

THE UPSHOT is the North Sea Region Programme's newsletter for project results of the 2007 - 2013 Programme. THE UPSHOT 3 sums up the results of CLIWAT.

Published 19 December 2013.

The North Sea Region Programme

THE UPSHOT

Your news update on project closures



Dear colleague

This edition of THE UPSHOT presents the results of CLIWAT and reveals two possibilities for the new year: A chance to exhibit at the North Sea Commission conference in April and a final call for this programme period.

Invitation to exhibit at North Sea Commission Conference

On 13 and 14 March 2014, the North Sea Commission is hosting their 25th anniversary stakeholder conference "Sustainable growth and partnership in the North Sea Region" in Aalborg, Denmark. The North Sea Region Programme Secretariat will represent the Programme at the event and NSRP projects related to energy and climate are invited to participate in the exhibition, which will be attended by European decision makers and key public and private stakeholders.

Interested projects can sign up by contacting Lise Espersen at lise.espersen@northsearegion.eu before 17 January 2014.

New call published soon

In the beginning of 2014, the 10th call for applications will be published on our website. It is a call for extensions focused on communications and will be open only for projects, which have been approved in previous calls.

We look forward to our continued cooperation in 2014.

The North Sea Region Programme Secretariat

CLIWAT

Adaptive and Sustainable Groundwater Management and Protection of Society and Nature in an Extreme Climate



CLIWAT fieldwork. See more photos from the project [here](#).

Groundwater learning from the future

The climate of the North Sea Region is changing. Rain is falling less frequently, but as heavy cloud bursts, and this is gradually affecting our ground water systems.

The CLIWAT project brought together 16 public and private partners from four countries in the North Sea Region. They cooperated to predict how the future climate will affect the groundwater, marine and fresh water quantity and quality as well as developed solutions to meeting these challenges. The project also investigated the need for new legislation or standards for engineering of drainage and construction of roads and buildings.

Apart from the 16 partners involved, a board of representatives from professional organisations, NGOs, municipal, regional and national authorities and representatives from agriculture and water sciences were involved in each of the seven pilot sites.

Highlights

As an extra way of creating awareness on groundwater challenges, results from CLIWAT were presented in a special edition of the highly accredited online journal of the European Geosciences Union, HESS. Read the publication online [here](#). The CLIWAT handbook "Groundwater in a future climate", available online [here](#), was also published. Both publications were extra contributions to the project and as such not foreseen from the set out.

Stories from the project

One of the many concrete examples of CLIWAT's impact can be found on the Dutch island of Terschelling, a partner of the project. Building on knowledge gained from the pilots in Denmark, Germany, Belgium and the Netherlands, a sustainable solution was implemented to provide drinking water by pumping up groundwater locally. As an added bonus, the new solution was cheaper than the previous, as water no longer needed to be supplied from the mainland.

But CLIWAT had impacts beyond the scope of the project itself. Following the project, other Dutch islands have shown interest in the knowledge and methodology developed by CLIWAT and are now pursuing similar results.

In Denmark, the national authorities have started implementation of national strategy plans for all municipalities. CLIWAT results and the focus on groundwater have encouraged development of groundwater quantitative maps incorporating data from CLIWAT.

Other key achievements

The main results of the CLIWAT project can be summed up as follows:

- Development of geo- and hydrological tools for evaluation and demonstration of the effects of climate change scenarios for the North Sea Region
- New knowledge about climate change impacts on the hydrological cycle
- Development of transnational and regional management plans for groundwater protection
- Development of 2D and 3D geological models and visualisations
- Development of maps of groundwater table scenarios and flood risk areas
- Recommendations on better practice in spatial planning and urban development

Furthermore, CLIWAT was part of the cluster project [WaterCAP](#), which brought together 14 partners from five Interreg projects to raise awareness of the extensive knowledge these single projects generated about climate change impact on the hydrological cycle, and to better communicate the results at policy level.

CLIWAT on video



The film "Water Beneath Our Feet" describes the conditions our society will be facing when climate changes will bring us wet winters, dry summers and a change in groundwater quantity and quality. Watch it [here](#).

Word of mouth



Hans Martin Friis Møller, Grontmij (DK)

The CLIWAT project has been touching upon a very important part of the hydrological cycle – groundwater. The groundwater is a hidden resource affected indirectly by climate change. Knowledge has been needed and gained from the project.



