HOUSING byPeople IN ASIA

Newsletter of the Asian Coalition for Housing Rights Number 23, October 2025

COMMUNITIES ON THE FRONTLINES OF HEAT AND THEIR FIGHT TO KEEP COOL

In many of Asia's cities, families wake already sweating, the air heavy before the day begins. Rapid urbanization, shrinking green spaces, and a changing climate have turned heat into a relentless and increasingly dangerous threat. The poorest residents suffer most: they live in small, crowded homes with metal roofs, little ventilation, and no relief from sweltering temperatures that rise higher each passing year.

Cooling has become an urgent matter of survival—especially for those who cannot escape the heat. Wealthier households retreat to air-conditioned apartments, malls, or cars. The poor must cope on their own: with fans that strain their budgets, with shade made from cloth and bamboo, and with everyday habits and simple tricks passed carefully from neighbor to neighbor.

Over the past two years, ACHR has worked with communities in eight Asian countries to understand how people experience and respond to extreme heat. Supported by the ClimateWorks Foundation and its Clean Cooling Collaborative, this work looks not at technology alone, but at how heat is tied to land and housing conditions, and how community-led approaches can bring cooling onto the housing agenda. Cooling is not just a technical challenge; it is a question of justice, of dignity, and of who gets to live comfortably in our urban future.

This newsletter shares stories of daily survival and ingenuity: mothers watering hot roofs in Dhaka, children sleeping on rooftops in Karachi, neighbors planting trees in Bangkok, and cooperatives in Jakarta experimenting with new housing designs. These accounts of endurance, adaptation, and innovation lay the groundwork for the project's final stage: the participatory development of passive cooling solutions for urban poor households in Asia, and a collective rethinking of housing and settlements in ever-hotter cities.

THE HUMAN COST

Heat is not just weather—it is exhaustion, illness, and worry. It shows up in school closures, lost workdays, empty water jars, rising expenses and families stretched to breaking point.

BUILDING BRIDGES

From Bhuj to Colombo, Yogyakarta to Davao, communities meet, share, and learn from each other. Together they weave ideas and solidarity, creating pathways toward homes that can breathe and cool.

FACING HEAT

In narrow lanes and crowded rooms, the heat presses in from every side. Families adjust their routines as cooking, sleeping, and working all bend around the rising temperatures.

LIVING PRACTICES

People invent ways to cool their homes, layering tin sheets with insulation, building ventilated roofs, planting vines for shade, or making walls from earth blocks. Each adaptation reflects creativity born from necessity.

HOLDING THE HEAT

Making the Case for Cooling in Poor Communities

ACHR, together with partner organizations, local leaders, and grassroots groups, is engaged in the processes described in this newsletter as part of the project "A Regional Approach to Passive Cooling Solutions for Urban Poor Households in Asia" (2024–2025).

When the City Becomes Too Hot to Live In

Rising heat across Asian cities: A new normal of extremes

Across Asia, summer now comes with a sense of dread. Each year, headlines announce new records: "hottest temperatures in Nepal's Terai region," "record-breaking humidity in Colombo," "new peak temperature in Dhaka." What once sounded like extraordinary events are now annual markers of a changing climate. The "hottest ever" has become routine, and the sense of normalcy masks the mounting danger.

Climate change has pushed the region to the frontlines of global warming. Cities are experiencing not only higher average temperatures but also longer, more frequent, and more intense heatwaves. In Karachi, the 2015 heatwave killed more than 1,200 people in just a few days. In 2024, Bangladesh endured its longest-ever heatwave, stretching 27 consecutive days. Across many cities, temperatures now climb above 40°C with alarming regularity. These extremes are no longer distant forecasts; they are lived realities, reshaping how people work, rest, and care for one another.

The impacts are uneven, interacting with geography, local climate, and patterns of urbanization. Those who suffer most are the urban poor, whose settlements and livelihoods are structurally unprepared for prolonged heat. Residents experience this rise in their bodies, homes, and daily routines, revealing what statistics alone cannot: heat is a daily struggle that worsens each summer.

When heat leaves no trace

Unlike floods, cyclones, or earthquakes, heatwaves rarely leave visible scars. There are no collapsed buildings or dramatic images of inundated streets for the evening news. Heat does not strike with spectacle, but its cumulative toll makes it no less deadly.

Heat leaves its mark quietly through exhaustion, disrupted sleep, failing health, and lives cut short. These impacts play out in daily life: a worker too weak to finish a shift, a child unable to study in a hot classroom, a mother lying awake through stifling nights. Deaths are scattered across hospitals and homes, often misclassified or unrecorded, making the true toll very difficult to measure.

Because it is largely invisible, heat is often underestimated compared to other hazards. A disaster without ruins is a disaster that too easily slips from view. For the poor, who already endure the harshest housing and living conditions, heat is both a climate emergency and a crisis of justice, demanding attention precisely because it cannot be captured in a single photograph or dramatic headline.

> **"This year, the government announced the Heat Action Plan 2024 with guidelines for people and authorities, like avoiding sun exposure or setting up hospital wards for heat cases. But most people don't even know it exists and depend on whatever information comes through media, especially social media, even if it's unreliable."**
>
> *—Younus, Urban Resource Center, Karachi*

Slow, fragmented, exclusionary: State responses to rising heat

Heat is starting to appear on state and city agendas in Asia, even though it often trails behind other disasters. Floods and storms trigger investment in early warning systems, emergency response, and infrastructure upgrades. Heat, by contrast, is too often treated as a secondary concern, addressed only after extreme events expose its toll. The result is a pattern of responses that are slow, uneven, and reactive.

Heat Action Plans (HAPs) are the main policy tool to confront the challenge. They can exist at national or city levels: national frameworks provide broad guidance, while city-specific plans are meant to translate these into concrete measures such as early warnings, public outreach, and adaptation strategies. Across Asia, however, HAPs remain patchy. Even the most exposed megacities lack city-specific plans, leaving households to cope on their own. Where plans do exist, implementation is uneven, and the most vulnerable often fall through the cracks. Cities like Jakarta, Bangkok, and Ahmedabad have heat-specific plans on paper, but these rarely reach low-income settlements effectively.

