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Science-practice dialogue on climate adaptation at the German Baltic Sea coast - 2nd annual RADOST conference

Scientists and practitioners have rarely had the opportunity to exchange their ideas on climate adaptation in such an up-to-date and direct way as at the second RADOST annual conference on 18 and 19 May in Travemünde. What are the expected impacts of climate change at the regional and local level at the German Baltic Sea coast? How can local stakeholders adapt to these? What kind of scientific information do they need as a basis for implementing such measures? These questions were discussed by 75 scientists in the fields of climate and natural science research, political science and sociology, together with representatives from politics, administration, economy and civil society in several science-practice dialogues. This offered stakeholders willing to promote climate

adaptation in their region another opportunity to get involved in the design of this development process.

The presentation of previously existing RADOST research was the starting point for discussions on several topics.

Communication among scientists and stakeholders is key in regional adaptation to climate change

A survey of communal decision makers in communities at the German Baltic Sea coast, conducted by Ecologic Institute and Helmholtz Zentrum Geesthacht [1] has confirmed that climate change is perceived as a problem in the region. However, while adaptation measures are considered necessary and urgent, there is significant uncertainty regarding adequate measures at the individual level. Both the comprehensibility of research results and the direct

exchange with scientists have been assessed as "moderate". This is addressed by the RADOST project [2] with its basic approach that aims to introduce research results from climate and natural sciences as well as from socio-economic research into social dialogue in a way that is accessible to all. For instance, regional climate offices contribute to this approach by providing information on regional climate development to stakeholders, holding forums and roundtables, establishing direct communicati on with administratio n boards, and

increasing publicity throughout the region.

Further presentations of project results pointed out the impacts of climate change to be expected at the German Baltic sea coast. Impacts will differ according to the various topics and fields affected:

In consideration of future scenarios of tourism at the German Baltic Sea coast, the impact of climate change is assessed as considerable; however, this is only one among several relevant factors, including changes in economic development and demographics. An additional indirect impact is expected due to new streams of visitors from countries that might lose tourists as a result of increasing temperatures or extreme heat.

In the agricultural sector, changes in crop yields are to be expected within the next 100 years due to regional increases in temperature, seasonal changes in precipitation (i.e. increased precipitation in winter and increased drought in spring and summer), shifting of vegetation zones, change in disease pressure and augmentation of extreme events. Climate scenarios that are currently developed in the context of RADOST shall provide further information on the areas that will possibly be affected in a positive or negative way, as well as on excess rates of nitrogen and phosphorus at the local level.

Scientists agreed that agricultural nutrient input and direct impacts of climate change will have a considerable impact on the Baltic Sea ecosystem within the next 100 years. While water temperatures rise, ice cover in the winter and salinity will continue to decrease. The implementation of protection measures such as the reduction goals of the Baltic Sea Action Plan were thus considered essential.

The effectiveness of specific measures such as the construction of mussel farms in order to reduce nutrient input in the Baltic Sea are currently

Climate change and coastal areas - practical implications and adaptation, Dr Gerald Schernewski, Leibniz Institute for Baltic Sea Research Warnemünde (IOW)

being assessed at the Institute for Baltic Sea Research.

Decision makers were present at the conference, amongst them Hans-Joachim Meier, Chief Officer at the Staatliches Amt für Landwirtschaft und Umwelt Mittleres Mecklenburg [3] (State Agency for Agriculture and Environment in Mittleres Mecklenburg), Wolfgang Vogel, Director of the State Agency for Agriculture, Environment and Rural Areas [4] (LLUR) in Schleswig-Holstein and Dr. Johannes Oelerich, Director of the Schleswig-Holstein's Government-Owned Company for Coastal Protection, National Parks and Ocean Protection [5] (LKN), rewarded the amliness of research conducted within RADOST. They moreover pointed out the importance of coordination and cooperation among administration bodies and of supporting participative processes in Baltic communities.

In a further module on currents in the Baltic Sea, RADOST researchers presented the effects that are to be expected as a result from climate change. It is known that a constant sea level rise by 1 m will lead to the loss of approximately 100m coastline.

Participants of the 2nd annual RADOST conference at Lübeck-Travemünde

However, at the local level a variety of impacts are expected. Through intense monitoring and detailed climate modeling, RADOST researchers have compiled high resolution data at the local level. For example in Warnemünde /Westermark elsdorf less

small waves and more average and high wave heights are to be expected in the future, which would lead to an augmentation in wave energy especially towards the end of the 21st century. In contrast, in Travemünde average wave heights are expected to drop, and smaller wave heights will be more common, following the opposite trend. According to these dynamics, changes in sediment transport parallel to the coastline are expected.

In addition to science-practice dialogues, further concrete implementation projects were presented at the conference, such as the climate pavilion in Schönberg and examination on the use of thermal energy in constructions for coastal protection. Multimedia events and further innovative presentation tools demonstrated the range of possibilities to prepare information on climate change for different stakeholders in an accessible way.

Further links:

- Ecologic Institute Project: Regional Adaptation Strategies for the German Baltic Sea Coast [6] (RADOST)
- Ecologic Institute Publication: 1. RADOST Jahresbericht [7]
- Ecologic Institute Publication: Emerging Climate Change Coastal Adaptation Strategies and Case Studies around the World [8]
- Ecologic Institute Publication: RADOST Akteursanalyse - Teil II: Interessen, Nutzungsansprüche, Ziele und Konflikte relevanter Akteure der deutschen Ostseeküste vor dem Hintergrund des Klimawandels [9]
- RADOST project website [10]
- KLIMZUG – Managing climate change in the regions for the future [11]

Keywords: climate change, adaptation, regional adaptation strategies, nature conservation, ports, maritime economy, tourism, coastal protection, renewable energies, water management, agriculture, Germany, Mecklenburg-Western Pomerania, Schleswig-Holstein, Baltic Coastline

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Links
[1] http://www.hzg.de/institute/coastal_research/index.html.en
[2] https://www.ecologic.eu/../../2926
[3] http://www.stalu-mv.de/cms2/StALU_prod/StALU/de/mm/index.jsp
[4] http://www.schleswig-holstein.de/LLUR/DE/LLUR_node.html
[5] http://www.schleswig-holstein.de/LKN/EN/LKN_node.html
[6] https://www.ecologic.eu/2926
[7] https://www.ecologic.eu/4000
[8] https://www.ecologic.eu/4049
[9] https://www.ecologic.eu/4702
[10] https://klimzug-radost.de/en
[11] http://www.klimzug.de/en/index.php