REKLIM Helmholtz-Verbund Regionale Klimaänderungen

Helmholtz Climate Initiative
Regional Climate Change

HELMHOLTZ RESEARCH FOR GRAND CHALLENGES

Topic 6 & 7: The regional risk perception of extreme weather events in Germany

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Motivation

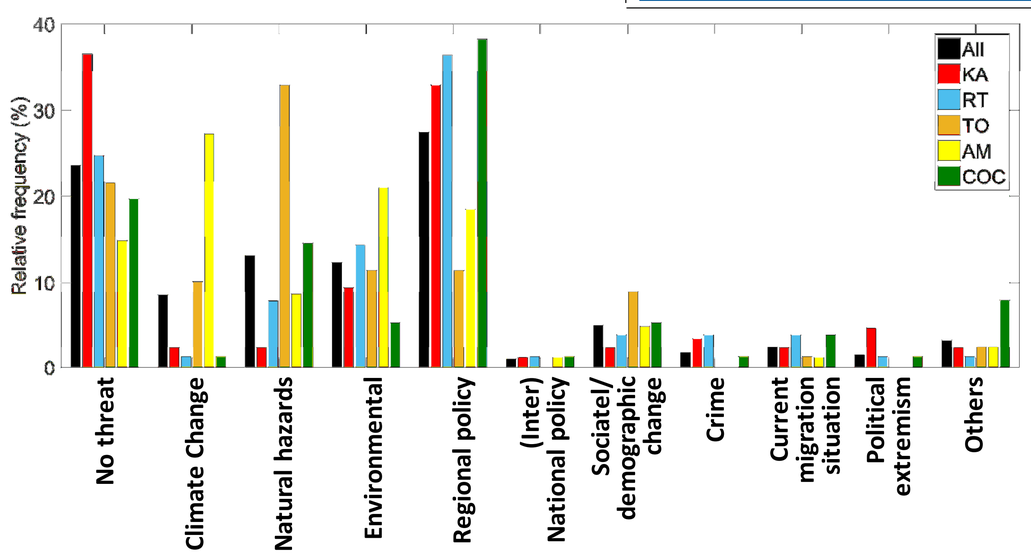
Damages to buildings, infrastructure and even human life caused by **extreme weather events (EWEs)** such as severe storms, storm surges, hail, floods, heat waves or droughts have significantly increased during the last decades. This has happened due to the interaction of several factors such as amplification in assets, in vulnerability of infrastructure and people, or changes in patterns and the frequency of extreme events.

Seen from a social perspective, this increase is basically connected to and framed as a direct consequence of global warming. Hence, extreme weather events are phenomena, which call for an inclusion of the social in the context of reliable mitigation and adaptation measures and risk actions to be taken in the case of extreme events.

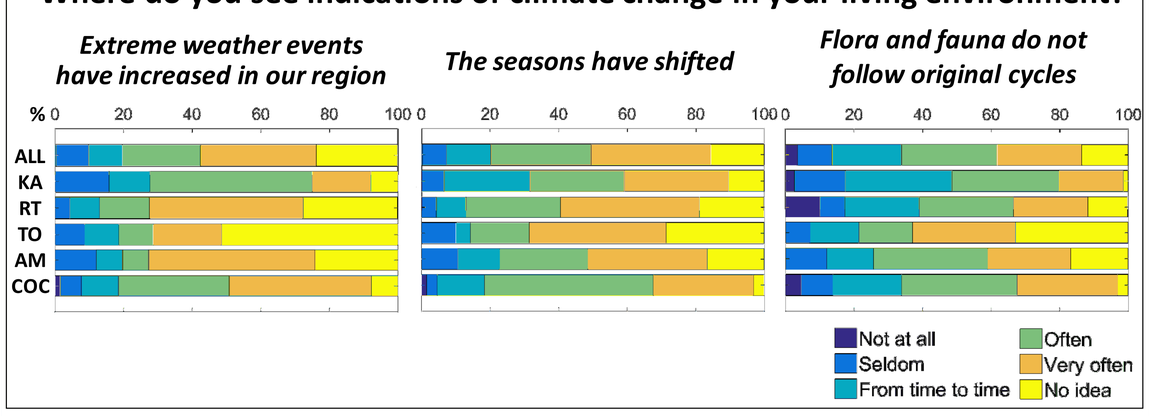
Within the frame of the **interdisciplinary project "Regional risk cultures of weather extremes"** scientists from different disciplines such as meteorology, geography and sociology merge their conceptual and methodological expertise to investigate EWEs from an integrated perspective. Emphasis is put on the social perception and assessment of EWEs as well as on security actions taken regarding EWEs.

