NEWS

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RA:dOst
Regional Adaptation Strategies for the German Baltic Sea Coast

RADOST Annual Conference 2011 in Travemünde

On 18 and 19 May 2011, the second annual RADOST conference took place in Lübeck-Travemünde. At the forefront of the conference was a science-practice dialogue, in which results of the scientific, engineering and social research conducted as part of RADOST were discussed. Along with scientists from RADOST-participating research institutions, practitioners from business, public administration and non-governmental organisations were among the 75 guests in attendance. The directors of three state agencies participating in RADOST – the State Agency for Agriculture and the Environment of Central Mecklenburg (StALU-MM) as well as the State Agency for Agriculture, Environment and Rural Areas of Schleswig-Holstein (LLUR) and Schleswig Holstein's Government-Owned Company for Coastal Protection, National Parks and Ocean Protection (LKN-SH) – were active participants in the discussions.

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Proof of the ambiguity of communication: the same instructions lead to different patterns.

Content

Research at Anchor

On 6 July 2011, numerous guests from Greifswald and the surrounding area had the opportunity to see the research ship "Ludwig Prandtl" in the harbor of Greifswald/Wiek up close and to ask researchers questions about their work on the ship and about the RADOST project.

The Open-Ship Day, part of this year's "Research at Anchor" tour of the Helmholtz-Zentrum Geesthacht Center for Material and Coastal Research (HZG), was carried out in cooperation with RADOST and was dedicated to the topic of climate change adaptation. …to be continued on page 3

„Open Ship" in the harbor Greifswald/Wiek

Regional Activities

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They praised the wide array of topics covered in the research being conducted under RADOST and emphasised the importance of coordination and cooperation between governing bodies as well as the support of participative processes in Baltic communities.

Scientific research results concerning the influence of climate change on the Baltic Sea region overall as well as specifically with regard to nutrient inputs, water quality, currents and waves were presented. In the field of social science, results from surveys of community and state-level decision-makers as well as from those in the tourist industry and tourists served as the focus of discussion (see article "Stakeholder Analysis" on page 3). Overall, it became clear that influences of climate change are emerging and are also being perceived by the public.

One trend that is clearly related to climate change is the retreat of sea ice. Ice cover has a significant effect on the sea waves even in far away sea regions, since it shortens the effective length of wind. A decrease in ice therefore increases the area which is subject to wind above the water, thereby producing more waves.

Other consequences, which are now seen as certain to occur, are the increase in water temperature and the decrease in salt content. Depending on which scenario is used, scientists estimate that the water surface of the western Baltic Sea will be 2 to 3 °C warmer by the end of the twenty-first century. The salt content of the water of the western Baltic Sea will decrease by 1-2 g/kg, according to calculations. These changes will have an effect on the ecosystems of the Baltic Sea: There will be a shift of habitats to the west, with corresponding changes in species.

Through simulations of the future wind activity over the Baltic Sea, it appears that both moderate as well as extreme wind speeds will only increase minimally by the end of the century, by a maximum of five percent. This will most likely cause only small changes in the overall sea waves. Reliable conclusions however can only be made after all calculations have been conducted. Simulations of local sea waves, however, produce widely varying results, depending on the location. In Rostock-Warnemünde and Westermarkelsdorf (Fehmarn) for instance, calculations of future wave heights showed that small waves will be more rare and moderate and large waves will become more common. This would mean an increase in wave energy, especially toward the end of the twenty-first century. For Lübeck-Travemünde on the other hand, the opposite pattern appears to be taking place: waves of moderate height are expected to occur less frequently, whereas smaller waves will be more common.

Dr. Grit Martinez, RADOST project leader (Ecologic Institute)

There are also areas where other factors play an equally strong role as climate change. For instance, deciding factors for tourism are general economic development and demographic changes. Another example is the development of nutrient inputs from agriculture, which is strongly influenced by the world market as well as political decisions, be it European agricultural policy, incentives for the cultivation of energy corn or requirements for the reduction of nutrient inputs according to the Baltic Sea Action Plan (BSAP) of the Helsinki Commission.

From the surveys among stakeholders,it became clear once again that there is a need for comprehensible information on climate changes themselves as well as on concrete, anticipated effects and appropriate plans of action. Examples of related efforts were presented at the conference, such as the info-pavillion on climate change of the municipality of Schönberg, which is currently being implemented. Two multimedia-events were part of the conference programme: one visualisation show of the Swedish Meteorological and Hydrological Institute (SMHI), which shed light on climate change and the ecology of the Baltic Sea region through projections in a dome tent, and a short film, created at the International Summer School 2010 "Climate Change in the Baltic – From global problems to local adaptation" of the Leibniz Institute for Baltic Sea Research, Warnemünde.

