



**The NARP process
(Nordic Arctic Research Programme
of the Nordic Council of Ministers)
– and after:
The White Paper to NCM**

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Nordic Research seminar and workshop in Ilulissat, Greenland April, 28 thru May, 2



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Nordic Arctic Research Programme (NARP) heritage and experiences and the Nordic Arctic workshops/seminars to

utilise the experiences from former/ongoing Nordic research cooperation aiming at formulating concrete research questions and research projects/project proposals to the IPY 2007-2008

utilise Nordic research effort focusing on such themes as:

- Arctic climate, its variability, change and impacts**
- Man, Nature and Arctic Societies**

strengthen cross-disciplinary research activities within social science and the humanities and between these research disciplines and the natural sciences



Nordic Arctic Research Programme

- **The plan and priorities for the programme were specified by the Nordic Science Policy Council**
- **The annual budget was 6.2 million DKK, in total 31 million DKK for the whole programme period 1999-2003**
- **In total 62 projects was funded over the span of the programme; mostly network projects with notable workshop support**
- **Young students have greatly benefited from their study visits in Nordic laboratories and institutes (more than 120 PhD students)**
- **Western-Nordic connections with Farao Islands, Greenland and Iceland have improved during the programme**
- **The coordination has been carried out by the programme secretariat under the supervision of the programme board**
- **Results books of the programme will be published in May 2005**



THEMES



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A. NATURAL PROCESSES – LAND, SEA AND ATMOSPHERE

- Total amount of 22 projects have been studying environmental changes in the Arctic; relations between the atmosphere and oceans, climate change, ocean currents and sea ice extent, oceanic conditions and living resources and several networks have been interpreting high-resolution climate history data from ice, sediments and pollen.

B. BIOLOGICAL DIVERSITY AND ENVIRONMENTAL THREATS IN THE ARCTIC

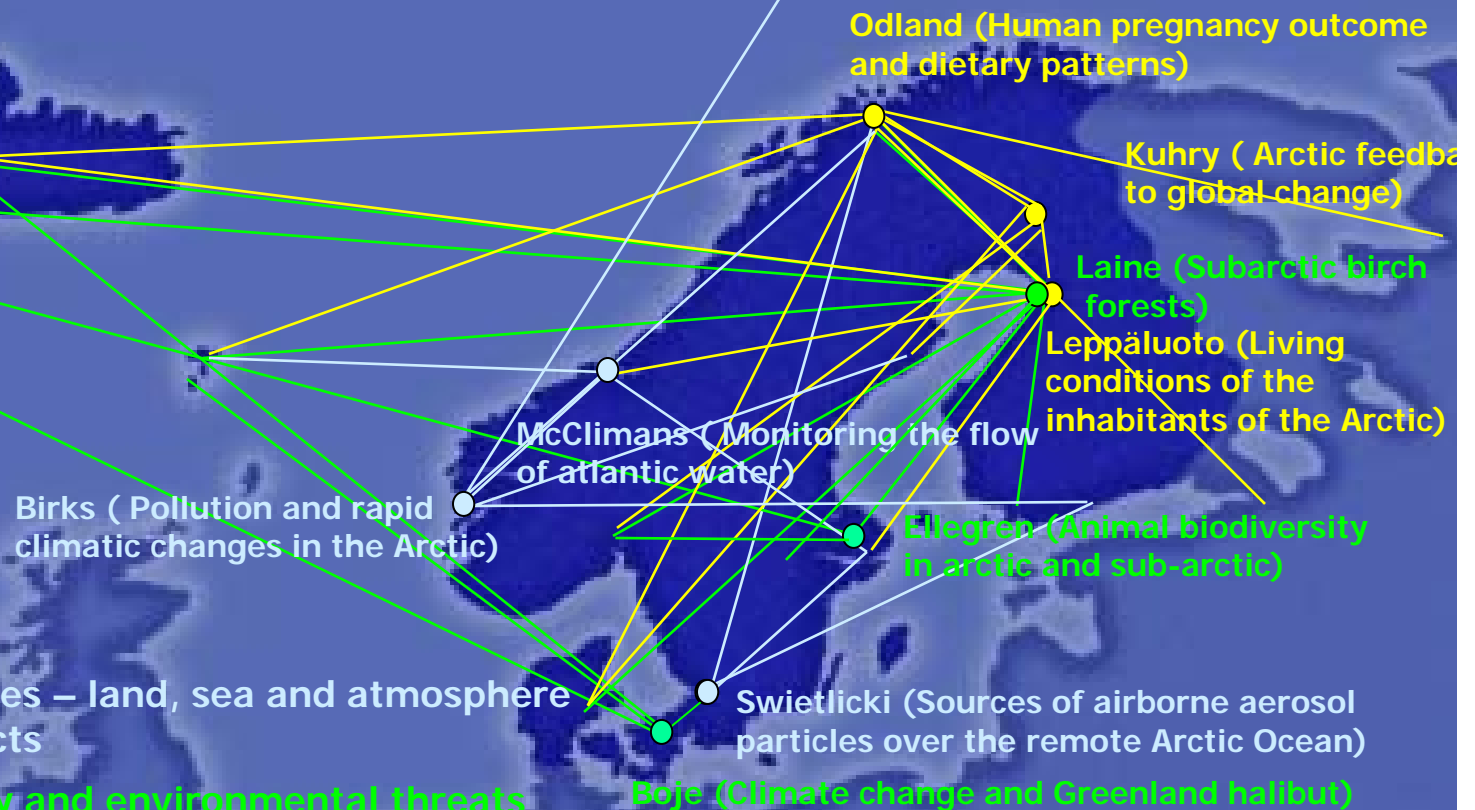
- In total 22 projects have been concentrating on effects of climate variability on marine and terrestrial ecosystems, ecosystem processes and carbon stocks as well as transport of pollutants and their effects on living resources.

