

NordForsk

magazine | 2014

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**Knowledge must
not be kept secret**

Bent Høie

High ambitions

Marja Makarow

**New Chair of the
NordForsk Board**

DAMVAD Consultants

**Top-level Research Initiative
has produced important
scientific results**



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Magazine 2014 Contents

02 Gunnel Gustafsson
NordForsk's Strategy
for 2015–2018

04 New Chair of the NordForsk Board:
Marja Makarow

06 Spotlight on health
and welfare

08 Bent Høie
High ambitions

12 Bo Könberg
Increased health care cooperation

14 NordForsk expands investment
in clinical research

18  Societal Security

22  The Arctic

26 Top-level Research Initiative has
advanced Nordic research

28  **x6**

34  Spotlight on the Nordic
diet and welfare system

38 NordForsk helped make
European climate research
more effective

42 Climate change
– for better or for worse?

46 Riitta Mustonen
"Single market" for European
researchers taking shape

48 Sofie Carsten Nielsen
Knowledge must
not be kept secret

53 Open Access in
Nordic countries

54 EuroScience
Open Forum 2014

60 Facts & figures



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The Swan ecolabel was
established in 1989 by the
consumer sector of the
Nordic Council of Ministers.

Photo: Terje Heiestad



Gunnel Gustafsson, Director NordForsk

NordForsk's Strategy for 2015–2018

At its meeting in October 2014, the NordForsk Board approved a new strategy for the period 2015–2018. The strategy is based on, and further develops, the work that has been conducted in accordance with NordForsk's strategy for 2011–2014. The overall goal is to enhance quality, impact, and cost-efficiency of Nordic research and research infrastructure cooperation. The main priorities are Nordic cooperation within research, research infrastructure and provision of new knowledge to policy-makers and other users as well as to science and society communities.

The research programmes are targeted towards strengthening integrated cross-sectorial cooperation with the aim of tackling societal challenges and promoting sustainable development. Examples of areas where Nordic research cooperation is already in place, and where further actions may be needed, include programmes within sustainable Nordic welfare, societal security, eScience and responsible development of the Arctic. Also prioritised are actions designed to create critical mass in areas where cooperation is expected to lead to excellence, for example research on Nordic languages and gender equality.

Nordic cooperation on research infrastructure developed positively during the previous strategy period and the ambitions for 2015–2018 have been set even higher. Access to research

infrastructures of the highest quality is a prerequisite for excellent research and is thus a key component in the effort to enhance the Nordic region's attractiveness internationally. NordForsk's new strategy emphasises the importance of Nordic cooperation for increased access to and use of existing Nordic and international research infrastructures, as well as development of new joint Nordic research infrastructures. Activities are underway to establish Nordic register cooperation that will have a major impact on the quality of research not least in the field of health and welfare. In addition, NordForsk is investing in neutron research where joint use of research infrastructures, such as the European Spallation Source (ESS) and the synchrotron plant MAX IV in Lund, is of crucial importance to the quality of research.

Access to evidence-based new knowledge provides a basis for sustainable improvements to the Nordic welfare states and to the competitiveness of industry in the region. NordForsk is therefore increasing its ambitions with regard to the impact of *research results* produced in the Nordic cooperation. Activities to this end will include organising end-user conferences and dialogue meetings with decision-makers at various levels. In addition, a range of measures will be undertaken in order to make new knowledge available in the science communities and society at large.

One of the news in the NordForsk strategy for 2015–2018 is that the Board will annually assess whether any adjustments of the strategy are needed. NordForsk's role as facilitator of Nordic cooperation results in continuously changing framework conditions, which in turn require an ongoing assessment of which fields of Nordic research and research infrastructure cooperation will provide added value and benefits.

The strategy for the period 2015–2018 is in line with the vision of the Nordic Ministers for Co-operation of a “borderless, innovative, visible, outreaching Nordic region”. The point of departure for the Ministers – as it was for Gunnar Wetterberg, author of the Nordic Council's Yearbook 2010 – is the fact that the five Nordic countries together have a population and a GDP which places them among the ten largest economies in the world. In my opinion, a framework is emerging for a renaissance of Nordic cooperation. NordForsk is a platform that already has the capacity to produce and disseminate new knowledge. It can further develop its contributions to making the Nordic region a global leader in research and innovation.

*Gunnel Gustafsson, Professor
Director NordForsk*

New Chair of the NordForsk Board

Marja Makarow

Marja Makarow was appointed Chair of the NordForsk Board in June 2014. The Board consists of members and observers from the Nordic region.

“I am enthusiastic about my new position as Chair of the NordForsk Board, especially when coming back from the European arena. It’s a pleasure to see the deliberation between the countries, as their similar values, history and opinions open for good discussions and collaboration,” explains Dr Makarow.

Strategic opportunities

NordForsk has drawn up a new strategy, to be introduced from 2015, and received new statutes in early 2014. The basic principles of Nordic research cooperation will remain the same, but certain areas have expanded and some topics need a stronger focus. Research infrastructure is one of these.

“It is extremely important that the Nordic countries provide a platform for mutually accessible research infrastructure, in addition to what is being done at the European level,” says Dr Makarow. “The new Nordic eScience Action Plan will also contribute to these efforts.”

NordForsk has provided funding for Nordic research cooperation projects

since it was first established, and the new statutes and strategy place emphasis on research programmes within topics of common Nordic interest.

“The new Arctic programme, Responsible Development of the Arctic: Opportunities and Challenges – Pathways to Action, is of crucial importance. This is a Nordic activity which has an impact on the Arctic region across borders – covering perspectives for the whole Arctic region. From a Finnish national point of view, there is excellent synergy with the Nordic activity. I would like to add that the humanities and societal aspects of the programme are very important as well,” says Dr Makarow.

Nordic-European research collaboration

NordForsk is a member of the European Stakeholder’s Platform for realising the ERA (European Research Area).

“NordForsk and the Nordic countries together have a stronger voice in the bigger context, which is the ERA. NordForsk’s efforts have been appreciated in this work. We will see how this platform will be developed in the future. NordForsk has been able to show that similar-minded communities can be flexible and act quickly when it

comes to improving research quality and environment.

Focus on gender

The Nordic region is often associated with gender equality and equal opportunity. The new NordForsk Chair sees this issue both in a European and a Nordic perspective.

“I was surprised when I came back from Strasbourg. The trend was no better than when I left Finland in 2008, and it seems like the development has stopped. It is important now that we work on this. A NordForsk brainstorming seminar in Helsinki on this issue was very useful. The output from this seminar could be used as a platform for further seminars and decisions about whether NordForsk should support gender equality research. We should be looking at the definition of excellence, which should not exclude women scientists from excellence programmes, such as centres of excellence in the Nordic countries and the European Research Council. In addition, I am concerned about the absence of women scientists in the innovation arena,” concludes Dr Makarow.

NordForsk Board from 2014

Finland: Marja Makarow, Chair, Vice President for Research, Academy of Finland • **Sweden:** Eva Björck, Vice Chair, Secretary General, Committee for Educational Sciences, The Swedish Research Council • **Iceland:** Guðrún Nordal, Director, Árni Magnússon Institute for Icelandic Studies
• **Norway:** Kristin Danielsen, Director, International staff, The Research Council of Norway • **Denmark:** Gitte Agerhus, Head of office, Danish Agency for Science, Technology and Innovation • **NUS:** Ole Petter Ottersen, Rector, University of Oslo
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• **Nordic Council of Ministers:** Anders Geertsen, Head of the Department of Knowledge and Welfare (KV)



Biography

Professor Marja Makarow has served as Vice President for Research of the Academy of Finland since 2012. She is former Chief Executive of the European Science Foundation and was previously Vice Rector of the University of Helsinki. As Vice Chair of the European Research Area Board (ERAB), she was actively involved in the preparation of the EU's Programme for Research and Innovation, Horizon 2020. As a member of the Prime Minister's Council for Research and Innovation, she advised the Finnish government on science policy and renewal of the university system, and played a key role in implementing the new University Act of 2010 in her capacity as Vice Chair of the Board of the Aalto University.

Dr Makarow has served as an evaluator for a number of universities, research institutes and research funding agencies. She is a Panel Chair for the ERC Starting Grant programme, and she chaired the jury of one of the world's largest innovation prizes, the Millennium Technology Prize. Dr Makarow chairs the Finnish Research Infrastructure Committee and is a delegate to the European Strategy Forum on Research Infrastructures (ESFRI). She is a member of the Governing Board of the European Institute of Innovation and Technology (EIT) and of the EU's Future and Emerging Technologies Advisory Group.

Spotlight on health and welfare

The new Nordic Programme on Health and Welfare is seeking to strengthen public health in the Nordic countries, and represents one of NordForsk's key focus areas.

The programme runs from 2014 to 2018 and is designed to improve health in the Nordic countries by finding solutions to societal and public health challenges through Nordic research cooperation. The first call for proposals had an application deadline in October 2014 and addressed the uneven distribution of health and welfare.

“We hope that the interdisciplinary approach of the projects will give us more insight into the underlying causes of the uneven distribution of health and welfare in the Nordic countries and how we can reduce inequalities in the future,” says Gunnel Gustafsson, Director of NordForsk.

“It is our hope that the knowledge generated by the programme can be translated into practical solutions within the health and welfare systems, which in turn will promote disease prevention, improve patient treatment and enhance the effectiveness of the welfare systems,” she continues.

Focus on Nordic strengths

All of the topics within the Nordic Programme on Health and Welfare focus on areas where the Nordic countries already enjoy a position of strength or where there is potential to benefit from increased

Nordic research cooperation. Despite an increasingly longer life expectancy and generally good public health in the Nordic countries, the distribution of health varies widely among individuals and groups.

“The call for proposals on the uneven distribution of health and welfare is the programme's biggest investment to date with NOK 150 million, and each project could apply for up to NOK 30 million in research funding. We have high expectations for the upcoming projects and hope that they shed light on the mechanisms underlying these unfair conditions and present solutions for how they can be mitigated,” says Maria Nilsson, Senior Adviser at NordForsk.

Potential Nordic goldmine

The other call for proposals issued under the Nordic Programme on Health and Welfare focuses on register-based research, one of the most exciting areas in Nordic health cooperation. The call puts the spotlight on the development of joint Nordic registers and databases for use in research.