Conference documentation:
www.klimzug-radost.de/termine/RADOST-JK2011

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On the evening of 6 July, a public informational event on "Coastal Adaptation" took place at the University of Greifswald. Dr. Marcus Reckermann of the international BALTEX secretariat at the HZG presented scientific findings on climate change and its effects on the Baltic Sea region.

Prof. Reinhard Lampe of the University of Greifswald emphasised that, on the Baltic Sea coast, the general rise in sea level, which is occurring due to the warming of the earth's atmosphere, is controlled by the different elevations and depressions of the surrounding land masses and will therefore have different consequences in different coastal regions. It is in fact on the sub-region level that the RADOST project, which was presented by project leader Dr. Grit Martinez, undertakes a major part of its acitivities, be it models for specific focus areas or the development of local adaptation solutions.

Aboard the ship, political decision-makers could exchange ideas with planners and scientists from Germany, Sweden and the US on the issue of climate adaptation.

In closing, Prof. Mike Orbach of the Nicholas School of the Environment, Duke University, USA presented on how the current sea level rise is being dealt with across the world in many different ways. Whereas the Netherlands, for instance, after years of intensive coastal protection measures, is now discussing pull-out strategies, new buildings are still being constructed "on the sea" in many Asian countries.

On the morning of 7 July, RADOST invited political decision-makers and other scientists for a ride on the Ludwig Prandtl to present its scientific work on site and to use this opportunity to initiate new cooperation on climate adaptation in the region. Following this, the Ludwig Prandtl continued its "Research at Anchor" tour, heading for Szczecin, Poland.

Stakeholder Analysis

First results on the perspective of selected administrative stakeholders and non-governmental organisations concerning adaptation to climate change on the Baltic Sea Coast are now available. In particular, significant uncertainty about the consequences of climate change still exists among stakeholders. The consequences of climate change are predominately perceived as negative. Not many measures to adapt to these changes have been developed yet, although the stakeholders are mostly convinced of this as a necessity. Especially the administrative stakeholders indicated that a particular challenge lies in communicating the climate adaptation measures to the general public. Need for action is perceived mostly in an investigation by region into the consequences of climate change, in order to be able to make informed decisions in the future. Due to a wide variety of interests and forms of land use, many conflicts exist between the individual stakeholders. From the examples mentioned in the interviews, one can observe several classic lines of conflict emerging between, for instance, nature conservation groups and the tourism industry and between agriculture and water management. On the other hand, there exist successful alliances, especially among stakeholders with similar interests. Overall, cooperation and integration of all affected stakeholders is seen by all those surveyed as necessary for the development of a common adaptation strategy.

Network building is an important element of the RADOST project. Therefore, the views, interests, alliances and conflicts as well as the personal perceptions of relevant stakeholders in the German states of both Mecklenburg-Western Pomerania and Schleswig-Holstein are of crucial importance. In light of this objective, 23 interviews with governmental and non-governmental stakeholders were conducted. RADOST network partners were also included in the survey.

RADOST-Workshop "Coastal Tourism" at the "Regional Conference Climate Adaptation Coastal Region"

On 30 and 31 March, the five states of Northern Germany held the "Regional Conference Climate Adaptation Coastal Region" in Hamburg, together with the German Federal Ministry for Environment, Nature Conservation and Nuclear Safety and the projects KLIMZUG-NORD, nordwest2050, RADOST and KLIFF as well as the CliSAP Cluster of Excellence.

In this context, a workshop on the issue of "Coastal Tourism" took place on the second day of the event under the auspices of Mecklenburg-Western Pomerania and the project RADOST. Private and public representatives of the tourism industry as well as representatives from municipalities, regional planning and the economy discussed, among others, the question "Coastal regions in climate change – a future source of tension? between tourism, coastal protection and nature conservation?"

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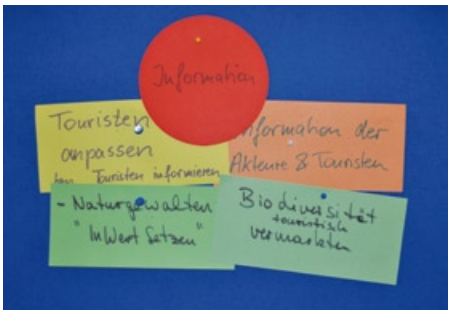
At the beginning of the workshop, participants discussed their visions for German Baltic Sea tourism for the year 2050. Over the course of the event, this introductory vision was complemented by lectures and discussed. Potential future developments influenced by climate change were identified and their relevance for the tourism sector evaluated. Along with strengthened dialogue between participating stakeholders, information and knowledge dissemination was cited as an important measure for the tourism industry and tourists to prepare for various possible scenarios and to adapt to them.



