

**ABSTRACT**  
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**Concepts and practical examples of transdisciplinarity**

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Based on the discussion of the role of science as an orientation for social transformations, the paper first explores the basics of a transdisciplinary scientific approach combining and integrating classic curiosity driven research with goal oriented (advocacy) knowledge and catalytic, process-oriented expertise. This integration leads to process of co-generation aimed at merging different knowledge pools and providing orientation for collective action. The new transdisciplinary approach has several policy implications: a) it requires an interdisciplinary cooperation between technical, physical and social science expertise; b) it suggests having stakeholders participate not only in the interpretation of the results but also in shaping the research design from the beginning; and c) it requires a rigid monitoring system for assessing impacts and outcomes.

In a second step, the paper explains how these concepts have been applied to numerous case studies in Germany. The first example describes a transdisciplinary approach to design and prioritize climate protection policies in the German State of Baden-Württemberg. It included roundtables with stakeholders, expert workshops with scientists, citizen panels with randomly selected participants and an internet forum. The process was instrumental for designing a state climate protection plan in 2015. A second example will be the German Citizen Assembly on Climate Change Policies which was conducted in 2022. The process included an expert forum and a large assembly of randomly selected citizens. Stakeholder group representatives served as consultants to the two bodies of deliberation. The third example describes a process of designing regulatory action for the treatment of private data based on a scientific inquiry of potential risks and benefits. The process resulted in a detailed set of recommendations of which only few were adopted by the government. The paper will compare the three cases and analyze the factors that have led to more or less success of each case.

**Keywords:** transdisciplinary research concepts, catalytic, goal-oriented and curiosity driven research, case studies, experiences with applications