States also rely on other instruments, including urban planning regulations, building codes, disaster management frameworks, and public awareness campaigns. In practice, these measures rarely prioritize heat, and enforcement is weak. Awareness campaigns are often limited to posters or advisories, offering no real solutions for families in cramped, poorly ventilated homes. Too often, adaptation measures focus on public infrastructure, like drainage systems or green belts, while overlooking the indoor heat that poor families face every day. And cooling centers are few and far between, and assume that families can leave their homes for hours—an unrealistic expectation for workers tied to daily earnings.

The result is not just inadequate policy, but policy that excludes the very people most at risk. Governments increasingly recognize heat as a threat, yet few measures reach the urban poor who experience it most intensely. Without programs to improve housing, provide affordable cooling, or account for indoor exposure, extreme heat continues to be a crisis that official planning frameworks fail to adequately capture.

The housing-heat link:

How land rights shape vulnerability

Heat vulnerability is not just about climate—it is shaped by land and housing, and the rights (or lack thereof) that determine who can protect themselves. Where tenure is insecure, settlements are informal, and basic services are lacking, households are more exposed to extreme heat and less able to take measures to reduce its impact. Land and housing are not just matters of shelter; they determine whether communities are recognized in planning, included in upgrading programs, and able to invest in durable, heat-resilient homes. Across Asia, these structural barriers amplify everyday heat risks in interconnected ways.

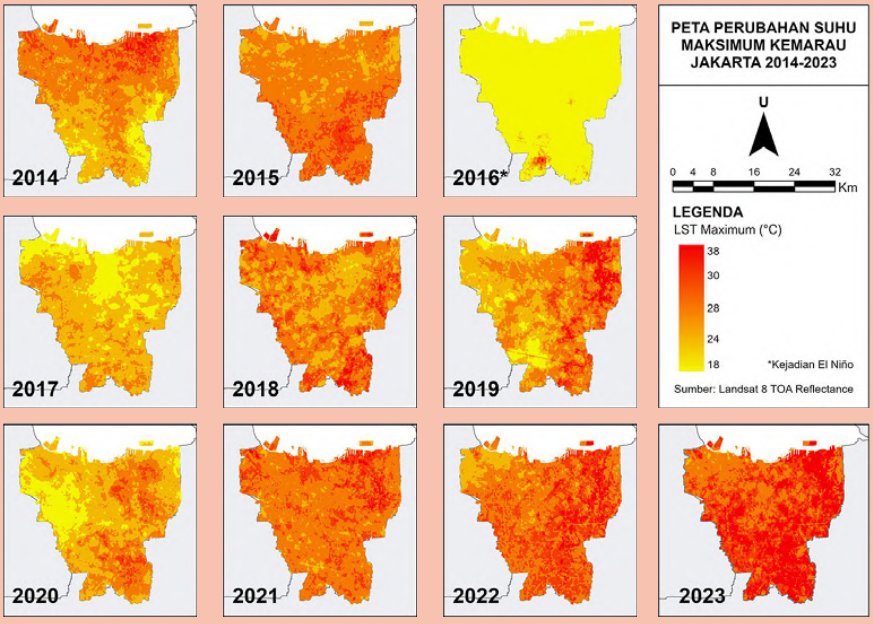
One of the most pervasive challenges is invisibility. Informal settlements are often missing from maps, absent from census data, and overlooked in climate assessments. Without recognition, authorities cannot grasp the cramped homes, poor ventilation, and heat-trapping materials that define daily life. Informality also dictates access to programs: government upgrading schemes and climate interventions frequently bypass these communities, and municipal initiatives are often out of reach.

Tenure insecurity deepens vulnerability. Households facing eviction or relocation hesitate to invest in housing upgrades or cooling solutions. Families with secure plots can plant trees, install shading, or improve roofs; those without must make do with tarpaulins and tin sheets, knowing any investment could be destroyed. Precarious land status thus discourages durable improvements, leaving residents exposed to extreme heat.

The picture is compounded by missing services. In many informal settlements, unreliable or absent water, electricity, sanitation, and drainage—often a direct result of their unrecognized status—make even simple cooling strategies difficult to implement. Without running water, fans, or shaded spaces, households must endure scorching conditions with few options for relief.

Together, these barriers make land and housing rights central to climate justice. Secure recognition, access to programs, and reliable services allow communities to invest in heat-resilient homes and participate in adaptation planning. Without these foundations, heat adaptation remains largely out of reach, forcing urban poor households to cope with a crisis that current planning frameworks barely recognize.

Over just a decade, Jakarta's dry-season maps reveal a city growing steadily hotter, with maximum temperatures rising across its neighborhoods:



In communities across the ten cities, heat has become a constant concern. Mothers, children, workers and the elderly experience it every day, yet until now, few had talked about it as something that could actually be addressed.

A Regional Effort Rooted in Communities

Introducing the ACHR Cooling Project

Against the backdrop of rapidly rising temperatures in Asia, ACHR launched a regional initiative in partnership with community networks in eight countries: Pakistan, India, Nepal, Sri Lanka, Bangladesh, Thailand, Indonesia, and the Philippines. This marks the Coalition's first coordinated effort to look squarely at heat in urban poor settlements: an issue long felt but rarely named in policy or housing debates.

The project has several interlinked objectives. First, to capture the lived experience of heat in marginalized settlements—not only the physical toll on housing and health, but also the social and economic strains it creates. Second, to give visibility and value to community knowledge and coping practices, which have often been ignored in formal discussions. Third, to support a shift in perception: from seeing heat as an unavoidable act of nature to recognizing it as a challenge that can be addressed through collective action. This transition from helplessness to agency is one of the project's most significant contributions, opening space for communities to reframe their realities and begin shaping solutions on their own terms.

Building on this awareness, the project moves toward designing and testing measures that are affordable, replicable, and rooted in the realities of low-income settlements. In this way, research becomes the foundation for action, laying the groundwork for practical cooling strategies that communities can sustain and scale over time.