Targeted information services are a key factor in initiating climate adaptation measures

The regional conference was the first in a series of regional events planned by the German Ministry for the Environment together with the respective German states, in order to further develop the German Adaptation strategy. At the same time, it marked a step towards greater cooperation between the coastal states concerning adaptation in an exchange with regional research projects like RADOST. Another North German regional conference is set to take place at the end of 2012 in Bremerhaven.

A detailed documentation of the workshop can be found at:
www.klimzug-radost.de/termine/workshop-kuestentourismus

BSSSC/BALTEX Conference "Adaptation to Climate Change on the Regional Level"

At the one-day conference in Hamburg on 31 May 2011, everything concerning regional climate change in the Baltic Sea area and sustainable development through adaptation was the central point of discussion. The conference "Adaptation to Climate Change on the Regional Level" was organised by the international BALTEX secretariat and the city of Hamburg, which also chairs the association of regional decision-makers in the Baltic Sea region "Baltic Sea States Subregional cooperation" (BSSSC).

Around 80 scientists, regional planners, decision-makers and other stakeholders from the Baltic Sea countries participated in this lively exchange of experiences and ideas. After an introduction into the scientific basis of climate research, presented by Prof. Hans von Storch of the Helmholtz-Zentrum Geesthacht, the topic of adaptation to climate change in the Baltic Sea region was presented with an emphasis on research. What challenges does regional planning face? How can potential damage be measured? These and other questions are being investigated by the projects plan B:altic and BalticClimate, led by Dr. Sonja Deppisch (HafenCity Universität Hamburg) and Sebastian Ebert (Academy for Spatial Research and Planning, Hannover). Along with these methodological questions concerning adaptation, the significance of communicating climate data to stakeholders was emphasised in the presentations of the climate information services of the Swedish Meteorological and Hydrological Institute (SMHI; represented by Dr. Carin Nilsson and Dr. Erik Engström) and the North German Climate Office (Norddeutsches Klimabüro; Dr. Insa Meinke and Prof. Hans von Storch).

From a practical point of view, case studies in Denmark, Germany, Norway and Sweden made clear that communication and inclusion of many different stakeholders is a key factor in the implementation of climate adaptation strategies in the Baltic Sea region. RADOST project leader Dr. Grit Martinez presented these case studies and moderated the closing panel discussion with Stefan Herms of the State Office of the City of Hamburg, Prof. Hans von Storch, Lykke Leonardsen from the municipal administration of Copenhagen, and Ulf Moback, city planner from the city of Gothenburg. In a lively discussion among both the panel and the audience, existing deficits in communication between academia, policy and planning were identified and the need for strengthened international cooperation in the Baltic Sea region in this area recognised. Through the intensive, cross-disciplinary exchange of knowledge and experiences on climate adaptation in the Baltic Sea region, the conference succeeded in taking a first step in the right direction. Thus, a summary from Dr. Marcus Reckermann of the BALTEX secretariat: "A stronger network of regional planners and improved communication between academics and planners are manageable challenges for the future, in addition to recognising opportunities for regional planning that could lie in intelligent adaptation strategies."

Further Information:
www.baltex-research.eu/bsssc/index.html

Workshop "Baltic Sea and Baltic Sea Coast between Climate Change and Climate Adaptation"

Lively exchange of views during the break

On 21 June 2011, an informational communication forum was dedicated to the increasing utilisation of the German Baltic Sea area and coast as well as the interaction of these various activities with the challenges of climate change and adaptation. The event took place in Neu Broderstorf near Rostock at the Institute of Applied Ecology (IfAÖ) as part of the project RADOST. Marine sand and gravel extraction, the fishing industry and future land space development in the coastal waters of Mecklenburg-Western Pomerania stood at the forefront of the workshop. One point raised during the lively discussions between the 35 participants was the limitations on the influence of contributions from sectoral planning in relation to politically motivated planning processes. It became apparent that the question of how to shape such processes and organise communication requires thorough consideration.

