

AK Naturgefahren-/risiken meeting

22-23 May 2025, Innsbruck (Austria)

Call for participation

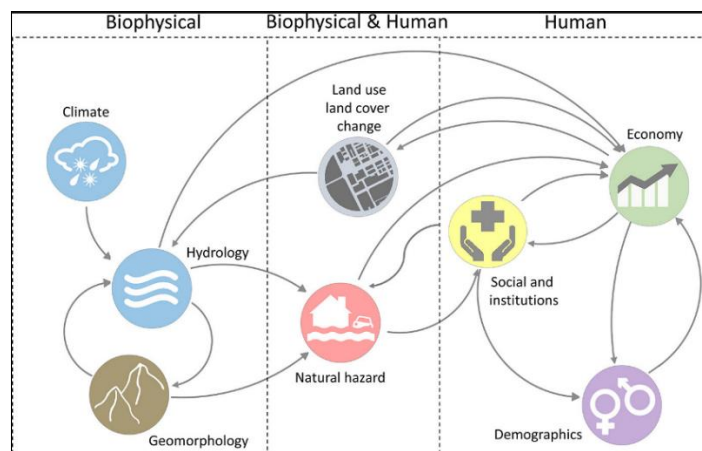
Interdisciplinary approaches on risk and resilience related to natural hazards – what can mountain research learn from other domains?

Synopsis

The focus of the next annual meeting of the AK Naturgefahren-/risiken is a reflexion on inter- and transdisciplinary approaches in natural hazard research and what specifically mountain research can learn from them. We aim to discuss questions such as “is my own disciplinary approach sufficient to understand the complexity of risk and resilience?”, “did I already think about other disciplines that I would need to adequately understand phenomena related to natural hazards, and if so, how could they be integrated?”, “why and how should I integrate stakeholders in disaster risk research”, or “what is the contribution of my interdisciplinary approach to understanding communal risk and resilience?”. We therefore cordially invite colleagues from physical and human geography, geomorphology, climate research, socio-hydrology, social ecology, sociology, science communication and related fields concerned with understanding disaster risk from an inter- and transdisciplinary perspective.

Interrelated risk and resilience dynamics – integrated perspectives on coupled human-landscape systems

Climate change is influencing the probability and magnitude of extreme weather events, and in consequence, of natural hazards processes. In conjunction with exposure and vulnerability, these three factors result in changing risks that challenge the resilience of local communities. For over a century, there have been calls for more systemic and integrated approaches to understand how communities cope with single and multi-hazard risks. Meanwhile, several scientific communities have adopted such perspectives.



Sources: Margreth Keiler, Hossain et al. 2020 [10.1016/j.scitotenv.2020.138322](https://doi.org/10.1016/j.scitotenv.2020.138322)

The analysis of coupled human-landscape systems has been a prominent feature in sustainability science as well as in the fields of socio-hydrology (e.g. flood risks), socio-geomorphology (geomorphic

risks and processes), and disaster risk reduction and resilience. In this context, conceptual frameworks serve as boundary objects for interdisciplinary research and support the understanding of the complex interrelations and feedback loops within and between the biophysical and social/human components. These frameworks enable the examination of key issues such as the temporality and spatiality of relevant processes and dynamics, and the specific interrelations between those factors and processes. For example, regions may share similar geophysical characteristics, but their communities have considerable differences in how they cope with hazard risk through formal and informal governance mechanisms.

