

Saving lives and livelihoods

The urgent need to invest in flood resilience

Summary

Floods affect more people globally than any other type of natural hazard, with over 734 million people affected by floods in the last ten years. Global warming is increasing the severity of flooding, with negative impacts on livelihoods and countries' ability to reach development objectives. There are preventive measures that can build flood resilience, but these are significantly under-resourced,¹ and when we fail to invest in risk reduction, these hazards become disasters with devastating consequences.

Donors and national governments need to act urgently to increase funding at the local level, so communities can protect themselves from the devastating impacts of floods and other hazards.



*Boats serve as transport during floods – Jonuta municipality, Tabasco, Mexico Flood Resilience Program.
Photo by Michael Szönyi, Zurich Insurance Group*

Recommendations

- Increase funding for disaster risk reduction and adaptation so communities and countries reduce the potential impacts of natural hazards. While finance needs of developing countries are higher, the international community has committed to providing \$50 bn annually in adaptation funding by 2020 to developing countries. Thus far the international community is falling far short with only about \$15 bn made available so far for developing countries, of which merely \$3 bn was for managing disaster risks (Climate Policy Initiative, 2018; UNEP, 2018).² A renewed political commitment must be made in 2019 to address the massive funding gap for ex ante prevention and risk reduction.
- Ensure domestic and international funding reaches the community level. The impacts of floods are felt most immediately at the local level, and communities and local authorities hold important knowledge on

where and how to build resilience. By ensuring funds reach the local level and decisions on disaster risk reduction (DRR) and adaptation measures engage the community, resilience can be built more effectively. Such strengthened capacities at the local level can make tangible impacts on people's lives.

- Align existing policies and institutional structures across sectors and geographic levels and integrate new risk reduction measures. The integration of flood risk reduction policies with development practices, for example, can reduce risk while also advancing community development goals. Likewise, the integration of disaster risk management and climate change adaptation policies and institutional structures can reduce duplication of efforts. By aligning laws and policies, countries and communities can build flood resilience in a more integrated way.

¹ While not completely analogous, funding for disaster risk reduction and adaptation can be used as a proxy for ex ante prevention and risk reduction activities. These are chronically underfunded, especially for the least developed countries (see, for example, Kellet and Caravani, 2013).

² Other research has shown even less has been provided for climate finance. The Oxfam Climate Finance Shadow Report, for example, estimates that \$9.5 bn of public climate finance annually was dedicated to adaptation in 2015–16 (Oxfam International, 2018).

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Raising the ground level with sand to protect the homes from the "Coastal El Niño" flood – Piura, North of Peru. Rodrigo Rodrich for Practical Action

Funding resilience

Across the globe, hazards too often become disasters with devastating impacts for affected people. Enormous amounts of money are required for disaster response and recovery. Instead of only responding and recovering from events, increased investments in preventing disaster are necessary. There are two key entry points for doing this:

- **Ex ante.** Invest before an event in corrective and prospective risk reduction (i.e. reduce the risk from existing problems through measures such as elevating homes or improving drainage, and prevent the creation of new risk through measures such as risk-informed land use planning that prevents development in high-risk areas).
- **Post-event.** Leverage recovery funding to not just build back as was but to build back better (for example, when rebuilding schools that were heavily damaged, put them in safer locations or build them to higher standards so future events will have reduced or no impact).

The problem

Urgent action to fund flood prevention and risk reduction measures at the global and national levels is essential. Floods already affect more people around the world than any other type of hazard – with over 734 million people affected by floods in the last 10 years (IFRC, 2018)³ – and cause significant economic, social, and human losses. Faced with uncertainty and a changing climate, these impacts will likely worsen. More frequent and intense extreme events, coupled with increasing development in hazard-prone areas and growing populations, will place communities and countries at increased risk of flooding. An IPCC Special Report details the impacts of an increase in global temperature of 1.5°C including risks from increased

urban and coastal flooding (IPCC, 2018). Without further adaptation, models estimate that the number of people affected by riverine floods alone could increase from 70 million today to more than 150 million by mid-century (Hoegh-Guldberg et al., 2018).

While insurance and other risk financing instruments can provide much-needed recovery funding to at-risk communities, there is a growing divide between the total economic losses incurred as a result of natural hazards and the insured proportion of those losses. In 2018, for example, natural hazards resulted in US\$225 bn worth of economic losses (with flooding a major cause) yet only \$89 bn was covered by insurance (Aon Benfield, 2019). In addition to traditional risk transfer mechanisms such as insurance, a wide variety of stakeholders, including governments, the insurance industry, humanitarian agencies, the DRR community, and academia, need to join forces to generate and share knowledge on risk management and risk reduction in support of community flood resilience. Additional support for resilience building is needed, especially for the most vulnerable who are unable to afford insurance, to address the massive funding gap for ex ante prevention and reduction.

Considering the harm that floods cause to people, livelihoods, communities, and economies and given the reality that climate change will exacerbate flooding impacts, global and national actors should prioritize investment in reducing harm. While post-event relief remains important and is often lifesaving, lives and funds could be saved with greater investment in prevention. In 2017 about \$27 bn was spent on international humanitarian response, in addition to the significant national funds allocated to response (Development Initiatives, 2018). However, studies show that every dollar spent on disaster risk management avoids, on average, five dollars in terms of future losses (Mechler, 2016; Zurich Flood Resilience Alliance, 2015).

³ The IFRC Report cites data provided by EM-DAT, the Emergency Events Database – Université catholique de Louvain/CREd (www.emdat.be). Note this only includes events where 10 or more people were killed or 100 or more people affected.