“Sharing data from biobanks and health registers across Nordic national borders may be a potential goldmine for the region. The reason is that each of the countries has access to high-quality register data that goes back many decades, and at present the registers have not been sufficiently utilised in research. A joint Nordic register will have access to data on almost 26 million individuals, which will be extremely valuable to research and will contribute to the prevention of disease and development of new treatment methods,” says Ms Nilsson.





About the Nordic Programme on Health and Welfare:

All five of the Nordic countries participate in the Nordic Programme on Health and Welfare, which is a cooperative effort between the Academy of Finland, the Danish Council for Independent Research | Medical Sciences, the Icelandic Centre for Research (Rannís), the Research Council of Norway, the Swedish Research Council for Health, Working Life and Welfare (FORTE), and NordForsk.

The programme was established on the basis of reports on research cooperation in the Nordic countries from the NORIA-net on Health and Welfare, the NORIA-net on Sport Sciences, and the report from the Joint Committee of the Nordic Medical Research Councils "Present Status and Future Potential for Medical Research in the Nordic Countries". The programme runs between 2014 and 2018 and NordForsk foresee three calls within the Programme.

Grønland urban district in Oslo. The differences in life expectancy between Oslo's urban districts are large. Men and women in the western districts live an average of 8.8 and 6.9 years longer, respectively, than those in the eastern districts.
 Photo: Ingar Storfjell/NTB scanpix



The Norwegian Minister of Health and
Care Services, Bent Høie, sees
great potential in Nordic research
cooperation in the health care sector and
points particularly to the opportunities
to be found in **clinical** and
register-based research.



Bent Høie

Bent Høie was appointed as Norway's Minister of Health and Care Services on 16 October 2013, and has represented the Conservative Party in the Storting since 2001. He chaired the Standing Committee on Health and Care Services from 2009 to 2013 and sat on the Standing Committee on Health and Social Affairs from 2001 to 2005.

High ambitions

I believe there is enormous potential in strong Nordic research cooperation in the health care sector. A lot of good work is already being done, but there are opportunities we can exploit better since our countries share many similarities, both within established research communities and with regard to research infrastructure. There is also the additional positive element that the Nordic population in general displays a high level of trust in researchers, which means it is not difficult to get people to participate in research studies,” says Bent Høie, the Norwegian Minister of Health and Care Services.

“The challenge facing the Nordic countries is that each country alone is small, which therefore makes it even more important for us to strengthen cooperation across national borders. This applies in general, as well as to the health care sector in particular. Areas with either low numbers of patients or small research communities may especially benefit from joint Nordic research because we can obtain better results using a much larger population base,” he continues.

Need more clinical trials

Clinical research is one of the areas that Mr Høie believes has the greatest potential for increased cooperation. It is also an area to which NordForsk has devoted greater investment by funding the Nordic Trial Alliance (NTA) together with the Nordic Council of Ministers. The number of clinical trials in the Nordic countries has declined in recent years, a situation which concerns Mr Høie.

“It is important to ensure that adequate research funding is available, but

as a general rule we politicians must also stay out of decisions about which research projects receive funding. This applies at the Nordic level as well. However, I must say that the decline in clinical trials in the Nordic countries is a problem that we take seriously. It is critical that we reverse this trend, as more studies will benefit all Nordic patients by providing quicker access to new medications and treatments,” says Mr Høie.

“We must look at how we can improve cooperation in this area, and this is why it is important that the Nordic countries give their support to the Nordic Trial Alliance. For 2014, I have indicated to the Norwegian health trusts that they should support the NTA’s efforts by initiating clinical multi-centre trials through the network,” he continues.

A better framework for industry

One way to increase the number of clinical trials is for the Nordic countries to create a better framework so that international pharmaceutical companies can conduct studies in the Nordic countries.

“It is critical to make the Nordic countries attractive to the pharmaceutical industry so that companies show interest in carrying out research in the region. By giving them the opportunity to conduct clinical trials across our national borders, they will have access to a population of 26 million people, which will make the studies considerably more relevant in an international context. Furthermore, our countries’ health services have many similarities, excellent specialist communities, and high-quality registers, which also make us more attractive,” he says.

“Denmark and Copenhagen have been the leading region in these efforts, but it is important that the other Nordic countries take part as well. In Norway we have just deliberated new legislation related to health registers that also aims to facilitate research and improve research quality based on register data,” explains Mr Høie.

Right to a new assessment in the Nordic countries

The minister is also concerned about closer Nordic cooperation at the patient level, and he wants to see patients have the opportunity to obtain a second medical opinion in a neighbouring Nordic country.

“In areas with small research communities and patient groups, it is often a challenge for patients to obtain a second opinion since the national specialist circles may agree in their assessments. All the Nordic countries have patient rights related to obtaining a second opinion, and in this case we should consider the possibility of establishing closer Nordic cooperation which makes it possible for a Norwegian to exercise this right in Denmark, for example. I believe that many people would benefit enormously from this,” concludes Mr Høie.

Positive towards a Nordic virtual centre for register-based research

On commission from the Nordic Council of Ministers, the former Swedish Minister of Health Care and Social Security, Bo Königberg, prepared a report exploring ways to develop and improve Nordic cooperation in the health care sector.

The report was submitted in summer 2014, and one of its recommendations fo-



cuses on a Nordic virtual centre for register-based research. Mr Könberg identifies NordForsk as a potential administrator of the centre, and Mr Høie finds both the report and the recommendation exciting.

“The report addresses important, relevant topics which reflect Mr Könberg’s systematic work vis-à-vis the various Nordic countries. We had two meetings, and I recognise some of the topics and issues that were discussed. This indicates

that several of the other health ministers have provided similar input, and this gives a good starting point for the road ahead,” says Mr Høie before continuing:

“The concept of a Nordic virtual centre for register-based research is certainly intriguing and in keeping with our desire for greater cooperation on register-based research. The Nordic countries have a variety of high-quality registers that go back many decades, and these have not

«It is important to ensure that adequate research funding is available, but as a general rule we politicians must also stay out of decisions about which research projects receive funding.»

been sufficiently utilised in research. I hope that the Nordic health ministers view the recommendation in a positive light, as it can generate significant gains and benefit all of us.”

Must clarify the legal parameters

Despite numerous challenges related to register-based research across national borders, Mr Høie does not think it is impossible to realise Mr Könberg’s recommendation.

“There are several issues that must be clarified, and here I am thinking in particular about the legal and technical obstacles. If the Nordic health ministers agree to implement the recommendation, we must quickly begin to clarify the legal parameters needed to achieve this,” he says.

“There are also some ethical issues, but ethics have their basis in the national statutory framework, and the research communities have previously indicated to me that cooperation between the committees on research ethics in the Nordic countries has improved,” continues Mr Høie.

“None of the Nordic countries is interested in weakening the protection of people’s personal privacy or infringing on the right of individuals to obtain information about themselves. These rights must be safeguarded if we are to be able to establish such a centre. Anything else could destroy people’s confidence in the research sector, but our similar approaches to ethical, legal and technical issues make me think it may be possible to succeed. In any case, we think that the recommendation is very interesting,” states the Minister of Health and Care Services.

Bo Könberg

Former Swedish minister Bo Könberg has written a report on expanding Nordic cooperation in the health care sector.



Increased health care cooperation

Bo Könberg has submitted 14 recommendations on how increased cooperation across Nordic national borders can improve public health and further develop the health services. One of his recommendations calls for establishing a Nordic virtual centre for register-based research and identifies NordForsk as a potential administrator of the centre.

In summer 2013 the former Swedish Minister of Health Care and Social Security, Bo Könberg, was commissioned by the Nordic Council of Ministers to write an independent report on ways to develop and strengthen Nordic cooperation on the health care sector over the next 10 years.

Now that the 14 recommendations have been submitted, Mr Könberg hopes that the Nordic health ministers see the potential in his proposals and support more comprehensive Nordic cooperation on health care.

“The purpose of the report was to find out where we can realise stronger Nordic cooperation on health care. The 14 recommendations identify areas that I believe have great potential for improvement and where closer cooperation may lead to better, more effective health services, especially for people with rare medical conditions,” says Bo Könberg.

“A larger patient base will make it easier to study rare diseases and to obtain more certain results than those achievable through national research alone,” he adds.

Vast opportunities in register-based research

The fourth recommendation in Mr Könberg’s report deals with register-based

research and proposes strengthening Nordic research cooperation on data registers, biobanks and clinical studies by establishing a Nordic virtual centre for register-based research.

“Greater use of register and biobank data in research can lead to better insight into the causes and prevention of disease and the development of more effective pharmaceuticals and new treatment methods. Measures that strengthen Nordic cooperation in this area will enhance the Nordic countries’ position as an attractive region for research and may lead to more clinical studies, which in turn will provide quicker access to new medications and treatment methods,” says Mr Könberg.

Various obstacles

Mr Könberg emphasises, however, that a number of obstacles must be overcome before the national data registers can be used in research.

“There is no doubt that this recommendation presents certain challenges, but the potential is enormous. Therefore, before we can proceed, the health ministers and the Nordic countries must agree on how they will dismantle the technical, legal and ethical barriers associated with data sharing across national borders,” he says.

A Nordic virtual centre for register-based research

If consensus is reached on data sharing within the Nordic region, Mr Könberg emphasises the importance of investing in research infrastructure and establishing a Nordic virtual centre for register-based research in the long term.

“A centre of this type will ensure that our unique data registers and biobanks can be used by researchers as a collective Nordic resource. The centre may serve as a cooperative platform with national actors, as well as continue the efforts to simplify register-based research at the Nordic level. I propose that such a centre could be administered by NordForsk in close cooperation with key national actors,” concludes Mr Könberg.

The report “The Future Nordic Co-operation on Health” is available at norden.diva-portal.org

NordForsk expands investment in clinical research

As part of the effort to boost clinical research trials, NordForsk has allocated funding to five joint Nordic research projects to be administered under the Nordic Trial Alliance (NTA).

According to the international panel of referees, the applications received in response to the NTA call for proposals were of very high quality. Director of NordForsk, Gunnel Gustafsson, is very pleased with the outcome of the call.

“Our objective is for the NTA to illustrate the benefits of carrying out clinical research trials at the Nordic level and to illustrate that this can speed up research activities and provide more conclusive results by drawing on larger patient groups. The funding has been awarded to studies that are of great interest and medical benefit to patients in Nordic countries and we are looking forward to following the progress of these projects,” states the director.

