Adapting to Climate Change -
Case Studies from the Baltic Sea Region
Hamburg, Germany, 31 May 2011

Abstracts and Speaker Profiles

Session 1: The Science Base

Scientific evidence on climate change in the Baltic Sea Region

***Hans von Storch**, Helmholtz-Zentrum Geesthacht and KlimaCampus Hamburg, Germany*

A regional climate change assessment report for the Baltic Sea basin was published in January 2008. The so called BACC (BALTEX Assessment of Climate Change for the Baltic Sea Basin) report was compiled by a consortium of 84 scientists from 13 countries around the Baltic Sea and covers various disciplines related to climate research and ecological impacts. The report shows that a warming trend in the Baltic Sea region is clearly detectable, as well as a resulting decrease in river, lake and sea ice, and changes in marine and terrestrial ecosystems. Scenarios derived from computer models for the time until 2100 project a continuing warming and related changes in precipitation and sea ice cover, with consequences for ecosystems and the socio-economic realm.

Prof. Dr. Dr. Hans von Storch is a Director of the Institute of Coastal Research of the Helmholtz-Zentrum Geesthacht and Professor at the Meteorological Institute of the University of Hamburg. His research interests are coastal climate and impact (wind, storm surges and waves) in recent times and in possible futures, and methodical issues of statistical climatology (such as detection and attribution of anthropogenic climate change, or utility of proxy data). He is also engaged in transdisciplinary research with social and cultural scientists since many years. He has been initiating assessments of scientific knowledge about climate and climate change in specific regions, such as the Baltic Sea drainage basin (BACC), the metropolitan region of Hamburg and the North Sea.

Session 2: From Science to Politics

2a. Adaptation from the scientific perspective - Examples from international research programmes

Adaptation strategies to climate change impacts in urban regions of the Baltic Sea coast - The science-practice interactions within plan B:altic

***Sonja Deppisch**, HafenCity University Hamburg, Germany*

This presentation will provide an overview of the project plan B:altic - climate change and spatial development. Especially it will be referred to the manifold forms of science-practice interactions and in-depth co-operations to develop adaptation strategies in urban regions of the Baltic Sea coast to climate change impacts. Plan B:altic co-operates with a transnational and BSSSC-based working-group and with urban and regional decision-makers and administrative practitioners from the urban region of Rostock, Germany. Besides, science-to-practice interactions are going on with the urban regions of Stockholm, Sweden and Riga, Latvia.

Dr. Sonja Deppisch is a landscape planner by education and received the PhD in Planning after working on governance in European cross-border regions. Since 2009, she is the Head of the research group plan B:altic - Climate Change and Spatial Development, based at HafenCity University Hamburg, Germany, at the Department of Urban and Regional Planning.

Adaptation needs? Adaptive capacities? Answers from the INTERREG Project BalticClimate

***Sebastian Ebert**, Academy for Spatial Research and Planning (ARL), Hannover, Germany*

BalticClimate works to make the climate change phenomenon understood as a challenge as well as a chance for overall and sustainable development in all Baltic Sea Region countries. The project enables municipalities, local and regional stakeholders to deal with the issue of climate change – mitigation as well as adaptation – in a cooperative, integrated and sustainable way. This presentation will focus on outcomes of vulnerability assessments implemented in the mainly rural BalticClimate target areas in 2010, based on a stepwise approach developed by the Centre for Climate Science and Policy Research (CSPR), Sweden. Furthermore, a brief outlook will be given on the web-based BalticClimate toolkit in which the vulnerability assessment approach serves as one of the tools especially for the target group of spatial planners. The toolkit is the central project output generalised from a couple of activities implemented locally and regionally with scientific guidance.

Dipl. Ing. Sebastian Ebert studied urban and regional planning. He is a research assistant at the Academy for Spatial Research and Planning (ARL) in Hannover and Research Coordinator of the EU-project BalticClimate. His current focus is on the mitigation of and adaptation to climate change in rural areas as well as on small and medium-sized towns, especially in the Baltic Sea region. Within this field, a special topic is local and regional development strategies generated by climate change. Further research activities include the improvement of transnational communication abilities on planning systems and planning terms.

