GLOBAL HEAT & COOLING FORUM
Solutions for a Warming World

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DEPARTMENT OF SCIENCE & TECHNOLOGY

CDRI
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ABOUT THE GLOBAL HEAT AND COOLING FORUM

The Global Heat and Cooling Forum (GHCF) is an international platform focused on advancing collaborative action on heat resilience and climate-friendly cooling. It champions a solutions-oriented, equitable, and integrated approach, convening government stakeholders, practitioners, community organizations, industry leaders, researchers, and civil society organizations to drive meaningful and lasting change.

Launched by the Natural Resources Defense Council (NRDC) in 2025, GHCF was established in recognition of the urgent need for solutions that both protect people from extreme heat and deliver sustainable and accessible cooling. It is co-organized with key government and institutional partners, reflecting a collaborative, cross-sectoral effort to strengthen coordination and scale action.

GHCF serves as both an annual convening and a year-round platform that brings together the people, expertise, and ideas needed to advance practical, scalable solutions for heat resilience and sustainable cooling.

Address by the Honorable Union Minister Dr. Jitendra Singh at the Global Heat and Cooling Forum

> Rising temperatures are already affecting our health, our daily lives, and the broader economy. Cooling must be accessible to all, but it must also be sustainable. Responsible use of modern cooling systems is essential to reduce the energy burden and protect our environment.

Dr. Jitendra Singh
Honorable Union Minister of State (Independent Charge) for Science & Technology and Earth Sciences; Minister of State for PMO, Personnel, Public Grievances, Pensions, Atomic Energy and Space, Government of India

In his inaugural address at the Global Heat and Cooling Forum, the Honorable Minister Dr. Jitendra Singh underscored the growing urgency of addressing heat as a public health, development, and economic priority. He emphasized that heat stress is increasingly affecting vulnerable populations and reshaping disease burdens across communities.

Highlighting India's diverse climatic realities where regions may simultaneously experience extreme heat and extreme cold, Dr. Singh stressed the importance of developing locally grounded and context-specific cooling solutions and innovations rather than relying on uniform global approaches. He also emphasized the need to balance equitable access to cooling with responsible and sustainable use.

Reaffirming India's commitment to innovation, and sustainable development, Dr. Singh called for stronger collaboration across governments, research institutions, industry, and communities to advance practical, inclusive, and scalable solutions.

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Executive Summary

NRDC's second-annual Global Heat & Cooling Forum (GHCF), held in New Delhi 20-21 April 2026, convened global experts to shape an agenda for keeping people cooler as global temperatures rise. The past decade has been the warmest in global history, but the harmful effects of extreme heat are experienced unevenly, especially in the Global South, exposing a widening divide in heat preparedness. A significant share of the world's population lives and works in environments that intensify heat exposure, and exposures are worsened when people lack access to cool spaces. About 1.12 billion people globally are at high risk due to lack of access to affordable and climate friendly cooling solutions, with 309 million of them in India.[1]

Addressing this heat-cooling challenge means thinking beyond reactive, short-term heat responses, toward more systemic approaches that integrate heat adaptation strategies with accessible, affordable, and climate-friendly cooling. Discussions at GHCF 2026 moved beyond the "what" and the "why" of heat risks and cooling technology gaps, to dive deeper into the "how" of advancing on-the-ground project implementation. The community of partners, speakers, discussants, and participants engaged creatively across multiple sectors, forging ideas that can spark action toward more equitable, climate-friendly heat protections and cooling for all.

Some common themes that emerged are summarized below.

Synthesizing Common Themes and Directions for Future Heat-Cooling Action

1. Governance and Institutional Integration

Administrative silos hinder information sharing and coordinated action. Solutions can focus on transitioning from seasonal, reactive responses toward long-term, institutionalized governance, including:

- Enhancing inter-departmental coordination to bridge gaps in heat planning
- Empowering local governments to choose tailored solutions
- Implementing improved oversight to eliminate implementation delays

2. Targeted Protection for Informal Workers

The informal and gig economy makes up over 90% of India's workforce, but current measures fail to capture conditions faced by informal, outdoor, and indoor workers. Strengthening protection requires refining how exposure is measured and establishing clearer standards for worker safety. Priority actions include:

- Developing exposure metrics beyond ambient temperature to include humidity, indoor heat accumulation in poorly ventilated spaces, and metabolic heat
- Transitioning from voluntary advisories to legally enforceable labor codes for heat
- Triggering safety measures for gig workers during extreme heat events

3. Built Environment and Regulatory Reform

Current building codes typically overlook passive cooling and life-cycle impacts, even though these would strengthen heat protections. Strategies to make buildings more heat-resilient include:

- National Building Code (NBC): Mandating reflective coatings and resilient materials on buildings in NBC revisions
- Prioritizing climate-responsive design in affordable housing (e.g., Pradhan Mantri Awas Yojana (PMAY))
- Retrofitting existing building stock to improve their thermal performance

4. Data Gaps and Evidence-Based Planning

Policymaking is hindered by fragmented and unlinked datasets on health, energy, and environment. Solutions that emerged from discussions include:

- Strengthening links between health and labor data to detect heat-related illnesses on and off the job
- Using GIS and satellite data to identify neighborhood hotspots for targeted heat interventions and investments
- Creating centralized databases that track building performance and infrastructure stress, to guide repair and upgrades

5. Financing and Economic Resilience

Financing remains a "major bottleneck," with limited dedicated budgets for heat action at municipal or state levels. Strategies to enhance funding for subnational Heat Action Plans (HAPs) include:

- Sharpening budgeting tools to track and improve the transparency of funding for heat resilience
- Strengthening the economic case for taking heat action by quantifying impacts on labor productivity, energy demand, and public health

By advancing coordinated and inclusive action and boldly testing solutions, we can ensure that the most heat-vulnerable communities are not left behind but are instead protected by heat-resilient infrastructure and equitable cooling solutions.

I. Keeping People Cooler as Global Temperatures Rise

NRDC's second-annual Global Heat & Cooling Forum (GHCF), held in New Delhi 20-21 April, 2026, convened global experts to shape an agenda for keeping people cooler as global temperatures rise. Extreme heat is one of the most consequential climate risks of the 21st century, and it is intensifying. The past decade has been the warmest in history, with 2023-2025 among the hottest years on record globally.[2] The adverse effects of extreme heat are experienced unevenly, especially in the Global South, exposing a deeper truth: a widening divide in heat preparedness. A significant share of the world's population continues to live and work in environments that intensify heat exposure, such as densely built urban areas, informal settlements, and poorly ventilated housing. The harmful effects of heat exposures are worsened when people lack access to cool spaces. As of 2023, about 1.12 billion people globally were at high risk due to a lack of access to cooling for thermal comfort, with 309 million of them in India.[3] These fundamental and growing disparities in climate adaptation and access to cooling leave the most vulnerable – low-income communities, the elderly, women and children, and outdoor workers – at increasing risk of health and economic harm.

That heat divide is further compounded by this paradox: as rising heat intensifies cooling demand, electricity consumption soars, leading to higher peak loads at power stations, and increased greenhouse gas emissions, which further accelerate climate change. Cooling delivered through carbon-intensive pathways can feed back in this way and worsen the warming it is meant to counter. To bridge this divide and surmount the heat-cooling paradox, we need to think beyond reactive, short-term responses to extreme heat, and toward more systemic approaches that integrate innovative heat adaptation strategies with more accessible, affordable, and efficient climate-friendly cooling solutions.

These ideas were the motivation for NRDC to launch the Global Heat & Cooling Forum in 2025, and GHCF 2026 builds upon the success of the inaugural 2025 edition. Discussions in 2025 highlighted cooling and extreme heat as deeply interconnected challenges, requiring integrated, multisectoral responses across health, energy, and urban systems. A key 2025 Forum outcome was the establishment of the Centre of Excellence for Heat Resilience and Sustainable Cooling (CEHSC) in Nagpur, housed at the State Institute of Disaster Management, Government of Maharashtra.

While the 2025 Forum aimed to ignite a coordinated global dialogue on heat preparedness and access to cooling, this year's event marks a pivotal shift, as discussions moved beyond the "what" and the "why" of heat risks and cooling technology gaps, to dive deeper into the "how" of advancing on-the-ground project implementation. GHCF 2026 is designed to move beyond problem framing toward actionable priorities, bringing together diverse stakeholders to identify what works, what is ready to grow and scale to other locations, and how to accelerate initial implementation in different settings. GHCF 2026 was co-organized with India's National Disaster Management Authority (NDMA), the Department of Science & Technology (DST), and the Coalition for Disaster Resilient Infrastructure (CDRI). It is supported by a network of partners, including the Global Heat Health Information Network (GHHIN), Alliance for an Energy Efficient Economy (AEEE), Ashok B Lall Architects, The Salata Institute for Climate and Sustainability at Harvard University, The Oxford India Centre for Sustainable Development, The ZERO Institute – University of Oxford, Sustainable Energy for All (SEforALL), SouthSouthNorth (SSN), Sustainable Solutions for Africa (SSA), Nabha Foundation, and Prayas Energy Group.

The GHCF 2026 agenda featured six thematic sessions spanning occupational health, adaptation governance, energy infrastructure, building regulations, community- and equity-centered approaches, and South-South collaboration, particularly India and Africa. Each session was co-curated with expert partners in each of these domains, ranging from academic institutions to on-the-ground community practitioners. The six deep-dive sessions and three plenary sessions were informed by three key priorities for 2026:

- **Centering lived experiences of the unheard to develop heat-cooling solutions**
  To narrow the heat preparedness divide, GHCF 2026 looked beyond temperature projections and health risk statistics, to focus on those on the frontlines of the climate crisis: informal and gig workers, women, and children. The goal is to move from designing solutions *for* these communities to designing *with* them.
- **Advancing heat-resilient buildings and infrastructure**
  This year, the Forum also explored the critical but sometimes overlooked dimension of power infrastructure, buildings, and transportation resilience. Since extreme heat threatens the physical systems that keep our society running, it is critical to ensure that future infrastructure is built to withstand the climate of the future.
- **South-South learning: sharing lessons from India and Africa**
  Many of the technical and policy challenges faced by countries in South Asia and Africa share common themes. GHCF 2026 highlighted locally-led approaches and case studies that can resonate and potentially scale across the Global South.

Photo Credit: NRDC

The Honorable Minister Shri Jitendra Singh sharing his special remarks during the inaugural session

Inaugural session and the release of NRDC's Heat issue brief

II. Topics Discussed in Depth at GHCF 2026

Across the two days of plenaries and thematic sessions, the following topics were discussed in depth. Summaries of the topics follow; please refer to the Appendix for the GHCF 2026 agenda.

1. Governance Pathways for Strengthening Heat Resilience in the Global South

Session Partner: Global Heat Health Information Network (GHHIN)

The past decade has seen a significant shift in both recognition and response to extreme heat. National and sub-national governments are increasingly treating extreme heat as a systemic risk requiring sustained policy attention and heat considerations are beginning to be integrated into disaster risk management frameworks, public health systems, and urban planning processes. But a necessary next phase of action is needed: to shift from primarily response-oriented measures toward more integrated, anticipatory, and development-linked approaches to heat resilience.

