



norden

NordForsk

## Annual reporting format 2015: Nordic Centre of Excellence

### Report Headings: NORDRESS 2015

#### Original aims:

##### NORDRESS AIMS TO

- **Enhance societal resilience in a wide spectrum covering individual, community, infrastructure, and institutional resilience**, through defined interdisciplinary research projects, emphasizing cooperation between different NORDIC institutions.
- **Create a lasting interdisciplinary platform for sharing ideas and knowledge among many of the best scientists and experts on natural hazards in the Nordic countries**, most of whom have not worked together before.
- **Improve the opportunities of the NORDRESS partners to obtain funding** from other agencies and thus have an **impact on scientific progress**.
- **Improve networking, education and training through The Nordic Societal Security Academy (NSSA)**, which administers a quarter of the NordForsk grant.
- More specifically, **each of the 13 WP tasks has its aims, stated in the original project description**.

**Design and methods:** NORDRESS is arranged into 2 administrative and 4 research WPs, each of which is further subdivided into Tasks. Each of these has its own approach, design and methods. NORDRESS employs sound scientific methods in every field and emphasizes a cross-disciplinary approach. Particular emphasis is placed on cooperation between institutions in more than one Nordic country, both for transfer of knowledge and to create networks that will last beyond the scope of NORDRESS itself.

**Practical changes to original plan:** The project leader, Professor Guðrún Gísladóttir has been on leave due to health reasons since May 2015. Dr. Guðrún Pétursdóttir has taken on her duties meanwhile. Otherwise, no major changes have occurred, although some proposed participating staff members have changed jobs and have been replaced by others.

**Table 1: Personnel of the Centre**

List the names of the research team leaders involved in the NCoE. Please give the number of other researchers and students who have worked within the project. Also, please indicate the number persons in each category as listed (number of, number of person years in total and the number of person years paid by the NCoE).

Name of the research team leader	Host Institution
Guðrún Pétursdóttir WP1-WP2	UI
Arna Hauksdóttir WP3.1	UI
Atle Dyregrov WP3.2	SFK
Ask Elklit WP3.3	SDU
Haakon Lein WP4.1	NTNU
Guðrún Gísladóttir WP4.2	UI
Hans Jørgen Henriksen WP 4.3	GEUS
Farrokh Nadim WP 5.1	NGI
Christian Jaedicke WP 5.2	NGI
Per Danielsson WP 5.3	SGL
Morten Thanning Vendelø WP5.4	CBS
Guðmundur Freyr Úlfarsson WP 5.5	UI
Adriaan Perrels WP 6.1	FMI
Guðný Björk Eydal WP 6.2	UI

	Number of Persons	Person years in Total	Person years paid by the NCoE
Professors and associate professors	18	1,336	0,002
Senior researchers (other than above)	32	2,521	0,649
Postdoctoral researchers	2	1,727	1,727
Postgraduate students	23	8,862	0,433
Other academic personnel	0	0	0
Auxiliary personnel (office, technical, other personnel)	2	0,500	0,500

## Detailed research progress:

NORDRESS has now completed its first year of operations. Understandably it took the WPs varying amounts of time to get the wheels in motion, some had intended to start right away while others planned to start later. A few WPs had difficulties recruiting staff, PhD students or Post Docs right away, but all envisage being able to do so in 2016.

The added Nordic value of NORDRESS lies first and foremost in the sharing of knowledge, experience and facilities that NORDRESS so heavily emphasizes. Its main aim is to create lasting networks to enhance resilience and to do so *collaboration within the project* is essential. All WPs are urged to work with multiple partners, preferably in several Nordic (or international) countries. Discourse with stakeholders outside the project is emphasized, e.g. by consulting planning authorities or civil protection agencies. This is also accomplished through extensive cooperation with other research projects, not least funded by the European Commission. The NORDRESS spirit is very positive and strong, as exemplified by the numerous applications to the Nordic Societal Security Academy (NSSA) for all sorts of networking activities.

Below is a brief account of the progress in each WP

**WP1 Administration.** This WP began months before the project started officially, with all the planning required to prepare the project, including all scientific and financial planning and setting up the Consortium Agreement and launching the NORDRESS website ([www.nordress.hi.is](http://www.nordress.hi.is)). The kick-off meeting took place in January 2015 and was very well attended and received. Subsequently WP1 has followed the progress of all WPs, providing information and advice as needed. Introducing NORDRESS in various fora, searching for cooperation opportunities with agents outside of NORDRESS, preparing grant applications, and arranging meetings, including preparations for the first annual meeting in May 2016, has also been a part of WP1. Last but not least, preparing the yearly report is in the hands of WP1.

**WP2 Nordic Societal Security Academy (NSSA)** has proven to be a great success as a source of mobility and cooperation. It provides motivation for the partners to arrange workshops and courses, as well as for students and researchers to visit other partners to learn from them and their colleagues, as well as gaining access to equipment.

The NSSA calls for applications for mobility grants and courses twice a year, in September and February. 13 applications were received for mobility grants and 6 for courses. All applications met the required standards and were funded. While some of these have already taken place, others are planned for 2016. This acts as a great motivator for cooperation in the consortium, as the funded activities generally involve partners from more than one institution. These grants also provide opportunities for the WPs to organise workshops to discuss and plan their work – and in some cases several WPs join to host a workshop. Thus the NSSA has fuelled cooperation between our partner institutions, strengthening the network and opening opportunities for transfer of knowledge and sharing of technical equipment.

**WP3 Individual resilience** WP3 studies the effects of natural disasters on the health of individuals, both children and adults. The participants in the three different tasks (Tasks 3.1, 3.2, and 3.3) work very closely together, and submit their progress report jointly. The first year of WP3's projects has proceeded very well. The kick-off meeting in January was used to plan the work in detail and shortly thereafter WP3 participated in a symposium on social services in times of disaster, hosted by NSSA (The Nordic Social Security Academy) and the Nordic Welfare Watch, which gave further contacts for future collaboration outside of NORDRESS. WP3 partners also met at NSSA funded workshops in Denmark and Sweden.

WP3 published several articles in 2015, and prepared other six for submission. Seven abstracts were presented at conferences (see Output and dissemination). A PhD student is working on the project, and three MPH students (Master of Public Health Sciences) finished their theses within the frame of WP3 during 2015.

Lastly, an important part of WP3 is to seek further funding, essential to be able to extend the scope of the project and develop it even further. WP3 submitted a 3-year grant application to the Icelandic Research Fund and one for a three-year doctoral grant to the University of Iceland Research Fund (both still awaiting decision).

## **WP4 Community resilience**

**Task4.1 Unpacking and measuring community resilience** has progressed more slowly than planned, mainly for administrative reasons that have held up the recruiting of a Post Doc who is to carry out most of the work in the Task. However, a PhD student is working on the project and has identified sites for the study of community resilience in Norway, field work was also carried out in Denmark by an MSc student who will graduate in spring 2016, and 4 Norwegian MSc students working on a related project (ClimRes) also contribute to WP4.1. WP4.1 doctoral student, Silje Aurora Andresen, obtained a mobility grant from NSSA to spend 6 weeks studying community resilience in Iceland in the spring of 2016. This will link WP4.1 and WP 4.2.

**Task4.2 Risk perception** has been delayed because of the WP leader being on leave for health reasons. Nevertheless, two graduate students are working on the project, and with a mobility grant from NSSA, data collection was carried out in the areas worst hit by the Holuhraun eruption in 2014-5. These interviews have been transcribed for analysis. WP4.2 members have given presentations on community resilience at various meetings and conferences, and took part in preparing the NordRed meeting in Göteborg in September 2015, to which NSSA contributed.

