

BaWü-labs on Their Way

Progress of Real-world Laboratories in Baden-Württemberg



Baden-Württemberg

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Real-world laboratories aim to create relevant and transferable knowledge and foster societal transformation towards sustainability. Members of the existing laboratories in Baden-Württemberg and experts have discussed the progress and the challenges of these innovative research settings.

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The research approach *real-world laboratories* (German “Reallabore”) recently witnessed a strong increase in academic and political interest. They are innovative – and transformative – research settings for conducting transdisciplinary research with and within society. As a pioneer in real-world laboratory research, the federal state of Baden-Württemberg currently finances 14 BaWü-labs (Wagner and Ertner 2016). These projects aim to develop conceptual frameworks as well as good practices strengthening the societal impact of research for sustainability. The overall funding program is designed as a learning process. There-

fore an accompanying research consisting of two teams¹ was established, supporting the BaWü-labs, for example, by providing knowledge around the use of methods and transdisciplinary project management as well as co-hosting several events that foster dialogue between and beyond the lab members (Schöpke et al. 2015).

The Inter-colloquium

In April 2016, the first so-called *inter-colloquium* took place in Stuttgart, designed and organized by the Ministry of Science, Research and the Arts Baden-Württemberg and the accompanying research team *ForReal*. This event combined a status seminar where members of the labs reported on the progress of the first seven BaWü-labs (with funding beginning in January 2015) with a workshop involving international scholars from sustainability science and science studies. The goal of the workshop was to provide feedback for the labs and to open up a broader debate on epistemological, conceptual and methodological questions revolving around real-world labs (Wagner and Grunwald 2015).

In the first part of the inter-colloquium, *Uwe Schneidewind* (Wuppertal Institute for Climate, Environment and Energy) focused his impulse on the pioneering role of real-world labs as part of an experimental turn

in transformative research. The following presentations about the labs’ progress highlighted the richness of approaches in the BaWü-labs and their potential to enable “real” transdisciplinarity, including processes of co-design, co-production and putting results into action collectively. While this short article cannot do justice to this diversity of approaches², we present here challenges that the BaWü-labs encountered as well as recommendations for their development.

Challenges Reported by the BaWü-labs

First, the project teams mentioned the demanding task of establishing and managing a real-world laboratory as an inter- and transdisciplinary endeavor, engaging with complex societal change processes. They reported difficulties in linking a broad variety of research aspects and disciplinary topics, establishing productive ways of collaboration between scientist and societal actors, as well as coping with various inter-

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¹ One team is based at the University of Basel, (<http://bit.ly/1QmT6y4>), a second team called *ForReal* is formed by Leuphana University of Lüneburg, the ISOE – Institute for Social-Ecological Research and the Wuppertal Institute for Climate, Environment and Energy (<http://bit.ly/1SbsvVi>).
² <http://reallabore-bw.de>, see Schöpke et al. (2015) for a rough overview on the projects.

faces in order to engage with “social reality”. Lab members pointed out a broad set of competencies the researchers should have or need to develop that include especially communication and management skills.

Second, mitigating unexpected conflicts amongst project partners posed another challenge. Most of the participants pointed out the importance to take into account the wide variety of expectations of all actors involved regarding the expected outcomes of the labs. Non-scientific partners are, for instance, less interested in scientific reputation and publication outputs and more interested in the concrete solutions created. While failures may still produce valuable evidence for scientists, partners from the practice may have a different opinion on this. Therefore most labs reported about the importance of transparency in decision making and establishing ownership of the project.

Third, the development of long-term organizational structures does not fit with the rather short-term connection of lab activities, for example, within the academic curriculum and the pressure of producing results. Overall, high flexibility and the willingness to embrace uncertainty appear to be key requirements for successful real-world laboratory research.

Fourth, setting up new curricula for research-based learning in the framework of the real-world labs is not yet anchored in the knowledge of respective transdisciplinary teaching concepts. They must be adapted to the specific setting and also further developed.

Presenters proposed various recommendations to support good practice in response to experienced challenges. Amongst others, these included:

- the importance to develop an overarching theoretical framework, building on a review of existing real-world laboratories and respective experiments that included the definitions of key terms and methods;
- the importance to clarify the overarching and shared goals of the labs, especi-

ally with regard to the question of whether the labs are established for initiating transformative action, or aligning with already existing approaches;

- the necessity to empower partners from the civil society to benefit from and contribute to transdisciplinary collaboration by 1. starting the co-design of the project already when developing the funding proposal, 2. easing (“unbureaucratic”) access to funds for external partners;
- the practicality to cultivate flexibility and “not knowing” as a working mode. This also includes the incorporation of different working schedules and rhythms of scientists and other project partners;
- the proposal to set up more supporting funding and organizational conditions, for example, in terms of prolonged funding periods, that benefit continuity and match the time span of transformative processes addressed in real-world labs;
- the utility to develop perspectives on how to scale up implementation of the research results within society.

Workshops on Broader Topical Areas

Andrew Karvonen (University of Manchester) addressed in a second impulse statement core challenges and raised five imperatives for lab research: 1. be passionate, but humble, 2. respect boundaries, 3. continuously monitor stakeholder buy-in, 4. be honest about deficiencies and limitations, 5. embed knowledge transfer from the start.

After Karvonen’s input, six workshops took place, comprising participants from the BaWü-labs and the invited experts:

- **Andrew Karvonen** and **Michael Stauffacher** invited participants to reflect on two core challenges of real-world labs, as well as their interrelation: the production of scientific evidence and the governance of real world change.
- **Marcus Andreas**, **Kora Kristof** and **Iris Kunze** offered a debate on projects driven by civil society, which create social innovation and societal transformation.
- **Alexandra Lux** and **Timo von Wirth** dedicated their workshop to the transdisciplinary co-creation of knowledge in real-world labs, including the role of boundary objects and differentiated processes of knowledge integration.

- **Cordula Kropp** and **Larissa Krainer** focused their workshop on processes of co-operation and participation in general and the mitigation of stakeholder conflicts in particular.
- **Matthias Groß** and **Thomas Jahn** invited participants to reflect on real-world labs and real-world experiments from an epistemological and philosophy of science perspective.
- Finally, **Guido Caniglia** and **Ariane König** combined reflections on real-world labs as spaces for learning with interactive explorations on experiential learning activities.

Outlook

The *inter-colloquium* closed with a panel comprising **Armin Grunwald**, **Ariane König**, **Andrew Karvonen**, **Kora Kristof**, **Michael Stauffacher** and **Maja Göpel** who reflected on the role of real-world labs in fostering transformative research. Reflections and discussions will continue in and around the two real-world laboratory funding lines and the associated events and workshops. The *International Sustainability Transition (IST) Conference 2016* in Wuppertal included, for example, sessions on the BaWü-labs as well as various national and international lab-like research projects.

In spring 2017, the second *inter-colloquium* will take place. Information and reports will be continuously communicated here in *GAIA*.

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