Understanding the evolution of risk and resilience

Several theories exist which allow to conceptualize how societies manage risks coming from natural hazards. Among those, the theory of complex adaptive systems is a promising tool for understanding how coupled human - landscape systems cope with risks over time and how their resilience is evolving. The concepts of non-linearity and emergence, co-evolution between human and landscape systems, and uncertainty are central to the conceptualization and modelling of how societies respond to both short-term challenges (e.g. natural hazards) and long-term stressors (e.g. socio-economic change). Societal change is the consequence of learning from, adaptation to those events, or even resistance or ignorance. How communities cope with those events are important characteristics for understanding the resilience of socio-ecological systems. Those are central components within the theory of complex adaptive systems. Moreover, the theory of complex adaptive systems not only provides a theoretical framework for analysing coupled human-landscape systems, but it is also a highly suitable foundation for modelling such systems: 1) Investigation of the complexity that is place-based and comprises diversity and heterogeneity; 2) modelling emergent phenomena; and 3) addressing risk cascades and understand the coupled biophysical and human dynamics involved in multi-hazards. Considering such questions and adopting a systemic and integrated perspective facilitates a more nuanced understanding of multi-hazard events and processes of societal learning, co-evolution, and change driven by the risk posed by multi-hazards in different landscapes.

Focus of the next meeting

The group “Coupled Landscape-Human Systems: Risk & Resilience (CHLS) will host **the next meeting of the AK Naturgefahren/-risiken on 22-23 May 2025**. The meeting will take place in Innsbruck (Austria), located in the Eastern Alps. Despite the increasing urgency to cope with multi-hazards, scientific interdisciplinary analyses of risk and resilience in relation to natural hazards in mountain regions are scarce. Mountain research can benefit greatly from integrating insights from interdisciplinary studies concerned with natural hazards and disaster risk reduction from related fields such as socio-geomorphology, socio-hydrology, or multi-hazard assessments to enhance the integration of social and human aspects in geomorphic analysis of mountain hazards. We invite participants to provide their ideas, experiences, and insights about conceptual and numerical models that explore (the evolution of) communal risk and resilience in different landscapes. Those will be used as the foundation for our investigation of the integration of geomorphological and human geography approaches for understanding the resilience of mountain communities when confronted with natural hazards. We are looking forward to exciting discussions on systemic, inter- and transdisciplinary approaches on natural hazards and how communities manage risks and assess their resilience. Next to discussing barriers of resilience, we are particularly interested to learn from successful cases of resilience building.

Please note: there will be no talks as in previous meetings of the AK. Participants are invited to present posters focusing on interdisciplinary questions and issues discussed above. The overall format

will be a workshop-style. It is envisaged to develop a joint opinion paper with those participants willing to contribute.

Keynote speakers:



[Simone Sandholz](#)
United Nations University



[Martin Mergili](#)
University of Graz



[Margreth Keiler](#)
University of Innsbruck and
Austrian Academy of Sciences

Registration:

For organisational reasons, please submit your abstract and register via this form <https://forms.office.com/e/e3Jz8qXzt2> until March 31st, 2025. Notification of acceptance until April 9th, 2025.

The conference is free of charge for participants. Coffee breaks will be provided by the conference organizers, travel and accommodation needs to be organized and covered by the participants; dinner will be organized but needs to be covered by participants.

Conference venue:

BfÖ - Büro für Öffentlichkeitsarbeit,
Universität Innsbruck
Josef-Hirn-Straße 15
6020 Innsbruck

Conference dates:

Thursday, May 22nd 1330 – app. 1900

Friday, May 23rd 0830 – 1300. If enough participants are interested, we will organize an excursion with a focus on technical and biological avalanche protection measures for the city of Innsbruck. The excursion includes trail hiking and ends at app. 1800.

List of potential hotels (early booking recommend):

- aDLERS Design Hotel*****S
- Austria Trend Hotel Congress Innsbruck*****
- Basic Hotel Innsbruck***
- Best Western Plus Hotel Goldener Adler****
- Hotel Mondschein Innsbruck*****
- Hotel Meininger
- Hotel Neue Post****
- Marriott AC Hotel *****

- Hotel Innsbruck****
- NALA individuellhotel
- Romantikhôtel Schwarzer Adler****
- STAGE12 HOTEL BY PENZ
- The Penz Hotel****

Speakers of the AK: Sven Fuchs (BOKU Vienna), Matthias Garschagen (LMU Munich)

Local organizing committee: Margreth Keiler^{1, 2}, Andreas Mayer², Annemarie Polderman¹, Sophie Stoffl²

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If you have any open questions, please contact sophie.stoffl@uibk.ac.at.