**Task4.3 Participatory early warning and monitoring systems for natural hazards** allow citizens and communities to take on a new role in the information chain, shifting from the traditional one-way communication paradigm towards a two-way communication model in which citizens become active stakeholders in information capturing, sharing, evaluation and communication in real time. The goal of the study is to incorporate public observations into existing monitoring networks and real time modelling and forecasting systems. Public observations sent to emergency management authorities or agencies can also help tailor the response actions through more accurate information on the local situation.

In 2015 WP4.3 has focussed on compiling a review of existing early warning and monitoring systems, with the aim of clarifying whether they can be adapted / enhanced to participatory early warning systems. More specifically, GEUS started an elaboration of user needs for real time monitoring and early warning systems (national – local coupled systems) in relation to flood risks. This was done by disseminating results of a Danish investigation (GEUS funded project: REALTIDSVARSLING) on real time modelling and forecasting in relation to flood risks, based on a prototype development for Skjern å river basins, questionnaire survey and participatory workshop with end users.

An NSSA grant was obtained to host a joint WP4.3/WP5.3 workshop in Odense, Denmark. WP4.3 also obtained an NSSA grant to host a Workshop in the Netherlands to discuss and analyse novel techniques and approaches using mobile platforms, including smart phones. It was planned in 2015 and will be held in Amersfoort, Netherlands in mid-January 2016.

## **WP5 Infrastructure resilience**

**Task5.1 Mitigation of risk posed by slope failures on transport infrastructure** contributes to NORDRESS mainly through in-kind synergies with ongoing international EU and CEDR projects as well as ongoing national initiatives on risk posed by landslide and snow avalanche to transportation infrastructure in Nordic countries. An overview report is being compiled, based on existing damage data, along with gaps analyses to address what needs to be done. This work is

planned to be completed in 2016. Contact with potential end users is being established. In 2015, a tsunami case study which links up with other WPs in NORDRESS, e.g. on the use of social media for warning, was carried out with the Iceland Meteorological Office. This was sponsored by NSSA with a mobility grant for Sigríður Sif Gylfadóttir (IMO) to spend two 4-week periods at NGI working with Carl Harbitz and Finn Løvholt on this case study.

### **Task 5.2 Mitigation of risk posed by snow avalanches on transport infrastructure**

Again, Task 5.2 contributes mainly through in-kind activities in related projects. The focus of Task 5.2 is to improve warning by developing a probabilistic snow avalanche exposure model to estimate the probability of an exposed road/railway being hit by a snow avalanche in the coming 24 hours. The model will consider triggering and run-out and will be calibrated using existing snow avalanche data.

In 2015, the team worked on compiling an overview on the risk posed by snow avalanche to transportation infrastructure in Nordic countries, as well as conducting gaps analyses to address the ensuing needs. Further testing is planned of the SNAPS methodology for snow avalanche warning.

### **Task 5.3: Risk assessment and prevention for flooding and coastal erosion in extreme weather.**

Partners in this task come from Sweden (SGI), Denmark (GEUS) and Iceland (IMO). In 2015 all partners focussed on developing assessing methods for coastal erosion risk in cooperation with local communities.

In Sweden the SGI developed risk analyses for three coastal communities, Ängelholm, Lomma and Ystad, using multiple GIS layers, in cooperation with the Swedish geological survey, SGU. The final tool will be available as a web-GIS tool with the option of choosing various layers and mix of layers.

In Denmark, GEUS focussed on flooding risks assessment (storm surges, flooding from river, groundwater and urban cloudbursts) using a modelling system for Funen – Odense river catchment - Odense metropole area – Odense city centre/Skibhus and considering both groundwater and surface water systems and interactions with the fjord for analyses of present and future flooding risks.

Three masters students are working on flood risk assessment and modelling under the guidance of Task 5.3. Their projects are: 1. Development of nested hydrological flood risk assessment model for Odense metropole and city centre/Skibhus area; 2. Analysis of time series data on water level in Odense fiord and river system, and 3. ( a joint student with the IMO) flood risk assessment and expected material damage after flooding due to storm surges/increased sea level in the Reykjavik capital area.

On October 1-2 2015 Tasks 4.3 and 5.3 organised a *NORDRESS Workshop on the Odense Case Study*, funded by the NSSA.

### **Task 5.4 Arctic offshore challenges**

The plan to map existing literature on arctic disaster research, risk assessment and arctic offshore/cruise activities was delayed because of manning problems. The right person has now been hired and will complete the task in 2016. Task 5.4 will also follow on site the planning, execution and evaluation of search and rescue exercises in the Arctic, in particular the LIVEX lead by the Danish Ministry of Defence. A NORDESS PhD student, Rasmus Dahlberg, took part in the LIVEX preparatory meeting in Nuuk in Feb 2015, and will take part in the LIVEX meeting which has been postponed until spring 2016. Rasmus has worked on developing the methodology for the on site evaluation and has tested it during smaller exercises in Italy and Greenland.

Task 5.4 contributes to a feasibility study of establishing an international rescue hub at the former US Naval Air station in Keflavik Iceland. As a part of this Task 5.4 organized an NSSA funded *Symposium on Cold Disasters – Risk and Resilience in the Arctic*, in Reykjavik on Dec 1<sup>st</sup> 2015, and an ensuing *Expert Workshop*, in collaboration with the Icelandic Coast Guard, on Dec 2 2015.

### **Task 5.5 The vulnerability of air traffic to volcanic eruptions**

This task is carried out in cooperation with the FP7 project ENHANCE, and has progressed very well in 2015. The NAME model for ash dispersion used by the London Volcanic Ash Advisory Centre, was used to simulate ash clouds in different scenarios using meteorological datasets from the events in April 2010. A Python program was used to process the created output and forecast the ash distribution. To gain insight into the stakeholders' reaction to the scenarios, they were invited to discuss these issues face-to-face in a workshop held in Iceland in July 2015. The workshop was attended by representatives from Eurocontrol, IATA, Icelandair, ICETRA, ISAVIA, IMO, the Icelandic Ministry of the Interior and Rolls-Royce. The meeting facilitated communication among the stakeholders about obstacles in the process and ways to improve the response and increase resilience to these types of events.

## **WP6 Institutional resilience**

### **Task 6.1. Review and enhancement of the institutional framework for natural hazard management.**

The team of Task 6.1 set off to compile a review of the current institutional settings of natural hazard management in the Nordic countries. It was decided first to produce a scoping report to provide sufficient guidance for the review by country and to support coherence in reviews. This was completed in August. In the summer (June-August) background material was collected for the interviews that were carried out in the autumn.

The review consists of (1) desk research of reports and peer reviewed articles, (2) a questionnaire based survey among public agencies and other relevant experts in all Nordic countries + the Netherlands, and (3) interviews of key experts in the public and private sectors. This material is summarized in a draft report, which functions as base material for a NNSA funded workshop to be held in Helsinki on January 28 & 29 2016.

All partners took an active part in the desk studies, survey design, recruitment, interviews, and the compilation of the draft report.

### **Task 6.2 The Nordic Welfare System**

The team of Task 6.2 works in close cooperation with the Nordic Welfare Watch on the role of the welfare system in natural disaster response. Together they planned a multidisciplinary Nordic Symposium on May 4-5 2015 on Social Services in Times of Disaster, with the aim of bringing together different perspectives and establish contact between professions ranging from students and academics to various stakeholders working in the field. Abstracts and full papers from the symposium were published on the Nordic Welfare Watch website:

<https://eng.velferdarraduneyti.is/nordicwelfarewatch/in-response-to-crisis/nr/35160>

Following the NEEDS conference in Copenhagen, the WP 6.2 team held a meeting to plan a PhD course in Disaster Social Work. They will apply for funding to NORDRESS in Sept 2016 for a grant to run the course in connection with the European Social Work conference in Iceland in the summer of 2017.

