



Exploring the potential for transdisciplinary co-production in the case of nuclear waste disposal (W11)

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Abstract. Citizen science and other transdisciplinary approaches become more important in environmental policy and within academia. Scientists benefit from citizens as they generate more socially robust knowledge. In the contested theme of nuclear waste management (NWM), such approaches can be particularly valuable, but they also face challenges.

Within our transdisciplinary research project (<https://www.transens.de/>, last access: 12 June 2023), we work jointly with 14 citizens (citizen working group or CWG) who are interested in the topic without being activists or having a specific agenda. The CWG helps us to enrich the research process with experiential knowledge. Parallel to gaining scientific knowledge, trust can be built due to close collaboration. However, the CWG becomes more scientific over time and no longer resembles the general public. This may have positive effects, as discussions can go deeper into scientific concepts, for instance. However, the increased literacy of a CWG may be criticized for lacking impartiality.

Moreover, we established a local measurement lab at the village of Remlingen near the Asse II site. This lab is open to the local public for measuring environmental samples using techniques such as gamma spectroscopy. Experts from the Institute of Radioecology and Radiation Protection (IRS) in Hanover provide assistance concerning technical and radiological questions and appropriate interpretation. One essential aim is to enable citizens to measure their own samples under scientific guidance.

During the workshop, we would like to discuss the benefits and challenges of such collaborations, going beyond the aforementioned examples. Potential key questions are as follows:

- How to ensure the quality of the citizens' work (measurements) and interpretation of results?
- Participation and in particular co-determination lead to a certain responsibility for the outcome: are the citizens aware of this and willing to assume it?
- To what extent is extended participation with empowerment for decision-making still in line with representative democracy?
- Is there a possibility for multiplication and/or upscaling of small-scale approaches?

We propose a workshop (90 min) setting with a rich picture methodology (https://naturwissenschaften.ch/co-producing-knowledge-explained/methods/method_factsheets/rich_picture, last access: 12 June 2023). After brief inputs on named examples, we will work in groups of approximately five participants. Participants draw a picture (e.g., on a whiteboard or flip chart) with a focus on the positive results and challenges of citizen participation in research projects. After finishing their pictures, the participants note on cue cards which findings surprised them the most. This is followed by a final discussion.

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