Summary of outcomes of the initiative "Empowering Policy Relevance of our Research" financed by the UZH University Research Priority Programme on Global Change and Biodiversity (URPP GCB)

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Initiative aims

The impact of our research is often measured in the number of publications or related indices, such as the h-index. The impact on policies/practitioners is more difficult to assess and less recognized in academia. *With this initiative, we aimed to strengthen the societal relevance of our research by fostering different pathways of science-policy-interfaces.*

Our exploration is guided by the following research questions:

- What are examples of good practices already in place for both initiating transdisciplinary collaborations and ensuring meaningful collaborations and outcomes?
- What gaps and challenges exist for the initiation of transdisciplinary collaborations and for ensuring meaningful collaborations and outcomes?
- Is there potential for improvement of these interfaces and networks? If so, where is that potential and how do we harness it?
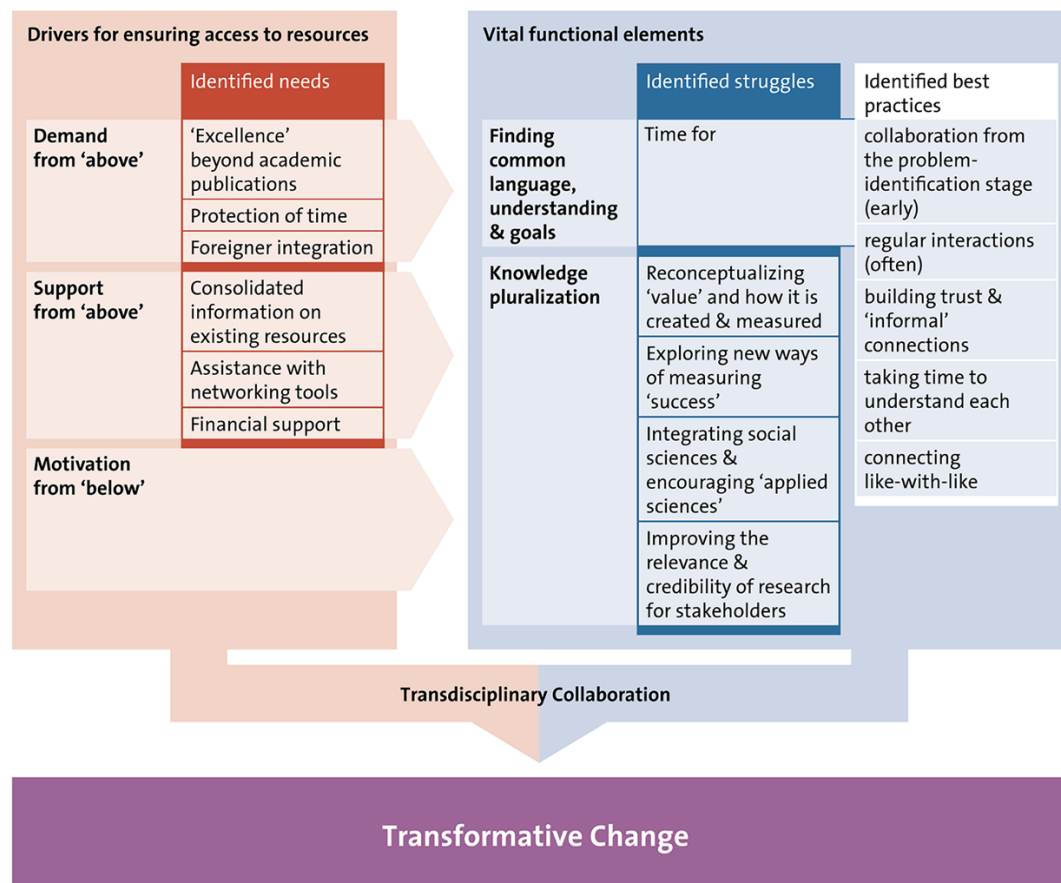
Main findings[1]

Figure 1: Drivers and elements of successful collaborations and identified needs and struggles, respectively, based on questionnaire and interview analyses.

Two of the major themes (see "Vital functional elements" in Figure 1) that emerged from this research were the continued difficulties with 1) finding a common 'language', understanding, and goals, and 2) meaningful pluralization of knowledge in transdisciplinary collaborations aimed at addressing global change and biodiversity loss.

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[1] All information stem from our research paper "Transdisciplinary transformative change: an analysis of some best practices and barriers, and the potential of critical social science in getting us there"

The former is widely cited in the literature as contributing to the failure of transdisciplinary transformative change initiatives (TTCIs) in the form of incoherent problem-framing, while the latter is often identified as contributing to the lack of structural transformative change (e.g., paradigmatic shifts) in completed initiatives. Another major theme reflected in TTCI literature was limited time. Moreover, based on our own extensive inter- and transdisciplinary experience, we agree with other experts that there is a persistent lack of understanding of the potential contributions of critical social science (CSS) to TTCIs. We thus argue that enhancing resource availability for TTCIs, especially tools for improving CSS literacy, could save time and support both problem-framing alignment and delivery of the structural/paradigmatic changes we aspire to.