What makes this initiative distinct is that it builds on ACHR's decades of experience in housing and upgrading, while turning a focused lens on heat for the first time. Communities are not treated as passive "beneficiaries" but as knowledge-holders and co-researchers, directly shaping both the understanding of the problem and the exploration of solutions. By deliberately connecting everyday experiences to broader debates on climate resilience, the project positions the realities of urban poor households within conversations on housing rights, climate justice, and inclusive urban planning.

Citywide processes as a foundation

In each country, community networks and partner organizations link households, neighborhoods, and local institutions while working toward citywide impact. They bring municipal authorities, academics, civil society, and grassroots groups into the conversation to share knowledge, test solutions, and build local capacity, framing cooling as a collective urban concern. The regional framework then carries these city-level efforts across borders, turning local action into a shared Asian trajectory of learning, experimentation, and advocacy.

Why a regional approach?

Heat stress in low-income settlements is not confined by national borders, and neither is the knowledge needed to confront it. Across cities, communities face remarkably similar vulnerabilities: insecure land tenure, poor housing materials, poorly maintained infrastructure, and limited access to affordable energy. Yet they are also responding in creative ways, reviving traditional building techniques, testing low-cost adaptations, and collectively negotiating the constraints of their environments.

A regional framework offers several advantages:

1 LEARNING FROM DIVERSITY

Conditions vary widely—from the dry, scorching heat of Bhuj to the humid, oppressive heat of Dhaka and Bangkok. Alongside diverse experiences of heat, the project brings together very different settlement types—from riverside kampungs in Yogyakarta to dense relocation sites in Davao and tin-roof clusters in Colombo. Different climates and settlement forms produce different strategies, and what works in one place can inspire adaptation elsewhere. Sharing experiences across borders builds collective knowledge that is richer than any single settlement's insights.

2 POOLING KNOWLEDGE AND INNOVATION

Communities exchange experiences across borders, bringing together technical know-how such as architectural details, material choices, and low-cost design adaptations. This collective knowledge becomes a resource for experimentation, while testing solutions across varied contexts strengthens credibility and supports wider scale-up.

3 BUILDING SOLIDARITY

Peer-to-peer exchanges between youth teams, community leaders, and local networks reduce isolation and reinforce that heat challenges are part of a broader system, not just household-level problems. Communities gain confidence not only from practical solutions but also from being part of a larger movement confronting climate impacts and political barriers together.

4 AMPLIFYING VOICE AND ADVOCACY

A regional framework links local realities to citywide, national, and global agendas, creating opportunities to push for systemic change based on shared, grounded evidence. It also connects rising heat to broader struggles for housing rights, climate justice, and inclusive urban planning, giving the urban poor a stronger, collective voice in spaces where they are rarely heard.

Why the cooling should be passive:

In a heating world, comfort and safety should not depend on whether a household can afford to run a fan or install air conditioning. For low-income families, these powered solutions are often unreliable, unaffordable, or simply out of reach. Passive cooling offers a fairer alternative: a set of design and material strategies that reduce indoor heat naturally, without relying on electricity.

At its core, passive cooling means designing and adapting houses to work with the environment—using airflow, shading, materials, orientation, and greenery to keep spaces livable. These strategies can be built into new housing or retrofitted into existing settlements, giving families practical ways to withstand extreme heat.

Cost is a decisive factor. Running an electric fan all day can be a heavy financial burden. Hawa from Dhaka explains: "*If we didn't rely on fans all the time, it would save us money in the long run.*" Ainun, a community leader in Yogyakarta, adds: "*With passive cooling, you reduce your household costs for electricity… and can spend it on other things to help your household.*"

Beyond affordability, passive cooling enhances **security** and **health**. Frequent power cuts, fragile grids, and increasingly intense heatwaves leave families vulnerable when relying on electricity. Cooler indoor environments reduce dehydration, heatstroke, and the fatigue that often accompanies heat stress in overcrowded homes.

Another strength lies in **cultural familiarity**. Many passive cooling practices build on traditional or locally adapted building knowledge—techniques that residents already know and trust. This makes them easier to adopt and sustain than imported technologies or complex systems. They also carry **environmental co-benefits**, reducing reliance on electricity, cutting greenhouse gas emissions, and supporting global climate goals.

Passive cooling is also highly **scalable**. Because it relies on design principles rather than expensive technology, solutions can be replicated across new and existing settlements without large investments. Ventilation, shading, orientation, and greenery can be adapted to different climates and housing types, and knowledge can be transferred through community networks, training programs, and peer-to-peer learning.

All of these benefits make passive cooling a powerful approach. Yet it's important to recognize its limits: passive strategies cannot fully replace active cooling in extreme heat. Depending on the climate and context, they may only reduce, rather than eliminate, indoor temperatures. Even so, they establish a baseline for dignified housing, lowering costs, improving comfort, and reducing dependence on fragile grids while giving families practical ways to cope with rising temperatures.

"Passive cooling sets the baseline—the minimum condition people should have to cope with urban heat. Of course, if families have more money, they can add AC, but with the housing conditions we have, passive cooling is the foundation we need to achieve."