2b. International climate services for stakeholders, the policy and the public

Creating and maintaining dialogue on climate information - Reflections on the adaptation process in Sweden

Carin Nilsson *and* ***Erik Engström****, Swedish Meteorological and Hydrological Institute, Norrköping, Sweden*

Climate information can be communicated in many ways to various actors within society. Dialogue as a means to communicate is often emphasized as an important tool to deliver and receive information. However, a dialogue can be initiated and maintained in many different ways. In Sweden, the Swedish Meteorological and Hydrological Institute (SMHI) can be seen as one of the actors between the climate science experts and society, and together with the Swedish Geotechnical Institute, SGI, it was recognized that the regional County Administrative Boards required climate information and knowledge in how to use and how not to use climate scenarios in order to start coordinating regional adaptation activities. At the same time, the National Authorities called for a more detailed compilation on the needs regarding climate information for decision making in the regional counties. Starting in the autumn of 2008, SMHI and SGI visited the 21 counties in Sweden, initiating a dialogue with the County Administrative Boards. The process continued in spring 2009 with a first seminar on adaptation. Personal visits and seminars have continued to be the arena for the dialogue, and new climate information products have been initiated as a response to the interaction. Here we present our latest climate information product.

Dr. Carin Nilsson holds a PhD in Physical Geography from Lund University, where she defended her thesis on windstorms in Sweden in 2008. She has taught climatology and physical geography at Stockholm University (2001/2002) and at Lund University (2003-2009), and she has been active in EU-funded research programs on wind erosion (WEELS) and climate extremes (MICE). Since August 2009, Carin is working at SMHI, the Swedish Meteorological and Hydrological Institute in the Climate and Air Quality Group within the Core Services. She serves as the contact person at SMHI for the regional coordinators of adaptation in Sweden. She is part of the group responsible for the development of the Swedish portal of adaptation (www.klimatanpassning.se) and she is also the SMHI representative in the working-group of the Swedish National Platform of Disaster Risk Reduction.

Dr. Erik Engström holds a PhD in Chemical Meteorology from Stockholm University, where he defended his thesis on "Soot over southern Asia" in 2009. He has taught atmospheric chemistry at Stockholm University (2005-2009), and he has been active in a UNEP-funded research program on soot over southern Asia (ABC). Since April 2010, Erik works at SMHI in the Climate Information Group within the Core Services. He works with weather and climate statistics, providing weather and climate information through SMHI´s website and external presentations in Sweden.

Regional Climate Service – Experience from the North German Climate Office

***Insa Meinke**, Northern German Climate Office at Helmholtz-Zentrum Geesthacht and KlimaCampus Hamburg, Germany, and **Hans von Storch**, Helmholtz-Zentrum Geesthacht, and KlimaCampus Hamburg, Germany*

The representation of risks we face is to a large part a matter of social construction. In 2006 the North German Climate office was established at the Institute of Coastal Research, Helmholtz-Zentrum Geesthacht and at the KlimaCampus Hamburg, to provide science based regional climate service for Northern Germany. In the following years three other regional climate offices started their work in the Helmholtz Association. Since climate change as well as the socioeconomic development varies in time and space regional climate services provide the scientific basis for adaptation strategies. Stakeholders in climate sensitive sectors need scientific based knowledge for developing adaptation strategies to a changing climate. In turn, from the science point of view there is insufficient insight in the type of information needed in the public. These circumstances imply three main tasks of a regional climate office:

- Stakeholder dialogue: Regional climate offices need to convey scientific knowledge into the public. In turn they need to explore the range of views, questions, and knowledge in the public about regional climate change.
- Science Interaction: Regional climate offices integrate scientific results for a specific region. At the same time public information demands on regional climate is integrated into research agendas.
- Provide adoptable knowledge: Regional climate offices develop user friendly products tailored for the specific needs of the stakeholders.

Dr. Insa Meinke is Head of the North German Climate Office at the Intitute of Coastal Research, Helmholtz Zentrum Geesthacht and KlimaCampus Hamburg. Her research is focussing on transdiscipinary aspects of regional climate change in Northern Germany.

