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Heat Action Plans (HAPs) — India's Framework for Heatwave Disaster Management

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Heat Action Plans (HAPs) — India's Framework for Heatwave Disaster Management

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WHY IN NEWS

IMD has issued **heatwave alerts** for West Rajasthan, Punjab, Haryana, and parts of Delhi-NCR for May 1-5, 2026 with temperatures reaching **44-48°C**. The principal administrative response to heatwaves in India is the **Heat Action Plan (HAP)** framework — a NDMA-coordinated approach adopted by **23 of India's 28 states** as of 2026. The framework's effectiveness, gaps, and adaptation to climate change define how India responds to one of the world's deadliest natural hazards.

WHAT IS A HEAT ACTION PLAN?

A **Heat Action Plan (HAP)** is a state or city-level operational document specifying how the government will:

1. **Forecast** heatwaves using IMD data and local weather stations
2. **Communicate** warnings to vulnerable populations
3. **Implement** cooling measures (cooling centres, water distribution)
4. **Manage** health responses (hospital preparedness, mortuary services)
5. **Coordinate** across departments (health, transport, electricity, water supply)
6. **Evaluate** post-season for continuous improvement

The first major HAP in India was developed by **Ahmedabad** in 2013 — following a 2010 heatwave that killed over 1,300 people in the city. The Ahmedabad HAP became the model for subsequent state HAPs.

IMD'S HEATWAVE DEFINITION (FOR CONTEXT)

REGION	HEATWAVE THRESHOLD	SEVERE HEATWAVE THRESHOLD
Plains	Maximum ≥ 40°C; departure ≥ 4.5°C	Departure ≥ 6.4°C
Coastal	Maximum ≥ 37°C; departure ≥ 4.5°C	Departure ≥ 6.4°C
Hilly	Maximum ≥ 30°C; departure ≥ 4.5°C	Departure ≥ 6.4°C

A heatwave declaration triggers HAP implementation in the affected state/district.

THE HAP FRAMEWORK — KEY COMPONENTS

Phase 1 — Pre-Season Preparedness (March-April)

- HAP review and update
- Inter-departmental coordination meeting
- Stockpiling water, ORS, ice, oxygen
- Hospital preparedness — special heat wards
- Public awareness campaigns

Phase 2 — Real-Time Response (April-June)

- IMD daily forecasts → State Emergency Operations Centre
- Yellow/Orange/Red alerts trigger different response levels
- Cooling centres activated
- Free water distribution at construction sites, bus stands, railway stations
- Ambulance pre-positioning
- Targeted SMS alerts (now CB alerts post-May 2, 2026)

Phase 3 — Post-Season Evaluation (July-August)

- Mortality data analysis
- HAP updates based on actual response
- Capacity building for next year

MORTALITY AND PUBLIC HEALTH IMPACT

Heatwaves are India's **deadliest natural hazard** (more than cyclones, floods, or earthquakes in mortality terms over the past decade).

YEAR	REPORTED HEATWAVE DEATHS IN INDIA
2010	~1,300+ (Ahmedabad alone)
2015	~2,500 (national)
2024	~700+ (May-June)
2025	Approximately 4,400+ (per SOE 2026 — broader extreme weather)

The actual mortality is often higher than reported because:

- Heat-related deaths attributed to underlying conditions (cardiovascular, dehydration)
- Outdoor workers, elderly, homeless are systematically undercounted
- Many heat deaths happen at home, not in hospitals

VULNERABLE POPULATIONS

HAPs identify specific vulnerable groups requiring targeted intervention:

- **Outdoor workers** — construction, agriculture, street vendors, gig workers
- **Children and elderly** — schools, anganwadis, old-age homes
- **Pregnant women** — maternal health centres
- **Homeless and slum dwellers** — limited access to cooling
- **Patients with cardiovascular/respiratory conditions** — pre-existing vulnerability
- **Working women** — often outdoor work + household responsibilities

STATES WITH OPERATIONAL HAPS (2026)

23 of 28 states + multiple cities have operational HAPs as of 2026, including:

- **Gujarat** (Ahmedabad model — first comprehensive HAP, 2013)
- **Maharashtra** (Mumbai, Pune)
- **Telangana** and **Andhra Pradesh** (severe heat zones)

- **Odisha** (post-2010 heatwave deaths)
- **Rajasthan** and **Punjab** (extreme heat zones)
- **Delhi** (Master HAP for NCR)
- **Bihar, UP, MP** — varying levels of operationalisation

States without comprehensive HAPs (or weak HAPs): Northeast states, Himachal Pradesh, J&K (heat is not historical priority but climate change is changing this).

GAPS AND CHALLENGES

CONCERN	ISSUE
Worker protection	Construction, agriculture, gig workers lack legal protection from heat exposure
Cooling centre underutilisation	Many sites unstaffed or unreachable for vulnerable populations
Power grid stress	Heatwaves drive AC use; grid failures concentrate during peak heat
Water access	Water distribution chains break down during extreme heat
Climate adaptation gap	HAPs designed for historical weather; not yet adapted for climate-changed extremes

CLIMATE CHANGE AND FUTURE HEAT

India's pre-monsoon heat is intensifying due to climate change. The **State of India's Environment (SOE) 2026** documented:

- 331 of 334 days of extreme weather in 2025
- 4,419 deaths from extreme weather (2025)
- 17.4 million hectares of cropped land affected

Future heat risk will require:

- HAPs in hilly states (where heat was previously rare)
- Integration with **Climate Action Plans (CAPs)** at state level
- Worker protection legislation
- Built environment changes (cool roofs, urban tree cover, ventilation in housing)
- Power grid hardening for sustained peak demand

UPSC RELEVANCE

PAPER	ANGLE
GS3 — Disaster Management	NDMA Heat Action Plans; heatwave classification; vulnerable populations
GS3 — Environment	Climate change adaptation; extreme weather; heat as health hazard
GS2 — Governance	State-level operational planning; inter-departmental coordination

Mains Keywords: Heat Action Plan, NDMA, Ahmedabad HAP 2013, IMD heatwave definition, vulnerable populations, climate adaptation, cooling centres, urban heat island, SOE 2026, 23 states HAP coverage

Facts Corner

ITEM	FACT
First HAP	Ahmedabad, 2013 (after 2010 heatwave)
States with HAPs	23 of 28 (2026)
Heatwave threshold (plains)	≥ 40°C with ≥ 4.5°C departure
Severe heatwave	Departure ≥ 6.4°C
2010 Ahmedabad deaths	1,300+
2025 extreme weather deaths	4,419 (SOE 2026)
Vulnerable groups	Outdoor workers, children, elderly, pregnant women, homeless
Cool roof guideline	Bureau of Indian Standards specifies SRI for reflective roofing
Climate Action Plans	State-level CAPs increasingly integrating with HAPs
Forecast source	IMD; State Emergency Operations Centre

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