**Governance:** The Institute for Sustainability Studies, University of Iceland is the **NORDRESS Project Manager**. Daily management lies with a 4-person **Executive board**, while the **NORDRESS Council**, consisting of one representative from each Party, has the ultimate decision-making power in the Consortium. All partners are devoted to specific tasks within the project which is structured into 13 **workpackage tasks** (WP Task). Each WP has been assigned a **WP leader** who coordinates activities and is responsible for the work-plan of the WP and its progress, as well as financial and scientific reports. WP leaders come from the partner institutions, which ensures a joint Nordic representation in the management of the CoE.

**Highlights of the research:** The main development in this first year of NORDRESS was simply to get the entire project up and running. NORDRESS is a complicated project with 13 WP Tasks and 14 partner institutions, most of which have several participants in the project. To get them all motivated was a major task. The kick-off meeting in Iceland played a key role there, it was well organized and left the participants with a clear sense of purpose, knowing where NORDRESS is heading and their own role in it.

It is a bit early for particular highlights of the research, although the progress in WP3 is quite impressive, with interesting results on the effects of natural hazards on people's health, in particular the tsunami victims in Sweden and a long-term follow up of avalanche survivors in Iceland.

**Key findings** from the first year come probably from WP3 on individual resilience which delivered several papers in 2015. These include:

1. Disaster exposure can lead to longstanding increased risk of stress-related psychiatric diagnosis and suicide attempts in adults.
2. The long-term sequelae of posttraumatic stress symptoms may be prevented by strengthening survivor's support systems and for children, focusing on alleviating caregiver's distress symptoms.
3. Lingering posttraumatic stress symptoms after childhood exposure to a disaster may negatively influence socioeconomic development in adulthood.
4. The manifestations of sleep disturbances appear to vary depending on survivor's developmental stage at the time of the trauma, with adults at increased risk for persistent nightmares post-trauma, while children are at greater risk of acting out dreams.

**Warrant:** As long as NORDRESS bases its research on sound and accepted scientific methods and publishes its findings in peer reviewed academic journals, a particular argumentation to support confidence in its findings should not be needed.

**Table 2: Researcher mobility**

Please specify research stay abroad as well as visits by foreign researchers. Here mobility is defined as a stay abroad of at least 2 weeks duration. Please note that the definition of mobility as minimum 2 weeks does not apply well to NORRESS. Often our researchers need to meet for a shorter while. All mobility and meetings of the researchers in NORRESS are supported by the NSSA, be it for short or long durations.

Name, job title, organisation	Site of work	Purpose of visit	Duration of visit	Comments, output of the visit
I. WP 6.2 Merja Rapeli, Ministerial Adviser, Ministry of Social Affairs and Health, Finland. (WP leader Guðný Björk Eydal, professor, UI).	VIA University College in Aarhus, Denmark.	To prepare the course <i>Working in Contexts of Crisis and Disasters</i> .	1 day	Costs of spending an extra day after a meeting in Aarhus to work on organising the participation of VIA in the course and to design the curriculum.
II. WP3 Berglind Guðmundsdóttir Psychologist, National University Hospital of Iceland, and Edda Björk Þórðardóttir, PhD student, University of Iceland (Arna Hauksdóttir, Associate professor, UI, WP leader)	Aarhus, Denmark; and National Center for Psychology Karolinska Institutet Sweden;	a) To work with professor Ask Elklit compiling a historical overview of psychosocial support following natural disasters in the Nordic countries. b) to work with Prof. Hultman on WP3 related issues.	10 days	a) Work on a paper on victims of avalanches in Westfjords and earthquakes in Southern Iceland. b) Practical problems solved regarding studies on Swedish tsunami survivors, e.g. how to link questionnaires to national medical and prescription registries.
III. WP 4.2 Sigrun Maria Kristinsdóttir, researcher, University of Iceland. (WP leader Prof Gudrun Gisladottir, UI)	Eastern Iceland; Egilsstaðir, Jökulsárdalur, Reyðarfjörður and Neskaupsstaður.	Interviews with local administrators and emergency response teams in communities affected by SO <sub>2</sub> pollution in the Holuhraun eruption.	20 days	65 interviews were carried out all of which have been transcribed and are being processed for further analysis.
IV. WP 5.4 Rasmus Dahlberg, Senior researcher, Copenhagen Business School. (WP leader Morten Thanning Vendelø, associate professor, CBS)	Greenland, Nuuk	Planning of LIVEX 2015, a full-scale rescue exercise.	6 days	Planning of the LIVEX 2015, the exercise itself however has to be postponed until 2016.
V. WP 5.1 Sigríður Sif Gylfadóttir, Post doc, IMO. (Farrokh Nadim, technical director NGI)	Norway - Trondheim, NGI	To learn about tsunami and flooding models from NGI experts.	4 weeks	The visit was spent on developing a numerical model of the Lake Askja tsunami and landslide in collaboration with specialists at NGI.



VII. WPs 4.3 and 5.3 Hans Jørgen Henriksen, Senior Advisor GEUS, and Per Danielson, National Coordinator Coastal Erosion, SGI	Denmark, Odense	Common meeting of WPs 5.3 and WP 4.3 in order to discuss coastal flooding with reference to the Odense case.	2 days	WP 4.3 - Hans-Jørgen Henriksen, GEUS Expected work and outcomes in Task 4.3 was introduced. WP 5.3 – P. Danielsson, SGI. Multi scale coastal vulnerability index (CVI) – coastal vulnerability mapping. WP 6.1 – Atte Harjanne, FMI Recap about what is the situation now in WP 6.1 Presentation Halldór Björnsson about vulnerability in Iceland
VI. WP 4.3 Peter van der Keur, Senior advisor, GEUS. (WP leader Hans Jørgen Henriksen, Senior Advisor, GEUS)	Netherlands (Wageningen/TU Delft)	Participants from GEUS, FMI and IMO will study flooding experiences from the Netherlands, and learn about best practices regarding participatory early warning and monitoring techniques.	2 days	To be held in January 2016
VII. WP 6.2 Carin Björngren Cuadra, Associate professor, Malmö University (WP leader Prof Guðný Björk Eydal UI)	University of Iceland	Study visit to develop the theoretical framework for a project on frameworks for selection and synergies.	2 weeks	Work on the framework for selection and synergies. The progress was fine and according to plans.
VIII. WP 4.2 Þorsteinn Ari Þorgeirsson researcher, UI (WP leader Prof Guðrún Gísladóttir, UI)	Northern Iceland	Field trip to gather data on pending hazardous floods and their impacts on inhabitants, community and societal infrastructure.	Up to 1 week	To be done in 2016
IX. WPs 4.1 and 4.2 Silje Aurora Andresen, PhD student, NTNU. (WP leader Prof. Haakon Lein, NTNU).	Iceland	To work on community resilience issues with NORDRESS partners at the University of Iceland and the Civil Protection in Iceland.	6 week	April and May 2016
X. WP 5.3 Per Danielson, National Coordinator, Coastal Erosion, SGI.	Southern Sweden	Study visit to discuss with local authorities the needs of municipalities in relation to flooding and erosion problems.	3 days	Spring 2016

Number of:

Visiting months (days x persons) in 2015 only, (as visits taking place in 2016 will be counted next year.

3,8

Visiting researchers in 2015 only

24

**Table 3: Researcher training and education**

Please list courses organized. Specify the number of students participating (own students, and other students) and number of ECTS points gained in the courses. In addition, the number of PhD and Post Docs, both national and international is asked for.