1. Assisted Reproductive Technology and Safety in the Nordic Countries

Globally, more than five million children have been born with the aid of assisted reproductive technology (ART), and in Nordic countries test-tube babies represent close to five per cent of all childbirths each year. *The Committee of Nordic ART and Safety* (CoNARTaS) was established

in 2009 to compile data on all Nordic test-tube babies.

“After five years of work we have amassed a database that contains information on over 92 000 test-tube babies born between 1982 and 2007. Adding data from the last six years will bring the number of children in the database up to approximately 150 000. This will further enhance the quality of the data as the Nordic registers contain a wide array of supplementary information about the ART treatments,” states Professor Anja Pinborg, the Danish project leader of the Assisted Reproductive Technology and Safety in the Nordic Countries project.

The database will provide a basis for epidemiological studies of ART children, including on the risk of cardiovascular disease, diabetes and illnesses related to puberty and reproduction for these individuals. In addition, the risks mothers face from treatment and the status of their long-term health will be one of the focus areas in the new data collection.

“We in the Nordic countries have the ability to link together health information so that we can follow test-tube babies from conception through the rest of their lives. This joint Nordic research project is one example of how we can use our unique Nordic registers to generate knowledge that will ultimately enable us to optimise treatment programmes and create the best possible framework for all test-tube babies,” Ms Pinborg explains.

*“We in the Nordic countries have the ability to link together health information,” says Anja Pinborg.
Photo: Kim Wendt*





Nordic Trial Alliance

(NTA) is a pilot project seeking to facilitate clinical research trials in the Nordic countries and is funded by NordForsk and the Nordic Council of Ministers. The NTA project will run for three years, from 2013–2016, and is part of the Nordic Council of Minister's "Sustainable Nordic Welfare" programme.

2. Nordic Rheumatic Diseases Strategy Trials And Registries

This research project will provide new, important insight into the optimal treatment for patients with early rheumatoid arthritis. Approximately 150 000 individuals in Nordic countries suffer from this disease, and the project will make it possible for the first time to compare four different treatments.

Patients with rheumatoid arthritis suffer from joint inflammation, swelling and pain, accompanied by difficulty in performing daily activities such as getting dressed, eating and working. Their average life-span is reduced by ten years and doctors often find it challenging to find the right treatment.

“The project encompasses 800 patients from across the Nordic region and will provide important insight into the best attainable treatment. In addition, researchers will be studying an aspect of the disease where we still know too little: how best to decrease use of medication when the patient’s condition improves. The researchers expect to be able to pinpoint molecules in the blood that enable them to identify which patients will have the greatest benefit from the respective treatments. This will make it possible to design customised treatments for arthritis patients,” says Professor Merete Lund Hetland, Denmark. She is the project leader of the Nordic Rheumatic Diseases Strategy Trials and Registries project.





"The project encompasses 800 patients from across the Nordic region and will provide important insight into the best attainable treatment," says Merete Lund Hetland
Photo: Ty Stange

The three other projects awarded funding are:

3. Nordic Arthroplasty Register Association

– an international quality register study of total joint arthroplasty of four nations.
Project leader: Keijo Mäkelä, Finland

4. BMT (bone marrow transplantation) in elderly AML (acute myeloid leukemia)

– a prospective, controlled, international study. Project leader: Mats Brune, Sweden

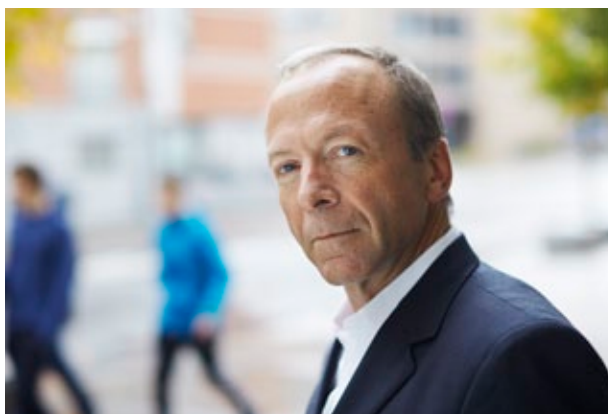
5. Discontinuation of infliximab therapy in patients with Crohns' disease during sustained complete remission

Project leader: Mark Ainsworth, Denmark



Societal Security

Two new Nordic Centres of Excellence (NCoE) within the area of societal security research have in 2014 been granted a total of NOK 45 million in funding for the next five years. Both centres address questions of crisis management in relation to prevention, preparedness, response and recovery in the Nordic countries. The centres will be carrying out activities across the various Nordic borders employing a multi-disciplinary approach.



*Project leader:
Research Professor J. Peter
Burgess, Peace Research
Institute Oslo (PRIO).
Photo: Bård Gudim*

Nordic Centre of Excellence for Security Technologies and Societal Values

Participation by six institutions in Denmark, Finland, Norway and Sweden.

The NCoE has received funding for the period 1 September 2014 to 31 August 2019.

Why is this research necessary?

– What is a society? It can best be understood as a group of people living together in relation to a set of values. The security of a society is the security of these values. The security of society means society's ability to remain unchanged in its core values in the event of shock, crisis or catastrophe. Paradoxically however, even though most would agree that societal values are at the core of societal security, it is security technologies that increasingly set the agenda for societal security policies. It is necessary to investigate how emerging security technologies influence the value premises at the heart of societal security.

What are the objectives?

– The main objective of the NCoE is to map and critically analyse the relationship between security technologies and societal values. This implies exploring, on the one hand, the concentration of technologies that promise to provide for human needs and, on the other, to link these to the cultural traditions – including religion, language, politics, and economics – that make up the societal values that we deem most worthy of protection.

How will this be achieved?

– The NCoE will advance research, education and training, industrial strategy and public policy in support of a wider and deeper understanding of the complex relation between security technologies and the values that are called upon to support and preserve our societies.



The main purpose of a Nordic Centre of Excellence is to optimise research in the Nordic countries through collaboration. This is why an NCoE must incorporate cooperation between a minimum of three Nordic countries to be eligible to seek funding from NordForsk. The ability to provide Nordic added value is essential.



How do new security technologies affect our societal values? This is one of the issues to be explored at the new NCoE headed by Peter Burgess. Increased security measures at Oslo Airport Gardermoen 2014. Photo: Therese Alice Sanne, VG/NTBscanpix



The number of natural disasters is rising. NORDRESS – and its 15 Nordic member institutions – will be studying how to increase community resilience and coping in the wake of catastrophic events. Eyjafjallajökull. Island 2012. Photo: Erlend Haarberg, Samfoto/NTBscanpix



Societal Security



Project leaders: Professor Guðrún Gísladóttir (left) and Director Guðrún Pétursdóttir (right), University of Iceland. Photo: Bård Gudim

Nordic Centre of Excellence on Resilience and Societal Security (NORDRESS)

Participation by 15 institutions in Denmark, Finland, Iceland, Norway and Sweden.

The NCoE has received funding for the period 1 January 2015 to 31 December 2019.

Why is this research necessary?

"During the past 30 years, the number of registered natural disasters has more than quadrupled worldwide; in 2011 alone, 440 million people were affected by natural hazards".

What are the objectives?

"NORDRESS will seek ways to increase societal resilience to crises caused by natural hazards. Resilience will be explored from the perspectives of individuals, communities, infrastructure and institutions. By focusing on extreme weather, floods, mudslides, avalanches and volcanic eruptions, NORDRESS will study the impacts of natural hazards on all the Nordic countries, from the local to the transboundary level".

How will this be achieved?

"NORDRESS aims to increase individual resilience through improved understanding of the mental and physical health effects of natural hazards; to increase community resilience by understanding risk perception and community coping as well as strengthening public participation in hazard monitoring and early warning; to increase infrastructure resilience by studying the effects of extreme weather, floods and avalanches on land, sea and air transport; and to increase institutional resilience by gaining an overview of emergency management in the Nordic countries, analysing laws and regulations regarding insurance and land-use planning and investigating how the Nordic welfare system can strengthen resilience before, during and after crises caused by extreme natural events".



Photo: Research Council of Norway

"I am happy to see the strong focus on societal security research in the Nordic countries, as illustrated by the establishment of a joint programme between Finland, Iceland, Norway and Sweden as well as NordForsk. The two new NCoEs have the potential to be of substantial significance both for societal security research worldwide and for end-users of this research in the Nordic countries. We are convinced that their work will be of high-quality. The applications received in response to the call were strong and employed a multidisciplinary approach. The centres selected for funding were outstanding."

Eivind Hovden, Chair of the NordForsk Programme Committee for Societal Security and Department Director at the Research Council of Norway





The Arctic

All the Nordic countries have joined forces with NordForsk to establish a new multidisciplinary research programme, “Responsible Development of the Arctic: Opportunities and Challenges – Pathways to Action”.

The programme is divided into three cross-disciplinary thematic areas:

- Drivers of Change in the Arctic Region – Interactions and Impacts
- Arctic Resource Development in a Global Context
- Waters, Ecologies and Life Environments

Qualification as a Nordic Centre of Excellence (NCoE) requires collaboration between at least three different Nordic countries. Each centre may seek up to NOK 30 million in funding for a five-year period of activity. The application deadline for full proposals for establishing an NCoE is March 2015. Two to three centres are expected to be launched in autumn 2015. The common pot budget is app. NOK 85 million.

A programme committee comprised of representatives of the participating countries has provided NordForsk with input on the implementation of the Arctic programme. Applications for NCoE status will be assessed by a panel of international referees.

Professor Mari Walls, what has been the biggest challenge in designing the Arctic research programme?

“Responsible Development of the Arctic is based on three thematic areas. It has been very important to identify the thematic framework of the programme, but at the same time keep things general enough for innovative research to have room to take a leading role in setting the more specific questions and shaping the scientific approaches in the spirit of interdisciplinarity”.

What would you characterise as the most important features in the coming NCoEs?

“We aim high with the NCoEs. The challenge – and reward – is to generate true interdisciplinary excellence that changes the way we look at Arctic issues. NCoEs bring together professionals with

diverse backgrounds for fresh thinking and collaborative research efforts. It is people who are the critical element here and we therefore hope to see researcher mobility and coordinated efforts in using research facilities and infrastructure”.

