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**Research Report**

## Disaster aid, insurance, and fairness: Household and firm perceptions of flood policy in Germany

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## Disaster Aid, Insurance, and Fairness: Household and Firm Perceptions of Flood Policy in Germany

Nicola Garbarino, Sascha Möhrle, Florian Neumeier, and Marie-Theres von Schickfus

- At the EU level, underinsurance is widespread and poses fiscal risks. The debate in Germany reflects a broader need for insurance-based climate adaptation mechanisms.
- Public expectations of government flood aid in Germany are surprisingly low – putting common concerns of moral hazard and “charity hazard” into perspective.
- When informed about generous past aid, households – especially uninsured ones in low-risk areas – show significantly more support for mandatory flood insurance.
- This change is driven by fairness concerns rather than self-interest or beliefs about overall efficiency.
- Overall, firms also have low aid expectations. Support for insurance increases or decreases depending on prior aid expectations and current insurance status.

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# Disaster Aid, Insurance, and Fairness: Household and Firm Perceptions of Flood Policy in Germany

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As climate change intensifies, flood events are becoming more frequent and more destructive across Europe. In Germany, catastrophic floods in 2021 caused over EUR 40 billion in damages, prompting a large-scale government aid response. At the same time, only about 50 percent of residential properties are insured against natural hazards (GDV 2023) – leaving a large share of losses uncovered.

This creates a classic policy dilemma: Should governments continue to offer ad hoc compensation after disasters? Or should they shift more responsibility to the private sector through mechanisms like mandatory insurance?

Across the European Union, the “insurance protection gap” for natural catastrophes remains large. According to the European Central Bank (ECB) and the European Insurance and Occupational Pensions Authority (EIOPA), less than 5 percent of disaster-related damages between 1980 and 2023 were insured in countries like Portugal, Greece, and Bulgaria (ECB and EIOPA 2024). Even in Germany, where the gap is smaller, only about 23 percent of losses were covered by insurance during this period.

Denmark and Romania are among the few EU countries requiring flood insurance by law, while France operates a de facto mandatory system through a public-private partnership (Roth 2021). Elsewhere, voluntary take-up remains low – raising concerns about fiscal sustainability and prompting calls for reform (ECB and EIOPA 2024).

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## Survey Design: Households and Firms

To better understand attitudes toward insurance and public aid, the authors conducted two related survey experiments (Garbarino et al. 2025; Garbarino and von Schickfus 2024):

1. A **household survey** (8,017 respondents from the German voting population) took place in November 2021, just four months after the 2021 floods. Participants were randomly assigned to three groups:
  - 1.1. A **control group**, receiving general flood information.
  - 1.2. A **high-aid group**, informed that the government had covered up to 80 percent of flood damages.
  - 1.3. A **low-aid group**, told that states had previously planned to reduce or eliminate aid.
2. A separate **firm survey** (639 respondents) was conducted between November 2021 and February 2022 in the flood-prone Bavarian Oberland. Firms were similarly assigned to treatment and control groups, concentrating on the high-aid treatment in this case.

The surveys assessed expectations of aid, preferences for mandatory insurance, and the perceived fairness, efficiency, and personal benefit of different policy options.

## Low Aid Expectations Relativize Moral Hazard Concerns

The provision of aid may reduce incentives for households to take out insurance, a form of moral hazard sometimes labelled as “Samaritan’s dilemma” (Coate 1995), “charity hazard” (Andor, Osbergerhaus, and Simora 2020), or simply “crowding out” (Kousky, Michel-Kerjan, and Raschky 2018), which further increases the need for public aid and the pressure on public finances.

Before receiving any information, **only 43 percent of households** believed they would receive public support if severely flooded. On average, they expected only **16 percent of damages** to be covered – far below the actual levels seen after the 2021 disaster. Among firms, expectations were even lower: **57 percent expected no aid**, and the average expected coverage was **14 percent**. These results suggest that while moral hazard needs to be taken seriously, it appears not to be the main driver behind low insurance penetration rates.

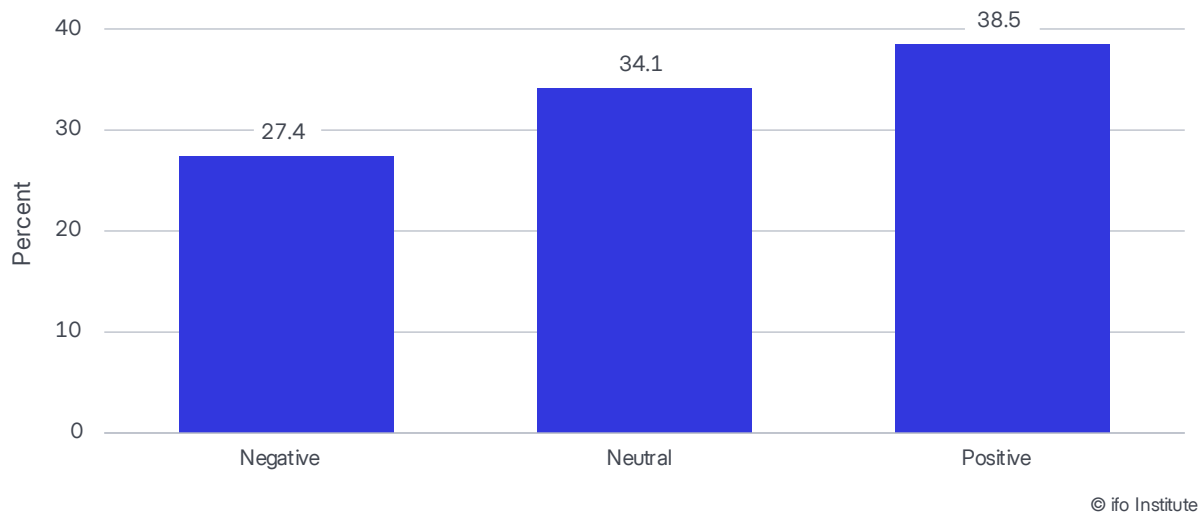
## High-Aid Information Shifts Household Preferences

Among households, support for mandatory flood insurance was substantial even in the control group (39 percent reported a positive view, and 34 percent were neutral). When asked to compare state aid and mandatory insurance, respondents perceive mandatory insurance as fairer and less costly for society than public aid, although they view public aid as more personally beneficial.

