

Real-World Laboratories – the Road to Transdisciplinary Research?



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Transdisciplinary research has become the magic word in sustainability science. Although definitions of this new type of research may differ, a consensus has evolved that the concept includes two major characteristics: 1. close relation to the *concept of transformation* (most often associated with sustainability) and the need to provide useful knowledge to facilitate such transformations;¹ and 2. the *co-creation of knowledge*,² that means, the process of research includes not only scientific actors but also representatives of politics, the private sector and civil society since these groups can provide special knowledge that helps to promote transformation. Furthermore, they possess agency for transforming knowledge into collective action.

Both characteristics apply to the concept of real-world laboratories (RwLs): in contrast to experiments in real labs, the stimuli are replaced by interventions, and the artificiality of the lab is overcome by testing these interventions in a real-world context. RwLs are normally directed towards a specific transformation goal (such as a new mobility concept). They are organized around a political intervention in close cooperation with decision makers and implementing agencies, and they include stakeholders during the research process. The idea of RwLs is to find strategies for transformation towards sustainable practices on a small scale that can inform larger-scale policies in the future.

This volume of *GAIA* includes a large variety of empirical investigations about the lessons learned from these RwLs. Do they keep what they promise? Are they able to bridge knowledge and action? Do they succeed in co-creating knowledge that is more robust and instrumental for triggering intended behavior changes? The answer is: it depends. Some case studies show that RwLs may not reach their goals because stakeholders do not find a common ground, or the task seems too ambitious, or the initial euphoria fades away, some demonstrate that the intended goals were even surpassed and the cooperation of the stakeholders extended to other areas and fields. It is too early to produce a systematic review of the factors that shape success or failure but three lessons can be drawn: 1. researchers need to have familiarity with the community in which the labs are situated, and they need to be aware of its living conditions and history; 2. researchers must place major effort in screening and selecting stakeholders for this inclusive process as the legitimacy of the procedure rests on the impression of fair representation and competent process facilitation; 3. all actors need to deliberate about what type of knowledge they can offer that helps reaching the desired goals.

Of course, more experiences with RwLs are necessary to confirm these findings. Yet, the picture that emerges here is clear: RwLs are a viable and promising concept for realizing the vision of transdisciplinary research.

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¹ Hirsch Hadorn, G. et al. 2008. The emergence of transdisciplinarity as a form of research. In: *Handbook of transdisciplinary research*. Edited by G. Hirsch Hadorn et al. Berlin: Springer. 19–42.
² Vilsmaier, U., D. Lang. 2014. Transdisziplinäre Forschung. In: *Nachhaltigkeitswissenschaften*. Edited by H. Heinrichs, G. Michelsen. Berlin: Springer. 87–114.