Climate Risk Insurance and Flood Risk in Germany

Sönke Kreft, Simone Sandholz, Florence Nick, Dirk Kohler
United Nations University – Institute for Environment and Human Security (UNU-EHS)
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General

- Risk Avoidance
- Risk Reduction
- Risk Retention
- Risk Transfer

Severity

Probability

Active Risk Management

Passive Risk Management

UNU-EHS
Institute for Environment and Human Security
Insurance

- Insurance - Insurance replaces a large, randomly occurring cost of an extreme weather event with a guaranteed cost of the insurance premium
- Nat-cat insurance can reduce negative welfare impacts of disasters and allow faster recovery
  - Indemnity based insurance
  - Index based insurance
- Extreme events: Low insurance penetration -> correlated risks -> higher insurance premiums
- Adverse selection & moral hazard
- Extreme events: Underestimate probability of rare events
- Charity hazard
General

Geneva Association 2018

Holzheu & Turner 2018
**General**

<table>
<thead>
<tr>
<th>Structure Group</th>
<th>Sector Covering Flood Risk</th>
<th>Common Market Features</th>
<th>Countries Allocated</th>
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</table>
| M1. Solidarity public structure | Public                      | - Mandated purchase requirement           
- Premiums unconnected to risk 
- Very high penetration rate (100%) 
- Government support for extreme losses | France; Belgium; Spain; Romania |
| M2. Semi-voluntary private market | Private                      | - Purchase is connected to mortgage lender conditions 
- Premiums are risk-based 
- High penetration rate (75-100%) 
- Damage to buildings is more often insured than contents due to mortgage requirements 
- No government support for extreme losses | Sweden; Ireland; Hungary; Finland |
| M3. Voluntary private market | Private                      | - No government mandated purchase requirement (voluntary)                                   
- Premiums are risk-based 
- Medium to low penetration rates (25-60%) if government support is uncertain (e.g., Germany) 
- Very low penetration rates (0-25%) if government support is certain (e.g., Austria) 
- Possible government reinsurer rather than government compensation | Austria; Netherlands; Germany; Italy; Portugal; Luxembourg; Greece; Poland; Czech Republic; Slovakia; Slovenia; Croatia; Bulgaria; Latvia; Estonia; Lithuania |
| M4. Voluntary PPP market | Public-Private                | - Voluntary market                                           
- Government reinsurer for extreme risk 
- Other characteristics are the same as M3 | Hypothetical market structure |
| M5. Semi-voluntary PPP market | Public-Private                | - Semi-voluntary market                                      
- Government reinsurer for extreme risk 
- Other characteristics are the same as M2 | Hypothetical market structure |
| M6. Public-Private Partnership (PPP) market | Public-Private                | - Purchase is connected to mortgage lender conditions 
- Premiums are partially connected to risk 
- High degree of loss sharing 
- High penetration rate (75-100%) 
- Damage to buildings is more often insured than contents (due to mortgage requirements) 
- Government reinsurer rather than government compensation | UK |

Notes: Romania displays many of the criteria of M1 with the exception of the insurance penetration rate being less than 20% due to poor enforcement of the purchase requirements. Therefore, it has been placed within M1 as a stylized market structure. Source: Hudson et al. [25].

Ilesslar et al. 2020
Objective to develop recommended actions for climate risk insurance and climate change adaptation

Based on literature review, expert interviews and focus group workshop

Survey focusing on

- Perceived/prioritized hazards
- Relevance of insurance instruments
- Risk mitigation measures
- Roles of actors – public/private
- International experiences

Recommendation

Recommendation I: Data basis, information offers and awareness raising

- Information and data on natural hazards and climate impacts as well as financial assessments of damage potentials must be centrally accessible.
- Awareness raising for climate risk and natural hazard protection must be comprehensive and target group specific.
- Information and evaluations from the insurance industry must be better integrated into existing risk management.

