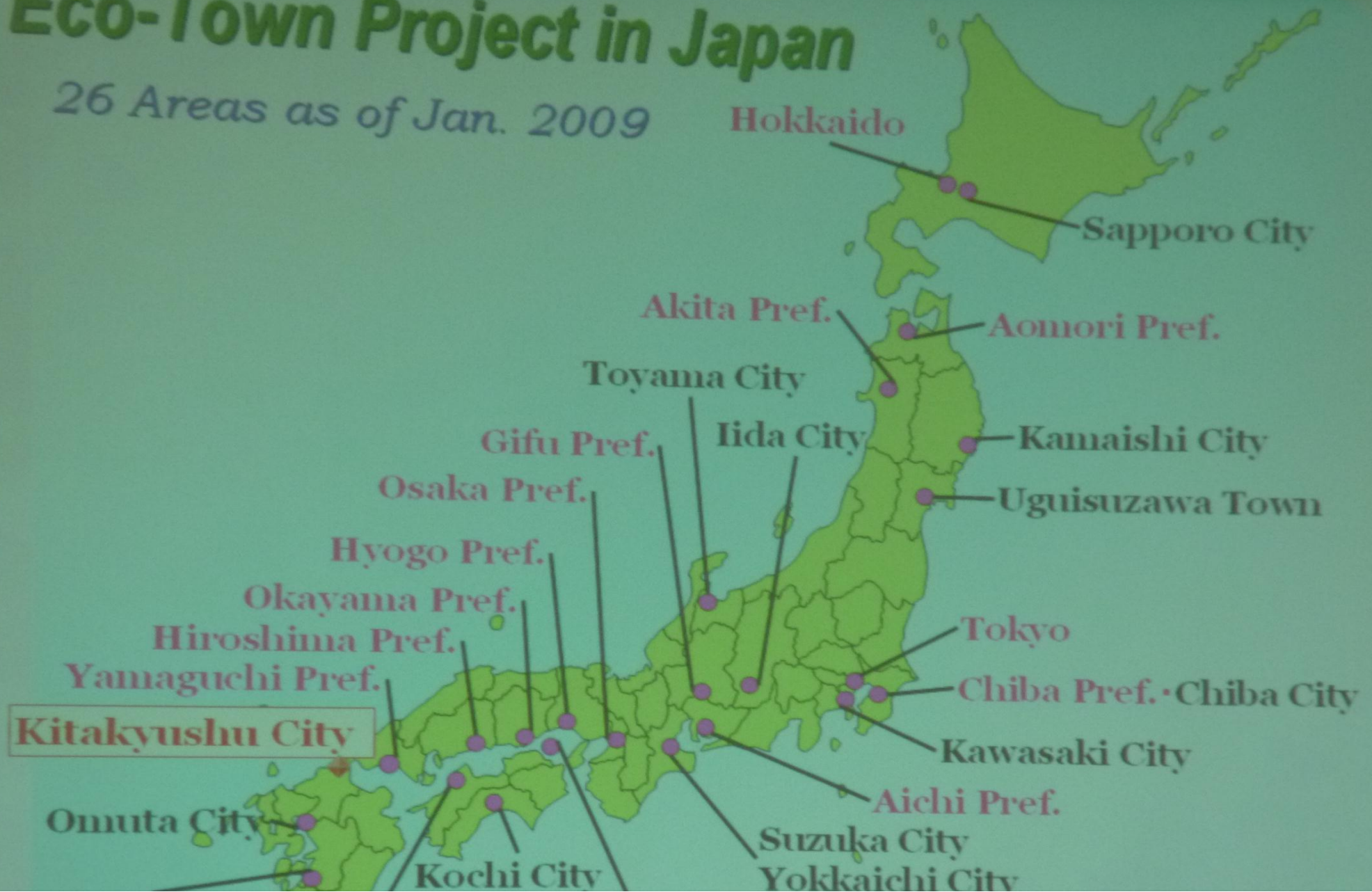


Cooperation between Oulu and Hokkaido

- **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

