

Editorial



Is climate change turning South Asia into a disaster hotspot and what can we do about it?

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The climate emergency is the biggest economic, social, and environmental threat facing the planet and humanity. Climate change is increasing the frequency, intensity, and unpredictability of natural hazards and is a driver for extreme weather. Disasters linked to climate change are no longer rare—they're becoming the new normal. These disasters—such as floods, heatwaves, wildfires, droughts, and hurricanes—are becoming more severe due to shifts in global temperature, precipitation patterns, and ocean dynamics. Monsoon rainfall has become more erratic and intense due to rising global temperatures. Rivers like the Ganges, Brahmaputra, and Indus overflow more frequently. Glacial melting in the Himalayas contributes to higher river volumes and glacial lake outburst floods (GLOFs). The 2022 Pakistan floods affected over 33 million people. India and Pakistan regularly experience deadly heatwaves, now more frequent and intense. In 2022, temperatures in parts of India and Pakistan crossed 49°C (120°F), causing heatstroke deaths and agricultural losses. Warmer ocean temperatures have intensified tropical cyclones. Cyclone Amphan (2020) devastated parts of India and Bangladesh, one of the strongest storms ever recorded in the Bay of Bengal. Rising sea levels increase storm surge risks in coastal zones. The Intergovernmental Panel on Climate Change (1)

confirms that many of these recent extreme weather events would be less likely or less intense without human-induced climate change. For example, the 2021 Western North America heatwave was found to be “virtually impossible” without global warming.

Disaster risk reduction (DRR) and climate change adaptation (CCA) are two practices concerned with tackling the increased risk of disasters, with climate change. IPCC (2014) conclude that climate change will amplify existing risks while creating new ones for humans and ecosystems (2). It further suggests that risks are unevenly distributed and are more significant for disadvantaged people and communities in countries at all levels of development. Therefore, adapting to climate change and reducing disaster risk will significantly enhance community resilience. DRR looks to reduce the risk of both natural and man-made disasters through reducing exposure and vulnerability of people and property and increasing preparedness for such events, while CCA looks to make adjustments to reduce the potential negative impacts of climate change on society about both climate extremes and gradual changes in mean climate (3).

The impacts of climate change and disasters on health are well-documented. According to the Climate and Health Profile Report published by the World Health Organization (4), The risk of vector-borne diseases such as dengue and Malaria in Sri Lanka will increase towards 2070 under both high and low emissions scenarios, while under a high emissions scenario heat-related deaths in the elderly population are projected to increase to about 22 deaths per 100,000 by 2080 compared to the estimated baseline of under 1 death per 100,000 annually between 1961 and 1990 (4). Public health researchers have identified several pathways which could influence such impacts, namely; Changes in the frequency and intensity of extreme weather and climate events, Effects mediated through natural systems including changes in the geographical extent and incidence of infectious diseases (e.g., Water borne and food bore infections, Vector borne diseases) or health outcomes associated with poor air quality and Effects mediated through human systems such as malnutrition, mental health, climate migration and conflicts. It is estimated that 'Climate Sensitive Diseases' would exacerbate the global burden of disease and challenge the health security and socioeconomic fabric of the majority of poorer nations across the globe (5). There are increased disease outbreaks (cholera, dengue, heatstroke), mental health stress from displacement and disaster trauma, and poverty traps (as disasters push vulnerable families deeper into poverty).

The climate change and disaster nexus are an ongoing debate. Both DRR and CAA practices aim to reduce the vulnerability and increase the resilience of society, but despite this shared aim, CAA and DRR are frequently handled independently, separated by institutional and administrative boundaries. This is the case in national-level arrangements where DRR and CCA are managed by separate government departments (6). There is growing recognition that the theory and practice of Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR) are

converging, and there is increasing interplay between the two fields.

Many scholars have suggested that addressing CCA and DRR together could be beneficial. Such benefits include more efficient use of resources and improved decision-making through the sharing of relevant knowledge (3). The integration of CCA and DRR contributes to achieving sustainable development, thereby contributing to the goals of international frameworks such as the Sendai Framework for Disaster Risk Reduction (SFDRR) and the Paris Agreement (7). With the likelihood of more disasters in the future, there is obviously a need to reduce risk and adapt, and this complex task is more likely to be achieved by the two practices working together. CCA is not a subset of DRR, and they have both similarities and differences in their scope and emphasis. DRR and CCA should be joined under the integrated risk management, which is an important pillar of resilient and sustainable development.