Arjen Kok, VITENS water supply (NL)

The knowledge gained in the CLIWAT project has been very important for the understanding of the fresh water reserve in the Frisian island.

Did you know that...

- Annual rainfall is expected to increase by 30% by the year 2070.
- The ground water level might rise with as much as two meters.
- In some areas of the North Sea Region, water levels will rise and may result in flooding and increased river runoff, while in others they will decline causing water scarcity in both surface and subsurface.
- In coastal areas the combination of increasing sea levels and groundwater levels will change the distribution of land and sea as well as freshwater and saltwater.



Project facts

Project started 1 September 2008 (42 months duration)

Total budget was 5,500,126 €

Lead beneficiary was Region Midtjylland, Denmark

Lead beneficiary contact is Rolf Johnsen

(rolf.johnsen@ru.rm.dk)

Project homepage is www.cliwat.eu

[Read more](#)

Transnational partnership

Denmark

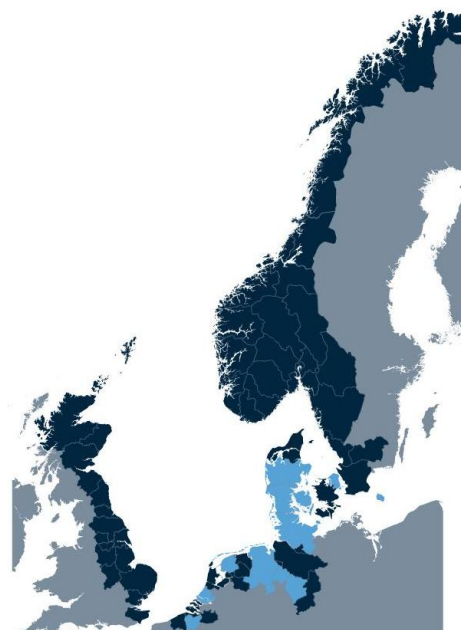
Region Midtjylland Jord og Råstoffer
Geological Survey of Denmark and Greenland (GEUS)
Region Syddanmark
Environment Centre Aarhus
Environment Centre Ribe
Aarhus Universitet
Municipality of Horsens

Germany

LIAG-Institut
Landesamt für Landwirtschaft, Umwelt und ländliche
Räume (LLUR)
SeeConsult GmbH
Federal Institute for Geosciences and Natural Resources
(BGR)

The Netherlands

Geological Survey of the Netherlands / Deltares
VITENS (SME)
Provincie Fryslan
Wetterskip Fryslan



Belgium
Ghent University



Related transnational projects

CPA
SAWA
Aquarius
DiPol
MARE
Biochar
Cluster: WaterCAP

Learn more [here](#).

CLIWAT was a priority 2 project and thus worked for the overall goal of promoting the sustainable management of our environment. Its area of intervention was 2.3: Adapting to and reducing risks posed to society and nature by a changing climate.

Web links

THE UPSHOT is first and foremost an online newsletter intended to be read as an email, in your browser or as a pdf on your screen. This is why we have used embedded links throughout. Should you wish to print this newsletter, the general web links referred to in our newsletter are:

All project information	http://www.northsearegion.eu/ivb/projects/
All videos	http://www.youtube.com/user/NSRProgramme
All photos	http://www.flickr.com/photos/northsearegion/sets
The North Sea Region Programme website	http://www.northsearegion.eu/ivb/home/
The North Sea Region Programme on facebook	https://www.facebook.com/NorthSeaRegionProgramme
The North Sea Region Programme on twitter	https://twitter.com/NorthSeaRegion
The North Sea Region Programme papers (including the ANSWERS magazine)	http://northseapapers.northsearegion.eu/

The Interreg IVB North Sea Region Programme

*Investing in the future by working together
for a sustainable and competitive region*



About the programme

The Interreg IVB North Sea Region Programme runs from 2007 - 2013. Bringing together regions around the North Sea from seven states, namely Denmark, Sweden, Norway, The United Kingdom, Belgium, the Netherlands and Germany, the programme has approved 71 projects in total, including five cluster projects and seven future perspectives projects and involving more than 850 beneficiaries.

Learn more on our [website](#), our [YouTube channel](#) and [flickr](#) and get the latest buzz on [facebook](#) and [twitter](#).

European Union



The European Regional Development Fund

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