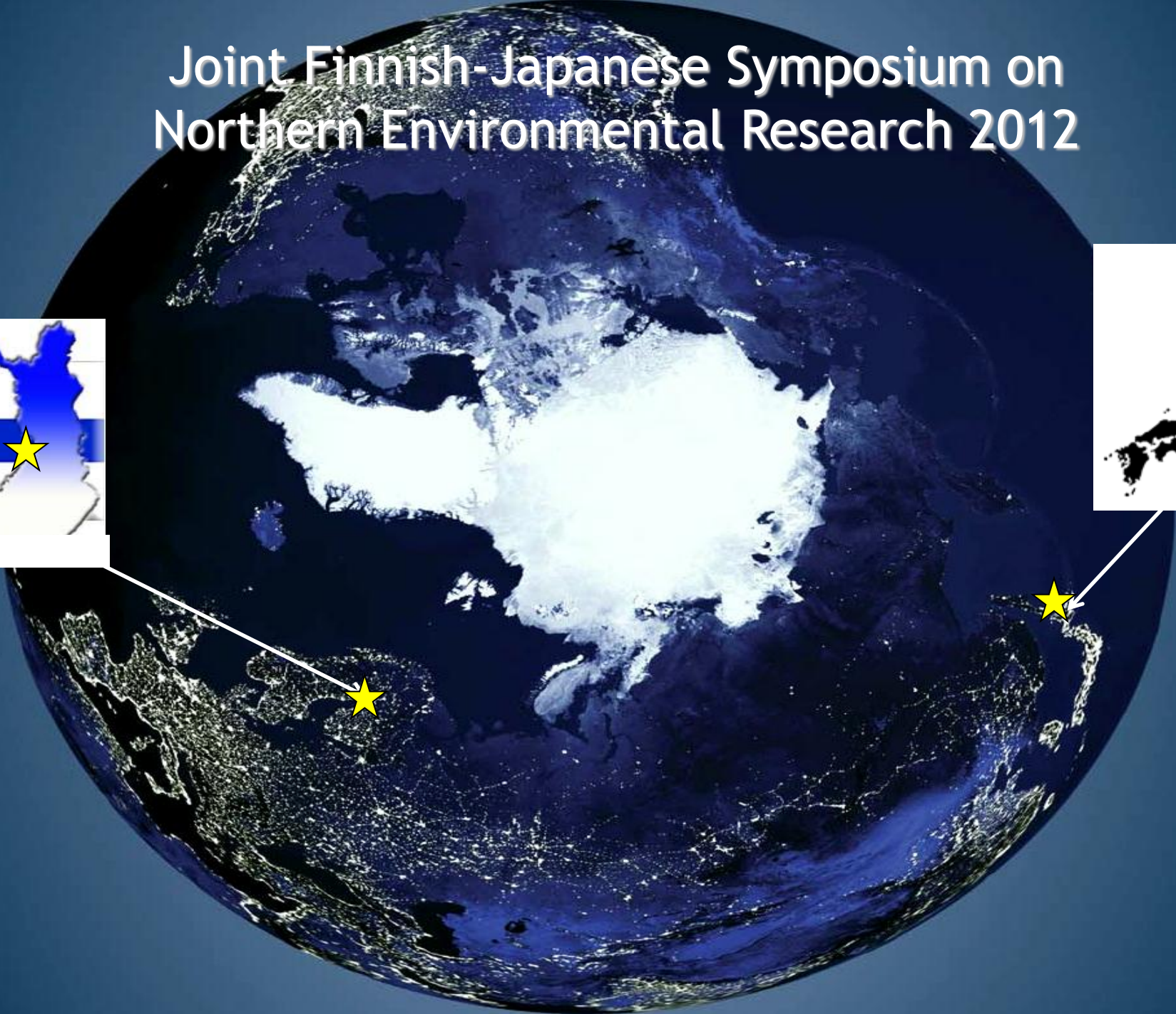
26 Areas as of Jan. 2009



