

Perceptions on intolerable climate risks and potential limits to adaptation in Austria

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Background

The accelerated rate of climate change and the resulting increased frequency and intensity of natural hazards raise new questions regarding the effectiveness of adaptive measures, and whether limits to adaptation could be reached. Adaptive capacity is influenced by the awareness of decision-makers, making it important to understand their perceptions on climate change, adaptation measures and potential limits. We aim to provide empirical policy-relevant scientific insights into climate-related risks "beyond adaptation" that may play a role in Austria, now and in the future.

Methodology

- Initial stakeholder identification and mapping
- Semi-structured interviews (n=26) with experts from research (19%), administration (42%), public institutions (31%) and the private sector (8%)
- Qualitative Content Analysis (Mayring, 2010) of interviews in NVivo

Results: concerns, constraints and measures

Most important concerns: increasing temperatures and more frequent precipitation extremes (→higher flood and drought risks)

Potential adaptation constraints:

- Responsibility for individual risk reduction very low
- Low acceptance of stronger adaptation measures among the population
- Low sense of urgency among the population and decision-makers, e.g. caused by lacking knowledge on future conditions
- Low risk awareness leads to construction of infrastructure in risk zones with insufficient protective measures

Discussed measures to overcome adaptation constraints:

- More responsibility for individuals for own risk reduction
- More restrictive and coordinated spatial planning
- More education on climate change and disaster risks at schools, universities and companies
- More participatory processes involving the population

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Key definitions

Adaptation limit: The point at which an actor's *objectives* (or system needs) cannot be secured from *intolerable risks* through adaptive actions (IPCC, 2019)

Intolerable risks: Those which "exceed a socially negotiated norm (e.g., the availability of clean drinking water) or a *value* (e.g., the continuity of a way of life) despite adaptive action" (Dow et al., 2013, p. 385)

Values [...] frame how societies develop rules and institutions to govern risk, and to manage social change and the allocation of scarce resources" (Adger et al., 2009, p. 338 based on Ostrom, 2005).



Flooding in Pinzgau, Salzburg, in July 2021. Copyright: Land Salzburg/Franz Wieser

Conclusions

Currently, there are no concerns regarding adaptation limits at national scale, but at individual or local levels

More awareness for and knowledge of possible impacts from climate change are needed to proactively plan and implement effective adaptation measures and to identify potential adaptation limits

More frequent and intense hazard events will lead to discussions on values and preferences:

"What is this building, this activity, worth? How much are we willing to pay for it?"

The involvement of relevant stakeholders and the general population is necessary to identify societal values and needs and will increase the understanding of adaptation limits and the acceptance of (transformative) adaptation measures.