—Dian, Rujak Center for Urban Studies, Jakarta

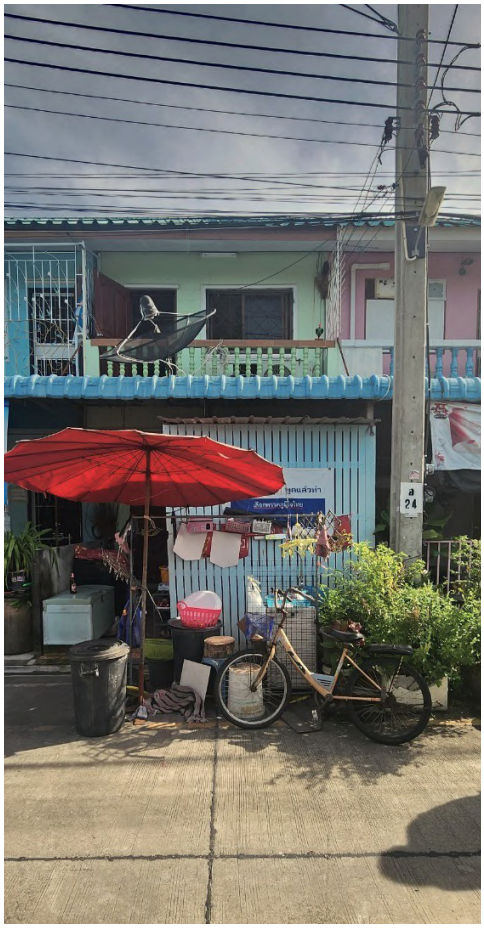
Rising temperatures: Not just measured, but felt

Maps, datasets, and climate models confirm rising heat in Asia's cities—but residents themselves describe the intensity in vivid, everyday terms: "*Sometimes you measure 32°C, but it feels like 36 or 38!*" "*You step out of the shower, and the humidity is so high that you're immediately sweaty again!*" Such accounts reveal the overwhelming presence of heat in daily life.

The increase in heat over time is also unmistakable. People recall, "*Ten years ago, it was not so hot, but now we experience heat three times more!*" "*Our office building gets so hot like an oven, we cannot have a whole ward meeting as we used to!*" Surveys confirm this lived experience: Sevanatha's 2023 citywide settlement survey in Colombo found that heat had become one of the most frequently mentioned concerns in low-income communities—a sharp shift from earlier rounds when it barely appeared.

What stands out is not just awareness of intensifying heat, but the struggle to frame it as a problem that can be solved. Heat is felt daily, yet it is often accepted as a natural condition rather than a social issue with solutions. Awareness without clear pathways for action remains one of the sharpest edges of the crisis.

Still, change is emerging. Across the region, communities are beginning to see how heat intersects with nearly every part of daily life, and that design, materials, and collective solutions can help reduce its impact. Discussions around passive cooling and practical interventions are opening new possibilities, showing that heat is not only something to endure, but a challenge that can be actively addressed.



Cities and communities in focus

The project is being carried out across eight countries, in cities and settlements carefully selected by ACHR partners together with local community organizations. The selection captures the diversity of urban experiences, from megacities and sprawling agglomerations to small towns, from dense inner-city neighborhoods to riverside, mountain, and desert settlements, providing a wide range of social, environmental, and material contexts. Together, these sites form a living laboratory for cross-learning, where different building traditions and settlement fabrics reveal insights that can inform cooling solutions across contexts.

Selection was guided by several considerations:

- the urgency of heat-related risks in urban poor areas;
- the presence of organized community structures and leadership;
- the capacity and interest of local partners to engage in participatory research;
- and the diversity of settlement types, climates, and housing conditions, from dense unplanned concrete settlements to upgraded housing projects.

At the city level, the process of selecting communities was equally rooted in bottom-up practices. Partner organizations collaborated with local leaders and networks to identify where to focus efforts. Each country team used its own approach, through meetings, group discussions, mapping exercises, or household surveys, but all followed the same principle: decisions should be led by residents themselves. The final choice of sites reflected community readiness, the scale of challenges, and the strength of relationships between networks and partner groups.

Pakistan

KARACHI

- **Population:** ~22 million
- **Partner:** Urban Resource Center
- **Communities:** Umer Colony, Nursery Christian Colony, Khyber Colony
- **Collaborators:** Department of Architecture and Planning NED University of Engineering and Technology, Department of Architecture Sir Syed University of Engineering and Technology, All Pakistan Alliance for Katchi Abadis, Darakht (Tree) Welfare Association

Karachi, Pakistan's largest city and economic hub, is growing at breakneck speed. Its population has doubled over the past two decades, now exceeding 20 million, placing immense pressure on housing, infrastructure, and services. Summers are punishing, with temperatures often exceeding 40°C. The city's 2015 heatwave, which claimed over 1,200 lives in just ten days, remains a stark reminder of the dangers posed by extreme heat. Such events are becoming more frequent, and long-term projections indicate continued temperature rises, further amplifying risks—especially for the millions living in informal settlements, or *katchi abadis*.

The project focuses on three communities: Umer Colony in PECHS, Khyber Colony in Nazimabad, and Nursery Christian Colony in Korangi. These sites were selected not only for their poverty and vulnerability, but also to reflect diversity in ethnic composition, housing typologies, and location—central, industrial, and coastal—providing a broad picture of how Karachi's urban poor experience heat. Umer Colony and Khyber Colony are informal settlements, while Nursery Christian Colony is a government relocation site for evicted families. Together, they illustrate a spectrum of vulnerability shaped by location, tenure status, and socio-economic conditions.

The Urban Resource Centre (URC), active in Karachi since 1990, collaborates closely with these communities, supporting local organizing, advocacy, and connections with city authorities and service providers. Leveraging its long-term presence, URC engages a range of experts, from architects and planners to health specialists, while also involving architecture and planning students in documentation and field observation. Given Karachi's history of heat-related tragedies, focusing on these settlements provides an opportunity to develop locally grounded solutions with the potential to inform citywide and even national-level strategies for reducing heat risk.

India

BHUJ

- **Population:** ~150,000
- **Partner:** Hunnarshala Foundation for Building Technology & Innovations
- **Communities:** Ashapura Nagar, Ramdev Nagar
- **Collaborators:** Sakhi Sangini, Setu, Homes in the City, Bhuj Municipality, Ward committees, Massachusetts Institute of Technology

Bhuj, in Gujarat's arid Kutch region, experiences some of India's most extreme summer heat. Daytime temperatures often exceed 45°C, creating unbearable indoor conditions in informal neighborhoods. About 30% of the city's residents—some 14,000 households—live in 74 informal settlements, where cramped housing, poor ventilation, and limited access to water intensify exposure. Social structures in these settlements are often organized around religious and caste groups, with each caste occupying distinct territories, adding another layer of complexity to the socio-economic dynamics shaping the city's fabric.