What are your expectations for the coming NCoEs?

“Outstanding interdisciplinary research that will provide innovative insights, new knowledge, and approaches that feed and facilitate sustainable future paths and local solutions. The challenge is to achieve this in collaboration with local experience, traditional knowledge and understanding. To succeed, we need a very strong human dimension in the programme”.

“I hope that the NCoEs in the Arctic research programme will generate fundamental new knowledge, attract and generate excellence, and educate committed professionals who will be able to engage in processes shaping the future of the Arctic”.

Mari Walls

Director at Finnish Environment Institute (SYKE) Mari Walls is chair of the Programme Committee for Responsible Development of the Arctic

7 reasons for international cooperation

"It is so much easier and makes so much more sense to cross-border fund the research, because when the funding is coordinated, you can focus on the science".

NOE The Arctic

Member of NordForsk's Programme Committee for the **Responsible Development of the Arctic programme** Lize-Marié van der Watt offers seven reasons why international cooperation is particularly important in Arctic research.

1 Arctic research is not a large research community, and you have to make use of the knowledge and funding resources to be able to do the best research possible. We are reliant on big infrastructures like ships and so on; expensive equipment where it is almost impossible for single countries to have a nation-only expedition.

2 The Arctic is a bit of a construct. Somebody for example in Västerbotten would not necessarily refer to themselves as Arctic, but in some contexts they are seen as part of Sweden's Arctic. That definition is quite often regional and bio-geographical, so a cross-border perspective is important.

3 Diversity in academic backgrounds and traditions aids creativity in research a lot – especially when people come from different universities and different disciplinary backgrounds.

4 You can actually use primary sources which you couldn't otherwise access if you don't speak that language yourself. If you are Russian, Norwegian or Sami native mother tongue speakers, you get a greater diversity of input and potential for research.



*Lize-Marié van der Watt has worked as a research coordinator at the Swedish Polar Research Secretariat, and is currently employed at the Arctic Research Centre (ARCUM) at Umeå University.
Photo: Joseph Cheek
International Polar Foundation*

5 Different nations and states have different research aims, and that also brings in a disciplinary diversity. It opens up opportunities. It's a cross-fertilization of ideas, you could say. It is actually quite unthinkable to do a programme of the size of the NordForsk initiative in the Arctic solely focused on one nation state.

6 When you bring different countries together there is also a level of competition that is healthy I think, and that will hopefully increase productivity for the researchers for them to get out really high-quality publications.

7 And finally, it is so much easier and makes so much more sense to cross-border fund the research, because when the funding is coordinated you can focus on the science. You can start with the actual work much more quickly instead of waiting for two different funding structures with two different deadlines. It also makes less work for the funders, so it's less paperwork.

Top-level Research Initiative has advanced Nordic research

The Top-level Research Initiative (TRI) has produced important scientific results and provided a major contribution to the Nordic research effort in the areas of climate, energy and the environment. This is the main conclusion in the final evaluation by the independent consultancy firm DAMVAD.

The TRI has been subject to ongoing review by the independent consultancy firm DAMVAD through a formative evaluation project launched in spring 2010. An interim evaluation in 2011 showed that the Top-level Research Initiative was a well-functioning research and innovation programme that had generated a relevant portfolio of promising projects. The final evaluation was completed in autumn 2014.

Many publications, high impact factor

The final evaluation now documents the many positive results that were achieved. It shows, for instance, that the number of scientific publications by the participating researchers has risen in the past four years and particularly in the year from 2012 to 2013. Publication levels will continue to increase for several years into the future, in part because many of the projects are not yet concluded.



Just as important is the fact that the citation frequency and the scientific journals' impact factor are high. The evaluation shows that 31 per cent of the articles are published in the most influential journals, which is considerably higher than the 20 per cent that was expected.

Interdisciplinary research

One of the primary objectives of the TRI was to support or stimulate interdisciplinary research, and this has been achieved. The final evaluation shows that more than 70 per cent of all the scientific articles by the TRI researchers are published in interdisciplinary journals. Moreover, 66 per cent of the published articles have non-Nordic authors in addition to Nordic authors. Many of the participating researchers emphasise that they have benefited greatly from dialogue and cooperation with researchers in other areas of the TRI that study climate issues from a variety of scientific perspectives.

Productive cooperation

One of the lessons learned from the TRI is that the Nordic countries have the ability to reach consensus and establish a large-scale programme in a relatively short period of time.

If Nordic research cooperation is to once again be given higher priority on the Nordic political agenda, an effort should be made to identify areas where there is a comprehensive need for action – similar, for instance, to how the threat of climate change was seen in 2007. In particular, the evaluation mentions NordForsk's programme "Responsible Development of the Arctic: Opportunities and Challenges – Pathways to Action" and the new Nordic Centre of Excellence programme on health and welfare research. The evaluation states that both of these address topics that are highly relevant in a joint Nordic context, and both are attracting a great deal of political attention. A third area is the "Green Growth – The Nordic Way" initiative established by the Nordic prime ministers and administered under the auspices of the Nordic Council of Ministers. Three organisations – NordForsk, Nordic Energy Research and Nordic Innovation have agreed to develop a cooperative effort under this umbrella.

*Greenhouse gases are measured from towers at different levels, with the tallest standing roughly 35 metres high. The SMEAR II field station in Hyytiälä, Finland.
Photo: Terje Heiestad*



History of the Top-level Research Initiative

At their summer meeting in Finland in 2007, the five Nordic prime ministers decided to strengthen efforts related to Nordic research and innovation. They asked the Nordic Council of Ministers to draw up a proposal that would promote Nordic top-level research in close cooperation with trade and industry.

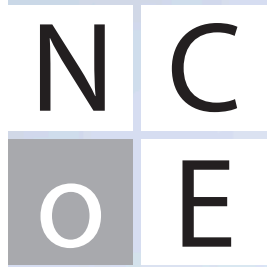
The Nordic prime ministers met again in April 2008 at the Riksgränsen ski resort in Sweden, where they drew up the Riksgränsen Declaration which laid

the foundation for the largest joint Nordic effort to promote research and innovation ever undertaken, called the Top-level Research Initiative.

Global challenges

A proposal for a research programme was prepared and discussed at the national and Nordic levels. In October 2008 the Nordic ministers of education and research approved the establishment of Nordic cooperation on top-level research. It was decided to focus initially on climate,

energy and the environment, areas that involved major global challenges and that would be addressed at the United Nations Climate Change Conference COP 15 to be held in Copenhagen in 2009. The budget for the TRI was DKK 400 million over five years, and participating institutions were also expected to contribute financing. By involving knowledge environments and trade and industry and by bringing the foremost Nordic talents together, the Nordic countries sought to develop solutions to the global climate challenges.



X6

NordForsk administers six Nordic Centres of Excellence (NCoE) under the Top-level Research Initiative. These centres conduct research on a variety of issues related to climate and climate change. Throughout the programme period many of the participating researchers have engaged in dialogue across the centres and established new, beneficial cooperation, as well as a network of contacts within and outside the Nordic region.

“I think that the research being conducted here is extremely important in terms of helping us to understand climate change. One of the biggest issues in climate change is what is happening to our cryosphere: ice sheets, glaciers, permafrost, snow. The Nordic countries are really playing a global leadership role here in understanding what is happening to the cryosphere,” says Mark Serreze, Professor at the University of Colorado and Head of one of the Scientific Advisory Boards.





*Norbert Pirk recording values from equipment that measures methane emissions and more from the tundra in Svalbard.
Photo: Terje Heiestad*



*Torben Christensen en route to the research station in Svalbard.
Photo: Terje Heiestad*

N C O E DEFROST

The aim of DEFROST is to understand how climate change-induced changes in the cryosphere influence the ecosystem which in turn directly affects climate. The centre seeks to bridge existing gaps between climate modelling, cryospheric science, and Arctic ecosystem science. The DEFROST centre has research stations at Svalbard, Greenland, North-Finland, Siberia and Abisko in Northern Sweden

“It’s like an engine that we do not understand. Here we are turning knobs if you like, in terms of warming an ecosystem that has important interactions with climate and we do not understand how the motor works very well. We are trying to give a complete picture of how the climate interacts with this tundra ecosystem. And we are trying to do so in a way that can provide a complete answer. The TRI has been fantastic in

providing a platform for us to establish cross-disciplinary cooperation between experts in marine, terrestrial, atmospheric and climate issues.”

– Professor Torben Christensen



*Michael H. Boy and Juho Aalto study measurements taken from close to ground-level at the SMEAR II field station in Hyttiälä, Finland.
Photo: Terje Heiestad*

N C O E CRAICC

Extensive measurements of aerosols are being taken in forest areas, such as at the SMEAR II field station in Hyttiälä, Finland. Aerosols are very small particles or liquid droplets in the air or other gases. The Nordic forests are just as important as the rain forest with regard to climate issues and climate change.

“The forest is very complex. A lot of gases are released from the soil, from the trees, from the stems, from the roots and from the needles. These contribute significantly to the global budget of aerosols,” says Dr Michael Boy.

Lower levels of ice and snow cover may cause changes in cargo traffic, travel and tourism, oil exploration and production, fishing and agriculture. However, society does have the potential to influence Arctic warming.

“The less ice and snow we have, the warmer the climate becomes. And when the climate becomes warmer, it opens up better opportunities for shipping and various activities, which in turn may lead to even greater warming and additionally reduced snow cover.”

– Professor Markku Kulmala





Grazing reindeer photographed by an automatic camera placed at a test site on the tundra, Kevo in Finland.

N C O E **TUNDRA**

NCoE TUNDRA is studying the impact of grazing animals on the tundra through test sites and laboratories. Increasing vegetation means absorbing warmth into the soil, whereas large areas of white snow cover will reflect the heat from the sun. Three types of animals influence the amount of vegetation: reindeer, which humans can control to a certain extent, and mammals such as lemmings and a certain type of leaf-eating moth, which cannot be controlled.

“On the tundra we have the ecosystem – and we have reindeer husbandry as a form of livelihood. A main goal is to combine these into a system that supports both the ecosystem and the livelihood of those reindeer herders in the North, so that both can co-exist in an optimal state.



The TRI initiative has been very valuable, indeed, because we have gotten to know so many of our colleagues in the other Nordic countries.”