This session introduced a structured approach for advancing heat governance, anchored in the *Extreme Heat Governance Framework and Toolkit*,[4] developed by GHHIN in partnership with the United Nations Office for Disaster Risk Reduction (UNDRR). Discussions explored ways to strengthen a shared understanding of what effective heat governance entails, including the institutional arrangements, coordination mechanisms, and policy instruments needed to transition from response-oriented measures to long-term resilience.

Photo Credit: NRDC

Session 1: Governance Pathways for Strengthening Heat Resilience in the Global South

Some of the key highlights from discussions include:

On reframing heat as a governance and development challenge

- The time is now ripe to position extreme heat as an integrated part of planning for development, disaster risk reduction, public health, labor, energy, housing and economic growth, rather than treating it as a standalone or seasonal issue. Heat action is increasingly aligned with broader national and state-level visions such as Viksit Bharat and Viksit Maharashtra. While in some contexts, initial responses to heat may have been driven by optics or political signaling, heat action clearly needs to be institutionalized in the long-term via a sustained commitment to building resilience.

- New organizations are emerging as critical enablers, like climate action cells and CEHSC (Maharashtra). They help facilitate multi-actor dialogue, support medium- to long-term planning, help localize heat thresholds and responses based on context, translate cross-sectoral discussions into actionable steps, and help mobilize resources across departments and stakeholders.

On institutional structures and evolving governance models

- Different governance models are emerging, including the appointment of Chief Heat Officers (CHO), the formation of interdepartmental task forces, and hybrid approaches that combine both. The hybrid model (CHO + taskforce) may be particularly effective in balancing leadership with coordination. However, such models have previously been constrained by limited authority, insufficient funding, and inadequate operational capacity for implementation. Therefore, these efforts must be complemented by clearly defined mandates, sustained financial resources, and institutional integration across departments to ensure effective and long-term impact.
- Effective heat governance depends on strong multi-level coordination systems, with clear vertical linkages across national, state, and local levels. Decentralized governance models, such as Kerala's panchayat-level Disaster Management Committees provide important example frameworks. However, local bodies like these require stronger scientific inputs and coordination capacity to function effectively.
- At the same time, there is a clear need to expand coordination beyond government, to include the private sector and vulnerable communities, and to strengthen accountability mechanisms across institutions and sectors.

On health systems and critical infrastructure gaps

- Health systems are currently underprepared to deal with increasing heat risks. A critical point that raised was the interdependence between energy and cooling systems—without reliable electricity, even basic cooling and health interventions in hospitals cannot function effectively.

On gaps in data and predictive planning

- There is a growing demand from governments for robust data as evidence to guide heat decision-making and justify investments. In addition to tracking heat-health impacts, collecting data on other indicators, can help reveal the expanding scale and geography of heat risk and underscore the possibility that certain regions may become increasingly unlivable under future scenarios.

On community engagement and partnerships

- Scaling heat interventions in low-resource settings requires strong partnerships across government, private sector, academia, and civil society. Using pilot and demonstration projects to build local evidence and trust is critical. Examples such as the Jodhpur cooling station project, which was scaled to the state level, illustrate how local evidence-backed solutions can be expanded successfully.
- Involving vulnerable groups, especially informal workers, in planning and implementation can help identify information gaps at the community level, and identify the most effective and cost-efficient solutions that also speak to local priorities. This shift toward co-governance is critical for ensuring that interventions are grounded in lived realities and achieve meaningful impact.
- Both top-down authority (through institutional mandates and leadership) and bottom-up engagement (through community participation) are essential. The interaction between these two approaches determines how effectively policies translate into action.

Photo Credit: NRDC

Suggested immediate next steps to help address these challenges are:

- Strengthen institutional coordination mechanisms across departments and government levels, both vertically and horizontally, with key roles for actors such as health, labour, NDMA, infrastructure agencies, and urban development authorities.
- Build and use evidence to demonstrate heat impacts and effectiveness of interventions and build the business case for heat action.
- Improve health system preparedness, including training, diagnostics, and infrastructure retrofitting.
- Expand pilot interventions and scalable solutions (e.g., cooling stations) to build government confidence.

Ideas for longer-term opportunities include adopting a "heat in all policies" approach across sectors; strengthening multi-level heat governance and decentralization that empowers panchayat and local-level institutions, transitioning toward community co-governance models that integrate informal workers into heat planning and implementation; addressing critical data gaps on heat impacts especially in health sector; and establishing dedicated heat financing and climate budgeting frameworks at city and state levels.

2. Built Environment Regulations as a Strategy for Heat Resilience

Session Partner: Ashok B Lall Architects and Alliance for an Energy Efficient Economy (AEEE)

The forecasted future of urban development patterns in India will have major implications on heat stress and cooling demand, in terms of buildings-related operational energy (largely driven by the growing demand for active cooling) and embodied energy. Moreover, there is increasing evidence of eroding heat-adaptive blue-green (water-vegetation) infrastructure as our cities grow or regenerate, exacerbating urban heat islands and heat stress-related health risks.

We are at an inflexion point on the path toward designing and implementing building regulations that transcend building energy codes and current urban development controls, and toward mainstreaming passive cooling solutions and blue-green infrastructure. The power, health, and housing sectors' interests can be aligned and advanced through stronger building regulations and urban development controls, encouraging housing and urban development authorities to adopt simple yet effective measures progressively for all new buildings, with a focus on affordable housing.

Photo Credit: NRDC

Session 2: Built Environment Regulations as a Strategy for Heat Resilience

Some of the key highlights from discussions include these points:

On the evolution of buildings policies in India

- Beyond cooling appliances, the focus must shift toward holistic building design and passive cooling strategies to maintain thermal comfort. Since the vast majority of the future built environment is yet to be constructed, there is enormous opportunity to integrate sustainable practices now.
- Building codes need to evolve from focusing solely on operational energy to including lifecycle impacts and embedded carbon. Enforcement of codes at the state level remains a challenge. There is a need for better automation, digital data repositories, and accountability measures to ensure compliance as codes evolve.
- Research and policy planning are currently hindered by fragmented data on energy use and building performance. Building a collaborative ecosystem to share and centralize building performance data is vital for meeting long-term climate goals.

On adopting health-promoting building design

- A systematic shift toward design strategies that simultaneously address multiple hazards—extreme heat, flooding, and air pollution—can improve chronic disease and mental health outcomes.
- High-level regulations often mask deep localized disparities, emphasizing the need for granular, neighbourhood-specific interventions that target both the most vulnerable populations and unique local built environment characteristics.
- Case studies (e.g., Gudalur, India[5] and Hong Kong[6]) show how passive strategies—like shading, natural ventilation, and building orientation—protect against heat while also reducing indoor air pollution and providing safety during power outages.
- The Brazilian social housing case study serves as a caution that failing to implement planned green infrastructure (like tree planting) can create cascading failures, including urban heat islands and erosion.[7]
- The integration of traditional knowledge and ground-level community insights alongside evidence-based data is optimal.
- Ideally, final building regulations should explicitly cite community input to maintain trust and ensure long-term development projects remain aligned with local needs.
- A multi-stakeholder process beginning early and continuing throughout the construction project lifecycle can combine data-driven "guardrails" with the lived experience of residents, to build lasting trust.

On integrating affordable housing into the heat resilience agenda

- Nearly half of India's annual construction occurs in the affordable and low-income segment (including the Pradhan Mantri Awas Yojana (PMAY)), but this sector receives less technical supervision and design interventions. Focus is typically on a *pucca* house, and verifications are milestone-based rather than quality-based.
- For vulnerable populations, "safety and strength" against disasters like cyclones and earthquakes are the primary concerns, often outranking heat resilience in immediate perceived importance.
- Many families invest their life's savings in securing an affordable house with the support of government subsidies, so any proposed resilience strategy must be cost-effective for them to consider and invest in.
- While RCC (column and beam) structures are preferred by many local masons, the lack of professional architectural or engineering oversight sometimes lead to suboptimal construction quality and poor thermal performance as these are not the focus areas for them.
- Intervention packages recommended for self-built housing as per study done by AEEE funded by the World Bank,: an '*Essential*' Package was recommended for immediate implementation, and a '*Desirable*' Package was recommended where long-term ecosystem strengthening and supply chain development could be seen in the long-term.
- Transitioning from standard framed structures to confined or reinforced masonry can simultaneously improve disaster resilience and significantly reduce the embodied carbon of cement and steel, depending on the usage. This impacts on avoided costs of repairs and reconstruction post disaster occurrences.
- Passive design strategies, like shaded verandas, addition of vermiculite concrete or brick-bat coba to the roof assembly, reflective paint for roof, addition of ventilators and optimal window sizing (increasing WFR in majority of cases), reduce heat stress and improve heat-resilience by increasing the number of thermally comfortable days for residents. This impacts on lesser mortality rate due to heat stress.
- Scaling resilience requires more than just better materials; it necessitates the training of local masons and the creation of digital data repositories to track construction quality at every milestone during verification by upgrading the apps that are currently being used.
- There has been a positive trend in government ministries (e.g. Ministry of Environment, Forest & Climate Change (MoEFCC), Ministry of Rural Development (MoRD) and Bureau of Energy Efficiency (BEE)) becoming more receptive to data-driven evidence-based research on building energy efficiency, heat and disaster resilience and improved efforts in addressing the infrastructural concerns faced by beneficiaries.
- Technical solutions for the urban and peri-urban poor also need to be supported by improved subsidy disbursement amounts in addition to improved verification processes, accessible financing, and robust institutional frameworks to ensure long-term sustainability.

On establishing healthy affordable housing guidelines

- Redefining housing quality by moving beyond just a permanent physical structure ('*pucca*' house) toward a multidimensional approach that includes disaster resilience, heat resilience and energy efficiency can better account for the social, psychological, and localized needs of residents.
- Shifting regulatory focus from arbitrary regional percentages to per-person requirement for green and open spaces ensures that residents have guaranteed access to nature and social areas, regardless of project density.

- Integrating limits on building height and housing density into national standards identifies these as the primary levers for improving social cohesion, reducing embodied carbon, and minimizing long-term maintenance costs.
- Site-specific solutions, such as optimized ventilation, external shading, and reflective coatings, respond to local climate conditions rather than applying a one-size-fits-all approach to thermal comfort.
- Mandating the inclusion of essential service protections, such as emergency water storage, on-site renewable energy backups, and dedicated resilience centers can safeguard vulnerable populations during extreme climate or disruptions.

On subnational case studies of building sector successes in India

- Delhi has elevated heat resilience to a core governance priority, with visible, public-facing interventions like cool roofs for schools and bus stops, wearable cooling technologies for outdoor workers, air-conditioned buses and water cooling stations in high foot-traffic areas, and reinforcing continuity of electricity and water supply during extreme heat episodes.
- Tamil Nadu has formally recognized heat waves as a disaster and integrated heat relief into disaster management frameworks. It has advanced passive cooling through standardized guidelines, embedded sustainable materials and techniques into procurement systems, linked land use and heat risk through dedicated analytics, piloted initiatives like cool roofs and green schools (with tangible reductions in heat and energy use), and runs certification programs and large-scale training to support widespread adoption of heat-resilient practices.
- Telangana has made cool roofs mandatory in building bylaws for key building categories and backed this with recognition of cool roofing under Corporate Social Responsibility (CSR), helping unlock multiple funding streams. It also uses mapping tools to track roof reflectivity and heat patterns across the city, working to ensure cool roof compliance on the ground and assess how these measures are influencing urban heat and energy use.
- Kerala is working to provide guidance on climate-responsive construction along with financial support, particularly in affordable and self-built housing. Its region-specific thermal comfort guidelines are grounded in local climate and building practices. Alongside this, Kerala is drafting a cool roof policy, promoting skilling of masons and contractors to drive adoption on the ground, and integrating the built environment into the state Heat Action Plan.