It was also demonstrated that the "Energy Revolution" faces serious challenges when it comes to practically implementing its goals with plans for offshore wind farms. One aspect is the conflict between wind park areas and shipping routes; another is underwater electric lines on the sea floor from which gravel and sand are being heavily extracted for purposes such as road construction and coastal protection. Fishing, both commercial and recreational, which, at the workshop, was viewed as a cultural heritage of the region, risks being damaged by the increasing use of the coastal waters. To what extent wind farms would not just be a nuisance but could also serve as a refuge for fish, is still controversial.

Along with aspects related to land use and spatial planning, current approaches to classifying types of marine habitats in the coastal water of Mecklenburg-Western Pomerania were presented. Determining exactly where these habitats occur is necessary for taking their protection status appropriately into consideration while planning. A controversial issue was the difficulty of finding areas suitable for compensation measures legally required by environmental law when intervening in the ecosystem of the sea, and what possible solutions for this situation could be.

The RADOST project was welcomed as a forum that creates opportunities to consider all the various uses of marine areas and their effects together in context. At the same time, the role of regional planning was referenced as an instance in which planning in various sectors is brought together and land use demands are balanced with each other.

Further Information:
www.klimzug-radost.de/termine/workshop-spannungsfeld-klimawandel-klimaanpassung

Mussel workshop at the Institute for Baltic Sea Research Warnemünde

On the 8th of June 2011, the first workshop on "Mussel farming in the Baltic: experiences and perspectives" took place at the Institute for Baltic Sea Research in Warnemünde (IOW). 26 participants from five different countries bordering the Baltic Sea exchanged ideas about the current developments and future possibilities of mussel farming. In the future, mussel farming in the Baltic Sea will most likely be simplified, since reduced ice coverage will mean less damage to crops. A wide span of issues was covered at the workshop: first hand reports from Denmark, Poland, Lithuania and Germany provided insights into the research of and practical aspects of breeding both mytilus and zebra mussels. Which materials are appropriate? In what locations do the mussels develop particularly well? The inclusion of mussels into a nutrient cycle (esp. nitrogen) was debated,

Anastasija Zaiko speaks about mussel farming in the Curonian Spit

and several uses of mussels are currently under discussion, i.e. mussels as feed, fertilizer or for human consumption. The question of how mussel farming can finance itself and/or become cost-efficient was raised; here, local consumption played a role as well as subsidies or a possible trade with nutrient certificates. In particular, the use of mussels to improve water quality through their filtration abilities was an important topic, all the more significant and timely considering the objectives of the Water Framework Directive. It is also possible that the problem of decreased water quality will worsen with climate change due to increased water temperatures. Mussel farming could help mitigate this. Nevertheless, mussel farming is, especially for Germany, a relatively new topic accompanied by many uncertainties that require further research.

Further information:
www.io-warnemuende.de/musselworkshop.html

International Activities

Climate Change, the Science Policy Interface and Coastal Zone Management – Riverside Chat with Michael K. Orbach and Hans von Storch

Prof. Hans von Storch (University of Hamburg, Germany) and Dr. Michael K. Orbach (Duke University, USA)

On 5 July 2011, an International Riverside Chat organized by Ecologic Institute brought together Michael K. Orbach (Duke University, USA) and Hans von Storch (University of Hamburg, Germany) in Berlin to discuss coastal climate change adaptation, as well as the role of climate sciences in policy-making and society. Framed by the RADOST-project, the event was held under the auspices of the US Embassy in Berlin.

Hans von Storch made initial remarks on 'post-normal science', where "facts are uncertain, values in dispute, stakes high and decisions urgent". He noted a decoupling of public opinion in recent years from growing scientific consensus on the anthropogenic nature of climate change. He tied this to failures in communication from the scientific community, as well as the existence of multiple competing knowledge claims on climate change, including a culturally constructed understanding largely created by the media. He contended that scientizing politics and politicizing science is highly problematic, due to the imposition of value judgments.

Visual impression of the River Side Chat by the French artist Pascall Vernot

Michael K. Orbach, agreed Prof. von Storch on the issue of scientizing politics, noting that science cannot state what 'should be' without imposing value judgments. Prof. Orbach then focused on projections that sea level will rise 1-2 m over the next century, highlighting that such a change is unprecedented in the history of built human environments and will challenge the very nature of existing legal edifices. The essential decision that mankind will face will be whether to defend or abandon coastal communities, and the differing manner in which humans value the coast mean this process will necessitate difficult decision making, long term planning, and significantly enhanced facilitation capacities.