Course (name of course, institution, person responsible)	Own Students	Other students	Number of ECTS points
Tools and Techniques in Climate Change Studies, NTNU, Trondheim, Norway. June 15-19, 2015 Dr. Jan Ketil Rød	1	4	7,5
Advances in disaster research, CBS, Denmark. December 7-8, 2015 Kristian Cederwall Lauts	6	9	2 for participation, 3 for participation and paper presentation

**How many PhDs and Post Docs are recruited in Nordic countries (specify the country) and how many are recruited internationally?**

Number of PhD students recruited in Nordic countries (specify the country)	3 Iceland (Ingibjörg Lilja, Edda Björk, Einar Pétur ) 1 Norway (Silje Aurora Andersen) 3 Finland (Väinö Nurmi, Atte Harjanne, Karoliina Pilli-Sihvola)
Number of PhD students recruited outside Nordic countries	1 Germany (Uta Reichardt )
Number of Post Docs recruited in Nordic countries (specify the country)	
Number of Post Docs recruited outside Nordic countries	

**Specify the number of PhD degrees achieved at the Centre in reporting period.**

Number of PhD degree achieved	None yet
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**Table 4: Output and dissemination**

Report the output of the research, e.g. publications.

**Two tables are provided.** The first table is for publications, reports and outreach activities with the main activities/collaboration funded by the NCoE. The second table is for publications, reports and outreach activities where the NCoE research has contributed. Also, report the number of Open Access publications.

Please attach a complete publication list (see attached format file Publication Report Format 2014)

## Outreach and Dissemination main activities/collaboration funded by the NCoE

Peer reviewed scientific publications / of which Open Access	<ul style="list-style-type: none"> <li>• Arnberg FK, Gudmundsdóttir R, Butwicka A, Fang F, Lichtenstein P, Hultman CM, Valdimarsdóttir UA. <a href="#">Psychiatric disorders and suicide attempts in Swedish survivors of the 2004 southeast Asia tsunami: a 5 year matched cohort study.</a> <i>Lancet Psychiatry.</i> 2015 2(9):817-24</li> <li>• <a href="#">Arnberg FK, Hultman CM, Valdimarsdottir UA.</a> Registration and definitions of mental disorders in Swedish survivors of the 2004 southeast Asia tsunami - Authors' response. <i>Lancet Psychiatry.</i> 2015 2(11):962-3.</li> <li>• Liu, Z. Q., Nadim, F., Garcia-Aristizabal, A., Mignan, A., Fleming, K., Quan Luna, B. (2015): <i>A Three-level Framework for Multi-risk Assessment.</i> <i>Georisk,</i> 9(2): 59-74, DOI:10.1080/17499518.2015.1041989</li> <li>• Thordardottir, E.B., Hansdottir I., Shipherd J.C., Valdimarsdottir U.A., Resnick H., Elklit, A., Gudmundsdottir, R., Gudmundsdottir, B. Risk Factors for Posttraumatic Stress Symptoms Among Avalanche Survivors: A 16 Year Follow-up (Article accepted for publication in the <i>Journal of Nervous and Mental Disease</i>).</li> </ul>
Non peer-reviewed publications / of which Open Access	<ul style="list-style-type: none"> <li>• Heiðrún Hlökkversdóttir, Project title: Long-term health effects of the Eyjafjallajökull volcanic eruption: A prospective cohort study in 2010 and 2013. Master of Public Health (MPH), University of Iceland, thesis published in June 2015: <a href="http://hdl.handle.net/1946/23130">http://hdl.handle.net/1946/23130</a></li> <li>• Hulda Guðmundsdóttir, Project title: Development and predictors for psychological morbidity following the 2008 earthquake in South Iceland: A prospective cohort study. Master of Public Health (MPH), University of Iceland, thesis published in June 2015: <a href="http://hdl.handle.net/1946/23291">http://hdl.handle.net/1946/23291</a></li> <li>• Jeppesen, T., Skøt, L. &amp; Elklit, A. (2015). Hjælp til døde og svært hørehæmmede i krisesituationer – nye retningslinjer. <i>Redderen,</i> 38(1).</li> <li>• Karlsrud, K., Heyerdahl, H., Kim, Y. and Henderson, L. (2015). Sikringstiltak for - og refundamentering av - Skjeggstad bruene etter skredet 2 februar 2015. (English: <i>Stabilizing measures for - and strengthening foundations of - the Skjeggstad Bridge after the landslide 2 February 2015.</i>) <i>Fjellsprengningsteknikk – bergmekanikk – geoteknikk.</i> Norsk Jord- og Fjellteknisk forbund. Geoteknikkdagen, Oslo 2015</li> <li>• Liu, Z.Q., Nadim, F., Kalsnes, B., Jostad, H.P., Fornes, P., Lacasse, S. (2015): <i>Probabilistic slope stability analysis in sensitive clay area.</i> Proceedings of the XVI ECSMGE, Geotechnical Engineering for Infrastructure and Development, Edinburg, 13-17 sept, 2015, doi:10.1680/ecsmge.60678.236</li> <li>• Ólóf Sunna Gissurardóttir. Project title: Mental health following the volcanic eruption in Eyjafjallajökull volcano in Iceland in 2010. A population-based study. Master of Public Health (MPH), University of Iceland, thesis published in June 2015: <a href="http://hdl.handle.net/1946/20888">http://hdl.handle.net/1946/20888</a></li> <li>• Setten, Gunhild. 'Det handlar ju om människor!'. Rapport fra Nordred-møtet 2015. Karlstad: Myndigheten för samhällsskydd och beredskap 2015. s. 30-31. (ISBN 978-91-7383-630-2)</li> </ul>
Reports	<ul style="list-style-type: none"> <li>• Uta Reichardt, Gudmundur F. Ulfarsson, Gudrun Petursdottir ENHANCE Deliverable 7.4: MULTI-STAKEHOLDER-PARTNERSHIP AND DISASTER RESILIENCE SCHEMES — AIR INDUSTRY RESPONSE TO VOLCANIC ERUPTIONS (ICELAND AND EUROPE), Dec.2015 FP7 Grant Agreement number 308438</li> </ul>
Publications for the public	
Invited conference presentations	<ul style="list-style-type: none"> <li>• Gísladóttir G., and Pétursdóttir, G., (2014). Nordress. Nordic Center of Excellence on Resilience and Societal Security. Hazard, Risk and Voluntary GI. Lisa Conference 10th of October 2014, in cooperation with GI Norden and the KRIS-</li> </ul>