Photo Credit: NRDC

Some suggested immediate next steps to help address these challenges include:

- Strengthen building regulations and enforcement by revising NBC provisions (e.g., open spaces, density)
    - Position passive design strategies as foundational, not optional, within architecture and construction.
- Build ecosystem capacity by training masons, contractors, and strengthening local supply chains to enable adoption of heat-resilient practices.
    - Address gaps in professional education and training, including curriculum reform and faculty development.
    - Build capacity across the entire delivery chain—planners, architects, engineers, masons, and contractors.
    - Promote hands-on learning models, such as pilots and living labs, to bridge theory and practice.
- Mainstream heat resilience into housing schemes by embedding essential measures into norms and linking compliance to subsidy disbursal, while improving awareness and access to financing for Economically Weaker Section (EWS) households.
    - Design heat resilience strategies that explicitly address vulnerable populations, including informal settlements, migrant workers, and those in precarious housing.
    - Recognize that informal and self-built buildings require solutions beyond formal building codes.
- Leverage data, metrics, and technology for decision-making
    - Use data-driven tools to identify high-risk "hotspots" and prioritize interventions.
    - Introduce quantitative performance metrics (e.g., hours of unsafe indoor temperatures) to guide design and evaluation.
    - Undertake rigorous impact assessments to build evidence for scaling and public investment.
- Expand focus to existing buildings and retrofitting
    - Prioritize retrofitting of existing building stock, recognizing its long-term dominance over new construction.
    - Promote solutions that improve thermal performance in current housing, especially for low-income communities.

Ideas for longer-term opportunities include:

- Institutionalize an integrated "heat–housing–energy–health" governance framework.
    - Treat heat resilience as a public health priority, embedding it within building regulations and urban planning.
    - Align built environment interventions with broader development and climate goals.
- Promote integrated, decentralized, and nature-linked solutions
    - Advance decentralized infrastructure systems, particularly for water management, as key cooling mechanisms.
    - Move toward integrated approaches that combine basic services (water, sanitation) with heat mitigation.

3. South-South Cooperation to Advance Heat Resilience and Sustainable Cooling in India and Africa

Session Partner: Sustainable Energy for All (SEforALL), SouthSouthNorth (SSN), Sustainable Solutions for Africa (SSA)

As countries across the Global South confront rising temperatures and rapidly growing cooling demand, they face a shared implementation challenge: how to scale durable heat resilience and sustainable cooling in ways that are institutionalized and sustained. India and many African countries encounter similar constraints: siloed initiatives across government departments, gaps in actionable heat-risk and vulnerability data, and barriers to scaling pilot initiatives into long-term programs backed by sustainable financing. At the same time, both regions are advancing innovative tools, institutional models, and technical solutions.

Photo Credit: NRDC

Session 3: Advancing heat resilience and sustainable cooling through South-South Cooperation: Insights from India and Africa

South–South cooperation could be a critical pathway to overcoming these shared constraints and building on emerging opportunities, by enabling practitioners to learn directly from peers in countries operating in comparable institutional and resource contexts. At GHCF 2026, experts and practitioners from Africa and India exchanged insights on strengthening institutional approaches, using data to inform heat and cooling decisions, and mobilizing finance for sustainable cooling.

Some of the key highlights from discussions include:

On heat-health impacts and adaptation in Africa

- SubSaharan Africa is warming 1.5 times faster than the global average, exposing more than one billion people to escalating heat stress.
- Evidence from cities such as Accra and from rural communities shows that women, the elderly, and outdoor workers are already disproportionately affected, with impacts projected to intensify sharply.
- Emerging research points to clear priorities for heat adaptation across African contexts: expanding urban greening, strengthening worker heat protections, improving heatresilient housing, and developing inclusive financing mechanisms that reach vulnerable populations.

On developing refrigerated supply chains in Africa

- Several African countries have integrated cooling needs into their Nationally Determined Contributions (NDCs), helping unlock financing for agricultural processing, dairy systems, and healthsector refrigeration.

- Ethiopia's coordinated approach of aligning efficiency standards for refrigeration across five ministries illustrates how institutional alignment can strengthen cold chain development.
- Solar-powered cold rooms managed by communities can improve market access and incomes, when paired with training and supply-chain integration.
- These experiences offer valuable case studies for Global South countries as they expand their own coldchain infrastructure, creating fertile ground for crosslearning on design, governance, and operational models.

On applying data-driven tools for heat risk assessment

- Tools such as SEforALL'sOpen Building Insights, which use satellite, GIS, and sensor data to identify building level heat risks and link them with projected cooling demand and electricity use, are emerging as powerful enablers of targeted heat action planning.
- Vulnerability and riskmapping approaches long used in India's heataction planning can be adapted across other Global South countries to guide the placement of cooling centers and prioritize highrisk neighborhoods.
- There have been proven impacts of these tools in applied in India and Kenya, with strong potential for replication in several African cities.

On financing sustainable cooling

- Scaling sustainable cooling requires financing models that can support bundled, scalable solutions. Multilateral development banks increasingly look for integrated project designs, and cofinancing with governments and national development banks is often essential to reach meaningful scale.
- While capital is available, enabling ecosystems frequently lag: cities may lack policy clarity, institutional readiness, or a pipeline of bankable projects. Divergent views of bankability also shape investment decisions—investors focus on financial returns, while governments emphasize broader economic and social benefits—requiring project designs that bridge both perspectives.
- Institutions such as the Asian Infrastructure Investment Bank (AIIB) highlight the value of integrating heat adaptation into core development and infrastructure priorities; for example, water infrastructure projects that can deliver both natural cooling and heatresilience benefits, making them more attractive to funders.

On South-South cooperation and knowledge exchange

- Targeted collaboration such as one-on-one city or technical exchanges have outperformed broad multi-city approaches.
- Leveraging existing alliances and cooperation mechanisms, rather than creating new ones, catalyzes action.
- Translating initial assessments into bankable, scalable projects is essential to implementation.

Suggested immediate next steps to help address these challenges are:

- Establishing more peer-to-peer exchanges between African and Indian cities can provide a dynamic pipeline of focused, structured, actionable opportunities. Six priority areas for cooperation include: (1) targeted peer exchanges; (2) structured, ongoing engagement; (3) matching expertise to needs; (4) linking data to implementation; (5) Aggregating solutions for finance; (6) leveraging existing platforms.
- Ensure that all cooling solutions being developed and deployed actively prioritize access for vulnerable communities, taking into account sociocultural factors, affordability, and usability.
- Reframe cooling as offering both mitigation and adaptation benefits in order to unlock broader and more diverse financing streams.

4. Invisible Exposure: Rethinking Heat Metrics and Protection Pathways for Informal and Gig Workers

Session Partner: The Salata Institute for Climate and Sustainability at Harvard University

The International Labour Organization (ILO) estimates that 34 million full-time equivalent jobs may be lost in India alone by 2030 due to heat stress.[8] The implications extend beyond macroeconomic productivity to occupational health risk, income instability, and widening inequality. More than 90 percent of India's workforce operates within the informal economy, including outdoor workers such as construction labourers, sanitation workers, waste pickers and street vendors; but also substantial number of indoor and home-based workers. Women are heavily represented in informal home-based production, caregiving, and small-scale manufacturing. Prevailing heat governance systems rely primarily on ambient temperature as a proxy for risk. It is increasingly being recognized that ambient temperature alone does not capture factors such as metabolic heat load under exertion, duration and intensity of exposure, humidity interactions, radiant heat amplification in built environments, and indoor heat accumulation in poorly ventilated housing, among others.

Simultaneously, India's platform-based gig workforce (such as ride-hailing drivers, delivery partners, home service providers) comprised 7.7 million workers in 2020 and is projected to reach 23.5 million by 2030.[9] The gig workforce operates under automated algorithm-driven management systems, with productivity pressures and limited social protection. India's NDMA issued a 2025 heatwave advisory acknowledging that gig workers operate outdoors and face disproportionate exposure. The advisory encouraged platforms to suspend mandatory work during heat alerts, introduce flexible shifts, provide cooling breaks, hydration kits, UV-protective clothing, and map rest zones on applications. However, these recommendations lack legal enforceability and are not embedded within binding occupational heat standards or labour codes. Their impact, however well-intentioned, on wages and health, is not fully understood.

The result is a persistent gap between climate metrics, physiological strain and health harms, labor productivity, and governance. Occupational heat risk is systematically underestimated and under-detected. This discussion intentionally broadens the framing from outdoor work to informal work, since exposure is not confined to open worksites only. Moreover, surveillance systems and assessments do not routinely link occupation to heat-related morbidity, nor to home heat exposures. Labour standards do not adequately capture heat exposure; housing and built-environment policies are rarely integrated into occupational heat discourse. How can protection systems be embedded across health, labour, housing, and disaster risk governance frameworks, especially in contexts where informality defines the labour landscape?

Photo Credit: NRDC

Session 4: Invisible Exposure: Rethinking Heat Metrics and Protection Pathways for Informal and Gig Workers

Some of the key highlights from discussions include:

- Since local heat conditions vary significantly, metrics need to reflect that diversity, rather than applying uniform temperature thresholds across cities. Much of the research on heat and health focuses on men in formal occupations, leaving out women and informal workers. Ongoing work by a Harvard-led team, using wearable sensors among women workers, is beginning to reveal very different patterns of exposure and stress, suggesting that existing frameworks are missing a large part of the picture.[10]
- Heat cannot be understood through temperature measures alone. Heat exposure depends on the nature of work, time spent outdoors or indoors, ventilation, and access to shade or cooling. Participants noted that workers often rely on physical symptoms such as fatigue or dizziness to gauge heat stress, which are not captured in standard metrics.
- Evidence shared during the session challenged common assumptions. Migrant workers, especially those working indoors in poorly ventilated spaces, were found to be more vulnerable than local outdoor workers in some cases. Heat impacts were also described as cumulative, affecting sleep, mental well-being, and productivity over time, not just during peak heat hours.

On invisible workers and occupational exposure

- Despite being highly heat exposed, informal, gig, and home-based workers' working conditions are not adequately reflected in planning or policy.
- For gig workers, the challenges are structural. There is limited recognition within labour systems, no reliable data, and very little engagement from platform companies. Basic needs such as access to rest areas, drinking water, and sanitation are often unmet. Workers adapt individually, but this often leads to reduced earnings or longer working hours.
- Participants pointed out that most current responses are temporary or fragmented. There was a clear need to integrate occupational exposure into HAPs in a more systematic way, including linking alerts to workplace practices and defining responsibilities for employers and aggregators.

On data gaps and evidence challenges

- Data emerged as a major constraint throughout the session. There is very limited integration between health, labour, and environmental datasets, which makes it difficult to understand the full extent and economic costs of heat impacts.
- There is a lack of disaggregated data, particularly by gender and caste, which results in certain groups remaining invisible in both analysis and policy. But examples such as SEWA's participatory surveys showed that it is possible to generate meaningful, grounded data that capture lived experiences and feed information back to communities, making the data more useful for both policy and practice.