A lively discussion ensued. Topics addressed included the need for the scientific community to communicate climate change science in a clear and responsible manner that still recognizes the array of other global challenges. Differing opinions were also raised on the adaptation challenge posed by 1-2 m of sea level rise, as well as the timeline over which such adaptation should be implemented. At the conclusion of the chat, the group agreed that, in light of the post-normal situation of climate change, the interplay between politics and science must change. Policy makers must acknowledge the inadequacy of current political timeframes. It was agreed that science is imbedded in specific cultural contexts, and so the array of perspectives involved mean that climate change adaptation must be undertaken in regionally sensitive manners.

Workshops on Regional Availability of Climate Knowledge in the Baltic Sea Region at Ecologic Institute in Berlin

In June 2011, two events were held at Ecologic Institute which were carried out as part of the project "Regional Availability of Climate Knowledge in the Baltic Sea Region". The project is affiliated with RADOST and funded within the funding programme "Circum Mare Balticum" initiated by the International Bureau of the German Federal Ministry of Education and Research.

A three-day workshop with more than 30 participants was conducted to foster the exchange of ideas between climate scientists (functioning as climate service providers) and users of climate data across various countries of the Baltic Sea region. Central questions of the exchange were to what extent existing information tools meet users' needs and are actually used by them, what improvements could be made, and what benefits can be expected from enhanced international cooperation. At the first part of the workshop, that took place in Berlin, scientists and stakeholders from the administration and politics of various Baltic countries discussed approaches from different scientific institutions in Germany, Sweden or Finland to make available regional climate knowledge to decision-makers and the public. Secondly, the practical use of these climate services was discussed with potential users at a local venue in Timmendorf Beach. There, an inclusive coastal protection project, as part of an Integrated Coastal Zone Management (ICZM) project, was presented.

Field trip to observe coastal defense measures (Scharbeutz)

Subsequently, three guest academics from Poland, Lithuania and Latvia visited Ecologic Institute Berlin. Lana Saksone (Latvia), Gintautas Stankunavicius (Lithuania) und Artur Skowronek (Poland) and academics from Ecologic Institute and the Helmholtz-Centre Geesthacht discussed climate adaptation strategies in the Baltic area. Starting point for the discussion was an online survey conducted at the beginning of 2011 on the perception of climate change and the implementation of adaptation strategies among political decision-makers on the German Baltic Sea coast. The survey was intended to indentify gaps in communication between climate researchers and decision-makers on the coasts with regard to climate change adaptation behavior. The aim of the working meeting was to prepare a second survey that will be extended to the other Baltic countries. To that end, "first-hand" information was gathered in the workshop on the political management structures and the stakeholders involved in Lithuania, Latvia and Poland.

Using detailed descriptions of the political structures in these three countries, it became clear that climate change is thematised there from a global perspective but is not perceived as a significant threat on the national level. Instead, economic issues are seen as more pressing. Thus, decision makers and the general public do not see the need for immediate action concerning climate change; rather, they associate it with positive effects for their respective countries (such as a longer vegetation period). Therefore, special adaptation measures hardly enter public debate. Coastal protection, however, is discussed often but is mostly treated as independent from climate changes.

In a summary of the workshop, a consensus was reached: the results of this workshop should lead to ongoing activities on the topic of climate knowledge dissemination. Therefore, further workshops will be held in autumn 2011 in cooperation with universities from Lithuania, Latvia and Poland to discuss the regional availability of climate knowledge with local stakeholders.

Contributors:

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Events

8th Baltic Sea Science Congress 2011
22–26 August 2011, St. Petersburg, Russia
www.bssc2011.org/

LOICZ Open Science Conference 2011 "Coastal Systems, Global Change and Sustainability"
12–15 September 2011, Yantai, China
www.loicz-osc2011.org/

Conference "Adapting to Coastal Change: local perspectives"
13–14 September 2011, Den Haag, Netherlands
www.imcore.eu/TheHagueConference2011/

Acqua Alta – Exhibition and International Conference on Climate Impact, Flood Protection and Hydraulic Engineering
11 – 13 October 2011, Hamburg, Germany
www.acqua-alta.de/en/homepage/

CIRCLE-2 Workshop "From National Adaptation Strategies to concrete adaptation actions"
20 – 21 Oktober 2011, Wien, Austria
www.circle-era.eu/np4/252.html

OURCOAST Stakeholders Conference
27–28 Oktober 201, Riga, Latvia
http://ec.europa.eu/environment/iczm/ourcoast.htm

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HSW Ingenieurbüro Gesellschaft für Energie und Umwelt mbH
IfAÖ
IGB
Leibniz Institute for Baltic Sea Research Warnemünde IOW
iöw Institut für ökologische Wirtschaftsforschung
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