	<p>GIS group. Grand Hotel, Reykjavík.</p> <ul style="list-style-type: none"> <li>• Guðrún Gísladóttir and Guðrún Pétursdóttir</li> <li>• Guðrún Gísladóttir and Guðrún Pétursdóttir. NORDRESS. New trends in societal security research in the Nordic countries. NordForsk conference, Norra Latin, Drottninggatan 71B, Stockholm, November 26-27, 2014.</li> <li>• Guðrún Gísladóttir., and Guðrún Pétursdóttir, (2014). Nordress. Nordic Center of Excellence on Resilience and Societal Security. Community resilience and natural hazards. Seminar NTNU at Britannia Hotel, Trondheim, 21.08.2014</li> <li>• Guðrún Pétursdóttir – Inngangsfyrirlestur: NORDRESS – Norrænt öndvegissetur um öryggi samfélaga – Aðventumálþing Rannsóknarstofnunar í hjúkrunarfræði, Reykjavík 10. des. 2014</li> <li>• Guðrún Pétursdóttir og Guðrún Gísladóttir – NORDRESS – Nordic Centre of Excellence on Resilience and Societal Security – Workshop on NORDIC COOPERATION ON CIVIL SECURITY: WHAT IS HAPPENING? Nordic House Reykjavik 24 November 2014 Nytt varningssystem blir interaktivt. NORDRED 2015, Göteborg 14 – 16 September. Peter van der Keur, GEUS</li> <li>• Guðrún Pétursdóttir og Guðrún Gísladóttir – NORDRESS – Nordic Centre of Excellence on Resilience and Societal Security NordForsk Workshop on New trends in societal security research in the Nordic countries, Stockholm 26 - 27 November 2014</li> <li>• Lisa Van Well on “Coastal Vulnerability” in Nordred conference “Nordisk räddningstjänst i utveckling” on 14-16 September 2015 in Gothenburg Sweden.: <a href="http://www.nordred.org/sv/nyheter-fran-nordred/nordisk-raddningstjanst-i-utveckling.-boka-nordred-14-16-september-i-goteborg/">http://www.nordred.org/sv/nyheter-fran-nordred/nordisk-raddningstjanst-i-utveckling.-boka-nordred-14-16-september-i-goteborg/</a> . NORDRESS Nordic Center of Excellence on Resilience and Societal Security Rannís and NordForsk meeting Grand Hotel Reykjavík, 27.08.2014</li> <li>• Uta Reichardt, Guðrún Pétursdóttir og Guðmundur Freyr Úlfarsson Mapping potential ash distribution in European airspace due to an extreme volcanic event in Iceland . Hazard, Risk and Voluntary GI LISA conference 2014 – GI Norden and the KRIS group 10th October 2014, Reykjavík</li> </ul>
<p>Conference presentations, oral / poster</p>	<ul style="list-style-type: none"> <li>• Cepeda, J. (2015): Challenges for estimating climate-related triggering conditions and runout distance of landslides affecting urban areas. European Geosciences Union Assembly. <a href="http://meetingorganizer.copernicus.org/EGU2015/EGU2015-11830.pdf">http://meetingorganizer.copernicus.org/EGU2015/EGU2015-11830.pdf</a></li> <li>• Dyregrov, A. Building community resilience after disaster: a realistic endeavour? Conference: Bridging the Gaps on Mental Health and Psychosocial Support (MHPPS) in Emergencies in Asia, organised by the Asian Disaster Preparedness Center, Bangkok, December 8-9, 2015. Keynote speaker.</li> <li>• Eidsvig, U., Kristensen, K. and Vangelsten B.V. (2015): Assessing the risk posed by natural hazards to infrastructures. Geophysical Research Abstracts, Vol. 17, EGU2015-7278, EGU General Assembly 2015</li> <li>• Elklit, A. (2015). Psykiske og somatiske problemer hos mennesker med højrisiko jobs. Oplæg på 112 dagen, Folketingets Fællessal, Christiansborg.</li> <li>• Elklit, A., Jeppesen, T. &amp; Skøt, L. (2015). Deaf and hard-of-hearing individuals in times of disaster and crisis: A qualitative study. Presentation at 14th ESTSS Conference, June 11-13, 2015, Vilnius.</li> <li>• Guðmundsdóttir H, Aspelund T, Guðmundsdóttir B, Þórðardóttir EB, Hauksdóttir A. Development and predictors for psychological morbidity following the 2008 earthquake in South Iceland: A prospective cohort study. The Icelandic Psychological Association Conference, 16-17 April 2015. Poster presentation.</li> <li>• Guðrún Gísladóttir, Guðrún Jóhannesdóttir participation in woskhop on Communicating volcano hazard and risk to stakeholders in a Stakeholder meeting exploiting the outcome of FutureVolc, Hveragerði Nov 5 2015</li> <li>• Guðrún Pétursdóttir, Guðrún Gísladóttir, Guðrún Jóhannesdóttir og Sigrún Karlsdóttir Náttúruvá og öryggi samfélaga, Vísindadagur VoN, Askja 25. Október 2014</li> <li>• Hauksdóttir, A. Conference on Research in Bio- and Health sciences, organised by School of Health Sciences, University of Iceland; 5-6 January 2015. Invited speaker: Natural disasters and health in Iceland – Research opportunities.</li> <li>• Heiðrún Hlökkversdóttir, Guðrún Pétursdóttir og Arna Hauksdóttir Longterm effects following the Eyjafjallajökull volcanic eruption – a follow up study.</li> </ul>

	<p>Sautjándra ráðstefnan um rannsóknir í líf- og heilbrigðisvísindum, Reykjavík 5. og 6. Janúar 2015</p> <ul style="list-style-type: none"> <li>• Hlödversdóttir H, Pétursdóttir G, Hauksdóttir A. Long-term health effects following the Eyjafjallajökull volcanic eruption: A follow-up study. Conference on Research in Bio- and Health sciences, organised by School of Health Sciences, University of Iceland; 5-6 January 2015. Oral presentation.</li> <li>• Hlödversdóttir H, Pétursdóttir G, Hauksdóttir A. Long-term health effects following the Eyjafjallajökull volcanic eruption: A follow-up study. 2 June 2015: Presentation at symposium organized by The Icelandic Society for Epidemiology and Biostatistics.</li> <li>• Nancy J. Guarderas H. presented "Climate change risk assessment for Reykjavík City", Icelandic-Czech workshop on Climate Change Adaptation and Ecosystem Services, 26-28 August 2015, Reykjavik, Iceland</li> <li>• Nancy J. Guarderas H. presented "Sea-level rise and storm surges: evaluating potential effects on population and infrastructure of the city of Reykjavík", at the NORDRESS WP 4.3/5.3 workshop. 1-2 October 2015, Odense, Denmark.</li> <li>• Ólöf Sunnar Gissurardóttir, Guðrún Pétursdóttir, Edda björl Þórðardóttir, Arna Hauksdóttir Mental health effects of the Eyjafjallajökull eruption: A population based study. Sautjándra ráðstefnan um rannsóknir í líf- og heilbrigðisvísindum, Reykjavík 5. og 6. Janúar 2015 Uta Reichardt, Guðmundur Freyr Úlfarsson and Guðrún Pétursdóttir Ash and 1001 flights School of Engineering and Natural Sciences Open House, University of Iceland, Askja, 25. October 2014</li> </ul>
<p>Number of appearances in media</p>	<ul style="list-style-type: none"> <li>• A new Centre of Excellence receives a major grant from NordForsk – Iceland National Broadcast TV news interview with Guðrún Gísladóttir and Guðrún Pétursdóttir July 2 2014 <a href="http://ruv.is/frett/420-milljona-krona-styrkur">http://ruv.is/frett/420-milljona-krona-styrkur</a></li> <li>• Edda Björk Þórðardóttir National Broadcasting Services kom í útvarpinu : <a href="http://nordress.hi.is/related-news/1587/">http://nordress.hi.is/related-news/1587/</a></li> <li>• Feature article Aftenposten 10 February 2015: "Brokollapsen på E18: Flaks varer ikke evig" (Bridge collapse at E18: Luck won't last forever), paper version and ap.no; <a href="http://www.aftenposten.no/meninger/kronikker/Brokollapsen-pa-E18-Flaks-varer-ikke-evig-7894025.html">http://www.aftenposten.no/meninger/kronikker/Brokollapsen-pa-E18-Flaks-varer-ikke-evig-7894025.html</a></li> <li>• Feature article Aftenposten 8 October 2015: "Katastrofer kan forebygges" (Catastrophies can be prevented), paper version and ap.no; <a href="http://www.aftenposten.no/meninger/kronikker/Kronikk-Ingen-vet-med-sikkerhet-om-Akerneset-er-det-farligste-fjellet-eller-om-vi-har-en-annen-skjult-versting--Carl-B-Harbitz_-Lars-Andresen-8193916.html">http://www.aftenposten.no/meninger/kronikker/Kronikk-Ingen-vet-med-sikkerhet-om-Akerneset-er-det-farligste-fjellet-eller-om-vi-har-en-annen-skjult-versting--Carl-B-Harbitz_-Lars-Andresen-8193916.html</a></li> <li>• Guðrún Pétursdóttir and Guðrún Gísladóttir Samfélagið í nærmynd – Iceland National Broadcast July 3 2014</li> <li>• Guðrún Pétursdóttir interview with Radio Bylgjan July 2 2014</li> <li>• Rasmus <a href="http://nordress.hi.is/related-news/rasmus-dalberg-in-media/">http://nordress.hi.is/related-news/rasmus-dalberg-in-media/</a></li> <li>• Substantial grant for research on natural hazards and societal resilience University of Iceland homepage July 2 2014</li> </ul>
<p>Outreach and dissemination to the public</p>	<ul style="list-style-type: none"> <li>• Article in Aftenposten innsikt, 5 February 2015: "Om leirskred og skredfare mot infrastruktur/veier". See ap.no: <a href="http://www.aftenposten.no/fakta/innsikt/Liten-bekk-kan-gjore-leirekvikk-og-farlig-7886398.html">http://www.aftenposten.no/fakta/innsikt/Liten-bekk-kan-gjore-leirekvikk-og-farlig-7886398.html</a></li> <li>• Article in Teknisk Ukeblad, 05-2015; "Teknologien som temmer norsk natur – innovasjon som gjør skredveiene tryggere"</li> <li>• Article in Teknisk Ukeblad, 30. juli 2015; Kartlegging av grunnforhold langs E18 med geofoner", om geofysisk kartlegging av grunnen for å finne eventuelle svakhetssoner som kan forårsake utglidninger.</li> <li>• Frem med gummistøvlerne – en del af Danmark bliver sat under vand. Morgenavisen Jyllandsposten. Lørdag den 30. januar 2016;</li> <li>• Guðrún Pétursdóttir and Guðrún Gísladóttir. Náttúrvá og öryggi samfélaga (Natural Hazards and security). Vísinda- og tæknidagur VoN (The day of Science</li> </ul>

