

Why it's so hard to be prepared for disasters

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Credit: Pixabay/CC0 Public Domain

Jeffrey Schlegelmilch is the director of the National Center for Disaster Preparedness at Columbia University's Climate School. There, he works to understand and improve the nation's capacity to prepare for, respond to, and recover from disasters.

Although the events themselves are extraordinarily traumatic and disruptive, Schlegelmilch finds the field of inquiry around disasters

fascinating. Rather than viewing disaster preparedness as a single discipline, he likens this intersection of social sciences, engineering, and the built environment to a musical symphony (although not always harmonious).

While functioning as an academic institution, the center's original research, trainings, and education of students ultimately are applied in a consultative-type arrangement to inform real-world decisions, such as meeting the needs of children during disasters, helping utilities support community benefits in an equitable way, and informing policy and legislation.

The way we react to disasters says a lot about who we are and what our society values. I sat with Schlegelmilch to learn what we can understand about risk mitigation and disaster preparedness from these consultants to civil society.

The following interview has been edited for length and clarity.

A magnitude 7.8 earthquake in early February killed more than 50,000 people in Turkey and Syria, and the casualty count seems to be compounding daily. What went wrong? From your professional opinion, were they prepared? Can anyone be?

This is one of the most common questions I get after a disaster, and the most difficult to answer. Preparedness is not a static point in space and time or an end goal achieved; it's a process that has to be engaged. With an [earthquake](#) of this magnitude, you'll always have damage and fatalities and you can't fully avoid it, as the cost of doing so is impossible.

Seeing as this is an historically seismically active area, damage on the order of magnitude we're seeing raises these questions: why is it so extensive, and did they do everything they could have? However, ongoing challenges in these countries, and in others experiencing geopolitical conflicts and hyper-inflation, can affect the ability to make the long-term investments needed for preparedness.

Another challenge is that the decisions we make are often guided by shorter-term goals [for example, being able to show earnings in a shareholder report], and longer-term investments don't always make it to the forefront, particularly in this region.

What global resources do all countries, especially those dealing with other growing pains, have available to ensure the safety of their citizens?

Grants and financing programs are in place at a global level, but they're not enough.

It's difficult for countries to make the necessary investments to meet increased exposure to hazards when there are other geopolitical forces at play [such as war or political polarization]. Recently, however, there has been increasing attention from global finance organizations to provide resources for these countries to enhance disaster resilience while meeting other economic needs.

But we shouldn't expect to see immediate major results. Existing infrastructure, like old buildings and roadways, are not necessarily designed to be resilient, and it can take generations for those investments to be realized at scale to provide a meaningful level of risk reduction.

If political and financial incentives for preparedness

are often for short-term gain, what levers are encouraging preparedness for the future? Are disasters factored into the cost of doing business?

There tends to be more of a focus on response and less on disaster risk reduction, even though that money goes further. It costs more money to build an earthquake-resistant building, but the payoff when that earthquake happens is much greater. And if the financier doesn't realize the savings from this payoff in a direct way—say, if society reaps the benefits—this value does not get meaningfully factored back into the investment decision.

So the math we're doing to value investments is wrong. There is more risk that's not being captured, making some resilience investments more valuable than they appear.

Do governments ever weigh inaction as more cost effective than preparing for a threat because they'll get bailed out by the federal government?

Chronically. States don't spend enough on disaster preparedness, largely because of the disaster relief fund, where the federal government will pick up the tab for 75% afterwards for most major disasters.

There have been proposals for mechanisms such as a disaster deductible, as well as large funding resources from FEMA and other agencies for pre-disaster risk reduction. Disaster costs are overwhelming, and behind the measurable dollar amounts are lives and livelihoods that are lost or disrupted for generations as a result of being under prepared.

Sometimes, a "natural" disaster is just that, a natural

event, but what makes it a disaster is the response of infrastructure not suited to the environmental conditions. In a growing global population with sprawl being ubiquitous, what levers exist to curb growth from areas prone to these natural disasters?

There's a bit of a debate in disaster academia on whether the term "natural disaster" should be gotten rid of altogether. What it comes down to is a concept everyone agrees with: whether of natural origin or not, a disaster requires some sort of human element to be a disaster.

An earthquake of roughly similar magnitude can render dramatically different amounts of damage, lives lost, and economic disruption due to variability in the built environment. A 7.0 magnitude earthquake felt standing in the middle of a field is not really a disaster. But if it's in the middle of Port-Au-Prince, Haiti, in substandard concrete construction, it's one of the worst disasters we've seen in modern history. There's thus a vulnerability, as well as a potential, in engineering.

Can we engineer our way out of it all?

We can't engineer our way out of everything, as there are always things we cannot predict, and we draw a line at the point at which the expense is not worth it.

The social and political environment is a factor as well. The [informal settlements](#) up hillsides, seen often in South American urban areas, are usually the first ones to be washed away in heavy rains, only to be gradually rebuilt between disasters. Interestingly, I grew up in the Bay Area in California, and those homes up on the hill were the most expensive ones! They were built to high earthquake codes and

everything, so were less vulnerable than informal settlements elsewhere.

We're increasingly reliant on infrastructure, particularly on electricity. The Texas outage in 2021, I would argue, was really only a major disaster because of the failure of the grid. Deaths were largely directly or indirectly due to power being out from this infrastructure failure. In the face of climate change and our increasing need for electricity, water, and ever-scarcer resources, increased dependence on infrastructure creates a vulnerability that needs to be shored up.

Seeing as we are dependent on man-made systems to deliver water and energy, if these lifelines are down, how can we be independent and in control of our own safety?

Taking care of yourself makes you more available to be there for other people. Basic skills, having backup plans, and knowing how to get to safety is healthy for everyone. A colleague of mine, Daniel Aldrich at Northeastern University, has convinced me that investments in social capital (neighbors helping neighbors) is just as important as investments in the built environment.

Research suggests that throwing a block party, and such activities that engender social cohesion, can be as valuable as having supplies like waterproof matches in your emergency preparedness kit. These social bonds and connections could be the thing that reminds your neighbor or community member to look out for you and get you out of disaster together. Building social capital is a resilience investment and something that can also be fostered at the municipal level.

Are there tradeoffs between physical resilience and

economic and social resilience? Are they ever at odds?

Yes, frequently. In the building of seawalls in Japan, cutting off connectedness to the sea eroded social and economic resilience in some places by disrupting access to fisheries, tourism, and one another.

For access to recovery resources, vertical connections—how connected your community is politically—can have a big impact on how money flows. In observing which states get more money or more attention after a disaster, the communities that are disproportionately disadvantaged are historically under-served communities who by definition lack a lot of that vertical [social capital](#).

All this talk about disasters: What makes you optimistic?

The people I work with. The more you peel back [disasters](#) and understand the built environment, the hazards, the social environment and racial inequities that're contributing to disaster vulnerability, you go down this pit of despair. But, you also get this inflection point where the curtain is lifted, you see how society works, and that opens the door towards a more just future. That's not something that comes from me but from the people who are focused on doing better by learning more and listening to communities, with ingenuity, passion, and energy.

Just recently, we had another project to take on related to the war in Ukraine, developing trainings to help teachers for trauma-informed classrooms, and although I am very keen to the heavy workload already allocated to the team, they are just excited about an opportunity to do something to help. It's very inspiring to see this desire and humility to help others.

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