Prof. Dr. Dr. Hans von Storch is a Director of the Institute of Coastal Research of the Helmholtz Center Geesthacht and Professor at the Meteorological Institute of the University of Hamburg (see above for extensive profile).

Session 3: Case Studies

Cooperative planning for climate change adaptation on the municipal level - Two case studies from the metropolitan region of Hamburg

***Thomas Zimmermann**, HafenCity Universität Hamburg, Germany*

The present discussion on climate adaptation emphasizes the importance of communicative instruments for identifying opportunities and threats related to climate change and concerning public decision-making. In the research project KLIMZUG-Nord, HafenCity University and Hamburg's Department of Urban Planning and Regional Development are testing innovative communicative instruments for climate change adaptation on the municipal level. The presentation will describe the visioning process based on scenarios concerning approaches to climate change adaptation in the rural community of Gartow, located along the Elbe River. Also included in the presentation will be the first set of results from the ongoing cooperative process in the Wandse catchment area in the east of Hamburg.

Thomas Zimmermann studied urban and regional planning at the Technische Universität Berlin and works in the Department of Urban Planning and Regional Development at HafenCity University Hamburg. His research focuses on sustainable settlement developments and climate change adaptation in urban and spatial planning.

BaltCICA, consulting citizens about climate adaptation

***Jørgen Madsen**, Project Manager Information with the Danish Board of Technology, Denmark*

Lack of preparation and adaptation to climate change will cause lawsuits, insurance problems and endless conflicts between citizens and politicians. The BaltCICA-project "Climate Change: Impacts, Costs and Adaptation in the Baltic Sea Region" aims to bring citizens, stakeholders and politicians together in a process in due time to research, debate, vote and recommend solutions and ways for future planning acceptable for as many people as possible. Presented will be "The Kalundborg Case": Situated along the Great Belt coast on Zeeland's west coast, Kalundborg already has experienced serious troubles with surge and cloud burst, and the incidents are becoming worse. The process is framed on two scenario workshops and a citizen summit, engaging 500 citizens at one round table meeting on 5 March this year. The summit has produced a series of climate adaptation recommendations for the local and regional politicians future planning. The presentation will give also a brief introduction to "The Danish Board of Technology" as developer of citizen participation and as advising board to the Danish Parliament.

Jørgen Madsen, MA Comm. Geo., is Project Manager Information with the Danish Board of Technology. As editor he is responsible for magazines, the website and press contacts. He was a former editor with the Danish Broadcasting Corporation.

The Norwegian case: Climate change adaptation at the regional and local level – The role of the land use planning sector

***Elisabeth Dahle**, Head of regional planning in the region of Östfold, Eastern Norway*

The core issue of the scientific project is how adaptation strategies to climate change can be coordinated between different decision making procedures in order to achieve overall goals, and how institutional and political conditions influence adaptation at the local level in a multi-level and cross-sector context. There is a growing recognition of the need for planned action in order to adapt to the rapid climate changes. Lack of climate action has been explained by the fact that relevant knowledge to varying degrees is uncertain and controversial, and that there is a lack of congruence between the scientific logic of climate knowledge and the political logic of climate decision making – there is no direct link from scientific knowledge to action. One of the important issues of the project is therefore how the knowledge is communicated and interpreted from providers to users and from science to policy. The project has chosen to concentrate on two sectors of government: Climate change adaptation within land use planning and water supply and waste water sector.

Elisabeth Dahle has been the Head of Planning in Østfold County Council since 2006. She holds a Master's degree from 1990 in the Master programme in Environment and Natural Resources at the Norwegian University of Life Sciences. Earlier occupations were at the Norwegian Climate and Pollution Agency and the Norwegian Agricultural Authority. She has had experience with local spatial planning from 8 years of employment in Sarpsborg municipality, both as an adviser and as Head of Planning. She now works on a Master's degree paper in the Master programme in "Organization and Leadership" at Østfold University College, which has the scope of this presentation.

