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RECEIVED 01 May 2023

ACCEPTED 25 May 2023

PUBLISHED 09 June 2023

CITATION

Chattopadhyay S (2023) Editorial: Resilience in the face of environmental disasters in the age of COVID-19. *Front. Commun.* 8:1215056. doi: 10.3389/fcomm.2023.1215056

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Editorial: Resilience in the face of environmental disasters in the age of COVID-19

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KEYWORDS

resilience, environmental disasters, disaster management, COVID-19, pandemic

Editorial on the Research Topic

Resilience in the face of environmental disasters in the age of COVID-19

The COVID-19 pandemic has highlighted the levels of global uncertainty created by crises. The increased frequency and magnitude of environmental disasters, such as hurricanes, typhoons, tsunamis, earthquakes, droughts, and forest fires further add to the constant threat of global disasters that could send communities in a tailspin of chaos. Climate change experts and other scientists now find themselves in a position where their data has been weaponized, with vastly divergent forms of communication on the issue being presented to the public. Yet, despite this cascade of confusing information, it is evident that urgent actions need to be implemented by governments and communities around the world to combat the pressing issues of climate change. However, there is still a lack of certainty about the types of actions that will lead to community resilience in the face of such challenges. Understanding community resilience in the face of disasters is critical, and it requires collaborations and partnerships between experts in climate and environmental change, security, defense, communication, and systems science. Community resilience is the capacity of a community to retain desired functionality in the wake of a disaster or a crisis, and it involves the capacity to foresee potential vulnerabilities and plan actions ahead of a disturbance event.

Communication is a key concept in fostering and enhancing community resilience, and resilient communities incorporate changes into planning for recovery, often leading to more functional and closer-knit networks built on trust. The roles of communication and perceptions have not been well-studied specifically with respect to the effects of critical incidents and community responses that result in long-term resilience to such disasters. This Research Topic sought to explore this through a set of studies focusing on how different communities have responded to disasters, the lessons emerging regarding communication about such disasters, and solutions that could offer a more effective way forward in the face of uncertainty brought on by disasters.

Ferrari et al. explore the COVID-19 crisis in Medellín, Colombia, highlighting the limitations of the state in adequately addressing the crisis, leaving vulnerable urban areas at greater risk. However, their study shows how local collective actions led by citizens can offer concrete solutions to such crises. Their study highlights the need for a more proactive interaction between local community stakeholders and the state and the exchange of knowledge between them and their joint actions to better respond to such crises especially in the urban areas.

In their Puerto Rico study, [Rios et al.](#) also highlight how the impact of Hurricane Maria exposed weaknesses in the Puerto Rican healthcare system marred by the limited capacity of backup generators, poor patient care coordination, and interruption of medical care for patients with chronic conditions when the hurricane hit the island. The two remaining resiliency factors, addressing diverse needs and system adaptiveness in a time of crisis, were seen as positives in the Puerto Rican case. Their study indicates that a resilience framework that could help health systems identify extant strengths and areas of improvement in preparation for possible natural disasters, is necessary for better disaster preparedness and community resilience. This need is especially critical as the aftermath of the recent COVID-19 pandemic continues to challenge the capacity of the Puerto Rican health system, increasing the likelihood of another health system collapse, should another hurricane hit the island.

Further, in their work, [Retchless and Ross](#) discuss the positive link between scientific knowledge on the impact of anthropogenic CO₂ on hurricane activity and the need for effective and accurate communication of hurricane risk in coastal communities. This study notes that message framing and stakeholders' experience may affect receptivity to hurricane hazard information, and that communicators should consider these factors when sharing scientific hurricane risk information with the public.

[Robinson et al.](#) through their study focusing on the National Ecological Observatory Network (NEON) stress the need for the resilience of ecological communities in the face of increasingly frequent and severe environmental disasters and highlight how this further necessitates long-term and continuous observations of data and a research community that is itself resilient. They stress the importance of research communities having- reliable access to data and resources to facilitate responses to environmental disasters as well as mechanisms for rapid and efficient adjustment and adaptation to post-disaster conditions.

Overall, all the studies in the Research Topic underscore the importance of building resilience to disasters through collective

actions, research communities, and effective communication. Promoting proactive interactions between society and the state, identifying areas of improvement, and maintaining reliable access to resources and data are critical steps toward building resilience to natural disasters and other kinds of crises.

Author contributions

The author confirms being the sole contributor of this work and has approved it for publication.

Acknowledgments

I offer my appreciation for all the help offered by the Frontiers staff, through the entire process of organizing this Research Topic. I offer thanks to all the authors as well for their strong contributions to the Research Topic.

Conflict of interest

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