

What is lacking in India's heat action plans?

The absence of long-term strategies may lead to a higher number of heat-related deaths due to more frequent, intense, and prolonged heat waves in the following years.

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Between 2020 and 2022, deaths due to heat stroke had increased in the country. While the number stood at 530 in 2020, it jumped to 730 in 2022. (Photo by Narendra Vaskar)

Most of the heat action plans (HAPs) put forth by multiple Indian cities lack long-term strategies to tackle the growing threat of extreme heat in the country, a new study has found. It also said that the cities having such strategies did not implement them

effectively.

Such gaps in planning could result in a higher number of heat-related deaths due to more frequent, intense, and prolonged heat waves in the following years, the analysis says.

The study, 'Is India Ready for a Warming World? How Heat Resilience Measures Are Being Implemented for 11% of India's Urban Population in Some of Its Most At-Risk Cities', was carried out by the Sustainable Futures Collaborative (SFC), a New Delhi-based research organisation. It was authored by researchers from SFC, King's College London (England), Harvard University (USA), Princeton University (USA), and the University of California (USA).

"These findings are a warning about the shape of things to come... While progress on systems to respond to ongoing heat waves is both necessary and urgent, equal attention needs to be paid to gearing up for the future," Aditya Valiathan Pillai, a visiting fellow at SFC, said in a statement.

Here is a look at the findings of the study, and how it was carried out.

First, what is a Heat Action Plan?

A heat action plan is essentially an early warning system and preparedness plan for extreme heat events. "The Plan presents immediate as well as longer-term actions to increase preparedness, information-sharing, and response coordination to reduce the health impacts of extreme heat on vulnerable populations," according to a government document.

In response to a Lok Sabha question asked in July 2024, Minister of Science and Technology and Minister of Earth Sciences Jitendra Singh had said that the National Disaster Management Authority (NDMA) was implementing HAPs in 23 states that were prone to heatwave conditions, in collaboration with state authorities.

The response also showed that between 2020 and 2022, deaths due to heat stroke had increased in the country. While the number stood at 530 in 2020, it jumped to 730 in 2022. However, in 2024, it came down to 269 suspected heatstroke deaths and 161

confirmed heatstroke deaths, according to the NDMA.

Notably, non-profit organisation HeatWatch said in a 2024 report that “between March and June [last year], there have been 733 deaths due to heatstroke in 17 states in India”.

How was the new study carried out?

For their analysis, the researchers identified cities with populations over 1 million (based on the 2011 Census) that were “expected to experience the largest increases in dangerous heat index values, which combine temperature and humidity, relative to their recent historical average,” the study said.

These cities were [Bengaluru](#), Delhi, Faridabad, Gwalior, Kota, [Ludhiana](#), Meerut, [Mumbai](#), and [Surat](#). The researchers conducted 88 interviews with city, district, and state government officials responsible for implementing heat actions in these nine cities. They also interviewed representatives from disaster management, health, city planning, labour departments, as well as city and district administrators.

What did the study find?

The analysis found that although all the nine cities had short-term emergency measures — such as access to drinking water and changing work schedules — long-term actions were either entirely absent or poorly implemented.

Long-term measures such as “making household or occupational cooling available to the most heat-exposed, developing insurance cover for lost work, expanding fire management services for heat waves, and electricity grid retrofits to improve transmission reliability and distribution safety” were missing in all the cities, the study said.

The cities implemented actions like the expansion of urban shade and green cover and the creation of open spaces that dissipate without focusing on populations and areas that experience the greatest heat risk, according to the analysis.

It also noted that the long-term strategies being implemented focus largely on the health system, and not on the prevention. The study highlighted that there was a requirement that more funding was required to implement long-term actions.

Importantly, the analysis found that institutional constraints limit the possibilities for long-term action. “The top problem identified by respondents was local coordination between government departments, both within and between municipal, district, and state government departments,” the study said.

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