– Professor Jukka Käyhkö



*Climate change has a direct impact on the life cycle of cod.
Photo: Per Eide, Samfoto/NTBscanpix*

N C O E **NorMer**

Marine ecosystems are under pressure from both anthropogenic climate change and high exploitation rates. A major challenge is to identify ways that oceans can provide food and other services in a sustainable way under changing climatic and socio-economic conditions.

“Our research focuses primarily on how climate change affects cod. On the direct impact this has on the individual cod and the cod stock, as well as on the entire food chain. Plankton and other fish species that cod depend on through various phases of the life cycle are also affected and influenced by climate change – and cod reproduction is directly affected as well.

Nordic cooperation – the Nordic network through the Nordic centre – makes the window on the world so much larger. I see that when we are looking for scientists, we get many more applicants for Nordic positions than for strictly Norwegian ones. I am certain that the applicants find it much more interesting to



work in a larger, Nordic constellation. The NorMER centre has 17 doctoral and eight post-doctoral research fellows. Half of them receive funding from NordForsk and the others are funded by the cooperating institutions.”

– Professor Nils Christian Stenseth



N C O E SVALI

Global warming has led to changes in the cryosphere, that is, the part of the Earth System where water occurs in its frozen form. This has caused an increased flux of meltwater and icebergs from glaciers and a rising sea level. Greater freshwater discharge to the oceans also has an impact on ocean circulation as well as on the Arctic Hydrological Cycle. These changes are occurring more rapidly than predicted. In order to foresee future sea level rise, more knowledge and insight is needed. What are the causes, what are the processes already underway and what are the ramifications?

The SVALI centre has 17 partners from all of the Nordic countries. More than two-thirds of the SVALI budget is spent on the centre's highly successful graduate school, where seven post-doctoral researchers, 10 Ph.D. students and 14 associated Ph.D. students are employed.



"All the graduate students should receive supervision from at least two different partners and countries in SVALI to enhance mobility and build contacts between the various partners and countries in the project. This is a very important aspect of and benefit from SVALI's graduate school."

– Professor Jon Ove Hagen



*Sine Munk Hvidegaard in a research aircraft, measuring the volume and thickness of ice in glaciers in Svalbard.
All photos: Terje Heiestad*



Tom Anders Stenbro out in the elements. Photo: Flashstudio, Sindre Kinnerød

NORD-STAR

Research at the centre will form that basis for decision-making and policy and strategy development related to climate change and social transformation. The NORD-STAR centre has three main components: research, public-oriented contact, and communication.

“I think that if we wait for international treaties, if we wait for regional treaties, we are not going to move ahead as quickly as when we convince ourselves that adapting to climate change is a personal response, something we each can do here and now.

We offer a graduate training programme that brings together practitioners, scientists and decision-makers, or future decision-makers, from all over the world, not just from the Nordic countries. We train them with the top scientists from the Nordic countries and abroad to become adaptation practitioners. This is something new. And we are very proud of our efforts.”

– Professor Michael Goodsite



The NORD-STAR centre, in cooperation with four Nordic insurance companies, has developed a portal called VisAdapt, which can be used by homeowners and municipalities to plan climate adaptation measures and gain an overview of where it is safe to live in relation to climate change.

“The goal of the project is to help our customers, the homeowners, to see what kind of climate-related risks they are facing and to give them very concrete, practical advice on how they can reduce their own vulnerability,” says Tom Anders Stenbro, customer adviser at the Tryg Forsikring insurance company.

Ph.D. researcher Erik Glass who has worked with the new insurance program for house owners thinks that this collaboration with the insurance companies and the business sector has been really important.

“It has given us another perspective on our research, and it has generated results that are easier to use or that are adapted for certain audiences, which is sometimes difficult for a researcher to incorporate.”



Spotlight on the Nordic diet and the welfare system



Peter Stern is a philosopher with a PhD in sociology. He has worked with evaluation and analysis activities within research and innovation and also has experience from government administration in Sweden. Photo: Terje Heiestad

The number of researchers from China and the US who come to study the Nordic welfare state is on the rise. Word has begun to spread that typical Nordic dietary patterns are just as healthy as the better-known Mediterranean diet. Two joint Nordic research programmes established by NordForsk in 2007 have helped to make this happen.

In 2007, NordForsk launched the first two of a new type of research programme, based on the introduction of a Nordic Centres of Excellence (NCoE) scheme. The centres brought together established Nordic researchers who were to receive additional resources in order to enhance the international profile of their research activities, and operated as either a virtual or a physical entity. The final evaluation of the first programmes under the NCoE scheme indicates that the cooperation model is effective and has yielded high-quality research results.

One overall conclusion from the evaluation is that schemes of this type are beneficial for already-established groups of researchers with a strong position in their fields.

“There is no doubt the centres have been successful and have been home to top research activity,” states Technopolis Senior Consultant Peter Stern, who served as project leader for the evaluation.

Good grounds to continue

Peter Stern points out that the Nordic Centres of Excellence have an academic orientation with a strong basic research component. Their research can not be expected to lead to many innovations or new companies, nor was that their purpose. The evaluation further finds that there are good grounds to continue the type of funding on which the NCoE programmes are based.

“The evaluation is positive. In fact, things have been even more successful than originally hoped for,” Dr Stern explains.

Even so, there is still room for improvement. The evaluation includes a set of recommendations for the design of future Nordic Centre of Excellence programmes. Among the most important of these is to maintain the five-year horizon for the NCoE centres.

“Not very much can be achieved if centres aren’t given enough time. The time frame is clearly important for this type of scheme,” Dr Stern adds.

A Nordic success story

According to the evaluation, it would have been constructive to have better clarification of the role of NordForsk and the national research funding institutions at the time these initial programmes were established.

“At the time, it was important to avoid a situation in which NordForsk’s activity could be construed as not generating any significant Nordic added value because that would mean the activity could simply have been conducted nationally. There was also a need to develop the dialogue with the Nordic Council of Ministers and



Food, Nutrition and Health

The most important objective of the NCoE Programme on Food, Nutrition and Health (2007–2012) was to create Nordic strength by promoting scientific excellence and enhancing Nordic research collaboration and mobility of researchers. Public health benefit was a priority for this NCoE-programme, which aimed to strengthen the knowledge base for public dietary recommendations and contribute to an innovative product development within the Nordic food industries.

Welfare

The main objective of the NCoE Programme on Welfare Research was to create Nordic strength by promoting scientific excellence and enhancing Nordic research collaboration and mobility of researchers. The aim was to improve the quality, efficiency, competitiveness and visibility of Nordic welfare research through closer cooperation in the Nordic countries.



the Secretariat to the Council. NordForsk and other stakeholders have subsequently put substantial effort into clarifying their roles and promoting closer dialogue,” says Peter Stern.

Research has emerged as one of the success stories from Nordic cooperation because so much has been accomplished. “The positive results have come about in part because, from the outset, we shared by and large the same view of what we wanted to achieve,” Dr Stern explains.

Nordic diet gaining momentum

The NCoE Programme on Food, Nutrition and Health received a positive review. The evaluation finds that the Programme on Food, Nutrition and Health has helped to increase interest in the Nordic diet with emphasis on berries, root vegetables, fish and game. The impact on health of the Nordic diet has long been of interest to Nordic researchers, but the evaluation states that a much wider focus on Nordic food in an international context emerged during the course of the programme.

“While the NCoE programme can’t claim sole honour for this development, it has contributed in many ways,” Dr Stern points out.

Interest in the welfare model

The NCoE Programme on Welfare Research also received a positive evaluation. The objective of the programme was to study the Nordic welfare state and its ability to adapt to a society undergoing change.

The most prominent benefit of the programme may be that it expanded the network among participating researchers.

This is completely in line with the intent of the programme, and as such is no surprise, but the programme has also helped to strengthen the networks of others than just those who took part in the actual programme.

Another important result is that the programme has led to increased international interest in the Nordic welfare model.

“Among other things, specific co-operative projects were developed between Nordic researchers and their counterparts in both China and the US. This does not necessarily mean that China and the US are going to become “Nordic” welfare states, of course. In this case, too, the developments are not due to the programme alone, as the participating researchers were already recognised internationally in their fields. But many will certainly agree that the programme has contributed considerably,” says Peter Stern.

A good evaluation

Both programmes have helped to increase intra-Nordic mobility, particularly for young researchers.

“We should also keep in mind that these were the first NCoE programmes established and that NordForsk has already learned much from the experience and has further refined the scheme. One could say that NordForsk had a pretty sure bet to begin with here, but it has still created a scheme that makes good researchers even better. And that is exactly what they sought to achieve,” Dr Stern concludes.



NCoE HELGA

NCoE HELGA has studied the effects of a diet with a strong element of wholegrain products on modern lifestyle diseases such as cancer and diabetes 2. The evaluation states that NCoE HELGA has become renowned and has generated results that had a high impact among researchers and the general public.

NCoE MitoHealth

Centre for Bioactive Food Components and Prevention of Lifestyle Diseases. NCoE MitoHealth has investigated how food from marine raw materials can reduce the occurrence of modern lifestyle diseases. Among other things, the programme provided a good overview of “who is doing what” in the Nordic countries which may be used to facilitate future studies.

NCoE SYSDIET

Systems biology in controlled dietary interventions and cohort studies. NCoE SYSDIET has looked for new mechanisms to promote health and prevent metabolic syndrome and related diseases through diet. The centre carried out a large-scale, important intervention study in all Nordic countries, with contributions from molecular genetics and metabolomics as well as diet and nutrition scientists.

NCoE NordWel

has studied the Nordic welfare state - a hallmark for the Nordic countries that has attracted international attention. Participating institutions came from Denmark, Finland, Iceland, Norway and Sweden.

NCoE Reassess

has examined the capacity of the Nordic welfare model to renew itself under changing external and internal conditions. Participating institutions came from Denmark, Finland, Iceland, Norway and Sweden. In addition, the University of Tallin in Estonia was an associated partner.

NordForsk helped make European climate research more effective

In 2013, NordForsk, together with French National Research Agency, took on the responsibility for administering the first joint call under the large-scale European research initiative JPI Climate. “A positive experience and a step along the path towards a common European Research Area,” says French partner Patrick Monfray.

