

The contribution of scenario-planning to research and practice of adaptation to climate change: Theoretical and practical findings from a case study in Rostock, Germany

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Climate change is not only recognized as being one of the most pressing socio-political problems of our time, but is also characterized by a remarkable degree of complexity and uncertainty. Such complex problems cannot be addressed by a single scientific discipline, nor by science alone. Therefore, any attempt to deal with the inherent complexity of climate change in a more meaningful way entails a broad involvement of different methods, disciplines, world-views and knowledge forms, making a strong case for integrative, transdisciplinary approaches. Yet, how can it be ensured that multiple viewpoints, forms of knowledge and epistemologies as well as the underlying uncertainty of climate change are incorporated into a process of adaptation for such a complex phenomenon as climate change?

In this paper, we argue that scenario planning can be effectively used in transdisciplinary contexts as a tool for dealing with uncertainty, potential nescience and surprising events as well as for the integration of knowledge and different epistemologies. Of course, the utilization of the scenario planning approach as a method of coping with complex uncertainties related to future developments of climate change is not quite new. This also holds partially true for the use of scenario planning as a framework for the generation and exchange of knowledge, which is, however, rarely discussed in a more systematic way and is more or less treated as a positive side effect of the primary goal of scenario planning: coping with complex uncertainties and possible future developments. Our paper aims at turning special attention to this largely neglected epistemic effect of scenario planning in the context of adaptation to potential climate change impacts. In this sense, the scenario-planning process can be developed to an institutionalized epistemic platform for exchange and integration of different forms of adaptation relevant knowledge (scientific, lay or informal) if certain conceptual and organizational preconditions are met.

Using socio-ecological resilience as a common conceptual framework, we also intend to show how the scenario planning process that we started in Rostock, Germany in 2010 can be used for the development of resilient adaptation strategies to climate change at the regional level. Due to its inherent characteristics - such as a strong focus on problems of the practical world, dealing with potential nescience, uncertainty and surprise etc. - the concept of resilience can be used as a common conceptual framework for the scenario-planning process and even more importantly encourage boundary work which aims at facilitating exchange and integration of knowledge.

Recently, the first scenario workshop has been organized that addressed a broad spectrum of possible futures and climate change impacts in the context of spatial development. The integration of local and scientific knowledge forms has provided deeper insights into how the future might look like and facilitated the discussion on the specifics of the region, potential regional climate change impacts, possible adaptation strategies, which would not have been possible from a solely scientific perspective.