	<p>and technology University of Iceland), Reykjavík, 25. October, 2014</p> <ul style="list-style-type: none"> <li>• Nordic Centre of Excellence on Resilience and Societal Security (NORDRESS). Nord Forsk Magazin 2014</li> <li>• Press article in Suddeutsche Zeitung 22/23 August 2015, nr 192 "Bergsturz", presentation of unstable rock masses along Norwegian fjords, with example from Aakneset monitoring, in conjunction with the film "Monster wave".</li> <li>• Reichardt, U., G. F. Ulfarsson, and G. Pétursdóttir, 2015: Reducing the impact of volcanic eruption and ash on air traffic (In Icelandic: Dregið úr áhrifum eldgosa og öskufalls á flugumferð). University of Iceland Magazine (Tímarit Háskóla Íslands), University of Iceland, p. 113.</li> <li>• Sigrún María Kristinsdóttir, Guðrún Gísladóttir Public information meeting in Eastern Iceland about the risk og SO2 gas pollution form the Holuhraun eruption on Feb 3-4 2015</li> <li>• Ude og hjemme. 5 2016. Oversvømmelser kan forudses.</li> </ul>
Web disseminations	<ul style="list-style-type: none"> <li>• 55th Rankine Lecture, Imperial College, London 18 March 2015, held by NGI's Suzanne Lacasse; "Hazard risk and reliability in geotechnical engineering", with presentation of reliability methods to prevent slides on infrastructures. Numerous press prints – GEO May 2015 / Samferdsel og infrastruktur no. 9-2015 / Ground Engineering March 2015. Live Webinar of the lecture at Imperial College.</li> <li>• Nyt forskningsprojekt skal sikre de nordiske lande mod naturkatastrofer. 4. dec. 2014. <a href="http://www.geus.dk/cgi-bin/webbasen_nyt.pl?id=1417721570&amp;cgifunction=form">http://www.geus.dk/cgi-bin/webbasen_nyt.pl?id=1417721570&amp;cgifunction=form</a></li> <li>• Ongoing Twitter flow #NORDRESS #Coastal #Vulnerability #Erosion, @PerOBDanielsson</li> </ul>
Conferences arranged	<ul style="list-style-type: none"> <li>• International Conference on Creep and Deformation Characteristics in Geomaterials, Gothenburg 24-25 August 2015. NGI presented results from investigations and field tests on piles in quick clay in are where new E6 south of Trondheim will go. See press print here: <a href="http://www.bygg.no/article/1246444">http://www.bygg.no/article/1246444</a></li> <li>• Klimatanpassning Sverige 2015 conference 23 September 2015 in Stockholm (Lisa Van Well and per Danielsson SGI organized a workshop on "Risk and risk communication on the coast and the shore" during the conference.</li> <li>• NORDRESS Odense workshop 1-2 October 2015. Vissenbjerg storkro. Denmark. NORDRESS Task 4.3 – Task 5.3. 14 Nordic participants</li> <li>• NORDRESS workshop in Amersfoort (NL) – 14 January 2016. Hydrologic. BV, Stadsring 57, Amersfoort, The Netherlands</li> <li>• Seminar on "Challenges related to tsunamis caused by subaerial and subaqueous landslides", Oslo 22-23 January 2015. See press release: <a href="http://www.mynewsdesk.com/ngi/pressreleases/world-leading-experts-on-tsunamis-induced-by-landslides-met-at-ngi-in-oslo-1121294">http://www.mynewsdesk.com/ngi/pressreleases/world-leading-experts-on-tsunamis-induced-by-landslides-met-at-ngi-in-oslo-1121294</a></li> </ul>
Summer courses	Tools and Techniques in Climate Change Studies, NTNU, Trondheim, Norway. June 15-19, 2015]