Recommendation II: Linking risk prevention and risk transfer

- Risk reduction strategies must not only focus on coping with the consequences of disasters, but must also include prevention.
- The obligation to adapt to climate change impacts and natural hazards should be more firmly anchored in legal foundations and regulations.
- Risk-adequate insurance premiums should be enforced.
- Insurance products must be linked to risk prevention and loss avoidance measures.
Recommendation III: Increase the level of protection against climate risks and natural hazards

- Growing climate change impacts have different effects on sectors and population groups.
- The insurance penetration against natural hazards and climate risks must be increased.
- The insurance industry should discuss "opt-out" application procedures in consultation with consumer protection associations.
- Insurance is only one part of financial risk management, thus developing alternative risk financing strategies is important.
- Institutional approaches to increase the insurance density should be examined.
- In agriculture, insurance against climate-related damage and natural hazards must be increased, as the level of insurance is insufficient.
Recommendation IV: Linking risk prevention and risk transfer

- State actors at federal, state and municipal level should promote comprehensive protection against climate and natural risks through legislative, legal and planning instruments.

- Private sector actors, especially the insurance industry, should develop or improve risk management products and provide data for better risk management.

- The development of appropriate measures to improve risk management should be accompanied by scientific studies

- Cooperation and dialogue formats for the coordination of the actors involved must be established or expanded and institutionalized

- Establishment of a climate risk commission with the participation of relevant political, scientific and economic actors
Recommendation

**Intervention Points**

- Increasing pressure to act due to growing climate change impacts
- Rising number of climate risk insurances at international level
- Growing risks from natural hazards, with sectoral differences
- Increased level of insurance improves societal climate risk management
- Not all risks can be covered by pure insurance instruments

**Need for action**

- Cooperation, dialogue and consensual division of roles between the actors involved
- Increase the level of protection against climate risks and natural hazards
- Better data basis, information offers & awareness raising
- Cross-sectoral linking of risk provisioning and risk transfer

*Source: own figure, MCII and UNU-EHS*
2021 Floods in Germany

- Historical record: 8.2 billion EUR insured damages in the affected areas (GdV, 05/2022) (total est. 30 billion EUR), **claims handling still in progress**
- Germany: **Insurance density against natural hazards at 45%**
- **Climate change** → extreme weather events expected to occur more often in the future
- 2016 flood event classified “once in 100 years” – 2021 surface runoffs were even higher than that
- Insurance can provide reliable and timely financial relief for recovery → important for climate change adaptation

Regions in Germany affected by flood

Quelle: Bundesamt für Bevölkerungsschutz u. Katastrophenhilfe; Landesamt für Umwelt
CRI – Interviews in March 2022 on 2021 floods

• What has changed since 2021 flood events?

Qualitative expert interviews

• 3 representatives from 2 re-insurance companies, 1 representative from the association of German insurance companies (representing 460 (re)insurance companies)

• 3 representatives from different consumer associations
  • German association of the insured: 45,000 members
  • German association of home owners: 360,000 members
  • Consumer association NRW: 27 consumer-oriented associations as members
What has changed since July 2021

- Higher demand for insurance against natural hazards right after floods
- Association of German insurance companies
  - Suggested concept to facilitate both **higher insurance density** and more **preventative and precautionary** measures
- German association of the insured
  - Suggested concept to facilitate **higher insurance density and financial protection by public sector**
- Federal states “not against” mandatory insurance → legislative authority and relevant ministries plan to suggest new legal framework by end of 2022
Interviews on 2021 floods – Preliminary findings

Key issues regarding 2021 floods

- Legal standards and policies
  - Limited preventative and precautionary measures: unprotected buildings near water bodies
  - Bureaucracy: **German governance structure** hinders swift revision of legal standards

- Climate risk insurance
  - Insurance density in Germany perceived too low
  - **Limited awareness and understanding** about insurance among citizens

- Risk awareness
  - Flood events are quickly forgotten
  - Flood risks insufficiently considered in urban planning & zoning
Conclusion: key messages

- **2021 Floods as window of opportunity for change**
  - Only little progress since study 1
  - Findings show consensus that **change is necessary**

- **Combined efforts to balance risk and the price to pay for it** in the long term are key for climate change adaptation
  - **Concerted action** between stakeholders – “round table”
  - Governments need to update legal standards and policies
  - Support social justice
Thank you
References


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