NordForsk has recently concluded its term as web portal for the first JPI Climate call and secretariat for a part of the call, tasks that left NordForsk itself and its partners with a wealth of useful experience.

“I am very pleased with our collaboration with NordForsk. I would like to stress that effective cooperation with institutions such as NordForsk, which is so professional in dealing with calls for proposals and other elements of research administration, is extremely important to the success of JPI Climate,” says Professor Heikki Mannila (right). He is the President of the Academy of Finland and the Chair of the Governing Board of JPI Climate.



“Climate change is one of the major global challenges. It is not a phenomenon that does respect national boundaries, nor does it respect the boundaries between scientific disciplines. We therefore need large-scale international collaborative projects to enhance our understanding of the complex interactions and feedbacks in the climate systems, of how to adopt and mitigate climate change, and of how to effectively integrate climate issues into existing policies, planning, and governance in different sectors in the society. From these perspectives, it is particularly important that the research funding bodies in various countries work together to determine what types of research should be carried out,” the professor adds.

Promising opportunities

At the time the Joint Programming Initiative was taking shape, NordForsk was engaged in coordinating the Nordic Top-level Research Initiative (TRI) on climate change, energy and the environment. This was done in cooperation with Nordic Energy Research and Nordic Innovation.

“When JPI Climate was established in 2010, the TRI Management Board asked the NordForsk administration to follow developments closely. It was obvious that there were promising opportunities for collaboration between the broad-based Nordic initiative and the even broader-based European initiative. NordForsk took part as an observer in JPI Climate’s Governing Board, and several participants from TRI-funded projects were members of the working groups under JPI Climate,” says Senior Adviser Susanna Sepponen at NordForsk.

In 2011, JPI Climate began preparing the first joint call, under which European researchers would compete for allocations within an overall budget of EUR 12 million. One of the first issues that needed to be dealt with was determining which organisation would serve as secretariat for the technical implementation of the call. The French National Research Agency (ANR) quickly emerged as a strong candidate for administering the first topic, Societal Transformation in the Face of Climate Change.

“The second topic, Russian Arctic and Boreal Systems, dealt with temperate and Arctic areas in Russia. The Nordic countries were naturally very interested in this topic, and therefore proposed that NordForsk should administer that part of the call on their behalf. The proposal was well received by JPI Climate’s Governing Board, and concrete efforts got underway in 2013,” explains Ms Sepponen.

Secretariat in two countries

The day-to-day task of administering the call was coordinated by a team at NordForsk in cooperation with project manager Johann Müller at the ANR. The NordForsk team consisted of coordinator Susanna Sepponen, Senior Adviser Jostein Sundet, who was responsible for application processing and evaluation for the Russian topic, and Adviser Kati Lehtinen Melbøe, who provided technical support.

“In practice we worked as a secretariat, even though we were physically located in our respective countries. We worked very hard during the spring and

A woman with short blonde hair, wearing a black blazer and black trousers with decorative buttons down the side, stands leaning against a grey wall. She is looking towards the camera. The background is a courtyard with a large building, trees, and a person in the distance.

The Nordic region is unique in that research funding for international cooperation is allocated with such a high degree of trust and flexibility,” says Senior Advisor Susanna Sepponen, NordForsk

autumn 2013 on programme documentation, preparing the call and application processing,” recalls Ms Sepponen.

Positive experience

It was a new step for JPI Climate and the EU system to allow a regional, multinational organisation such as NordForsk to co-coordinate the call. Patrick Monfray, ANR Programme Director of the Facing Societal, Climate and Environmental Changes programme, co-chair of the Belmont Forum and vice-chair of the JPI Climate Governing Board, is just as pleased as Professor Mannila.

“I have only positive things to say about our collaboration with NordForsk. NordForsk handled its part of the process expertly, and I know that JPI Climate benefitted greatly from the collaboration. We ought perhaps to do more to establish this type of constellation in the future, because use of regional institutions is a great way to counteract the fragmentation that still characterises research

and research funding in Europe. In this respect, the collaboration with NordForsk is a step on the path towards a fully developed European Research Area,” says Mr Monfray.

Mr Monfray suggests that the Baltic region could be a natural arena for new multinational cooperation, alongside the Nordic region. Most European research funding in Europe is still allocated at the national level, but the European Research Area is encouraging national research councils to launch joint transnational calls to provide support for European research networks.

Nordic flexibility

Susanna Sepponen adds that JPI Climate is structured differently from what NordForsk is accustomed to. “JPI Climate and other EU cooperative efforts operate with what is known as a distributed budget. In practice this meant that NordForsk and the ANR coordinated the programme up to the submission of recommendations

for allocation, and then the individual countries awarded the funding to their respective researchers. In the Nordic countries, we generally have access to a genuine programme budget allocated by the countries, and NordForsk awards funding within this framework on the basis of scientific quality and relevance relative to the call,” she explains.

There is an expectation of fair return in international cooperation; that is, each country expects to get back roughly the amount it has contributed.

“The Nordic countries have instead followed the common-pot principle, in which the best projects are awarded funding until the budget has been used up. Funding is allocated independent of how much each country has contributed. The Nordic region is unique in that research funding for international cooperation is allocated with such a high degree of trust and flexibility,” says Ms Sepponen.

About JPI Climate

The Joint Programming Initiative concept (JPI) was introduced by the European Commission in 2008 to support implementation of the European Research Area. The objective of joint programming is “to increase the value of relevant national and EU R&D funding by concerted and joint planning,

implementation and evaluation of national research programmes”.

JPI Climate is a collaboration between 14 European countries seeking to coordinate their climate research, develop more climate-related knowledge and fund joint research projects. JPI Climate

focuses on the societal challenges resulting from climate change.

In the autumn 2014, JPI Climate will announce which projects have been awarded funding under the first joint call. Follow developments at www.jpclimate.eu.





Climate change – for better or for worse?

A photograph of a harbor filled with fishing boats, mostly white with red and blue accents. The boats are docked and their reflections are clearly visible in the calm water. In the background, there are steep, rocky mountains under a cloudy sky. The scene is typical of a coastal town in a Nordic country.

While a warmer, wilder climate will pose challenges to the primary industries in the Nordic countries, it may also lead to greater sustainability and growth.

– For the primary industries, this means having to deal with achieving reductions in their own emissions while at the same time meeting the rapidly growing demand for food and other products.

In 2007, the Nordic prime ministers agreed to launch a major Nordic initiative to enable the region to address the challenges posed by globalisation. One of the concrete projects this spawned was to shed light on the impacts of climate change on natural resources in the Nordic countries.

The Nordic Council of Ministers established a research programme with the overall objective of creating a Nordic knowledge base on the impacts of climate change on the primary industries – agriculture, forestry and fisheries – in the Nordic region. NordForsk was given the task of administering the programme.

Participants from leading research groups in the Nordic countries formed six research networks to examine various aspects of the topic. The joint report of the networks has been published this year offering a range of recommendations to political decision-makers.

Challenges facing the primary industries

According to Jørgen E. Olesen, chair of the programme's steering committee and a professor of agroecology, the Nordic primary industries will be facing a number of complex changes.

"We will be seeing a significant rise in temperature if the current trend in emissions of greenhouse gases continues. For the primary industries, this means having to deal with achieving reductions in their own emissions while at the same time meeting the rapidly growing demand for food and other products," says Professor Olesen.

Peer Berg, Section Leader for Farm Animals at the Nordic Genetic Resource Center (NordGen), believes that greater focus on genetic resources will be part of the solution.

"We must exploit the full range of genetic diversity and use the right species in the right places. We must also take full advantage of the variation among animal species, for example in relation to temperature tolerance and disease resistance."

Enhanced competitiveness and greater sustainability

Higher temperatures and a longer growing season may boost productivity in agriculture and forestry, making it possible to cultivate a wider array of species, also in the northern parts of the region. Increased forestry production can also help to satisfy the growing demand for bioenergy.

Higher productivity may result in larger market shares for Nordic producers, as climate change may have a negative impact on productivity in other parts of the world. A warmer climate should also enable the Nordic countries to engage in more sustainable production and become more self-sufficient in certain areas. "Certain changes will create better conditions for primary production and should pave the way for more sustainable production systems. A longer growing season will give an upswing in productivity, particularly in grasslands. This increase in productivity – combined with new biorefining technology – can make us more self-sufficient when it comes to animal feed. This will enhance the sustainability of both agricultural production and aquaculture production," says Professor Olesen.

Political agreements and management authorities under pressure

Climate change may lead to the appearance of new species while others disappear or migrate. As a result, existing

resource management agreements may become irrelevant or give rise to conflict.

"During the past decade, we have seen species migrate northwards. A prime example is mackerel from the North Sea and Norwegian Sea, which are now found in the waters around Iceland and Greenland. Such shifts will generate conflict regarding species management," states Sigurður Guðjónsson, Director of the Institute of Freshwater Fisheries in Iceland.

"We have observed a decline in southerly Arctic char stocks, and some of these may disappear completely. Thus, we are losing genetic diversity. On the other hand, Arctic char have exhibited an impressive ability to adapt, so there is no reason to fear that the species will die out," says Dr Guðjónsson.

Must devise Nordic solutions

There is no doubt that global warming will lead to opportunities and challenges that are unique to the Nordic countries. The region is the only place on earth with productive agriculture, forestry and fisheries at such high latitudes, with long summer days and dark winters. Moreover, warming is projected to be nearly double the global mean in the north and east of the region, resulting in very special conditions.

For example, it is often difficult for plants from other areas to adapt to light conditions in the Nordic countries, and they do not undergo the "hardening-off" process that prepares local plants for winter.

"The challenge is to identify and develop new genotypes that can survive the winter without needing any hardening-off and still provide adequate yields," says Anne Marte Tronsmo, professor of plant



Publications

The final report from the research programme, "Climate change and primary industries", was published in 2014, along with an abridged version that presents the main conclusions and specific recommendations for political decision-makers.



"Climate Change Impacts, Adaptation and Mitigation in Nordic Primary Industries"

The research programme was launched in 2010, as part of the Nordic Council of Ministers' globalisation initiative, and is coordinated by NordForsk. The programme comprises six Nordic research networks:

- Sustainable Primary Production in a Changing Climate
- Forest Soil C Sink Nordic Network
- Climate impacts on fish, fishery industry and management in the Nordic Seas
- Nordic Research Network on Animal Genetic Resources in the Adaptation to Climate Change
- Nordic Forage Crops Genetic Resource Adaptation Network (NOFOCGRAN)
- Arctic char: A species under threat and with great potentials in the age of climate change (NORDCHAR)

Jørgen E. Olesen, professor of agroecology at Aarhus University. Photo: Kim Wendt

pathology at the Norwegian University of Life Sciences.