The transfer of scientific knowledge concerning climate change to regional decision makers in the German Baltic Sea region

***Dennis Bray**, Helmholtz-Zentrum Geesthacht, Germany and **Grit Martinez**, Ecologic, Berlin, Germany*

In the past few years, science communication, especially for regional users of knowledge concerning climate change, has become a prominent issue. This has resulted in a significant number of 'Climate Information Centers' being established, with the goal of providing such information on a meaningful regional basis so as to assist regional decision makers on matters concerning adaptation to climate change.

To date there seems to be little in terms of evaluation of the match between knowledge production, knowledge dissemination and knowledge consumption. Using a large sample of regional decision makers, we explore, through the use of survey research, supplemented with qualitative material, issues of compatibility between needs and availability of information. Topics include sources of information, perceived regional adaptation priorities, decision maker perceptions of what would make information more useable, barriers to adaptation implementation projects, and the influence of science in the determination of decisions, to name a few issues among many. Results from the survey of decision makers will be contrast with a previous survey of scientists working on such issues in the Baltic regions (SurBACC 2010: A survey of the perspectives of climate scientists concerning climate change and climate science in the Baltic Sea basin). Assessments will be made concerning the similarities between the knowledge produced and the knowledge disseminated.

Dr. Dennis Bray is a sociologist working at the Institute of Coastal Research at the Helmholtz-Zentrum Geesthacht. From the perspective of the sociology of science, his areas of interest include climate scientists' perceptions of climate science and the development of the climate change issue. His work has focused on issues of consensus among scientists and scientists' assessments of specific aspects of the science. His work has also included aggregated scientists' evaluations of scientific reports and decision makers' experience with the transfer of scientific knowledge.

Dr. Grit Martinez has a wide range of practical experience in the areas of coastal zone management and adaptation to climate change, water sector development and integrity and transparency issues. She works as a senior project manager at the Ecologic Institute Berlin where she is leading the project RADOST (Regional Adaptation Strategies for the German Baltic Sea Coast, www.klimzug-radost.de). She is also a senior advisor to the Water Integrity Network (www.waterintegritynetwork.net) – an open and inclusive global network that promotes anti-corruption activities and coalition building between actors from civil society, private and public sectors, media and governments. In both positions she facilitated many dialogue sessions in the international and national fora. Grit Martinez holds a Ph.D. from the philosophical faculty of the Friedrich-Alexander-University of Erlangen-Nuremberg and a Master of Business Administration (MBA) from the Manchester Business School, U.K.

The project plan B:altic from the associates point of view in the urban region of Rostock

***Katja Klein**, Regional Planning Association Mittleres Mecklenburg/ Rostock, Germany*

Rostock and its urban hinterland area composes one of the pattern regions in the research project plan B:altic “Climate Change and Spatial Development”. This presentation will deal with the pattern region, the associates of Rostock but also with

the operating procedure implemented so far. First experiences and results from the research project will be presented.

Katja Klein studied rural management and environmental conservation at the University of Rostock. Since 1999, she has been at the Agency of the Regional Planning Association Mittleres Mecklenburg/Rostock in the Department of Regional Planning. The task fields embrace inter alia *issues of environmental protection and conservation of nature, agriculture and forestry as well as raw material securing. Since 2010, she has been Head of the Regional Planning Department.*

Living with water - Adapting to climate change in Copenhagen

***Lykke Leonardsen**, Municipality of Copenhagen, Technical and Environmental Administration, Denmark*

The City of Copenhagen has just prepared its first plan on how to adapt to climate change. The presentation will give an overview of the main challenges that Copenhagen will be facing when it comes to climate change - and how we intend to meet them. The focus of the work will be on using climate change to create an even better city for the people living in Copenhagen. The presentation will also look at, how the city is working to organize the work on climate change and how we intend to finance the initiatives.

Lykke Leonardsen is the Head of the Department for Strategy in the Centre for Parks and Nature at the Technical and Environmental Administration in Copenhagen, which has been in charge of preparing the first strategy and plan for adapting to climate change. She has worked for many years with urban development in the City of Copenhagen, and has taken part in a number of European projects on various issues of urban development.

