

## From forecasts to action: helping before disasters strike

**Recent impact evaluation shows that anticipatory humanitarian action based on meteorological forecasts helps vulnerable rural households cope with weather disasters.**

*As climate change increases the intensity and frequency of extreme weather events, humanitarian needs are rising. Anticipatory humanitarian action uses risk forecasts to provide assistance before disasters fully unfold. RWI researchers examined the impact of such anticipatory action in Mongolia, where extreme winter conditions lead to high livestock mortality and threaten the livelihoods of affected households. The study shows that poorer households benefit from the transfers in terms of livestock assets and food consumption. It also highlights the challenges of rigorously evaluating anticipatory action.*

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### THE MOST IMPORTANT RESULTS

Anticipatory cash transfers helped poorer Mongolian households to protect their herds and sustain their food consumption during extreme winter conditions.

Targeting matters: Measurable impacts occur among poorer households, but not among wealthier ones.

Anticipatory action is a promising innovation in the humanitarian action toolkit, but methodological challenges persist. Forecast uncertainty, spatial variation in disaster intensity, and data constraints complicate rigorous impact evaluation.

### What is anticipatory humanitarian action and why can it help?

Conventional humanitarian assistance is provided to households after a disaster occurs. Often, however, the aid arrives too late, after the households have sold assets, reduced their food intake, or fallen into debt. Anticipatory humanitarian action takes a different approach. It uses meteorological risk forecasts to trigger assistance before the most severe impacts of a disaster occur. The early provision of aid aims to enable households to mitigate damage more effectively than assistance provided after disasters.

### Do anticipatory cash transfers help households cope with extreme winters?

Our study, supported by the German Federal Foreign Office, addresses this question through a randomized evaluation in western Mongolia among herding households that were forecasted to face heightened risk of extreme weather conditions during the 2020/21 winter. Results demonstrate significant benefits for poorer households with smaller herd sizes, including increased livestock assets, herd protection investments, and food consumption. However, analyzing the full

sample including wealthier households reveals no detectable impact. This suggests that effective anticipatory cash transfers require precise targeting of vulnerable households.

### Why are rigorous impact evaluations of anticipatory humanitarian aid difficult to conduct?

Anticipatory programs address predicted risks instead of realized disasters, which entails uncertainty regarding whether, where, and how intensely a forecasted event will occur. Humanitarian actors must deliver anticipatory aid rapidly, limiting the time available for evaluation studies. These factors create challenges for planning rigorous impact evaluations. In Mongolia, for example, risk models predicted a medium to very high risk of extreme conditions for the 2020/21 winter. However, these conditions ultimately materialized in only one-third of the study region. As a result, some households that were not exposed to extreme weather received anticipatory cash transfers.

## Sources:

Mogge, L., J. Roeckert and K. Kraehnert (2025), Anticipatory cash transfers in the context of weather disasters. *Journal of the Association of Environmental and Resource Economists* 12, 6: 1819-1857. DOI: 10.1086/735534.

**Recommendations****i Use existing data systems to target vulnerable households for anticipatory assistance.**

In contexts where reliable forecasts can be used to identify vulnerable households in advance, anticipatory humanitarian action has the potential to mitigate harm more effectively than assistance provided after disasters. Administrative data, such as social protection registries, can provide up-to-date information on household characteristics and financial accounts. This enables faster targeting and cost-effective delivery of anticipatory assistance.

**i Invest in a long-term research agenda on anticipatory action.**

Despite promising potential, significant knowledge gaps remain regarding optimal anticipatory action design and effectiveness. Further research requires larger samples with broader geographic coverage, expanded outcome measures including health indicators, comparative analysis of delivery modalities such as cash versus in-kind assistance, and direct comparison with post-disaster aid. Close cooperation between practitioners and researchers is essential to address these questions and build a robust evidence base.

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