All hands on deck

Professor Olesen concludes: "We are going to have to solve several issues at once. We must reduce our carbon foot-

print, adapt the primary industries to the changing climate and protect our resource base. This will require new technology, new resource management systems and partnerships among relevant actors, from the public sector to private companies in the region."

“Single market” for European researchers taking shape

The conditions for free movement of researchers and scientific knowledge within Europe are now in place at the European level, according to the recent ERA Progress Report. What remains is for the Member States to implement the necessary reforms.

The European Commission issued a report in September 2014 stating that the partnership between EU Member States, the Commission and major European research organisations has taken significant steps towards developing a European “single market” for research.

“The conditions for achieving the European Research Area (ERA), where researchers and scientific knowledge can circulate freely, are in place at the European level. It is now up to Member States to implement the necessary ERA reforms and make ERA work,” the European Commission’s ERA Progress Report 2014 states.

Strengthening research in Europe

The ERA has been described as the research sector’s equivalent to the single European market for goods and services, and its intention is to enhance the international competitiveness of European research institutions. This vision is to be realised through the free circulation of researchers between the various European

countries and by preventing unnecessary duplication in research and infrastructure at the national level.

The Europe 2020 growth strategy stated that the ERA should become a reality in the course of 2014. However, the latest progress report shows that the ERA is not quite ready for take-off because the national administrative procedures are not yet adequately reformed. For example, while over half of the Member States have adopted initiatives for promoting gender equality in research, the overall progress in this area is moving too slowly.

NordForsk an active contributor

The Nordic countries have already come quite far in making the necessary ERA adaptations, not least in the area of gender equality.

“NordForsk has contributed throughout by working in partnership with universities, research groups and research councils with the aim of enhancing the overall framework for carrying out internationally cutting edge research in the Nordic countries”, says Riitta Mustonen, Deputy Director of NordForsk.

In July 2012, NordForsk signed a Joint Statement with the European Commission and major stakeholder organisations to support the achievement of the ERA. Dr Mustonen explains that NordForsk will continue to work closely with some of the stakeholders, especially Science Europe and EUA (European University Association).

The various EU countries – along with Norway and Iceland, who are part of the European research cooperation although not EU Member States – are currently

compiling “roadmaps” of the most essential measures that will be needed at the national level to achieve the ERA.

The ERA has already produced results

The report also states that efforts to realise the ERA have already produced excellent results.

“It documents among other things that the research institutions implementing the ERA generate a higher number of publications and patent applications, and that researchers who work in more than one country have a citation frequency (research impact) that is 20 per cent higher than other researchers,” Dr Mustonen points out.

“The basis underlying the ERA, and NordForsk’s active contributions, is that research is global. The best research does not conform to national borders, and talented researchers are always looking for the best partners and the best research environments,” Riitta Mustonen adds.



NordForsk's Report on contributions to the realisation of the ERA.

*“Our task is to support the measures agreed on by the Nordic countries,” says Riitta Mustonen, Deputy Director of NordForsk.
Photo: Terje Heiestad.*

NordForsk, ERA and SHO cooperation



The European Research Area (ERA) is intended to strengthen research cooperation, competitiveness and the sharing of knowledge and technology bases across national borders.

The ERA Progress Report 2014 is available on a webpage together with a link to the working paper, “ERA Facts & Figures 2014”. (http://ec.europa.eu/research/era/eraprogress_en.htm)

In 2012, the European Commission invited five key Stakeholder Organisations (SHO) to sign a Joint Statement on working together to realise the ERA. The participating organisations are: **NordForsk**, **European University Association (EUA)**, **League of European Research Universities (LERU)**, **European Association of Research and Technology Organisations (EARTO)** and **Science Europe**. **Conference of European Schools for Advanced Engineering Education and Research (CESAER)** joined at a later stage. Together these organisations comprise a Stakeholder Platform which meets regularly.



In 2011, the European Commission initiated a public consultation to identify obstacles to achieving the ERA. After analysing approximately 700 answers, the Commission concluded that the following areas are most vital to the development of the ERA:

- More effective national research systems;
- Optimal transnational cooperation and competition;
- Open Labour Market for Researchers;
- Gender equality and gender mainstreaming in research;
- Optimal circulation, access to and transfer of scientific knowledge including via digital ERA.



”What motivates me is that power is not to be shielded, power must be challenged, and as Minister of Higher Education and Science it is an important part of my job to ensure that knowledge is shared, including in the public sphere. Not just my knowledge, but the knowledge of researchers as well – they have to share it with society at large.”

Knowledge must not be kept secret

Sofie Carsten Nielsen,
Denmark’s Minister of Higher Education
and Science



“I think there are many people who will expand their competencies once they get greater access to research. This entails a rise in the level of knowledge, ideas and expertise throughout the world. No one should object to this.”

Sofie Carsten Nielsen put the spotlight on Open Access soon after she became Denmark's Minister of Higher Education and Science in early 2014. Why? Because she sees free access to research results as a part of the solution to many of the major challenges to society.

Open Access was one of the first things I noticed when I began as minister. There is much to be gained there, I thought!"

Why is Open Access so high on your political agenda?

"It is because I view Open Access as a part of something greater – namely, how we want to develop as a society. It is a global movement. There is pressure because of technological development, because the world is getting smaller and because people around the world are calling for higher levels of transparency and inclusion. Overall, people are better educated and are demanding greater insight into the decisions taken on their behalf as well as into what those decisions have been based on.

This is a direction I want things to take and I gladly support. The key idea is that we can best solve societal challenges – and for me this is the most important aspect – by getting as many perspectives on them as possible, and by having the best possible basis for taking well-informed decisions. I am certain that the more knowledgeable we are, the better decisions we will take."

Power must be challenged

"In many ways more transparency and inclusion pose a challenge to myself and

the position I hold – as well as to business leaders and all other decision-makers. But that is a good thing – also when it goes against my views and people disagree. What motivates me is that power is not to be shielded, power must be challenged, and as Minister of Higher Education and Science it is an important part of my job to ensure that knowledge is shared, including in the public sphere. Not just my knowledge, but the knowledge of researchers as well – they have to share it with society at large. Otherwise laypeople, myself included, will never understand what they do.

Today citizens have a responsibility and an opportunity to participate in decision-making processes because knowledge is accessible and must be made accessible to everyone to an even higher degree. I think we are facing some dramatic changes in the way we lead our lives. Imagine what it will be like when we can personalise treatments in the health sector to a greater extent than today and when we share knowledge about the best ways for people to learn! It is almost too big to grasp. Research must get on board and become an integral part of the public sphere to give us optimal ways to deal with societal challenges."

Sofie Carsten Nielsen

of the Danish Social Liberal Party was appointed Minister of Higher Education and Science in Denmark on 3 February 2014. During NordForsk's session on Open Access at the EuroScience Open Forum in June 2014, the minister presented Denmark's national strategy, which aims to ensure open access to all scientific articles from Danish research institutions by 2022.

A national steering group is responsible for coordinating the implementation of the strategy. The steering group consists of representatives from universities, libraries, and public and private foundations.

Research for the people

You presented Denmark's national strategy for Open Access at NordForsk's session on Scientific Impact and Open Access at the EuroScience Open Forum in June 2014. What are you hoping to achieve with the strategy?

“My overall goal is to make research understandable for the public at large and to give people access to knowledge that will make them more equal citizens of a democratic society. When I say I want to make research understandable for the people, it is because we as a society must invest heavily in research. This is a general belief in the Nordic countries and the EU, where, fortunately, there is general acknowledgement even in times of crisis that if we do not invest in research and innovation, we will lag behind. The opportunities we have as human beings are at stake. And when we use a large portion of the taxpayers' money on research – and I would like us to use an even greater amount, which is probably the goal of every minister of research – then the things that researchers know must absolutely not be protected or designed only for themselves. We must be able to explain why society as a whole should invest heavily in research and development. I have a political responsibility in this regard. And I believe that researchers have a responsibility to society.”

What do you think are the advantages of free access to knowledge?

“I think there are many people who will expand their competencies once they get greater access to research. This entails

Photo: Terje Heiestad



a rise in the level of knowledge, ideas and expertise throughout the world. No one should object to this. Knowledge must not be kept to oneself. I am very much against that. Knowledge must not be kept secret.”

We will begin in the Nordic countries

The strategy states that it is necessary to create a well-functioning platform for general dissemination of Danish research results. Do you see an opportunity for Nordic cooperation here?

“I have high expectations for the work being done by the steering group for Open Access. Our goal is that by the year 2022 all peer-reviewed research articles produced by Danish research institutions published from 2021 will be openly accessible, and I know that the steering group

“I view Open Access as a part of something greater – namely, how we want to develop as a society.”

have taken the Nordic and European perspectives into account. I think that we should begin with Nordic cooperation because we have very different positions in the EU in this area. I think it is crucial for us, and I think it is very Nordic, that we do not want a model that creates additional costs for researchers. It is a fundamental principle for us that this must not result in extra expenses for research publication.”

“NordForsk has taken a key step by creating a separate Open Access repository together with other organisations under the Nordic Council of Ministers. And I think that this can play a valuable role in relation to the exchange of experience as well as the overall development, so that we do not get stuck in the political discussion but rather move ahead with the actual implementation. The steering group agrees on this point. We can learn a lot about access to publications and data from each other in the Nordic countries. It appears that Finland has come the farthest in this regard. It would be terrific if NordForsk could help to facilitate this development. I am certain that we have lots to learn from each other in the area of Open Access.”

NordForsk promotes Open Access in two ways

1 Coordinating Nordic research cooperation: NordForsk provides a platform for policy development across Nordic borders. In the Open Access sphere, this translates into financing of critical e-infrastructure and facilitating the exchange of experience between countries.

