Climate-Related Emergencies on the Rise in Asia and the Pacific: Are We Prepared?

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Abstract: Climate change has increased both the frequency and intensity of natural disasters in the past decade, particularly in the Asia-Pacific. A transformative adaptation and mitigation effort is essential to ensure resilience and sustainable development in the region.

Asia and the Pacific continue to face multiple natural disasters, and their effects are compounded by the impact of the COVID-19 pandemic and the realities of climate change. It remains the most disaster-prone region in the world with more than 2m fatalities since 1970. An alarming number of more than 140 disasters struck the

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region in 2022 alone, impacting 64m people causing around 7,500 fatalities and US$57bn in damages.
A transformative adaptation and mitigation effort must be adopted going forward to ensure resilience and sustainable development in the region.
As someone who has lived in coastal cities in Asia, and experienced floods, cyclones, heatwaves, tsunamis, earthquakes, rains, and droughts, I have realised that we have a long way to go before we can say we are prepared for incoming natural disasters. The magnitude and impact of natural disasters over the past decade indicate that both their intensity and their frequency are on the increase due to climate change. For example, the number of recorded disasters have increased five-fold, and are driven in part by human-induced climate change and extreme weather.

Disaster risk and early warning systems
According to the United Nations Office for Disaster Risk Reduction (UNDRR), an early warning system is:

> (A)n integrated system of hazard monitoring, forecasting and prediction disaster risk assessment, communication and preparedness activities systems and processes that enables individuals, communities, governments, businesses and others to take timely action to reduce disaster risks in advance of hazardous events.

Multi-hazard early warning systems address several hazards in contexts where hazardous events may occur alone, simultaneously, cascading or cumulatively over time, taking into account potential interrelated effects. Economic losses, exposure, vulnerabilities, and fatalities are unevenly distributed across the region. This is attributed to the difference in development and capacities of developing countries and least-developed countries. Disaster risk is also escalating faster than the region's resilience. Hard-won developments are at stake, and inaction will cause disaster risk to outpace resilience beyond feasible limits of adaptation and imperil sustainable development.
COP27 saw a high level of consensus and support towards solving the climate crisis. With climate-related disasters displacing more people than conflict, the UN Secretary General unveiled a plan that ensures protection through early warning systems within the next five years.

Gaps in protection
A UNDRR report highlights significant gaps in protection as only half of the countries in the world have Multi-Hazard Early Warning Systems. More significantly for Asia and the Pacific region, less than half of the Least Developed Countries (LDCs) and

only one-third of the Small Island Developing States (SIDs), have a multi-hazard early warning system in place.
Early warning systems are a way of knowing that a natural disaster is on its way. Prior knowledge of an impending disaster helps vulnerable communities and local capacity to be prepared. Many countries in the Asia-Pacific region with limited or no early warning systems, particularly LDCs and SIDs will benefit from the UN Secretary General's plan.The Asia-Pacific Disaster Report 2023, while highlighting the crucial role that multi-hazard early warning systems play in terms of risk reduction, also sheds light on the need to champion innovation and scientific breakthroughs capable of advancing early warnings. Moreover, it calls for increased investment in nature-based solutions to support long-term sustainability, protection and restoration of degraded environments.

Need for transformative adaptation

Transformative adaptation as defined by the World Resources Institute is a fundamental and systemic change for sustained equitable growth which can secure sustainable societal development to strengthen resilience on various scales. It aims to do this while ensuring social equity, optimising financial efforts and minimising the risk to local livelihoods amplified by accelerating climate change. Strategies to encourage transformative adaptation can sometimes challenge existing structures and encourage countries and communities to overcome dependence on other groups for adjustment to climate change. This essentially attempts to localise efforts given that international or external support may fall sharply as the costs of domestic adaptation in donor countries rise.
In the context of LDCs and SIDs in the region, the magnitude and vulnerabilities exceed normal conditions while also overwhelming available capacity and resources. There have been increases in the severity and intensity of cyclones which have contributed to unprecedented damage. For example, Judy and Kevin, two Category 4 tropical cyclones and an earthquake of 6.5 magnitude impacted over 80 per cent of the population of the South Pacific Vanuatu islands in early March 2023. On macro-economic impact, Pacific SIDS face average annual losses from multiple hazards totalling US$1.1bn under the current climate warming scenario and these are set to increase to US$1.3bn and US$1.4bn under moderate and worst-case scenarios. Given that we can foresee more such events in the future, we need to adapt transformationally rather than just incrementally.

Examples of transformational adaptation strategy

An example of a transformational adaptation strategy is the 'Migration with Dignity' policy of the former President of the Pacific island nation, Kiribati. It recognises the need to build the vocational and educational capacity of Kiribati residents to achieve a life that will be better than or equal to the ones they might be leaving behind due to climate change. Such actions can eventually encourage vulnerable populations to voluntarily relocate thereby boosting climate resilience in the long-term.

There have also been instances where communities have been moved to less vulnerable locations while giving them access to similar livelihood opportunities to optimise sustained success. Fiji has undertaken many such relocations and the process has included community consultations.

In Bangladesh, transformational adaptation projects supported coastal settlements to adjust to the slow rise of sea levels and increasing storms. Hydroponic farming systems were introduced, which allowed the coastal population to rely on a less resource-intensive system to produce food. This meant that extreme events, which previously would have halted food production completely, are now eliminated.

Transformative adaptation is present and is adopted at the conceptual level, however, there is not much known about what it will look like on the ground, especially for thousands of informal and urban settlements across cities in Asia and the Pacific.

The way forward

There are many promising examples of transformative adaptation in the Asia and Pacific region, indicating the effectiveness of the process. Countries still reluctant to undertake transformational efforts must look towards good practice and lessons learned in order to increase climate resilience and adaptation.

Early warning for all is an imperative, and transformative solutions are needed. To minimise risk, adaptation investment must increase. For example, dedicated finance for adaptation could fund the development of early warning systems which would in turn help anticipate disasters and increase preparedness. Investing in adaptation and resilience could reduce the secondary consequences of disasters, such as climate induced displacement. New infrastructure and water resource management must be made more resilient.For example, strengthening natural systems like mangroves can elevate their functions to provide coastal protection by reducing the impact of waves, coastal erosion, and storm surge. Disaster risk reduction with equitable, sustainable and resilient development must be at the heart of a people-centred approach and evidence-based decision-making.