

# Lessons from past tragedies

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The climate upheavals of 2025 were a stark warning for India; it was the year when the frequency and severity of climate-related risk hazards were no longer aberrations but part of a new normal. Climate resilience is no longer optional but foundational for ensuring India's ambitions are realised. As we move further into 2026, extreme vulnerability to hazard events will undoubtedly occur, but are our state-level systems resilient enough to absorb shocks, protect livelihoods, and recover without deepening inequities?

The Climate Risk and Vulnerability Assessment 2025 (CRVA) report, prepared by the Institute for Competitiveness, provides a comprehensive picture of which states are exposed, most sensitive, and least prepared for such events. The CRVA assessment also reveals a troubling pattern: climate vulnerability in India is systematically higher in states with lower GDP per capita.

Bihar, in the assessment, emerges as the most climate-vulnerable state overall in the "very high" climate risk category, with a score of 55.27, illustrating how economic weakness and climate risk reinforce one another. States with limited fiscal capacity are in the least position to invest in resilient infrastructure, often, even though their exposure to climate risk reinforces one another. The result is a vicious cycle in which low incomes constrain adaptation, repeated climate shocks deepen economic losses and long-term growth is further suppressed, widening regional inequalities over time.

Bihar's experience is therefore not exceptional but indicative of a

broader pattern across many Indian states where high climate exposure coincides with weak adaptive capacity and constrained fiscal space. Bihar also demonstrated the most constrained adaptive capacity in the country, with a score of 82.38, reflecting severe deficits in basic infrastructure. The state has only 1.4 primary health centres per lakh population, among the lowest in the country, sharply limiting its ability to respond to climate-related health emergencies. Deficiencies in water and sanitation compound this vulnerability, with just 47 per cent of households having access to improved sanitation, increasing the risk of disease outbreaks during floods. Communication infrastructure is another critical weakness, with its tele-density being the lowest in the country at 55.8 per cent, constraining the dissemination of early warnings and coordination of relief during extreme events.

Macro-level assessments, such as the Climate Risk and Vulnerability Assessment (CRVA), identify where exposure, sensitivity, and adaptive capacity are weakest. However, it is micro-level assessments at the household level, as undertaken by Megh Abhiyan, that reveal what climate risk actually means in lived terms: the assets lost, livelihoods disrupted, the failure of early warning systems and the coping strategies exhausted that remain invisible in aggregate datasets.

The gap becomes clear when we examine Bihar's experience during the 2024 floods. A household-level flood assessment conducted by Megh Pyne Abhiyan, which surveyed 2290 households across 21 panchayats in seven of the worst-affected districts, combined GIS-based flood mapping with detailed household

questionnaires, participatory flood mapping, focus group discussions, and key informant interviews. Bihar floods occur every year and make headlines, but what makes the 2024 floods significant is the highly irregular monsoon season. Early rainfall deficits created drought-like conditions, followed by widespread flooding from mid-August as upstream surges in the Ganga spread across the state.

A late spell of heavy rain in September finally triggered phase 2 of the floods, affecting 27 districts in Bihar. This impacted 56.38 lakh people across 36,632 villages, damaging nearly 97 per cent of agricultural land, over 10,000 houses, and causing human and animal losses. Official estimates place the economic losses at approximately Rs 327 crore. Seen alongside the CRVA's rankings, the household assessment captures these compounded events in India's most vulnerable and poor landscape.

What makes the assessment unique is that it distinguishes among flood typologies, rather than treating all floods the same. As per the report, the framework recognises eight core flood types - including waterlogging outside embankments, riverine flooding, flooding within embankments, riverside riverine flooding within embankments, riverside riverine flooding with erosion, breach-induced riverine flooding in the countryside, flash flooding between embankments of the same river and flooding in unconfined embankments.

By explicitly classifying the type of flood a household experiences, the assessment was able to trace how different flood pathways produced, sharply different patterns of damage and losses in affected districts; as



the report showed that breach-induced flooding affected nearly 59 per cent of surveyed households and accounted for the largest share of aggregated losses, while rarer flash floods between embankments proved especially destructive for those affected. In aggregate terms, the losses recorded outside embankments were more than six times those recorded inside, underscoring that climate-resilient infrastructure and preparedness systems with early warning systems need to be better aligned with flood technologies and household realities rather than assuming a uniform risk.

Beyond asset damage, the report has also documented disruption to WASH facilities and damage to toilets, compounding health risks, service delivery and social inequities. This household survey, when seen alongside the CRVA assessment of Bihar floods, offers a real-time illustration of how high exposure and weak adaptive capacity translate into compounding losses on the ground.

Preparedness will determine the extent of our impact. This preparedness involves measures such as resilient infrastructure, strong early warning systems, climate-smart agriculture,

ecosystem restoration, and building communities' capacity to reduce vulnerability and minimise future losses systematically. But how can we know better if we continue relying solely on national-level assessments?

The risks faced by flood-prone districts in Bihar, Assam, and Kerala differ, as do the increasing urban flood risks in Indian cities, which continue to manifest in fundamentally different ways. That is why combining macro-level assessments with household surveys across states that capture real exposure, losses, and adaptive capacity is imperative.

Therefore, this year, there needs to be an imperative push across the country to integrate climate risks into state budget planning, invest in resilient climate infrastructure, and address existing inequalities. The path towards a resilient future is only within reach if states act decisively and treat not hard figures as merely records of damage or yearly accounts of statistics, but as a guiding part for building long-term resilience for the better.

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