

FOR A SHIFT IN GEAR: ON MANAGING NATURAL DISASTERS

Relevant for: Environment & Disaster Management | Topic: Disaster and disaster management

Kerala's unique topography — of coastal plains and rolling hills between the Arabian Sea and the Western Ghats — is vulnerable to several natural hazards, landslides, flooding and coastal erosion being the most common. Incidents of flooding have become frequent, aided by human intervention. In the massive flooding the State faced recently, more than a million people were displaced and had to be housed in relief camps. The conservative estimate of losses has been put at 21,000 crore. While the [Madhav Gadgil](#)-led Western Ghats Ecology Expert Panel had recommended the gradation of the Western Ghats into three eco-sensitive zones, with significant restrictions or outright bans on construction and mining activities, this was not acceptable to the State government.

India is prone to disasters. About 70% of its coastal areas are prone to tsunamis and cyclones, about 60% of its landmass vulnerable to earthquakes, and 12% of its land to floods. Multi-storied housing is booming in urban India, built on a framework of beams, pillars and brick walls. With parking spaces prioritised at the ground level over structural stability, retrofitting is urgently needed, despite the significant costs. Most Indian houses are made of brick masonry walls, with fire/unfired bricks and stones, and yet few if any undergraduate civil engineering courses consider these materials, focussing instead on reinforced cement and concrete. Earthquake engineering is taught as a specialisation at just a few universities, leading to a serious shortage of retrofitting-trained civil engineering manpower.

Yet, risk management is still in its infancy. In the case of Kerala, in 2003, the Home Ministry had proposed the formation of specialist teams to manage disasters using four battalions from the Central Industrial Security Force and Indo Tibetan Border Police. Kerala was required 'to identify a State-level training institution' for the purpose. The project has been forgotten. It has been the same response, even after the Ockhi disaster when the Centre proposed forming a special team and funding.

We are far behind even in forecasting disasters that occur annually. Even now, after the Kedarnath floods in 2013, Uttarakhand still has few if any Doppler radars to provide early alerts about cloudbursts and heavy rain. There are few guidelines on construction in flood-prone regions, or even a map of safe zones.

Few States have prepared emergency action plans for the over 5,000 large dams in India, with reports of just 200 dams having been covered so far. Inflow forecasts are available for around 30 reservoirs and barrages (there are over 4,800 such structures). Mitigation projects for upgradation of the observatory network have barely commenced. The effectiveness of the National Disaster Response Force (NDRF) has been hampered by a shortage of trained manpower, training, infrastructure and equipment, which prompted the Comptroller and Auditor General to highlight the National Disaster Management Authority's performance in projects such as vulnerability assessment and mitigation projects of major cities as "abysmal".

We need to revise the norms for disaster relief in India. Each State and district has different costs for labour and construction, making the idea of a uniform amount for relief redundant. In Kerala's Kuttanad region, one of the earliest affected by the floods, the specified compensation of around 92,000 for a completely destroyed house offered was seen to be inadequate. Current disaster norms do not differentiate between States, offering, for example, the same amount per unit for disaster relief in Bundelkhand as in Goa. Such practices are bound to lead to an inadequate recovery.

Disaster norms are also skewed more towards rural areas, focussing on agriculture, fisheries, livestock and handicrafts from a relief perspective. Typically, after a disaster, revenue officials

are responsible for visiting affected areas and identifying people for relief, in turn offering scope for misuse and corruption. In addition, any disaster relief will typically exclude anyone living in an unauthorised area. Such norms also exclude share-croppers and agricultural labourers, while focussing only on small and big farmers. The former are also the ones excluded from the rural credit market, while facing significant risk from agricultural uncertainty. Finally, unlisted disasters which are not neatly bucketed in the specifications under the Calamity Relief Fund are restricted to a relief of 10% of the fund's annual allocation.

Planned urbanisation can withstand disasters, a shining example being Japan which faces earthquakes at regular intervals. The India Disaster Resource Network should be institutionalised as a repository for organised information and equipment gathering.

India needs a strong disaster management agency. Disaster preparedness should be focussed on meeting the immediate contingency, implementing a conceptual, long-term rehabilitation strategy while maintaining an ethnographic understanding. It must be built on anticipatory governance, emphasising studies that embed foresight and foster citizen awareness. The NDRF must fill its vacant specialist positions while being given better control over transfers and deployment of its personnel. Without such reforms, only the Indian Army and paramilitary forces can remain first responders, and States will continue to cry out for relief. Perhaps, it's time to move on from being focussed only on managing natural disaster emergencies to improving resilience.

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