On built environment, urban planning, and heat exposure

- From a planning perspective, there was a strong emphasis on neighbourhood-level conditions, including ventilation, access to green spaces, and exposure in both indoor and outdoor environments – i.e. thinking beyond the conventional land use and infrastructure focus.
- Heat exposure is shaped not only by temperature but also by humidity, air quality, and built environment conditions. There is a need to better integrate heat, air quality, and broader environmental risks into planning decisions. At the neighbourhood scale, factors such as surface temperature, tree cover, access to cooling, and traffic intensity influence microclimates and help identify areas of higher vulnerability. While these may not be part of alert systems, they are critical for targeting interventions.

- The discussion also raised the need to view certain – or maybe all– public spaces as "heat-exposed workplaces," especially for street vendors and informal workers. Simple design solutions, such as shading, are often constrained by regulations and require policy attention.

On labour systems and platform work

- It is important to distinguish between informal workers and platform-based workers. While both lack adequate protections, platform workers operate within digitally managed systems shaped by algorithms, ratings, and incentives, and are increasingly recognised as a distinct category in policy frameworks.
- This creates an opportunity to use platform systems for safety. Heat alerts from IMD could be integrated into apps to trigger measures such as reduced delivery pressure, rest breaks, access to cooling points, and suspension of penalties during extreme heat.
- For informal workers, protections will continue to rely more on public systems, including municipalities, worker collectives, and urban infrastructure.

On limitations of current HAPs

- Currently, HAPs tend to follow standard templates, which provides a useful starting point, but they often do not address local realities, occupational exposures, or the specific needs of vulnerable groups.
- Implementation was flagged as a key challenge, along with the need for HAPs to move beyond advisory roles and include clearer operational triggers, particularly for workplaces and public systems.

Photo Credit: NRDC

Suggested immediate next steps to help address these challenges include:

- Occupational heat exposure needs to be brought more centrally into planning, and integrated into HAPs, with clearer links to workplace practices.
- Stronger integration of indoor exposures from home-based work and gendered vulnerabilities must be brought into heat governance conversations, expanding the focus beyond traditionally defined, heat-vulnerable "outdoor" work.
- Informal and gig workers must be recognized within planning and policy frameworks, for protections to be extended. Clear guidelines are needed for aggregators (delivery, ride-hailing) to implement heat safety protocols, flexible shifts, rest breaks, hydration, and income protection during heat alerts.

- On the ground, low-cost measures such as shaded spaces, access to water, improved ventilation, and context-specific cooling interventions should be prioritized. Social protection mechanisms, including wage protection and insurance models, also need further attention.
- Moving beyond simple temperature-based thresholds to trigger worker protections is essential, to capture how heat is actually experienced. However, improved metrics must be simple enough to be readily measurable and trackable.
- Improving data systems is critical, both across sectors and to ensure that data can reflect different social and economic groups. More targeted, sector-specific interventions are needed, rather than generic approaches. Strengthening data systems, including standardized reporting of heat-related illnesses, will also be important.
- Worker heat protections must continue to be explored through follow-up engagements, including under the CEHSC in Nagpur, Maharashtra, to help move from discussion to implementation.

5. Putting People First: Advancing Heat Resilience and Cooling Equity for Women & Children

Session Partner: Nabha Foundation

While extreme heat affects everyone, its impacts fall disproportionately on certain segments of the population such as women and children who often face disproportionate exposure because of how cities are built, how livelihoods are structured, and how access to cooling is distributed. Vulnerabilities of women to heat are compounded by disparities such as a lack of access to essential services, including safe water and sanitation; higher care burdens in often crowded and poorly built homes; and a higher likelihood of working in low-paid, strenuous and exploitative jobs. An MSSRF study across seven states found 70% of women in high-heat districts reporting fatigue, dizziness, dehydration, gastrointestinal issues, menstrual disruptions, and mental distress like anxiety and sleep deprivation, worsened by informal outdoor work and poor housing.[11]

Millions of women in India work in informal and outdoor occupations – agriculture, construction, street vending, waste picking and others – and spend long hours in direct heat with limited access to shade, water, or cooling infrastructure. Studies indicate that while both men and women in these sectors face prolonged heat exposure, women face compounded vulnerability: longer hours, limited rest, and restricted water intake due to absent sanitation infrastructure. Urban public spaces frequently lack shaded corridors, cooling shelters, accessible drinking water points, and gender-sensitive sanitation facilities. As a result, women working outdoors often reduce water intake during work hours due to the absence of safe sanitation infrastructure, increasing their vulnerability to heat stress.

Similarly, India's 440 million children under 18 – nearly a third of the population – face daily heat exposure through outdoor play, school activities, and commuting. Many schools lack shaded areas, climate-responsive design, or adequate ventilation. Children in informal settlements face the greatest risk, particularly during summer breaks or heat-related school closures when they remain in poorly ventilated homes. Higher metabolic energy needs and limited awareness of heat risks among children heighten their physiological vulnerability, with risks to their longer-term development. These vulnerabilities and impacts remain poorly captured: India's last national census dates to 2011, and gender- and age-disaggregated data on heat exposure, cooling access, and behavioural risks remains sparse, undermining the effectiveness of vulnerability assessments and HAPs How can policies, urban design, and cooling strategies embrace people-centered solutions to better ensure that women and children are no longer left at the margins of climate adaptation?

Photo Credit: NRDC

Session 5: Putting People First: Advancing Heat Resilience and Cooling Equity for Women & Children

Some of the key highlights from discussions include these observations:

- Women face compounded and invisible burdens under extreme heat: increased unpaid care work, restricted water intake due to absent sanitation infrastructure, occupational exposure, and documented links to domestic and societal violence during heat events (evidenced in studies across Tamil Nadu and Karnataka).
- Coastal and northern regions face chronically high temperatures, and humidity – a frequently neglected factor – compounds heat stress significantly, particularly for outdoor workers and pregnant women.

On children's heat risks in schools

- School closures during heat waves disrupt education but send children back to homes that are often hotter. The session stressed closing schools when necessary, without interrupting learning – through digital content, flexible scheduling, and catch-up protocols.
- Schools receive approximately ₹3 lakh per year for maintenance – this funding needs to explicitly include heat management. School Disaster Management Committees should incorporate heat as a named risk, with SOPs and drills.
- The school ecosystem must account for children as whole people – including their caregivers and their home environments. Nutrition, menstrual hygiene, and safe spaces for both boys and girls must be integrated into heat response planning.

Built environments and systems are not designed with women's realities in mind

- Retrofitting and built environment conversations must actively include women as participants and decision-makers. Urban design that ignores women's movement patterns, care responsibilities, and occupational routes is urban design that fails its most productive residents.
- Vulnerable groups within HAPs need to be "un-bucketed," i.e., rural women, pregnant women, waste-pickers, indoor rag-workers, and ASHA worker populations each face distinct risks and require distinct, targeted responses rather than being grouped under generic categories.
- Heat is still treated as a seasonal danger rather than a systemic and long-term risk. Pregnant women experience miscarriages with late detection; heat-related risks go unrecognised and unreported. This framing needs to change urgently.

The economic case for heat intervention is powerful and under-used

- Extreme heat cost India an estimated 181 billion potential labour hours in 2023.[12] Women, who account for a disproportionate share of informal labour, bore much of this loss. Building a rigorous cost-per-intervention analysis,including expected productivity gains, can make the case for sustained investment.
- Blended finance, accessible insurance, and women-led enterprise models (such as the Sauramandala Foundation's work in Meghalaya) show promise in scaling cooling solutions, but need institutional backing and policy pathways to move from pilot to scale.
- The session noted an important reframe: women and children should not be seen merely as beneficiaries of cooling solutions, but as active participants in building the cooling economy.

The following actions were identified as next steps in the near term, requiring coordination among session participants and their networks:

- **Implement localised early warning and response systems for vulnerable populations.** Early warning must reach women and children in informal settlements. Explore heat science hotlines and applied science resources accessible to frontline workers.
- **Integrate women and caregivers into Heat Action Plan design.** Climate literacy must grow at the community level and the most effective way to do this is to involve informal women workers in the design and monitoring of HAPs, not just as beneficiaries.
- **Strengthen heat-resilient school systems.** Develop and enforce heat-specific standard operating procedures (SOPs) in schools, include heat within School Disaster Management Committees, and allocate existing maintenance budgets explicitly for heat management.
- **Scale community-based adaptation programmes.** NDMA and Panchayati Raj institutions are beginning community-based disaster risk reduction programmes across 1,640 panchayats – these must integrate heat explicitly and include women as planners.
- **Close the enforcement gap in labour and education departments.** Labour departments must actively enforce worker safety during heat events; education departments need accountability mechanisms for implementation. The gap between policy and ground reality must be tracked and reported.

Photo Credit: NRDC

These are longer-term structural shifts identified as essential for durable, equitable heat resilience at scale:

- **Institutionalise gender-responsive HAPs with cross-sectoral convergence.** HAPs must integrate health, education, labour, and rural development system, currently siloed, through a coordinated governance mechanism. The session called for "system weavers": dedicated actors who can hold interdepartmental convergence together.
- **Scale climate-responsive infrastructure and "cooling for all."** Move beyond pilots to systemic investment in cooling infrastructure – shaded corridors, gender-sensitive water and sanitation points, ventilated homes and classrooms – supported by blended finance and women-led innovation. Cooling for all is not an aspiration; it is a policy target that needs funding and accountability.
- **Build a robust economic and data case for heat equity investment.** With India's last census from 2011, gender- and age-disaggregated data on heat exposure remains sparse. Closing this gap is an essential step. Simultaneously, developing cost-per-intervention economic analysis by drawing on tools like HERA's economic analysis framework can build the political and financial case for sustained investment.
- **Reframe heat as a systemic risk and design with, not for, communities.** The session's central provocation that solutions must be designed with women and children at the helm, not for them as beneficiaries is also the longer-term opportunity. Building co-design as a genuine practice (not just a concept) across government programmes, urban planning, and community-level adaptation is the structural shift the sector needs. Conduct social audits to assess what is being implemented on the ground versus what is on paper.

6. Power Sector Resilience to Extreme Heat - Learning from Practice

Session Partner: Prayas Energy Group and Coalition for Disaster Resilient Infrastructure (CDRI)

Extreme heat is increasingly affecting how India's power sector functions, influencing both electricity demand patterns and the performance of the power infrastructure. Rising temperatures are already driving sharp increases in cooling demand in some states, particularly in urban areas, leading to higher peak loads. At the same time, extreme heat also reduces generation efficiency, stresses transmission and distribution of assets such as transformers and conductors and increases the likelihood of equipment outages.

By bringing together perspectives from utilities, practitioners, and researchers, discussions examined how extreme heat is influencing real-time system operations, power purchase planning, and infrastructure reliability across generation, transmission, and distribution systems. The goal is to identify priority actions and research areas that can strengthen power sector resilience to extreme heat in the near future.

Photo Credit: NRDC

Session 6: Power Sector Resilience to Extreme Heat - Learning from Practice

Some of the key highlights from discussions include:

On infrastructure vulnerability under extreme heat & compound climate risks

- Utilities observed that hot daytime conditions are often followed by storms and strong winds in the evening, leading to tree fall and physical damage to lines in addition to thermal stress, which together intensify pressure on power infrastructure.
- Sustained temperatures in the range of 43–46°C are placing significant stress on distribution infrastructure, particularly in already constrained networks. Transformers frequently fail under these conditions, including incidents where overheating has led to fires and severe service disruptions.
- These failures are often linked to aging infrastructure and highly unbalanced loading across phases, which amplify thermal stress. Failures are more common in geographies which are poorly monitored and infrastructure is less resilient to incoming deviations in climatic conditions.
- There is a clear disconnect between the perception of infrastructure conditions and the actual realities in urban centers in comparision to semi-urban and rural networks.
- Load shedding practices often prioritize urban and industrial supply, resulting in rural feeders being curtailed first during extreme demand conditions.