Hunnarshala, an organization with decades of experience in vernacular and environmentally sensitive building techniques and deep community engagement, leads the project in Bhuj. It collaborates with Setu, an organization promoting decentralized urban governance and activating ward committees to connect citizens with local authorities. Together, as part of the Homes in the City (HIC) consortium, Hunnarshala and Setu have contributed to studies on heat stress in Bhuj, building a strong evidence base for local interventions. The community partner is Sakhi Sangini, a women's savings network that has established citywide systems for savings and credit, providing vital support to families facing everyday crises.

Building on this foundation, Hunnarshala, Setu, Sakhi Sangini, and local ward committees carried out detailed assessments in four informal settlements, selected for their heat exposure and diversity of housing conditions and densities. The expansion of a previous collaboration with the Massachusetts Institute of Technology (MIT) provides additional research insights into materials and heat analysis. By combining academic expertise with grassroots organizing, this partnership seeks to develop practical, community-driven cooling strategies tailored to the realities of Bhuj's most vulnerable neighborhoods.

Nepal

JEETPURSIMARA

- **Population:** ~127,000
- **Partner:** Lumanti Support Group for Shelter
- **Communities:** 10 communities across 4 wards (9, 11, 19, 20)
- **Collaborators:** Jeetpursimara Sub-metropolitan City, Department of Urban Development and Building Construction, CRAterre, Hunnarshala Foundation, Habitat for Humanity Nepal, Society of Nepalese Architects, Himalaya College of Engineering, Tribhuvan University

Jeetpursimara, a sub-metropolitan city in Nepal's Terai plains, experiences some of the country's most extreme heat. Formed in 2017 from the merger of Jeetpur and Simara municipalities, the city now hosts over 127,000 residents. Summer temperatures often exceed 40°C, while winters dip close to freezing, creating a harsh climate that strains housing and livelihoods. In May 2024, temperatures peaked at 40.6°C, underscoring the acute vulnerability of low-income families reliant on daily wage labor.

Lumanti Support Group for Shelter, which recently expanded its community development work to this municipality, began with a survey of ten low-income communities across four wards (9, 11, 19, and 20). The survey covered 678 households and more than 4,000 people, documenting housing challenges and the impact of climate stress. Building on these findings and through engagement with local networks, the project focused on Thulo Materiya, a settlement marked by dense housing, insecure tenure, and precarious livelihoods.

Lumanti has linked this local process to a wider coalition of partners. Jeetpursimara Municipality and the Department of Urban Development and Building Construction provide institutional support and help amplify advocacy efforts, while academic partners, CRAterre and Hunnarshala Foundation contribute expertise on construction techniques and vernacular materials such as bamboo, mud, and thatch. This collaboration lays the groundwork for context-sensitive approaches to improving thermal comfort.

Anchoring the project in this young, rapidly evolving city creates space to test practical solutions while strengthening citywide links between communities and stakeholders. The work in Thulo Materiya offers insights into climate-responsive housing at the local level and a pathway toward integrating these strategies into Nepal's wider urban upgrading and resilience agenda.

Sri Lanka

COLOMBO

- **Population:** ~640,000
- **Partner:** Sevanatha Urban Resource Center
- **Communities:** 528 Watta Maradana, 56 Watta Sangaraja Mawatha, 222 Redbana Watta, 3rd stage Kadirana, Pichchamal Watta, 164 Watta Aviwal Zavia Mawatha Grandpass
- **Collaborators:** Colombo Community Leaders Forum, Colombo Municipal Council (Public Health Department)

Colombo, Sri Lanka's commercial capital, is becoming increasingly hot and persistently humid, with average daytime temperatures of around 32°C. Nearly half of the city's population lives in low-income settlements with dense layouts and cramped housing. Many households are still recovering from the impacts of the Covid-19 pandemic, which pushed them deeper into poverty. More recently, the financial crisis of 2022–2023 has driven inflation to extreme levels, further eroding income opportunities and access to basic services. These structural factors, compounded by the unmanaged development of Colombo's settlements, shape both the physical and social fabric of communities, increasing residents' exposure to heat and reducing their capacity to cope.

The Sevanatha Urban Resource Center has a long history of working with Colombo's urban poor. Sevanatha's 2023 settlement survey, conducted to update community profiles and track evolving needs, highlighted rising indoor temperatures as a critical concern, an issue that had not been raised in earlier surveys. From the communities surveyed, Sevanatha and local leaders selected six priority settlements—528 Watta Maradana, 56 Watta Sangaraja Mawatha, 222 Redbana Watta, 3rd stage Kadirana, Pichchamal Watta, and 164 Watta Aviwal Zavia Mawatha Grandpass—to explore heat exposure and cooling potential more closely. Selection was based on several factors, including the social and technical characteristics of families and their houses in these settlements.

The project also engages the Colombo Community Leaders Forum, a platform organized by Sevanatha, Colombo Urban Lab, and the Municipal Council. Forum members act as trusted local representatives, mobilizing residents around indoor heat challenges and helping disseminate findings. The Public Health Department of the Colombo Municipal Council is closely involved, ensuring that community voices inform practical and scalable strategies to mitigate heat stress across the city's low-income neighborhoods.

Bangladesh

DHAKA & JHENAIDAH

- **Population:** Dhaka ~23 million; Jhenaidah ~160,000
- **Partners:** Co.Creation.Architects, Platform of Community Action and Architecture
- **Communities:** Shatbaria, Bhutiargati Khamar, Korail, Kallyanpur Pora Boshoti, Gabtoli
- **Collaborators:** Jhenaidah citywide community network; Nogor Abad, Nogor Bostibashi Unnayan Shongstha, Shapla Boshoti Unnyan Shongstha, BRAC University

Bangladesh's cities are among the hottest and most densely populated in Asia. Dhaka, a megacity of over 23 million, is growing rapidly, with roughly 35% of residents living in informal settlements. Summer temperatures regularly exceed 40°C, and prolonged heatwaves have become increasingly common. Smaller cities like Jhenaidah in the southwest face similar heat exposure, compounded by poor housing materials, limited ventilation, and declining greenery. In 2024, the country endured its longest heatwave in decades—27 consecutive days—with the mercury climbing to 42.7°C in Chuadanga, 40.4°C in Dhaka, and 39°C in Jhenaidah, while power outages left many without relief.

