



Pre-event financial protection is key to flood recovery

Financial capital is a key factor in building flood resilience. In particular, access to pre-event financial protection against flood-related disasters is a vital component. Solutions range from insurance and micro-insurance to pre-arranged post-disaster lines of credit and dedicated government relief programs. Implementation of these solutions should allow for further community resilience investment.

Key recommendations

- *Communities require adequate financial capital not only to limit financial exposure to disasters, but also to support human, social, physical and natural capital.*
- *A community's financial exposure, both direct (impact on assets and livelihoods) and indirect (interruption of economic activities), must be understood and measured.*
- *Pre-event financial protection options include insurance or micro-insurance, and alternative risk transfer instruments as well as streamlined access to pre-arranged post-disaster lines of credit and dedicated government relief programs.*
- *Public and private sectors must work together with civil society to co-generate these options into solutions that are widely available, affordable and adopted on a local and national scale.*

Financial capital and resilience

Through our on-going work with communities in both OECD and non-OECD countries we have identified financial capital as a key factor in building resilience against floods. Yet, the data we have collected across the globe in communities as diverse as New York City, USA¹ and Tabasco, Mexico², reveal a serious

deficiency in economic protection against flood events. When financial protection is not in place before the flood (for instance, through a savings account or an insurance-based solution), victims must seek funding from post-disaster government or donor interventions that are often very uncertain, insufficient and delayed. While there has been a significant increase in government monies spent on disaster relief in recent years, changes in climate patterns combined with increasing public deficits, ever-increasing populations and more assets located in flood-prone areas makes this increasingly unsustainable. Consequently, it is important for communities to plan ahead for disaster financing and economic recovery.

Financial protection options

A host of financial protection options ranging from insurance and micro-insurance, alternative risk transfer instruments as well as access to pre-arranged post-disaster lines of credit and dedicated government relief programs have been developed to help foster post-disaster financial recovery. In the public sector sphere, for example, this can include catastrophe bonds or other insurance-linked securities, as well as appropriately designed government subsidy programs. In addition, a transparent and streamlined process for accessing and allocating the funding should be designed for both private

and public sectors with public sector support from a national and international perspective.

Our joint Wharton Risk Center and IIASA review of flood insurance programs in 25 countries (accessible on the Internet through interactive maps³) reveals different approaches globally to providing residents with access to financial protection. We find that there is no purely private market-based insurance system in place, but that the public sector plays a key role as regulator, insurer or provider of subsidies to varying degrees. Communities, advocacy groups and individuals must press decision makers in the public and private sectors to make more concerted efforts to make co-generated solutions widely available and affordable.

Addressing the issues

The issue of increasing financial capital protections in communities to enhance community flood resilience is encouragingly gaining voice. A high-level international conference focusing on flood risk financial protection was organized by the OECD in collaboration with Zurich in Paris in May 2016. The conference provided a unique forum for governments to compare policy experiences, seek answers to common problems, identify good practices and work to co-ordinate domestic and international policies. Sessions were held on the financial management of flood risk, addressing the evolving nature of flood risk — understanding flood drivers and impacts, and building financial resilience against flood risk in developing countries. Talk now needs to turn into action.

References

¹Botzen, W., et al. (2015) Divergence between individual perceptions and objective indicators of tail risks: evidence from floodplain residents in New York City. *Judgment and Decision Making* 10(4): 365–385.

²Atreya, A., et al. (2017). *Adoption of flood preparedness actions: a household level study in rural communities in Tabasco, Mexico*. Working Paper 2016-10, Wharton Risk Management and Decision Processes Center, University of Pennsylvania.

Evidence from the field

The USA is one country with a national program, the Community Rating System (CRS), that systematically encourages communities to better prepare for flood events. Managed by the US National Flood Insurance Program (NFIP) under the Federal Emergency Management Agency (FEMA), the CRS quantitatively scores communities across a number of flood-resilience activities and links this to reductions in insurance premiums for residents in those communities. We have access to the full CRS database to analyse risk reduction actions taken by the 1200 active communities⁴. Overall, we find that the CRS program works well: it attracts more communities every year and the tenure is very high, with 99% of participating communities staying in the program year to year.

The average number of risk-reduction activities in which CRS communities are involved has increased meaningfully over time, and the increased number of activities not only leads to lower insurance premiums but, importantly, fewer flood claims than less-active communities. Our findings suggest that the CRS program can be an important tool for other countries that want to (re)design an effective flood risk insurance market that can be linked to risk-reduction efforts.

³Wharton (2017) *Flood insurance around the world*. <https://riskcenter.wharton.upenn.edu/flood-insurance-around-the-world/>

⁴Atreya, A., et al. (2016). *Learning over time from FEMA's community rating system and its link to flood resilience measurement*. Working paper #2016-11, Wharton Risk Management and Decision Processes Center, University of Pennsylvania.

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Image credit: Floods in Fischbeck, Germany. Michael Szönyi / Zurich (June 2013).

The Zurich Flood Resilience Program

An increase in severe flooding around the world has focused greater attention on finding practical ways to address flood risk management. In response, Zurich Insurance Group launched a global flood resilience programme in 2013. The programme aims to advance knowledge and develop robust expertise and design strategies that can be implemented to help communities in developed and developing countries strengthen their resilience to flood risk.

<https://zurich.com/en/corporate-responsibility/flood-resilience>