On operational responses by utilities

- Utilities are replacing failed transformers with higher-capacity units to better manage peak loads during extreme heat.
- Interconnections between feeders and transformers are being strengthened to enable load diversion during localized failures.
- Efforts are being made to improve load balancing across phases to reduce uneven stress on assets.
- Utilities are increasingly using data and monitoring systems to track transformer performance and identify high-risk assets.
- Structured load shedding protocols with multiple levels are being used to manage demand during peak stress periods.
- Despite these efforts, most responses remain reactive and incremental, rather than planned and targeted to address underlying structural issues in the system.

On planning and forecasting gaps

- Extreme heat and climate variability are not systematically integrated into planning models, leading to gaps in preparedness.
- Historical weather patterns are also not consistently used in planning, which limits the ability to design even reliable systems under current conditions.
- Current planning approaches rely heavily on aggregate demand growth trends and do not adequately incorporate weather variables such as temperature.
- Traditional forecasting approaches do not adequately capture the impact of rising temperatures, particularly increasing nighttime temperatures that sustain cooling demand. This limits the ability of utilities to accurately project peak demand and associated system stress during extreme heat events.
- Current system models treat demand, renewable generation, and weather variables as independent, ignoring correlations that exist between them during extreme heat.
- Extreme heat simultaneously drives higher demand and influences renewable generation patterns, making correlation-based modeling essential.

- There is a lack of granular data, including asset-level monitoring and localized temperature data, which constrains effective modeling and decision-making.
- Data gaps are a recurring issue across planning, operations, and demand-side interventions.

On equipment standards and management

- Equipment used in the power system is often based on generic standards that do not reflect India's high-temperature operating conditions.
- Centralized procurement processes limit the ability to customize equipment for local environmental conditions.
- Extreme heat contributes to insulation degradation within equipment, which may result in delayed failures occurring weeks after exposure.
- Ambient heat conditions and thermal stress are not adequately incorporated into maintenance practices or asset lifecycle planning.

On demand-side dynamics

- Cooling demand has emerged as a major driver of peak electricity load, particularly during extreme heat events. Even small increases in temperature can lead to significant increases in electricity demand due to cooling requirements.
- Demand flexibility has the potential to manage peak load in a cost-effective manner but is currently underutilized. It is often treated as a secondary or pilot intervention rather than as a core component of long-term system planning.
- There is ongoing work to develop appliance-level demand datasets to better understand the contribution of different end uses, particularly cooling. Such data can support the design of more effective demand response and flexibility programs.
- Centralized or district cooling systems can reduce peak demand by improving efficiency at scale.
- Thermal energy storage provides an additional pathway for managing cooling demand, beyond conventional battery storage solutions.

On procurement and storage

- Utilities face increasing uncertainty in procurement decisions due to demand variability and market price risks.
- Market constraints, including price caps and supply limitations, can restrict access to power during peak periods.
- There is a need to better manage procurement strategies across day-ahead and real-time markets under uncertainty.
- Energy storage is becoming necessary in certain regions due to grid constraints and renewable variability.
- The choice between storing renewable energy and selling it reflects a broader need for balanced and context-specific approaches.

On financial and regulatory dimensions

- There is a growing shift in managing extreme events: from a focus on prevention toward response and recovery mechanisms.
- Parametric and climate-linked financial solutions are emerging as potential tools to strengthen financial resilience at the consumer level.

- Current regulatory frameworks do not adequately account for resilience needs or incentivize related investments.

On systemic gaps

- Utilities often lack a clear understanding of why assets fail, with limited root cause analysis conducted after breakdowns. Failures may result from multiple factors, including manufacturing defects, installation issues, and environmental stress, but these are not systematically investigated.
- There is a disconnect between operational experience and planning models, leading to gaps between real-world challenges and modeled solutions.
- Planning approaches often reflect an urban bias and do not fully capture the realities of stressed distribution networks.
- The system is currently struggling to maintain basic reliability under extreme heat conditions, indicating that resilience remains largely unaddressed.

Photo Credit: NRDC

Suggested immediate next steps to help address these challenges are:

- Current responses are largely reactive, highlighting the need for more systemic and forward-looking approaches to resilience. Forecasting and planning approaches need to account for weather variability, including rising nighttime temperatures, which limits the ability to anticipate peak demand stress.
- Demand flexibility has strong potential to manage peak load cost-effectively but remains underutilized; it needs to be treated as a core system resource.
- Data gaps and limitations in modeling approaches must be addressed, so as not to constrain the sector's ability to respond effectively to extreme heat.
- Planning approaches need to evolve to incorporate weather variability, extreme heat scenarios, and improved demand forecasting, as current practices do not account for these factors.

In the longer-term, there is a clear need for greater investment in real-time asset monitoring and improved maintenance practices, given the limited visibility into asset stress and delayed failures. Demand flexibility is likely to play a much larger role and may need to be integrated more centrally into planning, supported by better data and smart metering. Regulatory and market frameworks may need to adapt to better account for resilience, given the operational and financial challenges highlighted by utilities.

7. Spotlight on Subnational Action on Heat and Cooling in India

In this Plenary session, three officials from state governments (Maharashtra, Tamil Nadu, and Kerala) and one leader from the National Institute of Urban Affairs (NIUA) discussed the varieties of subnational actions on heat and cooling. State leaders noted that while governments are rule-governed systems where inter-departmental silos often hinder information sharing, they can also possess strong elected leadership that ensures accountability to the electorate if the administrative system malfunctions. The intensifying challenges of climate change are forcing a shift in government operations to become less siloed and foster collaboration between government, NGOs, civil society, and academia. Often a small group of passionate individuals at various levels can drive the climate resilience agenda forward. Panelists also shared examples of ongoing state-level efforts to address heat and cooling challenges.

Tamil Nadu pioneered the notification of heatwaves as a state-specific disaster, which enabled relief payments to be made to victims, similar to other disasters. This also shifted focus from providing emergency relief for heat to a heat preparedness mode that integrates passive cooling and longer-term heat actions into core state planning. Cool roof initiatives in Green Schools and tenements showed reductions in roof and indoor temperatures. Vulnerable worker lounges have been set up that provide 24-hour air conditioned rest spaces for delivery workers and construction workers during peak heat hours. Parks provide large-scale shade and water-adjacent areas. Mandated localized greening frameworks ensure trees are visible from every home, and close proximity to green spaces for all. The state also dedicated a fund to support climate-tech startups; and leveraged corporate social responsibility and international partnerships (such as the World Bank) to fund nature-based solutions like mangrove restoration and coastal bio-shields.

Photo Credit: NRDC

Plenary Session: Spotlight on Subnational Action on Heat and Cooling in India

Kerala began addressing heat impacts as early as 2010 and named heat a state-level disaster in 2019. Humidity in Kerala worsens the health harms from heat, and since 2018 the state has mandated the rescheduling of labor hours to protect workers from peak heat exposure. The state also rolled out the "Cool Anganwadi project," providing thermal comfort to 200 early childhood centres. Mandatory school protocols have been launched to ring bells throughout the day to remind students to stay hydrated during heat waves. Some 48 acres of Miyawaki forests within municipalities has been set aside to help reduce the Urban Heat Island effect. It was noted that national mandates via the NBC for the use of reflective

building coatings and resilient materials in construction has a much wider effect that relying on individual state plans. In terms of governance, Kerala has promoted decentralization and letting Gram Panchayats to choose solutions from "basket of interventions" tailored to local needs. The state allocates one crore per District Disaster Management Authority (DDMA) for heat action. And once an action is assigned by the State Executive Committee, departments are directly answerable to the top five senior-most secretaries, ensuring high-level oversight.

The NIUA's C-Cube was established to create synergy across all climate actions which are being undertaken in Indian cities. With climate impacts now bringing simultaneous drought and extreme heat to India, climate change and Urban Heat Island effects are amplifying "in situ heating" of cities. The Ministry of Housing and Urban Affairs (MoHUA) initiated a pilot for 20 cities to give each 5 crore for direct heat resilience interventions in the next 2 heat seasons. NIUA's Urban Heat Resilience Framework, technical assistance, and structured training helps cities move toward implementation of heat vulnerability assessments, and taking 2-3 immediate actions.

8. Cooling for the Future: Advancing Domestic Manufacturing and Job Creation in India

India's cooling demand is expected to grow rapidly in the coming decades, driven largely by rising demand for room air conditioners and ceiling fans. However, domestic value addition in cooling equipment remains limited, with several critical technologies and intermediate components such as compressors, advanced motors, magnets, and control electronics still dependent on global supply chains. Strengthening local manufacturing across these areas presents a significant opportunity to build a more resilient cooling industry while generating skilled employment across manufacturing, supply chains, and supporting industries.

This Plenary panel discussed opportunities to expand domestic manufacturing across key parts of India's cooling ecosystem, while addressing gaps in research, testing, prototyping, and commercialization. Policy initiatives, industry collaboration, and emerging research platforms can accelerate innovation and local production. Strengthening these linkages can increase domestic value addition, reduce supply chain dependencies, and position India as a global hub for efficient and affordable cooling technologies while supporting job creation.

Photo Credit: NRDC

Plenary Session: Cooling for the Future: Advancing Domestic Manufacturing and Job Creation in India

Key discussion highlights focused on:

- *Room air conditioning manufacturing*
  - A key enabler for scaling domestic manufacturing of air conditioners is the localization of critical components such as compressors, motors, heat exchangers, and printed circuit boards.
  - Industry has already made significant progress in localizing room air conditioner production, with approximately 98% of units now manufactured domestically, but dependence on imported components and raw materials remains a major constraint.
  - Joint ventures between Indian and global firms were identified as an important pathway to access advanced technology while building domestic manufacturing capacity at scale.
  - There is a strong need to indigenize the entire Bill of Materials (BOM), including upstream materials such as copper and aluminum, to reduce supply chain vulnerabilities and import dependence.
  - Production Linked Incentive (PLI) schemes have played a critical role in driving localization of finished products, but there is a need to extend them to critical components with appropriately calibrated incentives reflecting their cost structures.
  - There is also a need to expand focus beyond room air conditioners to commercial cooling segments such as VRFs and chillers, where localization gaps remain significant.
- *Fan manufacturing*
  - A new NRDC report on ceiling fans was launched at the 2026 GHCF, "Blueprint for Advancing Affordable and Domestically Produced Super-Efficient Ceiling Fans in India."[13] It provides a roadmap for accelerating the adoption of energy-efficient fans.
  - India dominates global ceiling fan manufacturing, accounting for nearly 80% of global production; Ceiling fans represent 70–75% of the domestic fan market, making them central to India's cooling strategy.
  - Ceiling fans account for approximately 10% of India's total electricity consumption, with an estimated 100 crore fans operating during peak summer periods, making efficiency improvements highly impactful.
  - Despite this scale, innovation in fan motor design has historically been limited, with legacy induction motor designs persisting for decades until the adoption of Brushless DC electric motor (BLDC) technology.
  - While BLDC fans significantly improve efficiency, they increase dependence on imported components such as magnets and Printed Circuit Board (PCBs), raising concerns about supply chain risks and import costs.
  - There is a strong need to innovate within induction motor technology to achieve comparable efficiency gains while preserving domestic manufacturing ecosystems and employment, particularly for Micro, Small and Medium Enterprises (MSMEs).
  - Recent improvements in induction motor efficiency from around 75 watts to as low as 30 watts indicate promising pathways, but scaling and affordability remain key challenges.
  - Achieving high efficiency at low cost while maintaining performance standards is critical for mass adoption.
- *Industry-academia collaboration*
  - India has invested significantly in cooling-related research and development over the past decade through institutions such as Indian Institutes of Technology (IITs), National Institutes of Technology (NITs), and Indian Institute of Science (IISc), supported by government funding bodies.