C. LIVING CONDITIONS OF THE INHABITANTS OF THE ARCTIC

- 19 projects have been focusing on socio-economic effects of environmental change; resource management; social transformation and living conditions including health and community viability in the Arctic.



Nordic Arctic Research Programme networking examples by coordinators and by sub-themes



A. Natural processes – land, sea and atmosphere
- total 22 projects

B. Biological diversity and environmental threats
in the Arctic
- total 22 projects

C. Living conditions of the inhabitants of the Arctic
- total 19 projects



WEB RESOURCES

- Home page <http://thule oulu.fi/narp>
- Information about current Arctic research issues and links related to the programme
- NARP homepage serves as a storehouse of Nordic Arctic research information and is still accessible at the same address



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FUTURE NEEDS



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- **Need for scientific Arctic studies is real following the recommendations of the Arctic Council**
- **The trends and large natural variability of environmental changes in the Arctic are still poorly recorded and understood**
- **Changing socio-economic conditions in North requires special scientific attention**
- **Young researchers should be involved in Arctic science**
- **Research communities should add co-operation**
- **Create co-operative and more permanent networking relations between Arctic social sciences' research projects within the Nordic countries and between Nordic researchers and researchers outside the North – not least North America and Russia.**



CONCLUSIONS



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- **New links across the disciplinary boundaries and new research infrastructures are needed**
- **In the future Nordic and Arctic research institutions should have good position to join forces, sharing logistics and arranging joint courses for training of young researchers**
- **Results achieved in NARP enable further developments and closer Nordic collaboration**
- **Nordic countries have a special status; people of the Nordic countries live in the Arctic or the sub-Arctic, in difference from other countries in the world. We have a common interest in foster Arctic research, e.g. acting together in ICARPII planning and IPY activities**
- **Nordic Science Policy Council sees that Nordic co-operation in the field of Arctic research is a priority area for Nordic collaboration**



NORDIC ARCTIC RESEARCH PLANNING WORKSHOP

**DECEMBER 2-3, 2004 OULU, FINLAND
UNIVERSITY OF OULU, LINNANMAA CAMPUS**

Nordic Role in Arctic Research

Workshop's themes were:

