



EDITORIAL: THE HINDU

GENERAL STUDIES 3: DISASTER MANAGEMENT

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TOPIC: HEATWAVES

Tackle heatwaves with short- and long-term measures

1. Early Onset and Intensification of Heatwaves

- In 2025, severe heatwaves began as early as March 15, nearly 20 days earlier than in 2024.
- India is experiencing an increasing trend in both the number and intensity of severe heat days.
- Globally, 2024 was the warmest year recorded, with temperatures 1.55°C above pre-industrial levels.
- December 2022 was India's hottest December since 1901.
- The frequency of heatwaves has sharply increased over the past two decades.

2. Health Impacts of Heat Stress

- Heat stress occurs when external temperatures approach human body temperature (37°C), hampering the body's ability to cool itself.
- It can damage vital organs such as the brain, liver, and kidneys and may even lead to death.
- Wind speed and humidity amplify the health effects of heatwaves, making heat stress more dangerous.

3. Socio-Economic Consequences

- Heatwaves reduce agricultural productivity and increase stress on farmers and livestock.
- Poor and informal sector workers face loss of working hours, reduced income, and job insecurity.
- India's labour force is largely heat-exposed (about 75% or 380 million people).
- Economic losses from heat stress are estimated to be between 3%-5% of GDP.
- In 2023 alone, India lost nearly 6% of its work hours due to heat stress.
- Increased electricity demand during heatwaves strains infrastructure and affects industrial output.

4. Inequitable Burden on Vulnerable Populations

- The worst-hit groups include the poor, elderly, women, migrants, and informal workers.



- Women face added stress due to social customs (e.g., kitchen heat, clothing norms, and crowded sleeping areas).
- These inequalities make heatwaves a *social justice and equity* issue.

5. Urban Heat Island Effect and Delayed Global Action

- Cities have higher temperatures than rural areas due to human activity—this has been known since the 19th century.
- Despite this, global action on heatwaves was delayed until 2003-2008, when European countries began formulating Heat-Health Action Plans (HHAPs).

6. India's Efforts – The Rise of Heat Action Plans (HAPs)

- Ahmedabad, Gujarat, introduced India's first Heat Action Plan in 2013.
- Now, over 23 States and 140 cities have implemented HAPs.
- The National Programme on Climate Change and Human Health (NPCCHH) and NDMA issue advisories and health warnings.

7. Structure of HAPs

Most Indian HAPs include the following components:

- Early prediction and alerts for heatwaves.
- Awareness campaigns for people and communities.
- Preparing the health system to deal with heat-related illnesses.
- Long-term interventions like tree plantation, open gardens, and cool roofing.
- Data systems to track heat-related illnesses and deaths.

8. Shortcomings in Implementation

- Many HAPs remain partially implemented or lack local adaptation.
- Success depends on collaboration among State governments, city administrations, NGOs, public health experts, and communities.

9. Key Recommendations and Learnings

a) Update and Localize HAPs:

- Each State should update HAPs annually using vulnerability assessments.
- Plans should include humidity levels and define clear accountability of stakeholders.



b) Improve Data Collection and Interpretation:

- Cities must track mortality and morbidity due to heat more accurately.
- Understanding which areas and populations suffer most can guide interventions.

c) Introduce Heat Health Alert (HHA) Systems:

- Indian HAPs should include daytime and nighttime temperature tracking like in the UK.
- Alerts must predict times of relative thermal comfort to guide school and office hours.

d) Strengthen Long-Term Preventive Measures:

- Promote heat-resilient urban design, materials, and architecture.
- Provide financial support to informal workers during heat-induced downtime.

e) Address Urban Poverty in Advisories:

- ‘Stay indoors’ advice is ineffective in dense urban slums surrounded by concrete structures.
- Heat advisories should consider geography, socio-economic status, and microclimates within cities.

f) Introduce Summer Shelters and Cool Roofs:

- Establish community cooling centers or shelters, especially for homeless and poor communities.
- Adopt and promote ‘cool roof’ policies using reflective materials.

g) Ensure Drinking Water and ORS Accessibility:

- Availability of water stations and electrolyte solutions is essential in public spaces and workplaces.
- Authorities should support staggered work hours and midday rest periods.

10. The Way Forward – A People-Centric, Equity-Based Approach

- Investments in heat adaptation measures are cost-effective and prevent major health and economic losses.
- Policymakers must treat heatwaves as an *equity issue*, focusing on long-term, inclusive, community-driven strategies.
- Integrated actions involving coordination across health, disaster management, urban planning, and labor departments are crucial.



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- Provision of insurance for lost workdays due to heat can be an innovative policy tool to support vulnerable populations.

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