- The primary gap now lies in translating research into market-ready solutions, particularly in moving technologies from early-stage research (Technology Readiness Level (TRL) 1–4) to commercialization and deployment (TRL 4–10).
- India's challenge is not a lack of innovation but a lack of mechanisms to scale innovations beyond the prototype stage into commercially viable solutions.
- The Department of Science and Technology is shifting its focus toward translational research, aiming to bridge the gap between laboratory innovation and market deployment.
- Stronger collaboration between academia, industry, and policymakers is being institutionalized through joint research programs, stakeholder consultations, and co-developed problem statements.
- Industry participation is increasingly being integrated into research programs from the outset to ensure alignment with market needs and scalability.
- Process innovation in manufacturing is a critical R&D priority, as cost disadvantages compared to countries like China are driven largely by inefficiencies in production processes rather than lack of technological capability.
- Advanced tools such as artificial intelligence can play a role in optimizing manufacturing processes, reducing costs, and improving efficiency.

- *Financing and scaling*

  - India faces a significant challenge in scaling early-stage cooling solutions, particularly in hardware-intensive sectors where capital requirements are high.
  - The most critical financing gap exists at the "first-of-a-kind" stage, where companies need capital to build initial commercial-scale manufacturing facilities.
  - There is limited availability of dedicated funding instruments for this stage, resulting in many startups struggling to scale despite having viable technologies.
  - New funding initiatives, including climate-focused funds targeting early-stage cooling technologies, are emerging to address this gap.
  - Financing mechanisms such as blended finance, concessional capital, and asset-based financing models are being explored to reduce upfront costs and improve affordability.
  - Innovative business models, such as cooling-as-a-service, are helping convert high upfront capital costs into operational expenses linked to energy savings.
  - Existing financing schemes for energy efficiency exist but are often difficult to access, highlighting the need for simplification and broader deployment.

- *Market development*

  - Demand-side interventions, including large-scale replacement programs for old and inefficient air conditioners, are critical to accelerating adoption of efficient technologies.
  - There is a need to prevent the continued circulation of highly inefficient appliances through stronger enforcement, recycling frameworks, and end-of-life regulations.
  - Export market development, particularly in regions such as Africa and Southeast Asia, presents a significant opportunity, provided India strengthens its testing, compliance, and certification infrastructure.
  - Government initiatives are increasingly aligned with promoting domestic manufacturing and energy efficiency under broader frameworks such as Make in India and the India Cooling Action Plan.
  - Cooling must be approached as a system-level challenge involving buildings, urban design, and infrastructure, rather than as a standalone product issue.

- *Equity and access*
    - Affordable cooling solutions such as low-cost exhaust fans are increasingly used in low-income and informal housing, but they come with trade-offs related to noise, material quality, and effectiveness.
    - Informal markets for second-hand appliances result in inefficient cooling devices being passed on to lower-income households, increasing their electricity costs and system inefficiency.
    - There is a need for stronger policies and enforcement mechanisms to prevent outdated and inefficient appliances from remaining in circulation.
    - Industry and government are working toward replacement and recycling programs, including exchange incentives and stricter end-of-life regulations.
    - Extended Producer Responsibility (EPR) frameworks and recycling norms are expected to reduce the prevalence of inefficient appliances over time.
    - Ensuring that efficient cooling solutions are affordable and accessible to vulnerable populations remains a central challenge.
    - Cooling solutions for workplaces, particularly in informal and industrial settings, remain underexplored despite their importance for productivity and health outcomes.

9. Financing for Adaptation and the Cooling Transition

Financing for heat resilience and climate-friendly cooling remains a major bottleneck, constrained by limited investment flows and a lack of suitable financial instruments. Addressing these challenges presents a significant opportunity to mobilize capital at scale and align financial systems with growing climate risks.

This plenary brought together leaders from banking, insurance, philanthropy, and industry for a candid discussion on the current landscape of financing for heat resilience and climate friendly cooling. The session examined the limitations of existing financing instruments, the barriers that continue to constrain investment, and the emerging mechanisms needed to align financial flows with rapidly evolving climate risks. A central takeaway was that financing for adaptation and cooling is not a niche climate finance issue, but a mainstream economic and development imperative that must be embedded across all financial decision making.

Photo Credit: NRDC

Plenary Session: Financing for Adaptation and the Cooling Transition

Key discussion highlights focused on:

Reframing finance for a changing climate

- A key theme was the distinction between *climate finance*—a narrow term rooted in international negotiations—and the much broader universe of *finance for climate*. Every financial decision now sits within a shifting climate context, requiring two parallel shifts:
    - Resilient investments that adjust financial products and risk models to reflect the trajectory of climate impacts over time, ensuring investments remain viable as heat related extreme events intensify.
    - Investments for resilience that focus on scaling and mainstreaming solutions that strengthen adaptive capacity, enabling systems, institutions, and communities to manage and respond to increasing climate risks. For example, drought-resistant seeds, heat-resilient infrastructure, and efficient cooling technologies.
- Across sectors, there is a need for greater clarity on how adaptation investments are defined at national, state, and local levels, how private actors can meaningfully contribute to capacity building, and how blended finance structures can be made more transparent and accessible.
- Fragmented conversations across public, private, and philanthropic institutions continue to slow progress. Harmonized standards, taxonomies, and investment criteria would reduce friction and uncertainty, while locally led adaptation remains essential to ensure financing responds to community defined priorities and lived heat experiences.

Innovations in investment models

- New business models are emerging that can accelerate access to efficient cooling. Cooling as a service approaches—such as Smart Joules' utility style model for designing, operating, and maintaining cooling assets—demonstrate how operational and capital costs can be reduced while delivering measurable energy savings.
- These models shift cooling from a high upfront cost product to an affordable, performance linked service, expanding access for institutions and communities.

Public finance: unlocking systemic levers

The 16th Finance Commission's recommendation to notify heatwaves as a disaster represents a major structural shift. This designation opens access to mitigation, adaptation, relief, and response funding, allowing states to draw on disastermanagement resources for proactive heatresilience measures rather than relying solely on emergency relief. It creates new fiscal space for states to plan and implement longterm heatpreparedness strategies. As these mechanisms come into force, it will be essential for all relevant stakeholders to support states in accessing and operationalizing these financing streams so that the full potential of such shifts can be realized.

Private finance: making heat impacts visible

A persistent challenge is that the economic costs of heat remain largely invisible in financial decision-making. Quantifying the impacts of heat—on productivity, revenue, supply chains, health, and sectorspecific vulnerabilities—is essential for mobilizing private capital. Incorporating lived heat experience, including wetbulb temperatures, can help make these risks tangible and inform the design of financial products that reflect real climate exposure.

Scaling financial protection and insurance

Insurance remains an underdeveloped tool for managing climate risks. Awareness is low, access is limited, and payout triggers are often unclear—particularly for costsensitive populations who may pay premiums without receiving benefits. Strengthening climaterisk data, expanding aggregator models to raise awareness, and exploring options for governments or cooperatives to cover premiums for vulnerable groups can help expand financial protection. Clearer triggers and more transparent product design are essential for building trust and uptake.

Photo Credit: NRDC

Several systemic challenges cut across the financing landscape:

- Conversations across finance, climate, development, and sectoral ministries remain fragmented, limiting the ability to build a strong pipeline of investable resilience projects.
- Blended finance structures often lack transparency, making it difficult for public, private, and philanthropic actors to understand how capital is layered and how risk is distributedlie.
- The absence of shared definitions and taxonomies for adaptation and resilience investments creates friction, slowing decision-making and complicating efforts to mobilize capital at scale.
- At the same time, mechanisms to connect public, private, and philanthropic finance remain underdeveloped, leaving significant resources siloed rather than aligned toward common resilience outcomes. Strengthening these connective tissues is essential for building a financing ecosystem capable of meeting the scale and urgency of climate risks.

Emerging recommendations to help address these challenges:

- Improve data systems to quantify the true costs of heat across productivity, health, infrastructure, and supply chains.
- Harmonize standards and taxonomies to reduce friction and uncertainty for investors.
- Strengthen and scale financial mechanisms, including insurance products, risk pooling models, and blended finance structures, while investing in coordinated awareness and capacity-building efforts.

III. Strengthening Heat Resilience: Synthesizing Common Themes and Directions for Future Action

Based on the discussions in the plenaries and sessions, five broad themes were identified that represent current gaps between current heat-related conditions, issues, and risks that people experience, versus the solutions to create a more heat-resilient future. These themes include:

1. Governance and Institutional Integration

A primary gap identified is the persistence of administrative silos that hinder information sharing and coordinated action. Policy recommendations to address that gap focus on transitioning from seasonal, reactive responses toward long-term, institutionalized governance, including:

- **Inter-departmental coordination:** establish multi-actor structures like "Climate Action Cells" or Chief Heat Officers to bridge gaps that exist between heat-protective steps taken by health, labor and urban planning departments
- **Decentralization:** Empower local governments (for example, Kerala's Gram Panchayats) to choose tailored solutions from a "basket of interventions."
- **Accountability:** Implement high-level oversight where departments are directly answerable to senior secretaries to eliminate implementation delays.

2. Targeted Protection for Informal and 'Invisible' Workers

There is a significant gap in protecting the informal and gig economy, which makes up over 90% of India's workforce.[14] Current metrics often fail to capture the "invisible exposure" faced by home-based and indoor workers. Policy recommendations to address these issues include:

- **Refining metrics:** More health-protective temperature metrics would move beyond ambient temperature to include humidity, metabolic heat load, and indoor heat accumulation in poorly ventilated spaces.
- **Mandatory standards:** Transitioning from voluntary advisories to legally enforceable labor codes that mandate hydration, rest breaks, and flexible shifts will strengthen worker heat protection.
- **Digital integration:** Leveraging platform algorithms like Uber, Zomato, and others to trigger safety measures for gig workers during extreme heat events would recognize the unique heat exposure risks those workers face. Measures like suspending penalties for reduced workflow during heat waves would enable gig workers to take time for health-protective steps.

3. Built Environment and Regulatory Reform

An estimated 50% of the building stock that will exist in India in 2037-38 hasn't yet been built,[15] and current building codes often overlook passive cooling and life-cycle impacts, even though they could strengthen heat protection. Policy recommendations to make buildings more heat-resilient include:

- **National Building Code (NBC) revisions:** The National Building Code (NBC) could mandate reflective coatings and resilient materials on buildings nationwide, to enhance heat protection.

