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Strengthening the Transformative Impulse while Mainstreaming Real-World Labs

Lessons Learned from Three Years of *BaWü-Labs*

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Real-world labs have been proposed as a central catalyst to advance research for sustainability and societal transformation. In Karlsruhe, the scientific community presented new experiences and results from more than three years of pioneering real-world lab research in Baden-Württemberg (BaWü-Labs) and discussed the lessons learned with practitioners.



Strengthening the Transformative Impulse while Mainstreaming Real-World Labs. Lessons Learned from Three Years of *BaWü-Labs*
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Laboratories in societal settings gained momentum in the last decade as part of a larger experimental turn in social sciences addressing sustainability topics (Schäpke et al. 2018). A recent example are real-world laboratories (RWLs). The federal state of Baden-Württemberg pioneers RWL research and funded 14 *BaWü Labs*¹, beginning in 2015. Now, a symposium took place at April 27 in Karlsruhe, to present the state of affairs to a broad audience, reflect achievements, outline developmental potentials, and to celebrate. Complementary accompanying researchers, funders and practice partners provided inputs and overarching reflections. In

line with the experimental character of RWLs, interactive formats invited for debates. The event was hosted by the Ministry for Science, Research and the Arts Baden-Württemberg (MWK), the Karlsruhe Institute of Technology (KIT) and the accompanying research team *ForReal*². Some 250 persons participated, including researchers and practitioners from *BaWü Labs*, funders, the broader scientific community and policy-making. We present an overview of the contributions and summarize main results of the event.

Speakers and Contributions

Felix Wagner (MWK) opened the symposium with a recap on research for sustainability and the funding of RWLs in Baden-Württemberg. *Lucia Reisch* (Zeppelin University) provided a keynote on RWLs as a motor for transformative sustainability research and practice.³ Then, representatives of the *BaWü Labs* and the accompanying research teams invited for direct exchange on their approaches and results in an exhibition. Three welcoming addresses contextualized the event: the Minister of Science, Research and the Arts *Theresia Bauer* (MWK), mayor of Karlsruhe *Frank Mentrup* and vice-president of KIT *Thomas Hirth*. Both accompanying research teams, *Uwe Schneidewind* (Wuppertal Institute for Cli-

mate, Environment, and Energy) as chair of the expert commission on research for sustainability in Baden-Württemberg and *Oliver Parodi* (KIT) as head of local *BaWü Lab Reallabor 131* provided overarching reflections. Building on inputs provided, a fishbowl discussion elaborated on the future of the RWL research approach. *Marcus Andreas* and *Nikolaus von Stillfried* (RaumZeit) hosted a systemic constellation to explore the core elements of RWLs, relations with other actors engaged in transformations and future evolvments. The symposium finished with a dinner and a cultural program addressing the topics of transformation in artistic ways (see figure 1).

Main Results

RWLs Are Successfully Growing

Within a short period (starting approximately 2012), RWLs have reached consid-

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1 For an overview see www.reallabore-bw.de (in German only)

2 Two accompanying research teams supported the *BaWü Labs*: Team *ForReal* consisted of *Daniel J. Lang* and *Niko Schäpke* from Leuphana University, *Franziska Stelzer* from Wuppertal Institute for Climate, Environment, and Energy, and *Matthias Bergmann* from Institute for Socio-Ecological Research; Team *Basel* of *Rico Defila* and *Antonietta Di Giulio* from University of Basel.

3 Presentations provided can be downloaded here: <http://t1p.de/y4prde>.

erable attention in the German research and research policy landscape, and in sustainability oriented civil society. For example, larger research networks such as *Helmholtz Alliance* and *Leopoldina* relate to or even set up RWLs (e.g., talks *Reisch*, *Schneidewind*). Team *ForReal* highlighted RWLs as an ideal-type example of a larger trend towards society-based labs on sustainability topics. Due to their flexibility, RWLs allow to build bridges between different lab-like approaches in sustainability research.

RWLs Have a Transformative Potential, which They Need to Maintain

Uwe Schneidewind plead for a maintenance of the transformative purpose of RWLs in research and society. He highlighted two dangers: to adopt the label of RWLs without considering their implications (such as co-design or reflexive experimentation) and to deal with RWLs primarily from a self-oriented research perspective, without considering their societal aims. *Oliver Parodi* called for experimenting with fundamental, potentially transformative alternatives in RWLs, building RWLs on the normative grounds of sus-

tainability. *Rico Defila* and *Antonietta Di Giulio* acknowledged the transformative impulse of RWLs to the science system and argued for an expansion of RWLs beyond the sustainability niche, to address other societally legitimate, common good oriented purposes.