Households who were told about past generous aid were **4 percentage points more likely** to support a mandatory flood insurance scheme. This shift was **strongest among uninsured individuals in low-risk areas** – a group that typically does not benefit from public compensation but helps finance it through taxes. In this group, mandatory insurance is seen as a fairer burden-sharing arrangement.

**Figure 1**

**Households' Assessment of Mandatory Insurance**



The figure shows households' views on the introduction of mandatory insurance (originally rated on a 5-point Likert scale, broken down to 3 categories here).

Households' responses were not motivated by expectations of personal gain. The high-aid treatment had **no significant effect on willingness to pay** for insurance or on perceptions of efficiency. Instead, the treatment **increased fairness perceptions**: a 10 percentage point increase in expected aid led to a 2.2 point increase in the probability that respondents viewed mandatory insurance as fairer than public aid.

This fairness framing may help explain why some voters support redistributive policies even when they are not direct beneficiaries. It is also worth noting that the low-aid treatment did not have a significant effect. It did not shift aid expectations much, which were low ex ante; also, it may have invoked less of a fairness reaction

## **Firms Respond with Self-Interest, Not Fairness**

Firms' reactions were less strong, and less uniform. On average, there was **no statistically significant effect** of the high-aid information treatment on support for mandatory insurance. However, subgroup analysis reveals a nuanced picture. Among insured firms (71 percent of the sample):

- **Firms with high prior aid expectations** became less supportive of mandatory insurance when told about past aid (a "crowding out" effect).
- **Firms with low expectations** showed increased support (a "crowding in" effect).

These opposing reactions appear driven by **selective attention to the treatment information**: firms not expecting aid ex ante may focus on the fact that aid covered only uninsured damages (meaning they would not benefit from aid). Those with nonzero aid expectations seem to focus on the generosity of past compensation and favor aid over mandatory insurance.

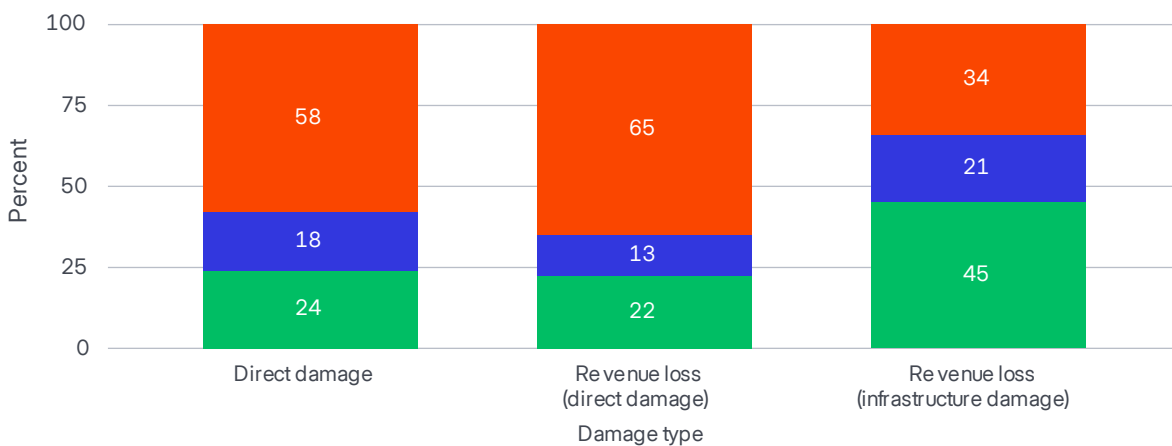
In contrast to households, firms **did not significantly shift their fairness evaluations**, underscoring the importance of financial self-interest in firm-level decision-making. In this context, it is also interesting to look at firms' normative views on who should take responsibility for adaptation: private or public actors. Views are quite divided, and surprisingly few respondents find that both state and private actors should be responsible.

**Figure 2** provides evidence on the type of damage firms are worried about in case of flooding. 24 percent think that direct damage to buildings and equipment is likely in case of local flooding (comparable to the Ahrtal event), and a similar share (22 percent) of respondents think that this will result in additional revenue loss. Almost twice as many expect that flooding will result in revenue loss due to damage to local infrastructure, such as transport and communication networks. Thus, for the majority of firms, the main threat of floods is through business interruption due to local infrastructure damage, highlighting the importance of public adaptation measures.

**Figure 2**

### Firms' Expected Damage Types

How likely is damage?    ■ Unlikely    ■ 50–50    ■ Likely



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## Policy Implications: National and EU-Level Lessons

**Fiscal sustainability is at stake:** Climate-related disaster spending could challenge member state budgets. Expanding insurance uptake is a critical component of long-term financial resilience.

**Germany's political space for reform may be wider than expected:** Public support for mandatory insurance exists and grows with better information – especially when fairness concerns are activated.

**Framing matters:** Policymakers should emphasize fairness and burden-sharing, particularly to reach households in low-risk areas who are otherwise unlikely to benefit from public aid.

**Ex ante measures are still needed:** Mandatory insurance can reduce reliance on ex post aid, but it should be paired with other climate adaptation measures – such as risk zoning, floodproofing, and public infrastructure investments, as well as private precautionary measures.

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