#### Outreach and Dissemination where the NCoE has contributed

Peer reviewed Publications / of which Open Access	<ul style="list-style-type: none"> <li>• Dyregrov, A. (2015). Children, Trauma and Grief; School Support in Scandinavia. Trauma Psychology News, Spring issue, 16–18.</li> <li>• Dyregrov, A., Salloum, A., Kristensen, P., &amp; Dyregrov, K. (2015). Grief and Traumatic Grief in Children in the Context of Mass Trauma. Current Psychiatry Reports. Published online: 06 May. DOI 10.1007/s11920-015-0577-x Johnsen, I., Laberg, J. C., Matthiesen, M. B., Dyregrov, A., &amp; Dyregrov, K. (2015). Psychosocial functioning after losing a close friend in an extreme terror incident. Scandinavian Psychologist, 2, e5. <a href="http://dx.doi.org/10.15714/scandpsychol.2.e5">http://dx.doi.org/10.15714/scandpsychol.2.e5</a></li> <li>• Dyregrov, K., Kristensen, P., Johnsen, I., &amp; Dyregrov, A. (2015). The psycho-social follow-up after the terror of July 22<sup>nd</sup> 2011 as experienced by the bereaved. <i>Scandinavian Psychologist</i>, 2, e1. <a href="http://dx.doi.org/10.15714/scandpsychol.2.e1">http://dx.doi.org/10.15714/scandpsychol.2.e1</a></li> </ul>
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	<ul style="list-style-type: none"> <li>• He, X, Stisen, S, Wiese, MB and Henriksen, HJ 2016: "Designing a hydrological real-time system for surface water and groundwater in Denmark with engagement of stakeholders". Water Resources Management 30: 1785-1802</li> <li>• Henriksen, HJ, Stisen, S, He, X and Wiese, MB 2015: A hydrological early warning system for Denmark based on the national model. Geological Survey of Denmark and Greenland Bulletin 33: 29-32</li> <li>• Kristensen, P., Dyregrov, K., &amp; Dyregrov, A. (2015). «Det er både helt grusomt og godt på samme tid». Etterlatte foreldre og søskens besøk til Utøya etter terrorangrepet 22. juli. Tidsskrift for Norsk Psykologforening, 52, 486–496.</li> <li>• Raundalen, M., &amp; Dyregrov, A. (2015). Barn og unge i sorg og krise. I E.K. Høihilder &amp; O.A. Gulbrandsen (red.): Pedagogikk og elevkunnskap i grunnskolelærerutdanningen, PEL i GLU (s. 192–213). Oslo: Gyldendal Norsk Forlag.</li> </ul>
Non peer-reviewed Publications / of which Open Access	<ul style="list-style-type: none"> <li>• Coastal vulnerability mapping for Swedish municipalities, at the European Conference on Soil Mechanics and Geotechnical Engineering, ECSGME, Edinburgh, 13-17 Sept. <a href="http://www.icevirtuallibrary.com/doi/abs/10.1680/ecsmge.60678.vol3.180">http://www.icevirtuallibrary.com/doi/abs/10.1680/ecsmge.60678.vol3.180</a></li> </ul>
Reports	[Type text]
Publications for the public	[Type text]
Invited conference presentations	<ul style="list-style-type: none"> <li>• Guðný Björk Eydal The project emBRACE. Presentation at the final meeting in the project international project emBRACE. See emBRACE website: <a href="http://www.embrace-eu.org/home">http://www.embrace-eu.org/home</a></li> <li>• Guðrún Gísladóttir. Environmental change: spatial and temporal aspects of the interactions between humans and nature. A Symposium in honour of the 2014 J.A. Wahlberg medallist Professor Guðrún Gísladóttir, University of Iceland; 11. 11. 2014, Geovetenskapens hus, Svante Arrhenius väg 8, Stockholms Universitet. Symposium organized by the Swedish Society for Anthropology and Geography (SSAG).</li> <li>• Hans Jørgen Henriksen participated in Ermond project meeting &amp; conference at Gunnarsholt, Iceland, 18-22 May 2015 and gave a presentation on “ecosystems resilience against floods case study”.</li> </ul>
Conference presentations, oral / poster	<ul style="list-style-type: none"> <li>• Hilppa Gregow presentation on “Nordic Node” and future collaboration to support WMO in its attempt to establish the Arctic Polar Regional Climate Centre. PRCC-workshop in Geneva Nov11-13.11.2015</li> <li>• Lein, H.2015. Reluctantly concerned but not worried? Norwegian views on climate change and climate related hazards AUSCCER Seminar Series: Spring Session 30.09. 2015 University of Wollongong, Australia.</li> <li>• Ny realtids varslingsmodel til forudsigelse af oversvømmelser ved højt grundvandsniveau eller vandindhold i rodzonen. EVA temadag 4/2 2016</li> <li>• Per Danielsson on Coastal vulnerability mapping.European Conference on Soil Mechanics and Geotechnical Engineering, ECSGME, Edinburgh, 13-17 Sept. <a href="http://xvi-ecsmge-2015.org.uk/">http://xvi-ecsmge-2015.org.uk/</a></li> <li>• Per Danielsson on Coastal vulnerability mapping Klimatanpassning Sverige 2015, 23 Sept. <a href="http://miljoaktuellt.event.idg.se/event/klimatanpassning-sverige-2015/">http://miljoaktuellt.event.idg.se/event/klimatanpassning-sverige-2015/</a></li> <li>• Per Danielsson on Coastal vulnerability mapping GEOINFO, 7-8 October, Malmö. Oral presentation by. <a href="http://www.uli.se/geoinfo2015">http://www.uli.se/geoinfo2015</a></li> </ul>
Number of appearances in media	<ul style="list-style-type: none"> <li>• Havet slukar den skånska kusten, Helsingborgs Dagblad, 2015-04-26. <a href="http://www.hd.se/nyheter/sverige/2015/04/26/havet-slukar-den-skanska-kusten/">http://www.hd.se/nyheter/sverige/2015/04/26/havet-slukar-den-skanska-kusten/</a></li> </ul>

	<ul style="list-style-type: none"> <li>• Motstridiga uppgifter om hotet från havet, Helsingborgs Dagblad, 2015-04-15. <a href="http://www.hd.se/lokalt/angelholm/2015/04/15/motstridiga-uppgifterom-hotet-fran-havet/">http://www.hd.se/lokalt/angelholm/2015/04/15/motstridiga-uppgifterom-hotet-fran-havet/</a></li> </ul>
Outreach and dissemination to the public	<ul style="list-style-type: none"> <li>• Aðlögunar rannsóknir á Veðurstofu Íslands (Climate Change Adaptation Research at the Icelandic Meteorological Office). Lecture for environment bureau at the City of Reykavik. Okt 21st 2015 ( <a href="http://brunnur.vedur.is/pub/halldor/PICKUP2/AdlogunIsland.pdf">http://brunnur.vedur.is/pub/halldor/PICKUP2/AdlogunIsland.pdf</a> )</li> <li>• Andrew Negus Flood risk extreme value analysis for Odense fiord and Odense river based on observed and modelled time series of water level</li> <li>• Hnatrænar loftslagsbreytingar og afleiðingar þeirra á Íslandi (Global Climate Change and Impacts in Iceland). Public lecture at Harpa Concert Hall as part of an event organized by the National Power Company of Iceland (see <a href="https://www.youtube.com/watch?v=Te04X1q-vqo">https://www.youtube.com/watch?v=Te04X1q-vqo</a> )</li> <li>• Lein, H. 2015. Naturfarer og klimaendringer- Kommentarer til Klimabarometerundersøkelsen 2015. Presentasjon av Klimabarometerundersøkelsen 2015. 07.05 2015 Filmens Hus, Oslo.</li> <li>• Reija Ruuhela Comments on draft of Guidelines for Municipality Level Activities related to Environmental Health Risks, prepared by The Association of Finnish Local and Regional Authorities. 16 Dec 2015</li> <li>• Reija Ruuhela Lecture on health Impacts of weather and climate in Tampere University Hospital Nov 5 2015</li> <li>• Reija Ruuhela: Research on seasonality of upper respiratory track symptoms - collaboration with Helsinki University Hospital Nov 12 2015</li> <li>• Øivind Hole Integrated modelling of groundwater and urban water flood risks for city centre (TBT) and Skibhus area in the Odense case (, Master student Copenhagen University/GEUS)</li> </ul>
Web disseminations	<ul style="list-style-type: none"> <li>• New model can help predict flooding two days in advance. ScienceNordic.com 5/1 2016 <a href="http://sciencenordic.com/new-model-can-help-predict-flooding-two-days-advance">http://sciencenordic.com/new-model-can-help-predict-flooding-two-days-advance</a></li> <li>• Oversvømmelser i Danmark kan forudses to døgn i forvejen. Videnskab.dk 28 December 2015 <a href="http://videnskab.dk/miljo-naturvidenskab/oversvømmelser-i-danmark-kan-forudses-dogn-i-forvejen">http://videnskab.dk/miljo-naturvidenskab/oversvømmelser-i-danmark-kan-forudses-dogn-i-forvejen</a></li> </ul>
Conferences arranged	<ul style="list-style-type: none"> <li>• Social Services in Times of Disaster- Multidisciplinary Nordic Symposium May 4-5 2015 Abstracts and full papers from the symposium were published on the Nordic Welfare Watch website: <a href="https://eng.velferdarraduneyti.is/nordicwelfarewatch/in-response-to-crisis/nr/35160">https://eng.velferdarraduneyti.is/nordicwelfarewatch/in-response-to-crisis/nr/35160</a></li> <li>• Hilppa Gregow helped KNMI (The Royal Meteorological Institute of Netherlands) in planning the workshop “Innovations in Climate Services” that was held in November and where Reija Ruuhela participated.</li> <li>• Kustmöte 2015, Göteborg, 4-5 November. Organized by Per Danielsson, SGI. <a href="http://www.swedgeo.se/sv/om-sgi/pressrum/aktuellt/kustmote-2015-i-goteborg-4-5-november/">http://www.swedgeo.se/sv/om-sgi/pressrum/aktuellt/kustmote-2015-i-goteborg-4-5-november/</a></li> </ul>
Summer courses	<ul style="list-style-type: none"> <li>• PARTnership Against GEOhazards (PARAGEO). Slovakia, October 5 - 12, 2015 – Guðrún Gísladóttir co-arranger</li> </ul>