RWLs Are (Only) One Essential Part of Research for Sustainability

RWLs were imagined as central catalyst of a research for sustainability (MWK 2013), intended to support reforms in various areas, such as education or the institutionalization of sustainability science in the overall research landscape in Baden-Württemberg (e.g., talks *Schneidewind* and *Parodi*). On their own, RWLs nevertheless are not sufficient for developing a research for sustainability. Rather, labs need to be embedded in a transformation of the science system itself, towards transdisciplinary and society-oriented structures.

RWLs Provide Space and Leverage for Sustainability Initiatives

RWLs reveal that research can practically address sustainability challenges in a so-

cietal accessible way, contrasting the impression of “ivory tower” science (talk *Bauer*). Further discussion outlined the capacity of RWLs to provide space and legitimacy for existing sustainability initiatives, strengthening their voice in local policy-making. This countered tendencies of disenchantment with politics, while experiences with labs showed how they function as focal points for a local culture of sustainability.

RWLs Bridge the Gap between Knowledge and Action

RWLs pose a systematic approach to bridge the gap between knowledge and action in a science-society collaboration. They allow for experimentation and establish legitimate possibilities to take risks, encouraging bold design and development of innovative solutions to sustainability challenges locally. This was reported strongly during the fishbowl discussion. While risks entailed by real-world experimentation demand transparency and joint process ownership between research and society, existing societal challenges motivate researchers to take on their societal responsibility in new ways. ➤



FIGURE 1: Performance by Freiburg Scientific Theatre: artistically exploring ways of collaboration and experimentation in real-world labs.

RWLs Expose Success Factors

Building on surveys and interviews with *BaWü Labs* and a literature review, *ForReal* identified success factors of RWL research: Empirically, the real world impact is considered more important for RWL success, than scientific outputs. RWLs are either structured as a continuous project, as separate experiments or an intelligent combination of both. Communication efforts and transdisciplinary collaboration are core elements of the process design, a longer-term exposure and high visibility of measures within the RWLs are key to the labs impact. Up-scaling and transfer of successful intervention strategies to new contexts are considered important, but the contribution to a broader transformation remains to be concretized.

RWLs Require Particular Support

The realization of RWLs is demanding, as the format per se depends on a specific supporting infrastructure and funding (e.g., talk Defila and Di Giulio). All *BaWü Labs* recommend key points for setting up RWLs, put down in a joint "policy paper" (see Parodi et al. 2018) which was handed over to Theresia Bauer. Recommendations include to build capacities and infrastructures for transdisciplinary work, funding periods of a minimum of five years and to provide accompanying research. The particular situation of early career researchers should be considered, moderation and mentoring in RWLs work secured and an evaluation committee with expertise in transdisciplinarity established. The authors recommend an overarching support structure, a dual trusteeship from research and societal actors, the realization of educational potentials and a positioning of RWLs as institutions of sustainability (talk Parodi).

RWLs Call for Institutionalization

RWLs need time to realize their potential. Three years of *BaWü Lab* experiences allowed to develop guidelines for good practice of transdisciplinary processes in RWLs. Given that transformative societal change

does require longer periods, selected *BaWü Labs* received a prolonged funding of two years. Beyond this, long-time oriented RWLs need to be established (talks Parodi, Defila and Di Giulio). In this regard, the upcoming establishment of the Karlsruhe Center of Transformation represents a laudable example of institutionalization (talk Hirth).

Outlook

Open questions remained. This includes possibilities to evaluate quality in RWLs, and to embed this in a respective incentive system. To support transdisciplinarity more broadly, societal impact should be implemented as an evaluation category (see the United Kingdom for an example). Complementarily and oriented towards research, participants voiced high interest in publication on RWL results, going beyond methods and processes, including English publications. To date, approaches and results from *BaWü Labs* are for example documented in the TATuP thematic issue 3/2016⁴, the edited book *Transdisziplinär und transformativ forschen* (Defila and Di Giulio 2018), the GAIA special issue S1/2018⁵, and the mentioned policy paper (Parodi et al. 2018).

We thank all participants of the symposium, particularly those from the *BaWü Labs*, invited guests and speakers, and interested audience.

MORE INFORMATION:

<http://t1p.de/y4pr>

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