The study focuses on five communities across the two cities, selected to illustrate a spectrum of vulnerability and scale. In Dhaka, Korail, Kallyanpur Pora Boshoti, and Gabtoli were chosen for their dense population, limited open space, and exposure to heat. Korail, in particular, houses nearly 100,000 residents within just 90 acres, making it one of the country's largest informal settlements. In Jhenaidah, Shatbaria, a Dalit neighborhood, and Bhutiargati Khamar Para, a peri-urban settlement with rural characteristics, were selected for their combination of high heat exposure and socio-economic marginalization.

Platform of Community Action and Architecture (POCAA) and Co.Creation.Architects (CCA) have long-standing engagement with these communities, supporting local networks and working with residents in participatory, co-creative processes. In a country where extreme population density and heat exposure create particularly challenging living conditions, collaboration between communities, practitioners, and local government institutions is crucial. This approach opens pathways for addressing thermal comfort through grounded, people-centered strategies and demonstrates how design can directly enhance resilience and dignity in everyday life.

Thailand

BANGKOK

- **Population:** ~15 million
- **Partner:** Community Organizations Development Institute
- **Communities:** 22 Baan Mankong housing projects
- **Collaborators:** Baan Mankong housing cooperatives and networks; Community Builders' Network, Bangkok Metropolitan Administration, Ministry of Social Development and Human Security

Bangkok, Thailand's capital, is one of Asia's fastest-warming cities. Daily highs often reach 35°C, and in the hottest month of April, temperatures exceed 40°C. High humidity further raises the "feels-like" temperature, creating especially challenging conditions for low-income residents. Rapid urbanization, dense housing, and limited greenery intensify exposure, while sprawling infrastructure and heavy traffic trap heat and pollution in already disadvantaged neighborhoods, further aggravating heat stress.

The project focuses on Baan Mankong, the government's flagship program for secure tenure and community upgrading. While the program has strengthened housing and tenure security for hundreds of communities across the country, early designs often overlooked passive cooling or green space, leaving residents exposed to high indoor temperatures. The project considers a range of contexts across five zones—Bangkok, Thonburi, Pathum Thani, Samutprakan, and Nakhon Pathom—covering central, suburban, and coastal areas to capture diverse social, spatial, and environmental conditions.

Led by the Community Organizations Development Institute (CODI), the project works closely with communities in 22 Baan Mankong settlements and with the Community Builders Network—a team of masons, carpenters, and construction laborers experienced in multiple housing projects. This network serves as a key platform for sharing solutions and construction practices more broadly. The process also builds on established collaboration between residents and government agencies through mixed committees spanning ward to district levels, ensuring that community voices remain central in decision-making processes. By combining technical expertise with local leadership, the initiative aims to enhance thermal comfort in Baan Mankong settlements while generating lessons that can be applied at scale across Thailand.

Philippines

DAVAO

- **Population:** ~1.8 million
- **Partner:** Technical Assistance Movement for People and Environment, Inc.
- **Community:** Samahang Matute and Soliman (SAMASOL) Homeowners' Association
- **Collaborators:** Homeless People's Federation Philippines, Inc., LinkBuild, Inc., University of the Philippines Mindanao, University of the Philippines Resilience Institute

Davao, the largest urban center on the island of Mindanao, is a fast-growing port city where summer temperatures often exceed 35°C and heat index values climb to 44–47°C. More than 40,000 families live in informal settlements, many clustered along rivers and coastal zones exposed to flooding and other hazards. To address housing insecurity, the city government has established 13 relocation sites, providing land and basic infrastructure for displaced families. Yet even in these planned developments, heat stress persists due to limited ventilation, restricted space, and unplanned household modifications.

One such site is Los Amigos in Tugbok District, where the Samahang Matute and Soliman (SAMASOL) Homeowners Association was formed. SAMASOL emerged in 2012 when two inner-city neighborhoods, Matute and Soliman, faced eviction. With support from the Philippine Alliance, a coalition of organizations dedicated to community-led development, 46 families registered for relocation and housing aid. In 2015, they moved into core houses built with interlocking compressed earth blocks. Over time, households extended and modified their homes, paving over open spaces and blocking airflow, which increased indoor heat.

The project is led by the Technical Assistance Movement for People and Environment, Inc. (TAMPEI), in close collaboration with the Homeless People's Federation Philippines, Inc. (HPFPI)—both members of the Philippine Alliance—and local community leaders. HPFPI supports community organizing and the development of financial systems, including housing loan packages for implementing and sustaining cooling solutions. Technical support comes from LinkBuild, Inc., while students from the University of the Philippines Mindanao assist with field observations and surveys. Together, these partners aim to create practical approaches for improving thermal comfort that can inform other relocation and upgrading projects across the city.

Indonesia

JAKARTA & YOGYAKARTA

- **Population:** Jakarta ~11 million; Yogyakarta ~4 million
- **Partners:** Rujak Center for Urban Studies, Arkom Indonesia
- **Communities:** Kampung Muka, Kampung Notoyudan, Kampung Sorowajan
- **Collaborators:** Jaringan Rakyat Miskin Kota, Urban Poor Consortium, Arsitek Kampung Urban, Habitat for Humanity, Universitas Indonesia, Kalijawi, Universitas Amikom Yogyakarta

Indonesia's urban poor face the dual challenge of extreme heat and high humidity. Jakarta, a megacity of over 11 million, regularly experiences daytime temperatures of 30–34°C, with humidity pushing the "feels-like" index above 40°C at times. These conditions are felt most acutely in *kampungs*, where dense housing, limited open space, and minimal tree cover intensify heat exposure. Further inland, Yogyakarta has seen rapid urbanization transform farmland and riverbanks into high-density settlements, exposing low-income residents to disproportionate heat risks.