1. Nordic environmental change observation and data collection
2. Societal response to the rapid changes in the Arctic
3. Impacts of environmental changes on regional economies and well-being in the North
4. Education, Outreach and Communication

Workshop outcomes

- Workshop's white paper to the Nordic Council of Ministers by May 2005
- Summary of five years NARP achievements
- Chapters within the white paper include:
 - Short vision within each themes
 - Key topics for Implementation
 - Recommendations to the Nordic Council of Ministers

Key topics for Implimentation

- Carbon balance, and biogeochemical cycling in the Arctic
- Climate, Ozone and UVB
- Paleoclimate of the Arctic
- Establish baseline relationship between weather, climate and health
- Improving of models and scenario-based predictive models
- Data sets and monitoring, sustained time series observations and coupling to process-level studies
- Societal responses
- Economy
- Education, outreach and communication

Background

- We have longest time series of climatic achieves and are sharing Arctic data
- Nordic regions important for climate history perspectives
- Activities will support EU's northern dimensions
- Indigenous knowledge
- Educate northern citizen

Other aspects

- Recommend to support research on critical issues and comprehensive circumpolar approaches to these issues (ACIA, AHDR, ICARP II)
- Recommend to support the processes that highlight and promote the (public) knowledge and understanding of the Arctic (e.g. ICT, education, and recruit)
- We need a better understanding of the effects of cumulative change, including environmental change on cultural and social well-being, resilience and vulnerability in the Arctic
- We need to improve our understanding of the roles that large scale extractive industries play in the pursuit of sustainable development at the regional level
- We need to do more in comparing and contrasting new institutions in the Arctic and distilling lessons relevant not only to the Arctic but also to other areas of the world
- We need to collect better and more consistent information on the Arctic's residents using common data protocols
- We need to learn more about the interaction between indigenous peoples and non-indigenous arctic inhabitants
- Interaction of biophysical processes, e.g. climate change, and social processes, globalization, as determinants of resilience and vulnerability of human systems

Other aspects

- To establish production based national accounts of the Arctic economies
- To identify and analyse the impacts of changes and the most vulnerable economic sectors
- To identify and analyse adaptive capacities and strategies of the Nordic welfare systems to environmental changes
- to study the impacts of changing economic conditions on well-being in the Arctic
- Surveillance and monitoring of the health outcomes is of great importance
- Why Nordic cooperation – people live here: improve school children education, educate new generation of researchers and young students
- School and education curriculum development should be done in response to rapid changes
- To include the outreach part to each new research projects to report 1) the policy related and management people and) journalists

White paper summary

- Recognises the Nordic Council of Ministers as a promoting Nordic component in implementing research for the International Polar Year (IPY) and other related activities e.g. supported by Arctic Council like follow up of Arctic Climate Impact Assessment (ACIA)
- Recommended is to establish research programmes bringing together Nordic researchers to study Arctic problems or critical themes
- It is important to enhance Nordic skills through joint Arctic research

White paper summary

- Specific research and topical programmes which could provide also opportunities for PhD training and post-doctoral research
- Accordingly, universities and research institutions should retain the option of linking their prioritised research to these Nordic theme programmes
- Those major infrastructure investments made at Nordic level could be utilised by these joint Nordic research programmes to maximise the benefit of those investments

White paper summary

- One of the workshop outcomes is also to recognise important of continuation of the Nordic Arctic Research Programme -like programs for smaller projects, which in the past have had large impacts for their size.
- Themes of this effort could use those of the International Polar Year.
- Coordination, maintenance and the stability of established networks and infrastructures should be a focus of this effort.
- Involve young researchers in active research networks

White paper summary

- Potential of multi-lateral funding agreements for arctic research with other international funding agencies should be further encouraged as well as increase liaise with relevant regulating bodies in Arctic countries to increase access for Nordic researchers
- This will support general target of Nordic region to become a leading region for research and innovation