Regional strategies and possibilities to tackle climate change in the Stockholm region

***Jessica Andersson**, Stockholm County Council, Sweden*

Since 2007 there has been an increasing focus on adaptation issues in Sweden, due to the national study “Sweden facing climate change - threats and opportunities” (SOU 2007:60). The study has increased the knowledge and awareness of adaptation needs on national and regional as well as on local level. As a result of the national study, the Swedish Government in 2009 gave the County Administrative Boards the task to coordinate the regional adaptation work, and develop planning tools as well as regional scenarios concerning the future climate change and adaptation possibilities. When it comes to adaptation and spatial planning, the local authorities have a major

responsibility as they have the planning monopoly in Sweden. Since 2010 the Stockholm region has a new Development Plan (RUFS 2010). The plan is not binding for the municipalities. It comprises the three dimensions of sustainability as well as a suggestion for the spatial structure of the region in 2030. In RUFS 2010, climate change is seen as a major challenge for the region's future development. Adaptation is one dimension of the energy and climate focus of RUFS 2010. The Office of Regional Growth, Environment and Planning together with the County Administrative Board assist and guide the local authorities as well as cooperate with them in order to adapt the Stockholm region to the future climate. An improved Planning and Building Act and improved regional climate and adaptation scenarios has up to now, 2011, given the local authorities a better situation in order to adapt the spatial structure to the future climate. The presentation will enhance the above, summarized into a picture of the adaptation situation in the Stockholm region of 2011.

Jessica Andersson is a spatial planner (MSc) and works as a regional planner with urban strategies, at the Office of Regional Growth, Environment and Planning, Stockholm County Council. Adaptation and other sustainability issues is one important part of the work. The office cooperates with the local authorities and other actors to achieve the goals in the Stockholm Regional Development Plan. Before that, she worked at SALAR (Swedish Association of Local Authorities and Regions) with spatial planning, the Swedish planning system and adaptation issues. She also has municipal experience as project manager responsible for urban comprehensive development planning.

Adaptation to climate change in Gothenburg, a seaside city in Sweden

***Ulf Moback**, Coordinator of the Gothenburg Climate Group, Sweden*

Göteborg is situated along the river of Göta älv where the river meets the sea, and new constructions are planned along the river in former industrial areas. In a deepened comprehensive plan which was adopted by the city council in 2003, we raised the security level from ½ m to 1m above extreme high water levels, due to the future rising sea levels. The Municipal executive board in the City of Göteborg gave the commission in 2004 to make investigations on adaptation to climate change called "Extreme weather". In 2007 we looked at research reports after the IPCC report from 2007. Based on the results from world wide research reports, we could establish that for infrastructure important for the society, the margin from extreme high water levels must be at least 2 meters (i.e. railroad, tunnels). In January 2009, a case study was completed for an industrial area that is planned to be exploited for i.e. housing in the future. Future work was listed. During 2010, we have made a pre-study of a hydro model. The aim of this is to connect the sea, the rivers, the sewer network, tunnels and surface in one model. We think this will be very useful for planning, making better prognoses of flooding events, testing different scenarios and inform the inhabitants.

We have also started working with new water level measurements and a web-based site showing water levels. We have also in the frame of Mistra Urban Futures started one pilot study about climate adapted city structure. In cooperation with universities we have also started a study about “Adapting cities to climate induced risks – a coordinated approach”. One focus for this study is temperature related health impacts.

Ulf Moback is a Landscape Architect educated at the Swedish Agricultural University in Ultuna and Alnarp. He has been with the City of Gothenburg since 1979, first at the Park Administration as head over planning and building parks and green areas in Gothenburg. In 1991 he started at City Planning Authority working at first with detailed plans for the regeneration of the shipyard areas, later with the comprehensive plan for the whole of Gothenburg, ÖP 93, ÖP99 and the current comprehensive plan. Parallel with that he has been working with environment issues like methods for environmental impact studies, nature reserve, storm water treatment, polluted areas etc. He has also been involved in EU-projects, like Water City International, Pure North Sea and Greenscom and SIDA-projects in South Africa. He is also coordinator of the climate group of Gothenburg. He is project leader in a research project about Climate adapted City structure, scenarios for future Frihamnen and he is involved in an other research project “Adapting cities to climate induced risks – a coordinated approach”.