

Communities must get prepared for increased flooding due to climate change, expert warns

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Communities must be better prepared for flooding in their homes and businesses, an expert warns, as climate change predictions suggest more

extreme flooding globally.

Floods still inflict major costs to the economies, livelihoods and well-being of communities, with flood risks and impacts set to increase further due to climate change.

Professor of Environmental Management, Lindsey McEwen explains how many experts now believe local communities have critical roles as key actors within [flood risk management](#) and [disaster risk reduction](#).

Professor McEwen said, "Flood risks are becoming more diverse, as are the communities they affect. So the question is, how can communities become more resilient?"

Increased risk

Professor McEwen offers various studies to show more extreme flooding is likely in developed world settings, with an increasing impact on people.

As well as the growing impact of climate change, there is also an increase in the economic value of assets on floodplains. [One study](#) predicts these annual flood damages in Europe could rise from EUR 5.3 billion to 40 billion by 2050, with the number of people affected increasing from 200 thousand to more than 0.5 million.

Professor McEwen collates evidence from up-to-date research, policy, and practice literature on community-focused flood risk management and draws on over 20 years of research and experience of working with diverse at-risk communities to outline the misconceptions and barriers to risk management, and the opportunities for progress.

She says the first misconception about flood mitigation is that it can be

solved purely through state-funded engineering solutions.

"Investing in large infrastructure projects as the sole flood management solution simply hasn't reduced ecological, financial and even sentimental losses," she explains. "Investment in defensive infrastructure alone, with its costs and design limits, can only be part of the solution."

Mitigating risk

Residual risk is risk remaining after any flood risk management measures have been implemented, for example, by [government agencies](#). Professor McEwen argues that effective risk management involves all stakeholders, with an 'urgent imperative' for the public to take some responsibility for residual flood risk and their own protection.

"Flood risk management is all about how we shift the focus away from reactive responses to preparation and resilience at the household and community level. Much of that residual risk management needs to happen at a local level, but people might not have the necessary information, skills or resources to do this," she explains.

Local flood risk management involves more than just government bodies, including non-government organizations (NGOs), community flood groups, small businesses, and local cultural and media actors.

"Critical is where responsibilities for mitigation of residual risk sit within the public psyche. Flood risk management, needs networks, collaboration and communication, including increasingly participation of [local communities](#) as key stakeholders. In some settings, structural measures, often implemented by government, offset design risk but residual risk remains," she explains.

Professor McEwen argues even with non-structural flood risk

management techniques, such as land-zoning, led by government or other actors, these often still require community awareness and agency to be effective, e.g. engaging with early flood warning systems.

"Even with these measures, residual flood risk remains to be dealt with by households at risk, such as through property-level protection."

Barriers to success

One of the issues with community resilience, Professor McEwen posits, is that some people can view this as a "government retreat in responsibility," rather than working alongside statutory interventions.

"A key question is how to increase community participation and agency when there is expectation of a key role of the state still pervades. There is a wider perceived disconnect between citizens and water in the developed world," she explains.

"While effective community-focused flood risk management requires action from communities and a wider group of stakeholders, communities have variable knowledge, empowerment or resources to participate in local flood risk planning."

It can also involve citizen involvement in wide-ranging community activities (e.g., local governance, volunteering, mutual aid and activism) working with and through community-based organizations, businesses, and non-government organizations (NGOs) involved in community development and resilience building.

Another barrier to sustainable risk management is people's individual vulnerability, including age, health, income, isolation and housing characteristics.

Hurricanes hitting the east coast of the U.S. are frequently cited as examples of differential impacts among particular racial, ethnic, and socio-economic groups. In just two examples, Hurricane Katrina in 2005 and Hurricane Harvey in 2017, African Americans, non-Hispanic Black and socio-economically deprived residents were hardest hit. These groups had constrained access to resources necessary for response, recovery, and medical care.

"To reduce personal losses, citizens—individually and collectively—need to be aware of what can or will be done by the state, what residual risk remains, and make plans to mitigate against that remaining risk" Professor McEwen concludes.

Professor McEwen is author of [*Flood Risk and Community Resilience*](#),

More information: Lindsey Jo McEwen, Flood Risk and Community Resilience, (2024). [DOI: 10.4324/9781315666914](https://doi.org/10.4324/9781315666914)

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