- **Affordable housing focus:** Prioritizing climate-responsive design in low-income housing (e.g., PMAY), including shaded verandas and optimized window sizing, would make heat-resilient homes accessible to millions more people.
- **Retrofitting of existing building stock:** Shifting focus toward improving the thermal performance of existing building stock, which will populate the urban landscape for decades, makes climate-responsive design more widely accessible.

4. Data Gaps and Evidence-Based Planning

Policymaking is currently hindered by fragmented and unlinked datasets on health, energy, and environment, with especially limited access to local data regarding heat-related illnesses and premature death. Some policy recommendations that emerged from discussions include:

- **Surveillance systems:** Strengthening the link between health and labor data will help accurately detect and report heat-related illnesses on and off the job, to better describe the totality of a person's lived experience of heat.
- **Localized mapping:** Using GIS and satellite data to identify neighborhood-level "hotspots" for targeted interventions will also help target investments in heat resilience.
- **Digital repositories:** Creating centralized databases to track building performance and infrastructure stress can guide more strategic resource allocation for repair and upgrades.

5. Financing and Economic Resilience

Financing remains a "major bottleneck," with limited dedicated budgets for heat action at municipal or state levels. To enhance the flow of funding to support subnational heat action plans, recommendations include:

- **Climate budgeting:** Utilizing climate budgeting tools can track and improve the transparency of funding related to heat resilience.
- **Dedicated funds:** Establishing sub-national funds to support climate-tech startups could help provide direct allocations (for example, one crore per district) for immediate action.
- **Economic case:** Developing a stronger business case for heat action by quantifying impacts on labor productivity, energy demand, and public health can better translate heat's harmful impacts across cascading sectors, and catalyze wider commitments to taking action.

IV. Shaping GHCF 2027: Insights and Opportunities for Further Exploration

There was a palpable energy at the 2026 Forum, as hundreds of policymakers, experts, and practitioners working on heat resilience and cooling access gathered in New Delhi this April. Over the Forum's two days, there were rich discussions and new alliances taking shape, among varied participants dedicated to sharing and learning more about communities, programs, technologies, financing, and businesses who are creating the foundation for a more heat-resilient future.

The 2026 Forum provides a unique opportunity for multi-sectoral discussions and re-affirmed the power of convening this Forum annually. For example, sectors that seem poised for fruitful collaborations, given some of GHCF 2026's discussions, include built environment and land use; climate services and communications; and architecture and public health.

The Forum also provides an annual platform for showcasing new initiatives. For example, GHHIN launched its South Asia Hub at this year's Forum; and the CEHSC in Nagpur was formally launched by the Honorable Chief Minister Devendra Fadnavis of Maharashtra on April 20, 2026. The Centre's mission is to support ground-level officials working on heat with technical assistance and best practices that combat rising heatwave impacts, develop sustainable cooling technologies, and implement HAPs. These initiatives, which were discussed at the 2025 Forum but not yet launched a year ago, demonstrate the potential of the GHCF platform to facilitate action fueled by new thinking and new ideas. The Forum's sustained presence is important for continuity as these and other initiatives are implemented and evolve in years to come.

It should be noted that several emerging issues surfaced at GHCF 2026 that may not yet be widely linked to extreme heat, providing opportunities for catalyzing conversations about new areas for strengthening heat protections. For example, at this year's Forum, the links between extreme heat and increased violence were mentioned in the "Putting People First" session discussions; in future, this knowledge could suggest new ways of target when and where to direct outreach to prevent or respond to domestic violence. In response to the session on "Built Environment Regulations as a Strategy for Heat Resilience," it was suggested that since heat and air pollution are compound risks that both harm health, mounting coordinated heat resilience and traffic calming programs makes sense, to reduce extreme heat exposures and traffic-related air pollution.

As participants look ahead to GHCF 2027, potential focus areas for next year's Forum were suggested by the discussions. These areas might, for example, include rural heat-cooling challenges, since urban centers have typically been the focus of energy planning, health surveillance, temperature data gathering, and strategic planning – yet rural areas have distinct conditions and challenges that will need to be met, to better provide heat preparedness and cooling access as temperatures continue to soar. Another recurrent challenge to explore further in future is the need for cooling spaces in workplaces. As new heat-cooling partnerships and initiatives unfold in the coming year, nourished by the exchanges at the 2026 Forum, undoubtedly more areas ripe for exploration will emerge.

Appendix: GHCF 2026 Agenda

Global Heat and Cooling Forum | 20 – 21 April 2026 | Bharat Mandapam, New Delhi

Agenda
Day 1: Monday, 20 April 2026

Time	Session Details
9:00 – 10:00 am	**Registration**
10:00 – 11:00 am	**Inaugural Plenary (Part 1)**
10:00 – 10:45 am	**Introduction** Prima Madan, Director, Cooling & Climate Resilience, Natural Resources Defense Council (NRDC) **Welcome Remarks** Dipa Bagai, Country Head, NRDC India **Opening Remarks** • Dr. Nisha Mendiratta, Advisor/Scientist G & Head, Climate, Energy and Sustainable Technology, Department of Science & Technology, Government of India • Amit Prothi, Director-General, Coalition for Disaster Resilient Infrastructure (CDRI) • Dr. Krishna Vatsa, Member & Head of the Department, National Disaster Management Authority (NDMA), Government of India **Special Address** • Sheela Patel, Founder and Director, Society for the Promotion of Area Resource Centres • Dr. Mrutyunjay Mohapatra, Director General of Meteorology, India Meteorological Department (IMD), Government of India **Report Release** • Harvard University's White Paper: Critical Perspectives on Extreme Heat in India by Dr. Satchit Balsari, Associate Professor, Emergency Medicine, Harvard Medical School • NRDC's Issue Brief: Extreme Heat in India - A Review of the Evolving Policy and Practice Landscape **Felicitation and Photo Closing and Vote of Thanks** Manish Bapna, President and CEO, NRDC

15 mins	**Transition Time**
11:00 am - 1:00 pm	**Parallel Thematic Sessions**

Session 1: Governance Pathways for Strengthening Heat Resilience in the Global South

Session Partner: Global Heat Health Information Network (GHHIN)

Moderator: Naim Keruwala, Regional Director for South and West Asia, C40 Cities

Speakers:

- Aditya Pillai, Sustainable Futures Collaborative
- Dr. Aakash Shrivastava, National Center for Disease Control
- Dr. Adelle Thomas, NRDC
- Dr. Anish Sinha, IIPHG
- Albert Ferreira, Cape Town (virtual)
- Alejandro Saez Reale, GHHIN
- Dr. Dileep Mavalankar, Program for Urban Heat Resilience, World Bank
- Dr. Eleni Myrivili, Atlantic Council (virtual)
- Dr. Jason Lee, National University of Singapore
- Dr. Sahil Hebbar, Self-Employed Women's Association (SEWA)
- Dr. Sekhar Lukose Kuriakose, Kerala State Disaster Management Authority (KSDMA)
- Dr. Sandul Yasobant, IIPHG
- Dr. Vishwas Chitale, Council on Energy, Environment and Water (CEEW)
- Jaya Dhindaw, World Resources Institute (WRI)
- Jorge Gastelumendi, Atlantic Council
- Sujata Saunik, Former Chief Secretary, Government of Maharashtra

Session 2: Built Environment Regulations as a Strategy for Heat Resilience

Session Partner: Ashok B Lall Architects and Alliance for an Energy Efficient Economy (AEEE)

Moderator: Dr. Satish Kumar, President and Executive Director, AEEE

Speakers:

- A.R. Rahul Nadh, Government of Tamil Nadu
- Abhijit Sankar Ray, World Bank
- Amanda Thounaojam, Indian Institute for Human Settlements (IIHS)
- Dr. Adele Houghton, Harvard University
- Dr. Beta Paramita, Indonesia University of Education (virtual)
- Depinder Kapur, National Institute of Urban Affairs (NIUA)

	• Girisha Sethi, Ashok B Lall Architects • Dr. Ian Hamilton, University College London (virtual) • Nitin Bajpai, NITI Aayog • Pavan Kumar Parnandi, Administrative Staff College of India (ASCI) • Prasad Vaidya, IIHS • Dr. Rajashree Kotharkar, Visvesvaraya National Institute of Technology (VNIT)* (virtual) • Dr. Saket Sarraf, ps Collective • Sumedha Malviya, WRI India • Suruchi Aggarwal, The George Institute for Global Health India • Venugopal Mothkoor, NITI Aayog • Dr. Vishal Garg, Plaksha University
15 mins	**Transition Time**
1:15 - 1:50 pm	**Inaugural Plenary (Part 2)**
1:15 - 1:20 pm	**Opening Remarks** Manish Bapna, President and CEO, NRDC
1:20 - 1:25 pm	**Special Address** Dr. Krishna Vatsa, Member & Head of the Department, National Disaster Management Authority (NDMA), Government of India
1:25 - 1:33 pm	**Rising Heat, Cooling Needs: Science and Integration for Impact** • Dr Radhika Khosla, Associate Professor and Research Director, Oxford India Centre for Sustainable Development, University of Oxford • Dr. Adelle Thomas, Senior Director, Climate Adaptation, NRDC and Vice - Chair IPCC Working Group II
1:33 - 1:43 pm	**Ministerial Address** Dr. Jitendra Singh, Hon'ble Minister of State for Science and Technology, Government of India
1:43 - 1:48 pm	**Felicitation and Photo**
1:48 - 1:50 pm	**Vote of Thanks** Dipa Bagai, Country Head, NRDC India
1:50 - 2:50 pm	**Lunch**
2:50 - 3:50 pm	**Plenary Session: Spotlight on Subnational Action on Heat and Cooling in India** **Moderator:** Jaya Dhindaw, Executive Program Director, WRI India Ross Centre **Speakers:** • A.R. Rahul Nadh, Director of Environment and Climate Change, Government of Tamil Nadu

	• Depinder Kapur, Head- C Cube, National Institute of Urban Affairs (NIUA) • Dr. Sekhar Lukose Kuriakose, Chief Resilience Officer, Kerala; Member Secretary (ex-officio), KSDMA • Sujata Saunik, Former Chief Secretary, Government of Maharashtra
10 mins	**Transition time**
4:00 – 6:00 pm	**Parallel Thematic Sessions**
	Session 3: Advancing heat resilience and sustainable cooling through South-South Cooperation: Insights from India and Africa **Session Partner:** Sustainable Energy for All (SEforALL), SouthSouthNorth (SSN), and Sustainable Solutions for Africa (SSA) **Moderator:** Yamide Dagnet, Senior Vice President, International, NRDC **Speakers:** • Ashish Jindal, SEforAll • Anshima Mishra, NRDC • Ishna Repswal, Resurgence • Dr. Ivan Ivanov, The State University of Zanzibar • Eleni Myrivili, Atlantic Council (virtual) • Felix Odhiambo Akello, Chief Heat Officer, Kisumu, Kenya (virtual) • Kathy Baughman McLeod, Heat Resilience Action (HERA) • Jaya Dhindaw, WRI India • Naim Keruwala, C40 Cities • Namo Lawson, UK–Canada CLARE programme, SSA • Rajesh Yadav, Asian Infrastructure Investment Bank • Rajneesh Sareen, Centre for Science and Environment (CSE) • Robi Redda, SSN • Roberta Evangelista, Base Foundation • Sheenaz Moosa, SSN • S. Karthikeyan, Confederation of Indian Industry (CII) • Vishwas Chitale, CEEW • Yvonne Serwaa Forkuko, SSA
	Session 4: Invisible Exposure: Rethinking Heat Metrics and Protection Pathways for Informal and Gig Workers **Session Partner:** The Salata Institute for Climate and Sustainability**,** Harvard University **Moderator:** Dr. Satchit Balsari, Associate Professor, Emergency Medicine, Harvard Medical School

