

Theme 1 - Climate proof flood risk management

Private flood precaution - an important component of integrated flood risk management and climate adaptation

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Background

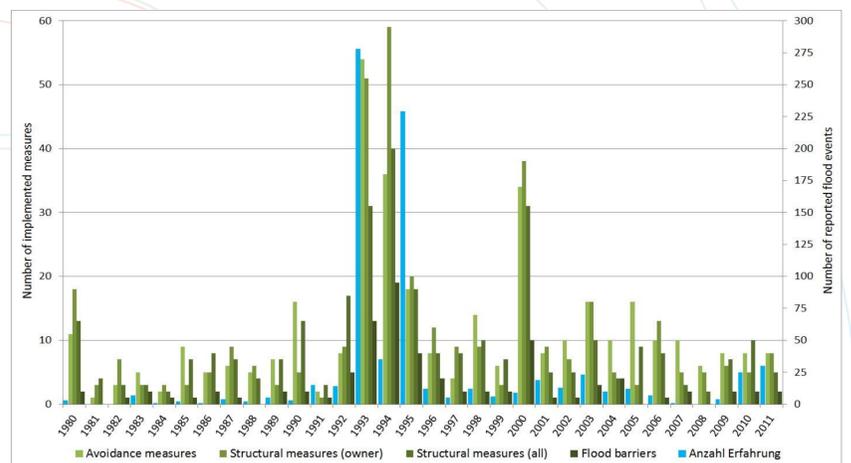
Flood risk is projected to increase in many places due to the effects of climate change and the on-going intensification of human activities in risk-prone areas. These projections and the considerable uncertainties associated with these developments increasingly require integrated approaches in flood risk management in Europe. However, even though non-structural measures have become an integral component of contemporary flood risk management, knowledge on their temporal and spatial spread, as well as their effectiveness and cost-efficiency are often lacking. Insights into these aspects are crucial for determining the efficiency of contemporary flood risk management.



Results

Changes in vulnerability over time

Analyses show that flood mitigation measures developed gradually among private households along the Rhine. Significantly increased rates of implementation can be repeatedly observed in the aftermath of large flood events.

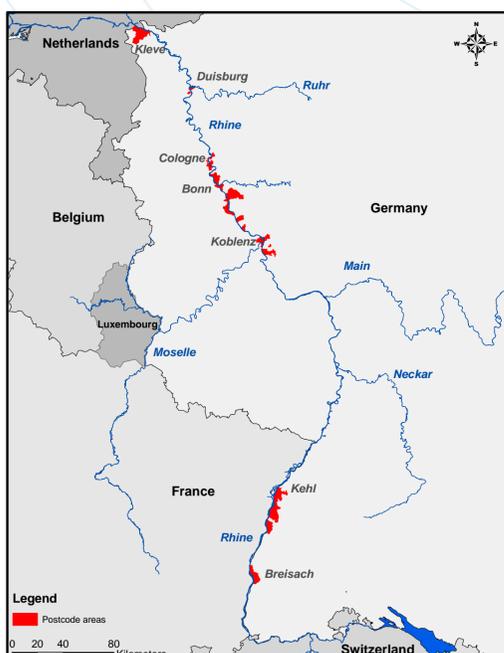


Effectiveness and cost-efficiency of measures

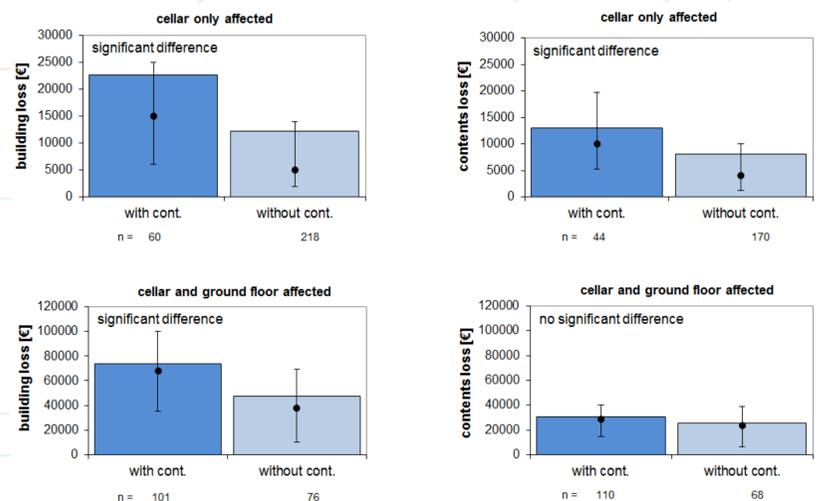
Cost-benefit analyses of various flood mitigation measures show that even small investments, such as securing the oil tank, can considerably reduce flood damage. Moreover, many measures are cost-effective even in areas less frequently affected by floods. Other cost-intensive measures are only efficient in highly flood-prone areas. In those areas, further accumulation of economic assets should be avoided through land-use planning policies.

Aim and approach

Changes in vulnerability over time, the damage-reducing effect of private flood-mitigation measures and their cost efficiency are examined using telephone-aided interviews with private households, for instance along the Rhine.



Postcode areas of surveyed households



Literatur:

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- Bubeck P, Botzen WJW, Aerts, JCJH (2012) Long-term development and effectiveness of private flood mitigation measures: An analysis for the German part of the River Rhine, NHESS, under review.