However, there are several challenges that hinder the integration of CCA and DRR in Asia. Dias et al (2019) (8) have categorised these challenges under five categories: chaotic institutional set-up, political priorities, funding, stakeholder complexity, and communication barriers. In many South Asian countries, CCA and DRR are placed within different ministerial portfolios where they tend to compete with each other rather than collaborating, and their inherited cultures prevent or reduce effective integration. Furthermore, there are very limited funding schemes available in South Asia to integrate CCA and DRR efforts. Instead, there are different funding schemes for CCA and DRR at global, regional and national levels, contributing to policy and institutional separation. It is also evident that there is a limited political will among those in the disaster management and environmental communities to integrate CCA and DRR mandates. Furthermore, a collaboration between different

stakeholders and the sharing of information and knowledge among them is limited.

In strengthening the coherence, understanding the link helps: Governments plan for climate adaptation and disaster preparedness, Scientists improve early warning systems, and Communities build resilience and reduce vulnerability. UNDRR (2025) (9) highlights several key recommendations for strengthening this much needed coherence, in capitalising on the opportunities of a comprehensive risk management approach: Strategic alignment (DRR and climate action planning, developing common strategic processes and integrating); Institutional coordination (Overcoming siloing between institutions responsible for DRR and climate action, as well as establishing and funding dedicated platforms for real-time coordination; Technical collaboration (Fostering cooperation through technical working groups focused on data sharing, methodologies and expertise); Financial integration (Mainstreaming risk reduction principles across government investment decisions, such as through joint financial instruments for DRR and climate action). In the sectors of mutual interest between DRR and climate action the following areas and sectors are found as consistent thematic focus and practical action across the aforementioned domains: (1) early warning systems; (2) resilient agriculture; (3) critical infrastructure; (4) resilient healthcare; and (5) nature-based solutions (NbS). These sectors represent possible spaces for joint implementation, offering a potential for synergies by mobilizing diverse stakeholders towards common goals (9).

Climate change is not just influencing natural hazards—it is amplifying them. By addressing climate change, we also reduce the scale and impact of future disasters. Climate Change is a key underlying risk driver and DRR is a core climate adaptation strategy. Both CCA and DRR aim to reduce adverse impacts on the people, properties and the environment and advance sustainable development.

References

1. IPCC. *Managing the risk of extreme events and disasters to advance climate change adaptation*. In: Field CB, Barros V, Stocker TF, Qin D, Dokken DJ, Ebi KL, Mastrandrea MD, Mach KJ, Plattner GK, Allen SK, Tignor M, Midgley PM (eds.) Special Report of the Intergovernmental Panel on Climate Change. Cambridge, UK: *Intergovernmental Panel on Climate Change*, 2012.
2. IPCC. *Climate Change 2014: Synthesis Report*. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, 2014. <https://doi.org/10.1017/CBO9781107415324>.
3. Clegg G, Dias N, Amaratunga D, Haigh R, Panda A. *Integration of CCA and DRR for flood resilience: a review of good practices in the United Kingdom*. In: Global Assessment Report on Disaster Risk Reduction (GAR 2019). United Nations Office for Disaster Risk Reduction (UNDRR). Available from: <https://www.unisdr.org/we/inform/publications/66296>.
4. WHO. *Climate and Health Country Profile, Sri Lanka, 2015*. Available from: <https://iris.who.int/bitstream/handle/10665/246141/WHO-FWC-PHE-EPE-15.45-eng.pdf>.
5. Etzel RA, Weimann E, Homer C, Arora NK, Maimela G, Villalobos Prats E, Banerjee. Climate change impacts on health across the life course. *J Glob Health* 2024; 14: 03018. <https://doi.org/10.7189/jogh.14.03018>.
6. Dias N, Amaratunga D, Haigh R. *Challenges associated with integrating CCA and DRR in the UK – A review on the existing legal and policy background*. 7th International Conference on Building Resilience. Bangkok, Thailand, 2018.
7. Amaratunga D, Haigh R, Dias N, Hemachandra K. *Synthesis report of legal, policy and science approaches within the frame of disaster risk reduction (DRR) and climate change adaptation (CCA)- ESPREsSO Project*. National Report, United Kingdom, 2017. <http://espresso-project.eu/>: University of Huddersfield.

8. Dias N, Clegg G, Amaratunga D, Raigh R. A resilient environment through the integration of CCA and DRR: an overview of existing challenges. *Int J Adv Sci Eng Inf Techno* 2019; 9(1): 129. <https://doi.org/10.18517/ijaseit.9.1.8072>.
9. UNDRR. *Disaster risk reduction and climate change adaptation: Coherence pathways in Europe and Central Asia*. United Nations Office for Disaster Risk Reduction, 2025. <https://www.undrr.org/publication/disaster-risk-reduction-and-climate-change-adaptation-coherence-pathways-europe-and>.