	Speakers: • Dr. Adele Houghton, Harvard University • Dr. Akhil Srivastava, India Meteorological Department (IMD) • Dr. Aravind Unni, Independent Reseacher • Apekshita Varshney, HeatWatch • Dr. Bhargav Krishna, SFC • Foziyabanu Riyazahmed Raie, SEWA • Purvi Patel, SFC • Dr. Radhika Khosla, University of Oxford • Ruchika Lall, IIHS • Dr. Sahil Hebbar, SEWA • Shalini Sinha, Women in Informal Employment: Globalizing and Organizing • Shaikh Salaudeen, Telangana Gig and Platform Workers Union • Dr. Sandul Yasobant, IIPHG • Dr. Siji Chacko, Jan Sahas • Suma Pathy, Independent Consultant • Sujata Saunik, Government of Maharashtra • Tamanna Dalal, SFC • Dr. Vidhya Venugopal, Sri Ramachandra Institute of Higher Education and Research • Vishnu Vasudev, William J. Clinton Foundation • Dr. Yogendra Samant, International Labour Organization
	Session 5: Communicating Extreme Heat and Sustainable Cooling: A Briefing for Climate Communicators **Session Partner:** CEEW and Climate Trends **Moderator:** Jayashree Nandi, Hindustan Times **Speakers:** • Dr. Akhil Srivastav, Scientist, IMD • Siraz Hirani, Director Programs, Mahila Housing Trust (MHT)
15 mins	**Transition Time**
6:15 – 7:15 pm	**'Dastangoi' Performance by Nusrat Ansari and Amina Syeda** *The evening will witness the rich tradition of Dastangoi, a form that brings narratives to life through voice, rhythm, and imagination.* *The performance—Suraj ki Dastaan (The Story of the Sun), or Dastaan-e-Aftaab—invites us to reflect on the many faces of the sun: as sustainer, as challenge, and as a force that now compels us toward new solutions.*
7:15 pm Onwards	**Networking Dinner and Cocktails**

Day 2: Tuesday, 21 April 2026

Time	Session Details
9:00 – 10:00 am	**Registration**
9:00 – 10:00 am	**GHHIN South Asia Hub Launch**
10:00 – 11:00 am	**Report Launch:** Blueprint for Advancing Affordable and Domestically Produced Super-Efficient Ceiling Fans in India **Plenary Session: Cooling for the Future: Advancing Domestic Manufacturing and Job Creation in India** **Moderator:** Neha Dhingra, Director, CLASP-India • Ashish Rakheja, Managing Partner, AEON Integrated Building Design Consultants LLP • Gaurav Mehtani, Associate Vice President, Daikin Airconditioning India Pvt. Ltd. • Mehul Jain, Senior Disaster Risk Management Specialist, World Bank • Pradyumna Poddar, Past President, Indian Fan Manufacturers Association • Pradyot Koley, Scientist D, Deputy Secretary, Department of Science and Technology, Government of India • Shravan Shankar, Co-founder, Climake • Aditya Narayan Singh, Director, Ozone Cell, Ministry of Environment, Forests and Climate Change (MOEFCC)*
15 mins	**Transition Time**
11:15 am – 1:15 pm	**Parallel Thematic Sessions** **Session 6: Putting People First: Advancing Heat Resilience and Cooling Equity for Women & Children** **Session Partner:** The Nabha Foundation **Moderator:** Mihir Bhatt, Director, All India Disaster Mitigation Institute (AIDMI) **Speakers:** • Dr. Aarthy R, M. S. Swaminathan Research Foundation • Abolee Muranjan, Aga Khan Agency for Habitat India

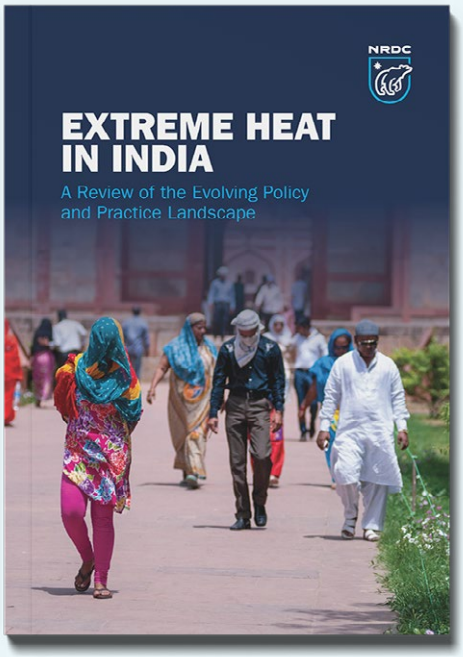
	• Anupriya S, Hasiru Dala • Apekshita Varshney, HeatWatch • Aastha Khathri, HumanQind • Bijal Brahmbhatt, MHT • Dr. Bhoomika Talwar, Public Health and Climate Expert • Jasprit Kaur, Khemka Foundation • Kathy Baughman McLeod, HERA • Leona Nunes, Aga Khan Agency for Habitat India • Nagakarthik MP, Sauramandala Foundation • Dr. Nitya Khemka, Nabha Foundation • Dr. Poornima Prabhakaran, Centre for Chronic Disease Control • Ranjini Mukherjee, CDRI • Ruchi Varma, HumanQind • Dr. Sarbjit Sahota, United Nations Children's Fund (UNICEF) • Sahil Hebbar, SEWA • Sneha Sachar, Clean Cooling Collaborative (virtual) • Shubhra Singh, Nabha Foundation • Sujata Saunik, Government of Maharashtra • Tanya Kak, Rohini Nilekani Philanthropies • Dr. Vijay Limaye, NRDC
	Session 7: Power Sector Resilience to Extreme Heat - Learning from Practice **Session Partner:** CDRI and Prayas (Energy Group) **Moderator:** Aditya Chunekar, Fellow, Prayas (Energy Group) **Speakers:** • Adarsh Nagarajan, BSES Rajdhani Power Limited • Amit Tripathi, CDRI • Deepak Raizada, Uttar Pradesh Power Corporation Limited • Karunakar Jha, Tata Power Northern Odisha Distribution Limited • Kiran Sabbineni, CDRI • Mayur Karmarkar, International Copper Association • Naresh Chandak, Indigrid • Prajkta Adhikari, MPEnsystems • Pramod Singh, AEEE • Rahul Walawalkar, Netzero Energy Transition Association (NETRA) • Ramraj Narasimhan, CDRI • Rohit Bajaj, Indian Energy Exchange (IEX) • Shalu Agarwal, CEEW • Saumya Vaishnava, WRI • Shweta Kulkarni, Prayas (Energy Group) • Yashraj Gore, MP Ensystems

1:15 – 2:15 pm	**Lunch**
2:30 – 3:30 pm	**Plenary Session: Financing for Adaptation and the Cooling Transition** This high-level session will convene banks, development finance institutions, CSR leaders, and philanthropic actors for a candid discussion to assess the current financing landscape for heat resilience and climate-friendly cooling, identify barriers, and explore innovative levers to mobilize and unlock catalytic capital flows. **Moderator:** Uday Khemka, Managing Trustee, The Nand and Jeet Khemka Foundation • Arjun P. Gupta, Founder and CEO, Smart Joules • Ashish Agrawal, VP & Head – Agribusiness, Bajaj Allianz General Insurance Co. Ltd. • Jorge Gastelumendi, Senior Director, Atlantic Council's Climate Resilience Center • Shalabh Tandon, South Asia Regional Head of Operations & Climate Change, International Finance Corporation* • Shishir Agarwal, Senior Vice President, AON • Sonalini Khetrapal, Team Lead, Health Sector (India and Bhutan), Human and Social Development Sector Office, Asian Development Bank
15 mins	**Transition Time**
3:45 – 5:00 pm	**Plenary Session: Weaving the Story Together: Insights, Priorities, and the Road Ahead** A fast, high-level synthesis that closes the Forum with clear direction for follow-through. **Moderator:** Dr. Radhika Khosla, Associate Professor and Research Director, Oxford India Centre for Sustainable Development, University of Oxford* • Naim Keruwala, Regional Director for South and West Asia, C40 Cities • Pramod Singh, Senior Director, AEEE • Yamide Dagnet, Senior Vice President, International, NRDC • Dr. Satchit Balsari, Associate Professor, Emergency Medicine, Harvard Medical School • Mihir Bhatt, Director, AIDMI • Aditya Chunekar, Fellow, Prayas (Energy Group) Q&A with the audience (40 mins)

5:00 – 5:15 pm	**Plenary Session: GHCF Valedictory Session** **Special Remarks** Yudhvir Singh Malik, Chairperson and Managing Director, Unitech Group* **Valedictory Address** Amitabh Kant, Former CEO of National Institution for Transforming India (NITI) Ayog **Closing Remarks** Dr. Vibha Dhawan, Director General, The Energy and Resources Institute (TERI) **Vote of Thanks** Yamide Dagnet, Senior Vice President, International, NRDC
5:15 – 6:15 pm	**High Tea**

**To Be Confirmed*

Reports Released at GHCF 2026



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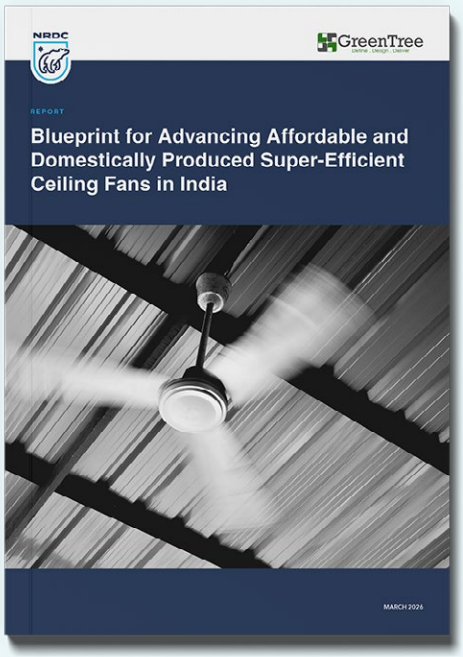

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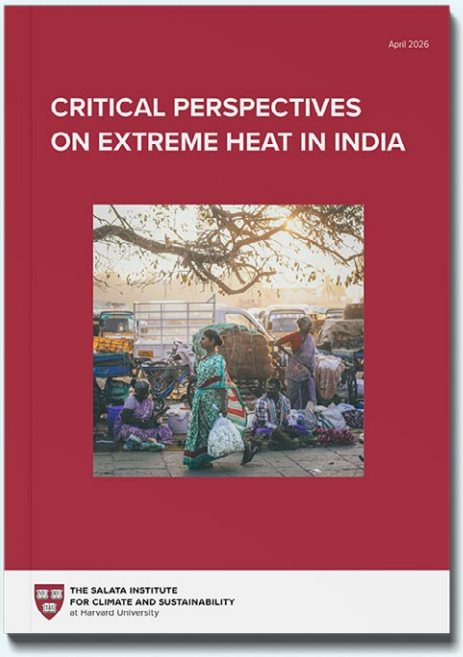

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