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

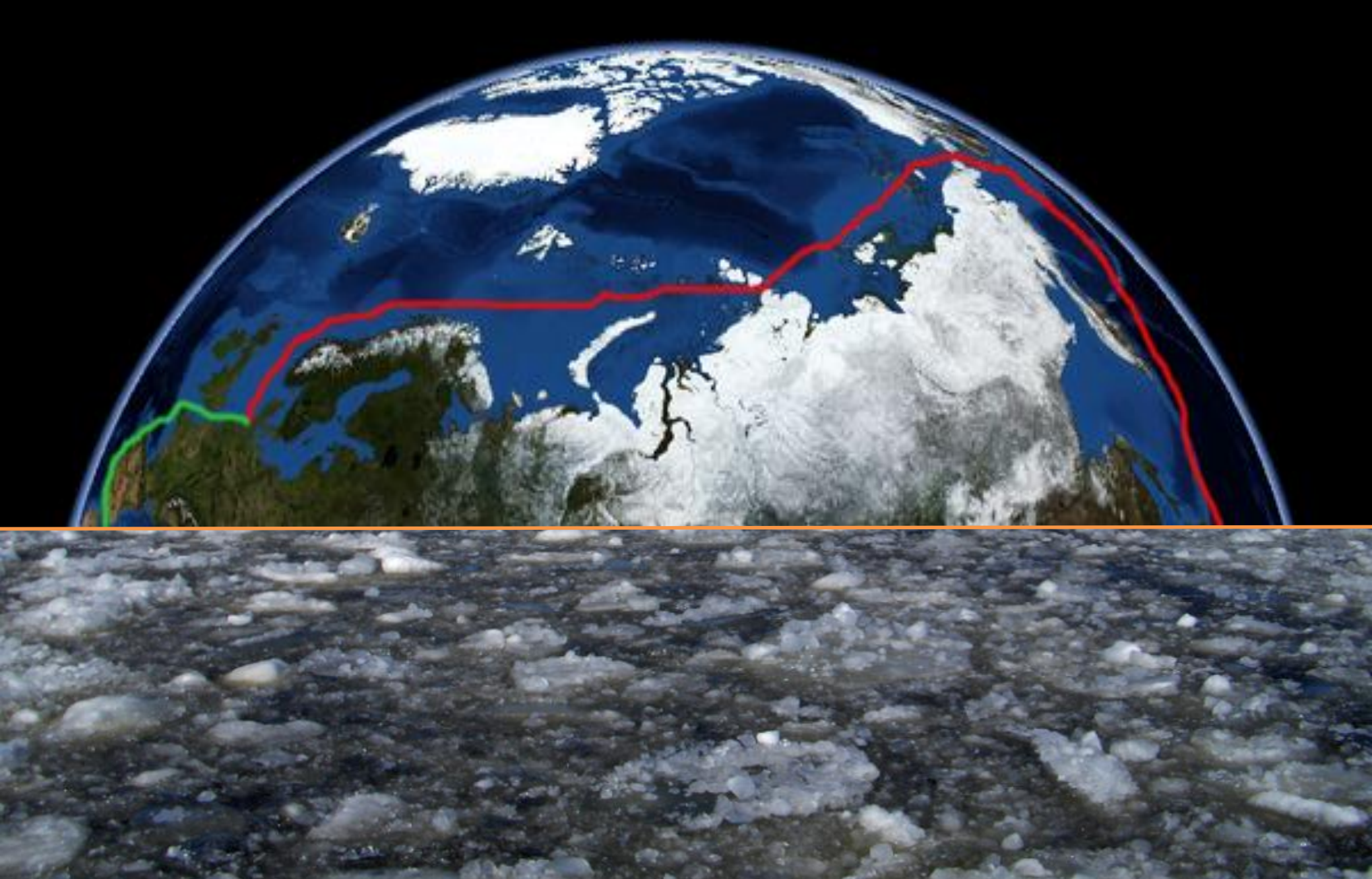
First Day Seminar in Oulu (1 day)

