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Impact of Climate Change on the Quality of Urban and Coastal Waters - Diffuse Pollution -

NEWSLETTER

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Transnationality: Danish and German scientists closely cooperate

Transnational cooperation is a major aspect within Interreg projects. During summer 2010 the Dipol consortium proved once more that we are taking this issue seriously. By means of a joined approach between the Luebeck University of Applied Sciences and the municipalities of Albertslund, Copenhagen and Glostrup as well as our colleagues from Hvidovre Forsyning A/S (Utilities) a comprehensive measuring campaign has been conducted in Denmark. More information on the work performed at the Copenhagen case study "Harrestrup Stream" is provided in this edition of the DiPol Newsletter.

But what's going to happen with the data gathered during

numerous measurements at the four case studies? A Web-based Knowledge Platform will be the answer to this question. Data will be presented from the DiPol website by means of graphical tools.

Furthermore DiPol has made major steps forward in terms of external communications: The first volume of the DiPol booklets has been set up and printed, comprising project information with a focus on the German case study "River island Hamburg-Wilhelmsburg". The booklet is also available for download from the web and covers a total of six languages - enjoy reading!

Hamburg, December 2010

Marco Ritzkowski, Project Manager

Measuring pathogenic bacteria at the Harrestrup Stream (DK)

The Danish case study "Harrestrup Stream" is located west of the city of Copenhagen. It drains a densely populated area of approximately 70 km² covering parts of the municipalities of Copenhagen and 7 neighbouring suburb municipalities. From the Harrestrup river basin waste water is directly discharged into the river channel during intense rain events either as combined sewer overflow or as wastewater from surface runoff collection systems.

In the framework of the "Risk analysis" work package pathogenic bacteria and additional physical parameters such as water temperature, pH-value, turbidity and conductivity have been determined by members of the according transnational working group. In order to carry out the investigations, the mobile laboratory of the Luebeck University of Applied Sciences (LUAS) has been assembled in Copenhagen for three months during summer.



LUAS' mobile laboratory for pathogenic bacteria analysis at the Danish case study

During the first six weeks dry weather conditions have been monitored, setting the baseline for comparison with extreme climate events. Then, in August 2010, an intense rain event was observed, leading to a significant pollution intake from several combined sewer overflows in the catchment area into the Harrestrup Stream.

During a period of only six hours almost 100 water samples have been taken at different sampling locations; an excellent example of a effective cooperation between the colleagues from Germany and Denmark.



Comparison of a waste water outlet at the Danish case study under both, dry (left) and intensive rain (right) weather conditions.

The conducted analysis clearly confirmed the assumption that during extreme weather events significantly more pathogenic bacteria are present in the stream as a result of the so called "first flush effect". With respect to the project background this could be interpreted as a strong indication that climate change (leading e.g. to a higher frequency of extreme weather events) might have the potential to negatively affect the water quality.

Based on the information received from this campaign a forecasting model for bathing areas in the Copenhagen harbour ought to be calibrated in the near future. One of the direct consequences might be that these areas have to be closed immediately during and after the occurrence of intense rain events in the catchment area.

European Union



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The Interreg IVB
North Sea Region
Programme

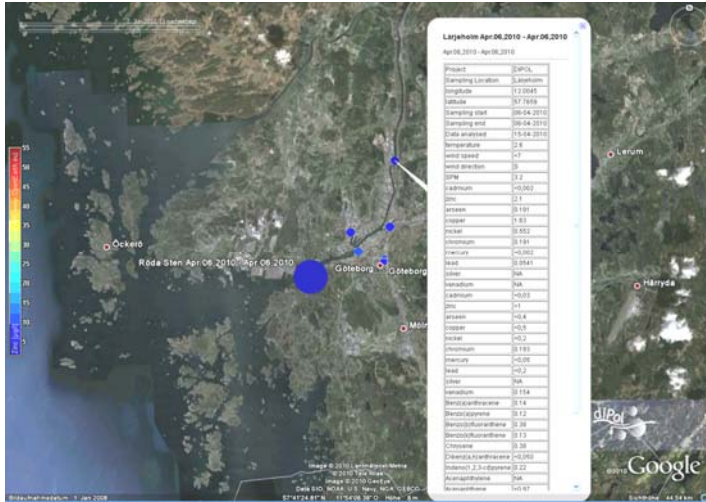


Investing in the future by working together
for a sustainable and competitive region

Web-based Knowledge Platform

The Web-based Knowledge Platform (WKP) contains data and information gathered at the case studies during the DiPol project and serves as a platform for exchange of data and results. The WKP includes a database and a detailed scientific part (open to the DiPol consortium) as well as a summary section which is publicly available, both being updated regularly.