Quantitative results

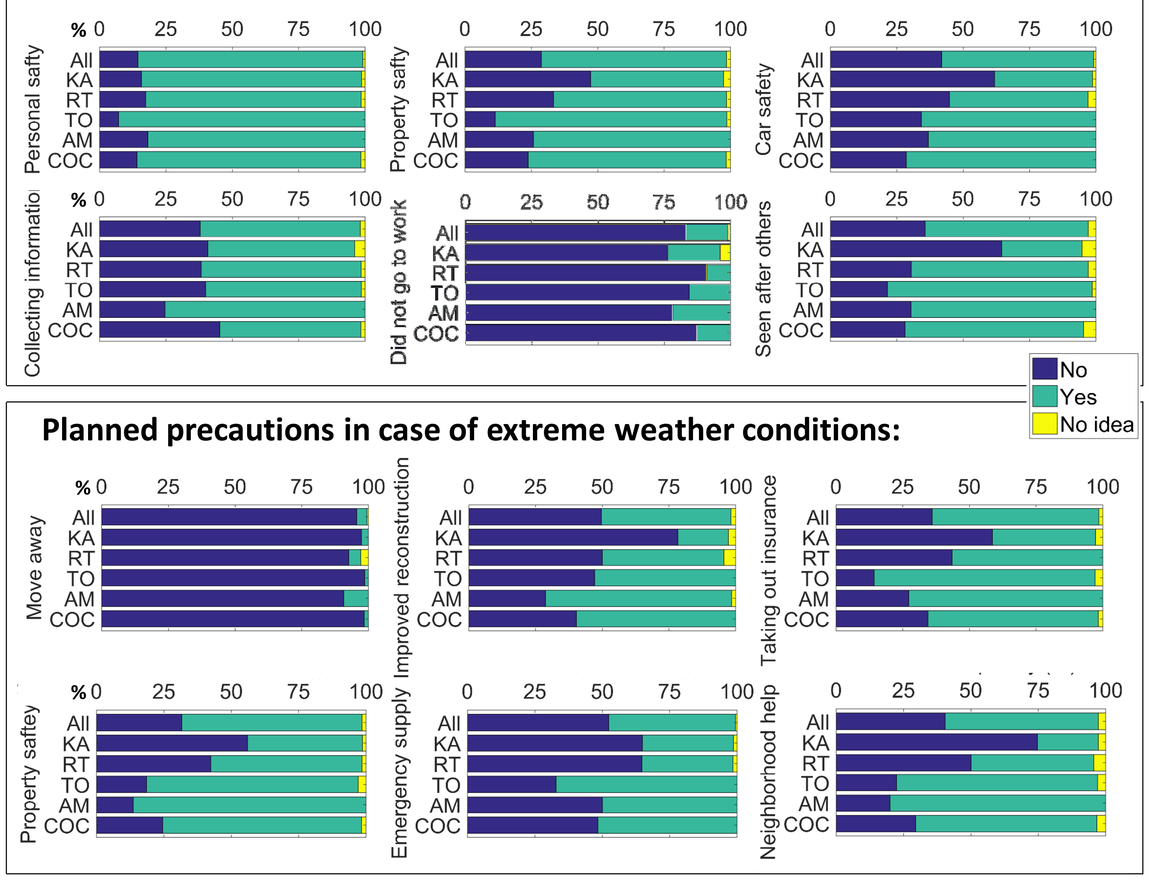
What is the biggest danger for your region?



Where do you see indications of climate change in your living environment?