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

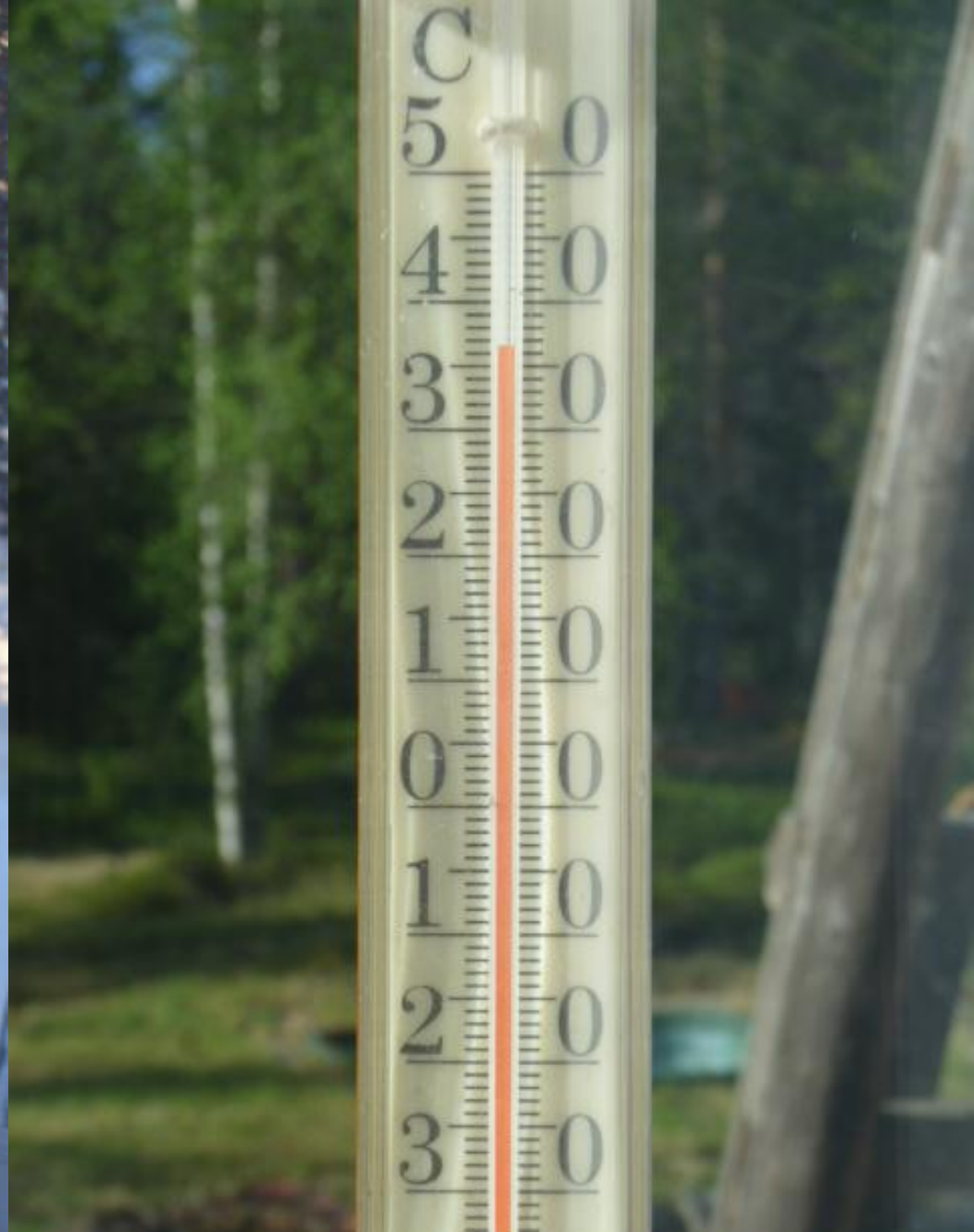
Research Week in Oulanka Research Station (3 days)

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