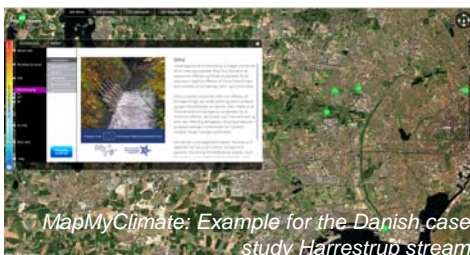
The Dutch DiPol partner 'Deltares' facilitates the usage of OpenEarth, a tool in which data can be stored and presented using GoogleEarth. The accordant data files can be downloaded from the DiPol website and opened in GoogleEarth, which is available free of charge.



Visualisation of sampling points in combination with analytical data for different sampling campaigns: DiPol's Web-based Knowledge Platform

The system supports the selection of a certain time period for which data should be displayed. Individual sampling locations are indicated by coloured dots and can be selected. Each time a location is selected, the sampling site's name as well as an associated data table opens up. Currently the WKP contains a first set of data for the Swedish case study "Göta Älv". During the coming months more data will be made available, probably also in connection with more detailed background information on sampling and analytical procedures as well as photographs from the case studies.

For the Danish case study "Harrestrup Stream" an additional visualisation tool is available. "Map My Climate" contains background information on the investigation area and offers the user a possibility to reflect his own personal behavior in terms of impact on climate change.



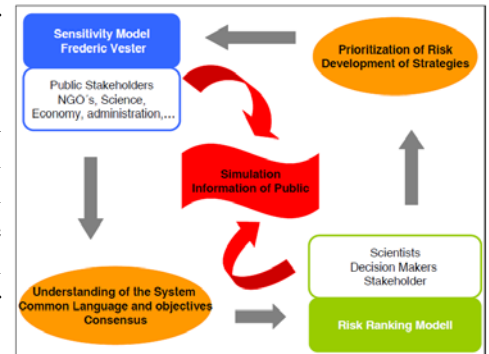
MapMyClimate: Example for the Danish case study Harrestrup stream

SIMACLIM:

Workshop on the „Sensitivity Model“

In order to further develop the simulation and demonstration tool SIMACLIM, a preparation workshop on the application of the Sensitivity Model (an element of SIMACLIM) has been conducted in Luebeck, Germany. The Sensitivity Model will lead to an improved understanding among stakeholders interests and environmental issues at different case studies.

In November 2010 participants from Germany, Denmark and Sweden met in Lübeck to get an insight to the Sensitivity Model of Frederik Vester during a two days workshop.



Structure of the SIMACLIM model

Following an introduction into the model on day one, the second was dedicated to a joined approach of all participants on the preparation of the workshops at the individual case studies. As an example the first steps towards a system description and drawing of a preliminary system outline were carried out for the Danish case study.

In the beginning of 2011 three workshops will be organised in Copenhagen, Gothenburg and Hamburg respectively. These workshops, organised by a core team of projects participants, are further steps of the development of SIMACLIM. More information will be provided with the following editions of the DiPol-Newsletter.

Coming up

- The fifth **Consortium Meeting in Delft** is scheduled 7 to 9 March 2011. The meeting comprises both, workshops by project workgroups and the DiPol general assembly, addressing the current project status and planning of future activities. More and detailed information (including agenda) will be made available on the DiPol-Website: [www.interreg-dipol.de].
- **New DiPol leaflet:** Short and precise information on the interaction between climate change and contaminants, the connection to the European legislation framework as well as DiPol's vision to counteract these mutual problems. The leaflet is available for download from the DiPol-Website: [www.interreg-dipol.de].
- **Next DiPol-Newsletter (Vol. 5):** Available spring 2011