Precautions taken in extreme weather situations:

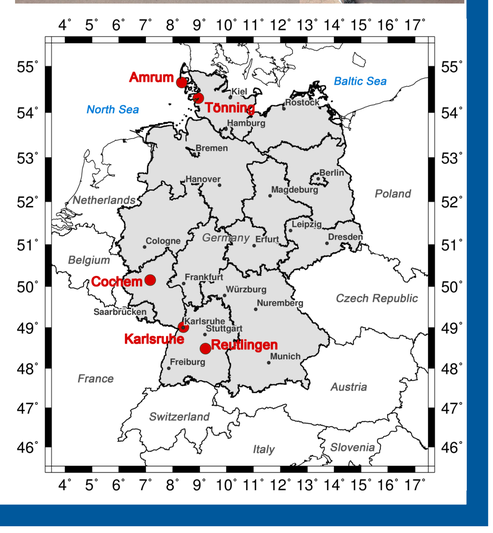


Planned precautions in case of extreme weather conditions:

- The experience of EWEs plays a relevant role for perceiving and assessing specific dangers and risks on a local and regional level (**site-specific**).
- The severity of the event is important for the perception and relevant for the interpretation of the results.
- EWE is an indicator of climate change for people participating in the survey.
- The actions taken regarding different EWEs are (often) similar between the regions.

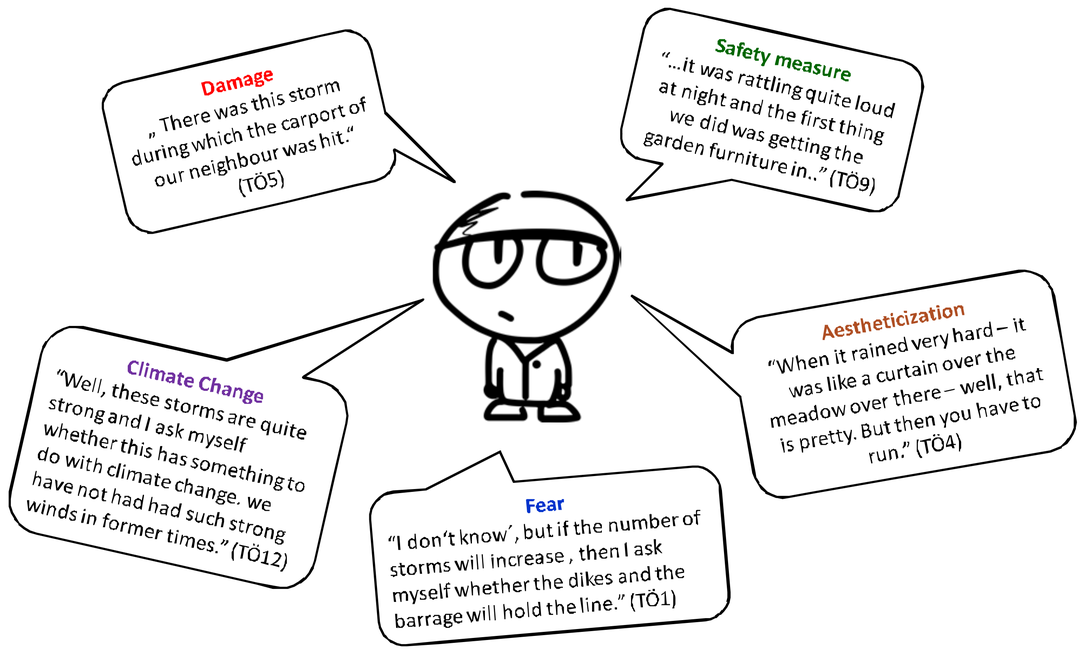
Methods applied

- Combination of a **quantitative** and **qualitative** approach
- **Quantitative**: 350 **street surveys** at different locations specifically affected by certain types of EWE in Germany:
  - **RT**: Reutlingen (hail storms)
  - **KA**: Karlsruhe (heat waves)
  - **TO**: Tönning (storms, storm surges)
  - **AM**: Island of Amrum (storms, storm surges)
  - **COC**: Cochem on the Moselle river (floods)
- **Qualitative**: currently 12 **in-depth interviews** (Tönning)
- Transcription and categorization of the interviews



Categorization of the in-depth interviews

How humans thought and talk about extreme weather events?



Link between humans and extreme weather events:

Damage	➡ EWE as an aggressor
Safety measure	➡ Fighting against EWE's impact
Climate Change	➡ Initiated by EWE
Aesthetics	➡ Beauty and sublime of EWE
Fear	➡ Emotionality of EWE
Pragmatics	➡ Practical handling of EWE

- EWE's socio-cultural perception clarifies local traditions and manners.
- A "socio-scientific meteorology" is crucial because with it:
  - a better understanding of regional risk perception is possible is and
  - that could be integrated into an appropriate risk management in the future.