Study design

We used a case study approach to investigate transdisciplinary collaborations in the thematic area of biodiversity and global change. We chose the Swiss science-policy-practice interface as both a representative and a unique case study. Representative in the way that global and national patterns are mostly congruent – but still uniquely set in a direct-democratic system. Thus, we are convinced that our results are applicable to a broader context.

Corresponding to our thematic focus, we surveyed and interviewed researchers and non-academic stakeholders from two different, ongoing research initiatives: The University Research Priority Program on Global Change and Biodiversity at the University of Zurich (URPP GCB), and the project ValPar.CH – Values of the Ecological Infrastructure in Switzerland, which involves five Swiss universities. The two initiatives facilitated our access to a very diverse set of researchers and non-academic stakeholders, all working to a different extent in interdisciplinary settings, some of them also with a strong transdisciplinary focus. Hence, we were able to receive insights from researchers and non-academic stakeholders with varying science-policy-practice exchange experiences. We follow a mixed-methods survey approach bringing together data from an online questionnaire (n=131) and qualitative, semi-structured interviews (n=7).

Recommendations

Many recommendations have been offered by those working on inter- and transdisciplinary collaborations more generally and TTCIs more specifically. Here we summarize these and our recommendations together for simplicity. We suggest ways forward to improve transdisciplinary opportunities and interactions, based on the data collected, available literature/theory, and our participant observation as academics in transdisciplinary collaborations:

Strengthen demand and support for TTCIs

- *Redefine excellence* to include, for example, long-term collaborations, care work, practical experience, and community-engagement.
- *Protect time for those wanting to get involved in TTCIs*, for example, by actively promoting long term funding, providing more permanent positions early in academic careers, and rewarding time spent in collaborations.
- *Improve integration of foreign experts* working at the science-policy-practice interface.
- *Consolidate information on existing resources*, including initiatives at different scales, funding opportunities, networking tools, collaboration tools, etc.
- *Provide dedicated assistance with networking tools*.
- *Explicitly provide more funding and funding schemes for TTCIs* (e.g., earmark funding specifically for TTCIs).

Account for vital functional elements

- *Collaborate as early as possible* (e.g., as soon as you begin to frame the problem).
- Meet with your team *as often as possible*, while still respecting differential levels of commitment within the team.
- *Take time to understand each other*; Learn to listen reflectively.
- *Actively build trust* and *make space for informal connections*.
- Consider arranging *separate meetings or events for people at similar career stages or in similar positions* within their organizations.

Incorporating more and multiple forms of knowledge can complicate the process of finding a common language, understanding, and goals. However, diverse knowledge forms, plural pathways, and acknowledgement of politics' role in pathway possibilities must be taken seriously to achieve paradigm shifts:

- *Reconceptualize 'value'* beyond economic output and, therefore, how it is created and measured.
- Explore *new ways of measuring 'success'* that reflect multiple forms of value.
- *Integrate (critical) social sciences and encourage applied sciences*.
- *Include affected stakeholders* to improve both the relevance and credibility of future research.

Develop critical social science (CSS) literacy tools

Critical social scientists are those who approach socio-ecological issues from critical theoretical perspectives. They focus on structural knowledge/power and agency dynamics and their causal links to systems decisions and resultant socio-ecological problems. CSS could open the floor for new alternatives and guide governing bodies and funding agencies in reconceptualizing 'value' and in exploring new ways of measuring 'success'. Guidance in knowledge pluralization would also include better integration of social and applied sciences, and meaningful inclusion of stakeholders.

It was clear from our data, the literature, and our own participant observations that most transdisciplinary collaborators want to include CSS but are unsure what that means or how to go about doing so. This fits with an observation our team have made as participants in inter- and transdisciplinary environments, where we have witnessed, and spoken with others who have witnessed, the repeated disconnect between what CSS has to offer and what non-CSS experts *think* they have to offer. We propose the development of CSS literacy tools to improve and accelerate integration of CSS in TTCIs. These tools could build on already existing tools designed to help engage different perspectives in inter- and transdisciplinary (ITD) collaborations.

Outputs

The project team has produced two major outputs that are publicly available.

- Research article published in "Biodiversity and Conservation"
  Sierra Deutsch, Roger Keller, Cornelia Krug, Annina Michel. 2023. Transdisciplinary transformative change: An analysis of some best practices and barriers, and the potential of critical social science in getting us there, https://doi.org/10.1007/s10531-023-02576-0

- Overview of science-policy-practice interfaces on the URPP GCB website:
  https://www.gcb.uzh.ch/en/resources/Science-Policy.html

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