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Unpacking the co-production of knowledge in adaptation to climate change

Developing the concept of regional climate service – 10 years of coastal applications

Hans von Storch and Insa Meinke

At the Institute of Coastal Research of the Helmholtz Zentrum Geesthacht, the need to develop formats and concepts for building dialogues between stakeholders (incl. the public) and scientific institutions have become obvious some 10 years and more ago. In exchange with various stakeholders and with social scientists, a few key conditions for building such a dialogue emerged, namely the recognitions of a misfit between the prospective partners

- In terms of **demand and supply**: the scientific knowledge does in most cases not fit to what “users” want to have. This is sometimes due to the fact that the expected answers by stakeholders simply are unavailable (such as certain critical water levels in four decades at a location), but also because the scientists do not understand the context within which the “need” is formulated.
- In terms of **knowledge**. Scientists often enough consider their knowledge not the “best explanation of the time being” but unconditional “truth” (which may need some minor fine-tuning), and perceive the problem of stakeholders of having “no knowledge”, so that stakeholders need to “learn” from scientists the right views (“empty vessel concept”). However, other explanatory systems (“knowledge” = cognitive ability to act) exist, which allow to deal with problems. Thus, a competition, and blending, of knowledge claims takes place, compromising the ability to apply scientific knowledge as conditioning constraints for solution construction.
- In terms of **legitimacy** – scientists often hold the view that scientific knowledge would be sufficient for determining “right” solutions. Thus, the role of scientific knowledge as constraining but not determining solutions is not understood. On the other hand, stakeholders often accept this view, but try to arrive at their preferred solutions by helping “their views” to become scientifically legitimized.

Thus, regional climate service needs sustained interaction with specific stakeholders in a specific region, for allowing the building of a dialogue (Klimabüros), a mapping of competing knowledge claims, and a clarification of the role of science in the advisory process.

We discuss these components, by making use of almost 10 years experiences assembled in attempts to build practically useful knowledge about Northern German coastal climate change (with emphasis on storms, storm surges and ocean waves).

A surprising finding was the significant interest by commercial stakeholders in the analysis of recent and present conditions and risks.