**Table 5: Meetings and networking**

*Number of workshops with invited speakers, conferences and other academic events organised by the NCoE:*

Workshops	1. Cold Disasters: Risk and Resilience in the Arctic. Reykjavík, December 1, 2015
Conferences	1. NORDRESS kick off meeting, January 28-30, 2015 2. Session at NORDRED, September 15, 2015 3. Social Services in Times of Disaster, May 4-5, 2015
Other academic events	
<b>Total</b>	<b>4</b>

**Infrastructure and data policy:** NORDRESS requires solid research infrastructure, equipment and other physical facilities, as well as access to databases and opportunities to collect further data. These needs are well met, as the partners are well equipped universities and research institutions ready to provide these facilities. The NORDRESS CoE emphasizes open access to methods and results and data as appropriate. The NORDRESS website provides continuous information on the project activities. NORDRESS partners are urged to produce open reports and submit academic papers to open access depositories listed in the OpenDOAR database or published in open access journals. NORDRESS helps cover the cost of open access publications, but expects to use the open access depository method more as it carries little or no costs for the project, rather than purchase open access rights in academic journals with prohibitively high costs.

**Progress and contributions towards Programme aims:**

- a) to *strengthen* the Nordic region's position within societal security research in Europe and beyond;

**The first step to strengthen the Nordic region's position is to increase cooperation between the Nordic countries, pull together their forces, and help them share knowledge, experience and best practices. NORDRESS strongly emphasizes cooperation between its partners and aims to form lasting networks that strengthen the region as a whole.**

**NORDRESS brings together experts from various fields of natural, social and health sciences** who pool their strengths to improve the resilience of the Nordic countries. While the Nordic countries span vastly differing areas geographically and the challenges they face vary accordingly, the Nordic societies have much in common: highly literate and educated populations, large public sectors, widespread freedom of expression, advanced and expensive infrastructure, very little corruption, political focus on gender equality, and last but not least, welfare states with well-developed democracies. These common attributes affect the resilience of these societies in a variety of ways.

The Nordic countries all have to meet the challenges of natural hazards, albeit to varying degrees. For geological and geographical reasons, natural threats vary greatly from one region to another. Yet the tradition for communication, co-operation and understanding within and between the Nordic countries facilitates transfer of knowledge and skills and makes it feasible to treat natural hazard management as a Nordic, rather than a national, task.

NORDRESS emphasizes **cooperation with other organizations** involved in civil protection, natural hazard prevention and mitigation, and other related fields. Already in its first year NORDRESS co-organized conferences with the Nordic Welfare Watch (<https://eng.velferdarraduneyti.is/nordicwelfarewatch/>) and NordRed the Nordic cooperation on rescue services ([www.nordred.org](http://www.nordred.org)).

NORDRESS stresses **international collaboration**, e.g. by hosting workshops with international attendance, such as the Symposium on Cold Disasters – Risk and Resilience in the Arctic; and the Expert Workshop, in collaboration with the Icelandic Coast Guard in December 2015. NORDRESS also hosts workshops in non-Nordic countries, such as the NSSA workshop on flooding prepared in 2015 and to be held in Amersfort, the Netherlands in January 2016.

NORDRESS is linked to numerous EU-projects, that provide good opportunities to share findings and experience. As an example, the NSSA will fund a workshop in 2016 that will be jointly hosted by NORDRESS and colleagues from the FP7 project ENHANCE.

Last but not least, the Nordic region's position will be strengthened by its contribution to **first class research**.

- b) *to develop new knowledge about and solutions for* the many aspects of societal security affecting the Nordic countries

NORDRESS addresses many aspects of societal security in the **13 research WP Tasks, that deal with individual, community, infrastructure and institutional resilience**. Each of these was carefully chosen to develop new knowledge and solutions to increase societal resilience. It is still too early to tell what each of these research projects will deliver, but they have been set up in the best possible way the consortium could offer, maximizing on its manpower, infrastructure and contacts with other institutions and research projects.

- c) to disseminate the results to a wide array of stakeholders in the Nordic region and internationally;

NORDRESS is a collaborate effort by Nordic researchers and experts who work on different aspects important for society's resilience to natural hazards. The consortium spans the chain from academics to end-users, and includes experts on geophysics, meteorology, geography, engineering, societal infrastructure, the welfare systems, disaster law and (catastrophe) insurance, public health, psychological trauma, civil protection and emergency management. Thus, NORDRESS in itself is a network of scientists, experts, end-users and other stakeholders in the field of natural hazards and societal security. The contact net of the NORDRESS participants is wide and varied – so through its own internal work and meetings, NORDRESS will already reach a wide array of stakeholders.

But in order to reach beyond the CoE itself, NORDRESS must publish its findings in academic journals, and reach out to other stakeholders through meetings and other media. The NSSA gives opportunities to bring together different stakeholders, such as administrators, rescue workers, (local) politicians, inhabitants in risk areas, the health professions, media people and so forth. Thus NORDRESS has built in mechanisms that allow for a wide outreach to various stakeholders, on a local, national and international level.

**Impact strategies and plans:** As well as bringing together interdisciplinary teams of researchers, that publish their findings in academic journals, NORDRESS emphasizes the involvement of different stakeholders in its projects. The impact of the CoE will depend on the attention it gains among the public and decision makers. The NSSA is probably a unique feature of NORDRESS. It provides wide opportunities for arranging workshops, courses or other events for a wide variety of stakeholders: scientists, administrators, civil protection agencies, rescue workers, media people etc.

**Potential media stories:** Currently, the media may be interested in reporting on the effects of natural hazards on individuals and their health. Dr. Arna Hauksdóttir ([arnah@hi.is](mailto:arnah@hi.is)) WP3 leader would provide more information and contact details for persons to interview.

**Supplementary funding:** We have not considered applying for additional funding to cover the needs mentioned here (user engagement, impact, communication activities, capacity building or inter-project liaison activities), as they are well covered by the NSSA. We have however applied for and secured some additional funding for the research activities. An important contribution lies in the numerous projects, national and international, that NORDRESS is linked to, such as ENHANCE, ClimRes, REALTIDSVARSLING, INTACT, and others.

**Programme engagement:** NORDRESS gave a presentation in the NordForsk Conference on New Trends in Societal Security Research in the Nordic Countries, held in Stockholm on 26 - 27 November 2014; and Guðrún Pétursdóttir was invited as guest speaker to the NordForsk 10th anniversary festivities in Oslo on October 8th 2015.

**Programme evaluation:** We have not yet had enough experience of the Programme Committee and Scientific Advisory Board to be able to comment on their input to NORDRESS. We would like to thank NordForsk, and in particular senior advisors Sóley Morthens and Kaisa Vaahtera, as well as Lisa H. Ekli, for their kind assistance and willingness to help in any way.

We have, however, a suggestion that might make things easier for the managers of CoEs. CONSISTENCY in the classifications used in the application form and the reporting forms would help. Using one classification regarding work contribution (e.g. manmonths) instead of varying between manmonths, workhours or manyears, depending on table. This also applies to professional categories – e.g. regarding professors and senior researchers; or doctoral students and/or postgraduate students. These may seem like minor issues, but they cost a lot of extra calculations and difficulties in comparing planned activities with actual activities.

**Requests for Programme support:** Thank you, it is good to know that we can seek support from NordForsk, should particular needs arise. We envisage that such help might be needed in relation to setting up meetings or facilitating contact formation with institutions or agencies that may be difficult to approach.