2 Together with a number of other institutions under the Nordic Council of Ministers, NordForsk has established an Open Access database, Nordpub, which currently encompasses surveys, analyses, reports and other publications published by the Nordic Council of Ministers (secretariat or institutions). This makes knowledge about the Nordic

region accessible to the general public at no charge – for the purpose of strengthening the knowledge base for decision-making in the Nordic countries. The long-term plan is that all the knowledge produced with funding from Nordic cooperation will be made available in Nordpub. In NordForsk's case, this means all funded research projects.

Open Access in Nordic countries

A great deal of attention has been focused on Open Access in recent years, and the concept of Open Science is now gaining in popularity too. Open Access involves free access to publications and in some cases to research data. Open Science encompasses free access to publications and the data underlying the publications, basic raw data and methods (i.e. software, analytical tools, algorithms) and to other information about research groups such as details about laboratory equipment, (including all metadata). **An Open Science framework is targeted towards making scientific knowledge fully and openly available as early as possible in the discovery process.**

Open Access policies in the Nordic countries in brief

Denmark

established a national strategy on Open Access to scientific publications in 2014. Denmark's research councils (today, the Danish Council for Independent Research, the Danish National Research Foundation and the Innovation Fund Denmark) introduced a requirement in 2012 that all researchers receiving funding must use Open Access channels for their scientific publications whenever possible. All project reports submitted must state whether publication in Open Access journals and media has taken place.

Finland

has not drawn up a national policy but has carried out national-level Open Access activity since 2003. As from 2006, the Academy of Finland has recommended researchers receiving funding to use Open Access channels to publish their scientific publications. In 2013, 'recommended' was changed to 'advises'. Project reports must state whether publications and data have been published in Open Access journals and media. An Open Science and Research initiative was launched in 2014.

Iceland

has had a national policy on Open Access to scientific publications since 2013. Rannís (the Icelandic Centre for Research) stipulates that researchers receiving funding must use Open Access publication channels whenever possible. Project reports must state whether publications have been published in Open Access journals and media.

Norway

The Research Council of Norway has had a policy on Open Access to scientific publications since 2009 and on Open Access to research data since 2014. The Research Council of Norway requires Norwegian researchers to archive their publications (Green Open Access). Project reports must state whether publications have been published in Open Access journals and media.

Sweden

is formulating national guidelines on Open Access to scientific publications and data during 2014. Since 2010, the Swedish Research Council has required researchers receiving funding to use Open Access channels and starting in 2015, only scientific publications published in Open Access journals and media will be counted in project reports.

EuroScience Open Forum 2014

ESOF
2014
COPENHAGEN
EUROSCIENCE
OPEN
FORUM



*Professor Klaus Bock is a member of the Scientific Council of the European Research Council and former Executive Vice-President for Research of Carlsberg A/S.
Photo: Linn Hoff Jensen*

Professor Klaus Bock was the Champion of ESOF 2014 in Copenhagen. The conference consists of a research policy/scientific programme and a research festival, Science in the City, which invites inquisitive adults and children to seek inspiration and broaden their horizons.

How does ESOF distinguish itself from other major conferences?

“ESOF is not a traditional research conference where researchers discuss the state-of-the-art in their specific field with other researchers. The ESOF conferences have a different focus. They take the pulse of European research and ask, ‘So what does this mean for Europe and for

us all?’ I think ESOF 2014 made it very clear that ESOF is the leading European forum for open discussion between the scientific community, organisations, politicians, citizens and companies on the design of tomorrow’s society and the role of research in solving major global challenges.”

“I was very impressed by the presentation of the Top-level Research Initiative at the session on Nordic research cooperation. DKK 400 million has been invested over a five-year period in this joint Nordic climate research initiative. Climate challenges are the best example of why close dialogue between the research community and society at large is needed. It is also an area in which the Nordic region

already holds a strong position. Hopefully this position will now get even stronger.”

“I think we have a well-entrenched tradition – not just Danish but Nordic – for mixing together official and popular levels and for maintaining openness in debate and decision-making that affects society as a whole. We upheld this tradition at ESOF 2014 by establishing greater continuity between the conference and the festival than has previously been the case.”

EuroScience Open Forum 2014 (ESOF), Europe's largest science conference and festival, was held on 22–26 June 2014 at the former Carlsberg brewery grounds in Copenhagen. This was a fitting location, as the brewery is known for its research as well as its beer. More than 4 000 researchers, politicians, students and journalists took part in the event, which is held every second year in a European city. All in all a total of 38 000 visitors visited the event. NordForsk took advantage of the fact that ESOF was being held in a Nordic capital, and participated with a stand and five well-attended sessions.



 NordForsk was fortunate to borrow the beautiful Greenland table from the Danish Architecture Centre (DAC). Originally created by curator Jeppe Møhl for the DAC's exhibition "Possible Greenland", the table is at a scale of 1:300 000 and shaped like the curvature of the Earth. It gives a good indication of Greenland's vast size. At ESOF, the table was used to emphasise NordForsk's focus on the Arctic and as a meeting place for visitors. Photo: Terje Heiestad



○ NordForsk's stand focused on the Top-level Research Initiative and the new joint Nordic research programme, "Responsible Development of the Arctic: Opportunities and Challenges". People were invited to touch a genuine iceberg, which melted during the course of the conference.
All photos: Terje Heiestad

NordForsk presented the workings of Nordic research cooperation to a packed Glyptek Hall at the Carlsberg Museum. Speakers included former Danish Minister Bertel Haarder; Chair of the Management Board of the Top-level Research Initiative, Rolf Annerberg; Director of NordForsk, Gunnel Gustafsson; and Peter Stern of Technopolis. The session was moderated by science journalist Quentin Cooper, formerly of the BBC.

“ESOF was a great experience for me. A prominent Danish researcher said to me on her own initiative that in the decades she has been active in European research cooperation she has never experienced the Nordic countries not getting what they wanted, provided – mind you – that they had conferred beforehand! This bears witness to the potential inherent in Nordic research cooperation”, says Bertel Haarder.



The Nordic Centre of Excellence Justice through Education (JustEd) hosted the session **“The role of education in promoting social justice”**, where ways of maintaining focus on social justice in education were discussed. Speakers included Professor Gunilla Holm (University of Helsinki), Professor Lois Weis (State University of New York at Buffalo), Professor Michele Schweisfurth (University of Glasgow) and Professor Lisbeth Lundahl (Umeå University), and the session was attended by a large number of ESOF participants.



NordForsk hosted two debates on Open Access at ESO 2014 in Copenhagen: a panel discussion at the Carlsberg Academy, immediately followed by an informal, open discussion for all interested parties at Café Elefanten. The core issue was how to apply new methods and models optimally to measure scientific impact.

The panel of experts included CEO of the American Association for the Advancement of Science (AAAS) and Executive Publisher of Science, Dr Alan Leshner; Danish Minister of Higher Education and Science, Sofie Carsten Nielsen; Vice President for Research at the Academy of Finland and Chair of the NordForsk Board, Marja Makarow; Dr Janine Swail of Nottingham University Business School; Director of Advocacy at PLoS, Cameron Neylon; Sijbolt Noorda, Open Access Ambassador in the Netherlands, and Head of Publications at the Secretariat to the Nordic Council of Ministers, Niels Stern (left and right).



Lars Kullerud, President of the University of the Arctic, is fascinated by the Arctic, and on 25 June 2014 he shared his enthusiasm and insight with the audience at his lecture "Europe's North – research in the Arctic region". In Dr Kullerud's view, it is essential to draw local populations in the Arctic region into decision-making processes and to respect local competencies.

Following the session “Scientific Impact and Open Access”, those who were interested moved on to Café Elefanten, where there was free entry and the opportunity to continue the debate in an informal setting. ○

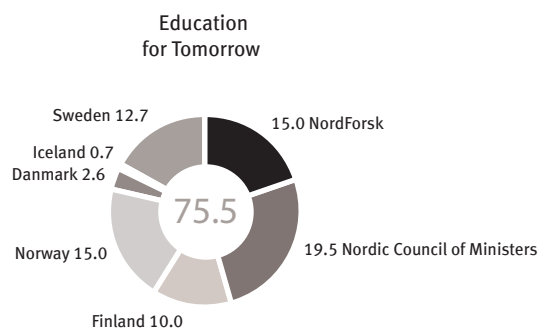
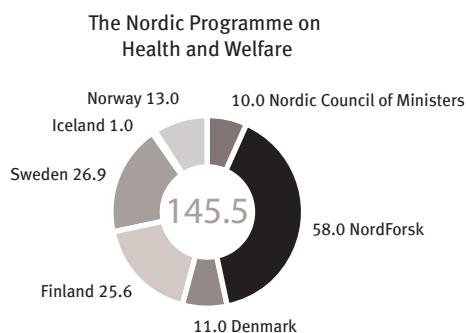
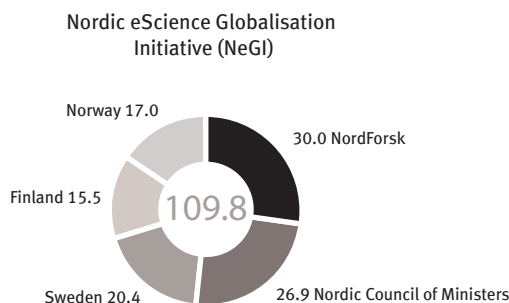


○ The Danish Minister of Higher Education and Science, Sofie Carsten Nielsen, took the opportunity to present Denmark's national strategy on Open Access. All photos: Terje Heiestad

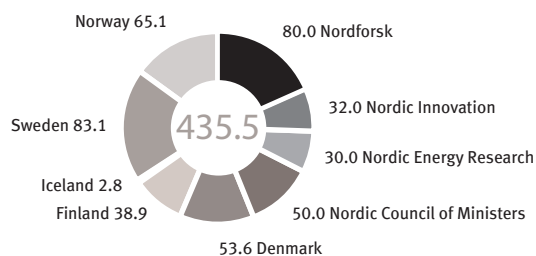
Facts & figures

NordForsk seeks to increase the added value of ongoing research activities in the Nordic countries, thereby strengthening the position and influence of Nordic research both in Europe and globally. Nordic national research-funding institutions, the Nordic Council of Ministers and NordForsk all work together on a number of large-scale programme initiatives. NordForsk is responsible for administering the budget for these activities, usually in the form of a real common pot.

Larger active common pot initiatives Funding in MNOK



The Top-level Research Initiative on climate, energy and the environment



Total of all active common pot initiatives