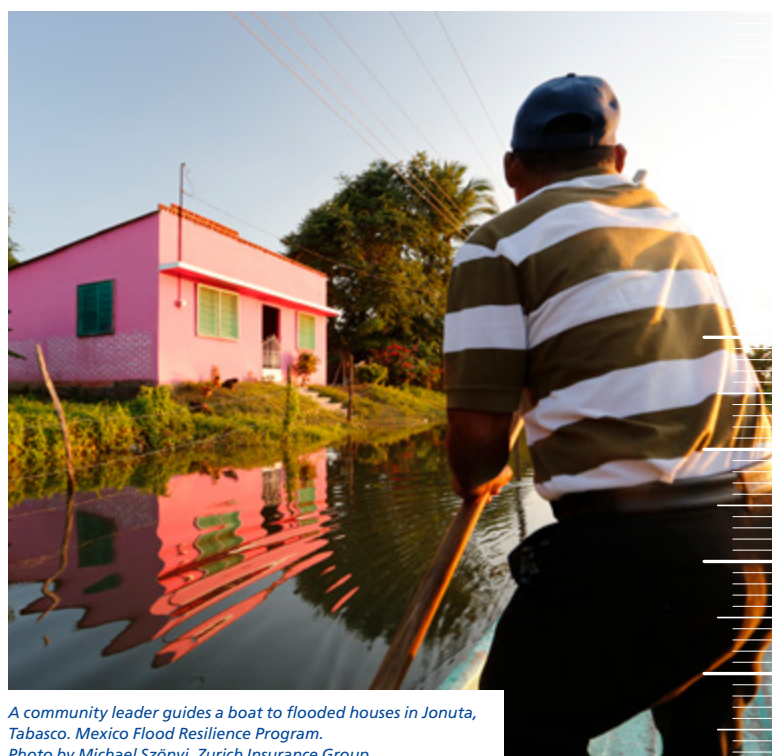
Furthermore, this risk reduction funding needs to reach those areas that need it most. Ensuring that adequate funding of resilience practices reaches at-risk communities is vital as people affected know best the risks they face – and how to respond. Strong and empowered local organizations, institutions, and decision-making structures are essential to ensuring sustainable, long-term capacity to reduce risk and respond to disasters. While it is difficult to estimate how much funding is targeted at empowering people and building the capacity of local systems, analysis suggests that only around 10 per cent of development finance is intended to do this (Soanes et al., 2019).

Some solutions: concrete steps to build flood resilience

While the impacts of floods are widespread and devastating, there are practices and policy recommendations that can help prevent and mitigate these impacts. Global and national level actors can shift funding priorities and increase investment in prevention and community-level engagement in resilience to reduce losses from floods in the future. The integration of risk reduction policies into existing development and adaptation efforts can limit flooding impacts and prevent risk being created by risk-blind or conflicting policies. For example, in many countries, water-use and environmental laws and policies still fail to draw links with flood prevention efforts.

Over the past five years the Zurich Flood Resilience Alliance, a multi-sectoral alliance of international and non-governmental organizations, academia, and the Zurich Insurance Group's risk management experts, has developed an evidence-based approach illustrating the value of investing in flood resilience. Proven resilience-building measures range from 'softer' interventions to hard infrastructure and can include:⁴

- end-to-end warning systems (which ensure early warning reaches the community level);
- livelihood diversification options;
- bio-dykes (for example to prevent erosion of river banks);
- climate sensitive and participatory risk assessments;
- community capacity building;
- communication to raise risk awareness;
- financial protection (such as flood insurance, forecast-based financing);
- planning and avoiding development in high-hazard areas.



A community leader guides a boat to flooded houses in Jonuta, Tabasco. Mexico Flood Resilience Program. Photo by Michael Szönyi, Zurich Insurance Group

By ensuring funding is supporting community-level interventions as well the integration of efforts across national, regional, and local levels, we can help communities reduce the devastating impacts of floods. Increasing flood prevention also provides an opportunity to innovate and further promote pre-event risk reduction and resilience-building efforts beyond insurance products alone.

What is resilience?

Flood/disaster resilience is 'The ability of a system, community, or society to pursue its social, ecological, and economic development and growth objectives, while managing its flood/disaster risk over time in a mutually reinforcing way' (Keating et al., 2017).

The time is now

Knowing the significant detrimental impacts that floods have on communities around the world; that there is a cost to doing nothing; and that solutions are in hand; there is no excuse for inaction. Donors and national governments must now take action: to commit to increasing funding for DRR and climate adaptation, including flood prevention and risk reduction measures; to adapt policies and funding mechanisms; and to ensure that funding is reaching the local level, where it is needed most. Failure to do so threatens continued development and places these gains, quite literally, at risk of being washed away.

⁴ See Flood Resilience Portal (<https://floodresilience.net/index.php>) for resources.



Removing water from a house with pumping equipment after the “Coastal El Niño” flood – Piura, North of Peru. Rodrigo Rodrich for Practical Action

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The Zurich Flood Resilience Alliance is a multi-sectoral partnership which brings together community programmes, new research, shared knowledge, and evidence-based influencing to build community flood resilience in developed and developing countries.

We help people measure their resilience to floods and identify appropriate solutions before disaster strikes.

Our vision is that floods should have no negative impact on people’s ability to thrive. To achieve this we are working to increase funding for flood resilience; strengthen global, national and subnational policies; and improve flood resilience practice.

Find out more: www.floodresilience.net

The Zurich Flood Resilience Alliance is made up of the following organisations:

