



Perceptions of surface facilities of a potential disposal site and the role of place attachment

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Abstract. Building a deep geological repository for the final disposal of nuclear waste implies not only changes in the underground but also landscape changes on the surface. Transformations of the surface – the landscape – are accompanied by changes in the perceptions of places and the activities of those living close-by, e.g. regarding leisure activities (cf. Devine-Wright and Batel, 2017; Gailing et al., 2020). Therefore, changed perceptions of a landscape may also have effects on the place attachments of individuals and collective groups who live in those transformed regions (cf. Knaps et al., 2022; Mihaylov and Perkins, 2014). Place attachment is defined as the emotional bond of individuals or collectives to certain locations or landscapes, which include both physical objects and social aspects (cf. Lewicka, 2011). Potentially affected local people want to be able to have an idea of what a repository might look like, even on the surface, how this would fit into the surrounding landscape, and what effects the construction and operation of a repository might have on a region. In this context, participation plays an important role, as shown, for example, by the extensive discussion on the placement of surface facilities in the sectoral plan procedure for deep geological repositories in Switzerland (cf. Neles, 2022).

In the project TRANSENS, a transdisciplinary project on disposal research, we conducted an empirical study with different actors on the role of place attachment and perceptions of models of surface facilities of a repository. Our research question is as follows: how do residents with different place attachments perceive landscape changes? For this purpose, we designed an experimental workshop setting with different actors (students, people from different regions in Germany, and transdisciplinary partners in TRANSENS). In this experimental setting, we conducted two surveys which were centred, first, on place attachment and, second, on perceptions of the visualized models of surface facilities integrated in different landscapes (which we showed the participants in a 3D virtual space). We also included a group discussion on the different perceptions and evaluated how the discussion changed the perception. The results of the workshop show that place attachment among the participants of the workshop is more or less pronounced and influences the perception of the visualized surface models differently (e.g. those who define “home” by its landscape elements attach great importance to changes in the landscape). Aesthetic aspects in relation to the embedding in the landscape are emphasized in the discussion. In addition, the group discussion had a rather positive influence on the perception of surface facilities.

The findings of the experimental workshop are integrated in a transdisciplinary research design on spatial effects and governance in which we have already conducted several interviews (e.g. on place attachment) with individuals from three different regions of Germany. With our research, we aim to elaborate on how these findings are to be included in a place-sensitive and participatory long-term governance concept (cf. Mbah and Kuppler, 2021).

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