In Jakarta, the Rujak Center for Urban Studies engages with Kampung Muka, a settlement of roughly 2,000 families beside railway tracks. The kampung, an informal settlement due to its land status, is well-organized under the citywide urban poor network known as Jaringan Rakyat Miskin Kota (JRMK). Rujak and JRMK collaborate with the Urban Poor Consortium (UPC) for organizing support, Arsitek Kampung Urban (AKUR) for greening and ventilation guidance, Universitas Indonesia (UI) for design support, and Habitat for Humanity (HfH) for implementation.

In Yogyakarta, Arkom Indonesia partners with Kalijawi, a federation with more than 300 members from 15 different kampungs. Kalijawi is organized as a cooperative, managing savings and loans for housing, health, and education—now extended to climate resilience. After initial engagement by Arkom and Kalijawi, Kampungs Notoyudan and Sorowajan emerged as focus areas, where communities work closely with academic partners such as Universitas Amikom Yogyakarta for data support and to strengthen advocacy efforts.

Together, under the national alliance Koalisi Perumahan Gotong Royong, these organizations engage in ongoing exchange and mutual support, facilitating knowledge transfer across cities and, most importantly, amplifying their voice in local and national advocacy efforts.

What do we want to learn about heat and how?

To get a real picture of how heat is affecting people's lives, the project used a mix of tools—some more technical, some more about daily experiences and perceptions. But just as important as the tools themselves was *who was using them*. Communities were not just being studied; they were at the center of the process, deciding what to look at, tracking temperatures, mapping their neighborhoods, and telling their own stories of coping. By blending numbers with lived experience, the research didn't just capture how hot it gets inside houses or streets, but also how heat shapes routines, stresses, and small acts of adaptation. And because this work was done collectively, it became more than research: it was also a process of building awareness, confidence, and collective momentum.

The methods below reflect this blend—technical and social, scientific and deeply human.

1 Reading the context: Policies, literature and lessons

Before going into the field, country teams reviewed existing data and literature to understand the broader context of heat risks and policy responses. This included looking up national and municipal heat action plans, building codes, land-use policies, and case studies from across Asia and beyond. The review highlighted both the gaps that leave low-income communities outside formal planning frameworks and the practices that could be adapted locally.This preparatory work grounded field research in evidence, helping teams enter communities with a clearer sense of both challenges and opportunities.

2 Voices from the heat: Listening to communities

At the heart of the research were the voices of the communities themselves. Through interviews and group discussions, teams collected stories and practical data about how heat is experienced day to day. Women managing households, elderly residents, children, and outdoor workers all shared perspectives that revealed coping strategies, impacts, and the strains of adaptation. These conversations showed how different groups experience heat in distinct but overlapping ways. Group discussions also encouraged reflection within the communities: participants compared experiences, recognized shared struggles, and began to see heat not only as a private discomfort but as a social and collective issue. By centering these interactions, the research was firmly grounded in lived realities rather than abstract assumptions.

How to talk about heat?

Discussing heat required more than technical questions—it meant creating a space for people to reflect on something often invisible, normalized, or dismissed as "just the weather." To guide these conversations in Dhaka and Jhenaidah, POCAA developed a set of concrete, relatable questions, helping residents articulate how heat affects them, their homes, and their routines. The goal was to make the discussion tangible: rather than starting with abstract concepts like "thermal comfort," the team asked about everyday life, when and where heat is felt, how people move through their homes, and the small practices they use to cope. These questions encouraged participants to think critically about their surroundings, household arrangements, and daily rhythms, turning experience into valuable insights.

- Which is the **hottest month** of the year?
- What **time of day** is the hottest?
- Which **room** in the household is the warmest?
- Does the **floor** get warm?
- Which part of the house is the **coolest**?
- What is your usual **cooking time**?
- Do you **prepare food** in the indoor kitchen or the outdoor kitchen?
- When the temperature peaks at noon, what do you usually do to find some **relief** from it?
- Where do you **spend most of your time** in the household?
- Do you use any external methods to **keep the house cool** from the heat?
- If yes, what is the procedure? If not, what is the reason for not using any **external layers**?
- Do you take any measures if the **roof** gets very hot during the day?

3 Bringing expertise to the table

To complement community stories, research teams reached out to a wide circle of experts—architects, engineers, planners, local officials, and health professionals—each adding their knowledge and professional insight. These conversations helped frame heat not only as a lived struggle but also as a structural and institutional challenge.

In Indonesia, for example, architects and building specialists offered practical perspectives on what could realistically work in dense kampungs and how passive cooling might be integrated into local construction practices. In Pakistan, the lens was even broader: the team heard from teachers describing how stifling classrooms shaped learning and play, and from health workers treating patients suffering heat-related ailments at community clinics.

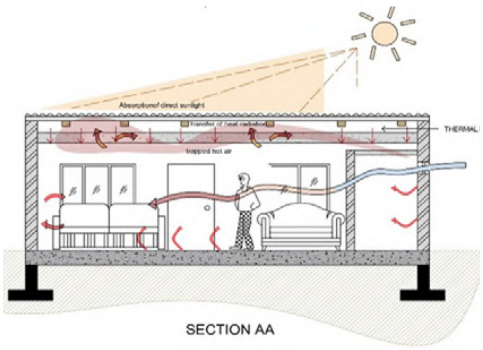
Across contexts, such dialogues created a bridge between technical expertise and local realities. They helped refine tools, interpret data, and shape interventions that are not just technically feasible but also socially acceptable and grounded in everyday life. Importantly, they opened pathways for longer-term collaboration between professionals and communities—an essential ingredient in scaling solutions.

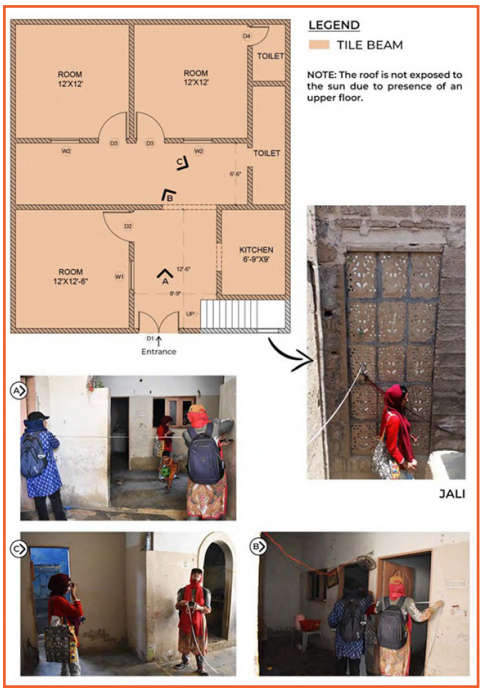
4 Homes under the microscope

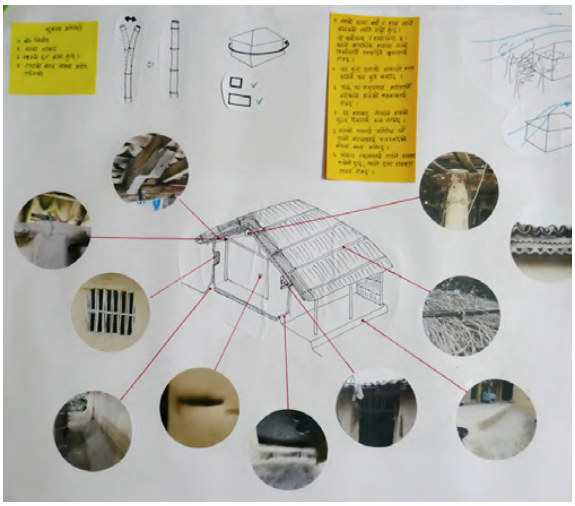
A cornerstone of the research was the detailed study of houses most affected by heat stress. Teams documented housing typologies, mapped materials used for walls and roofs, recorded dimensions, noted the orientation of structures, and assessed ventilation flows. This rich dataset allowed linking design and material choices directly to the temperatures experienced in interior spaces—a crucial insight across all communities studied.

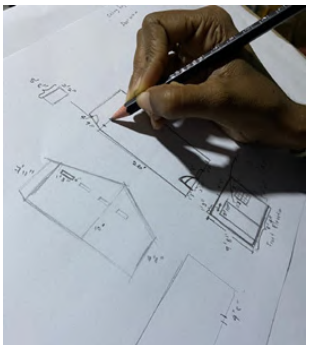
In some places, this process was taken further through "heat perception maps." Residents sketched their homes and shaded areas from deep red (hottest) to cool blue (most comfortable). These simple drawings made invisible differences tangible, sparking discussions about which rooms, corners, or times of day felt most unbearable.

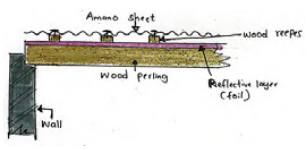
In Colombo, Yogyakarta, and Dhaka, teams also examined interior arrangements: how stoves, beds, or storage shaped airflow and comfort. The findings showed how even small design choices, like the placement of a cooking area, could significantly influence heat exposure. Together, this combination of mapping, measurement, and household analysis offered a fine-grained understanding of how housing design and layout shape daily comfort.

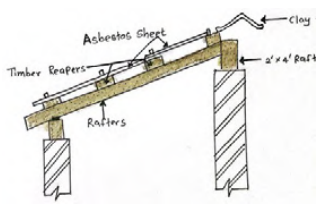










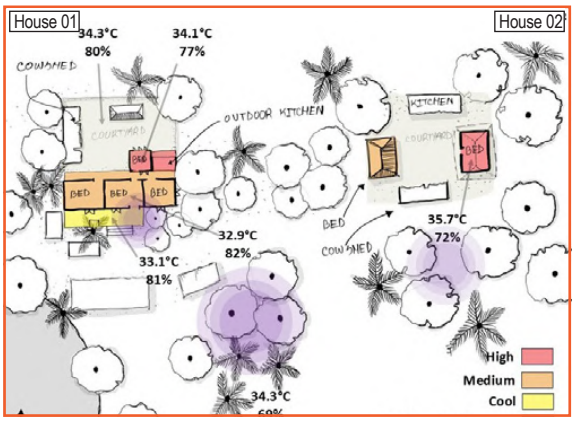


5 Street-level heat: Reading the neighborhood

Heat does not stop at the doorstep; it spreads across the environment surrounding each home. To capture this, teams examined settlement layouts, vegetation, shaded areas, paved surfaces, and the overall level of green cover. In some cities, outdoor heat perception maps were created, identifying "hot spots" where dense structures, cemented surfaces, or the absence of trees amplified local temperatures.

In Jakarta, residents mapped green spaces within their neighborhoods, both to record what already existed and to imagine how these spaces could support future cooling strategies. In Bangkok, the team studied masterplans of 22 Baan Mankong housing projects, comparing layouts to airflow and assessing the balance of paved and shaded areas.

These exercises revealed that heat is not solely a property-level issue—it is embedded in the very fabric of the neighborhood. Linking housing conditions with their surrounding microclimate demonstrated that community and street-level planning, shade provision, and vegetation management can be as important as improving individual homes. Understanding heat in context underscores the need for cooling strategies that extend beyond walls and roofs, engaging the spaces in between.



6 Thermometers at hand: Participatory heat monitoring

One of the most engaging moments came when thermometers and sensors were introduced. As the Thai team reflected: "*We wanted to be obvious, to have some evidence, so we decided to measure. We did it in a casual way, but we needed to prove that things are different—the concrete or the soil, the shaded or exposed area.*"

Across all project sites, residents learned how to use simple, low-cost devices to log temperature and humidity at different times of day, following context-specific schedules. Many grew enthusiastic, carefully noting down their readings and comparing results with neighbors. By the end of the exercise, what emerged was a rich record of meticulously logged data.

This hands-on process transformed subjective discomfort—"*it feels unbearable*"—into concrete figures that made the problem visible and undeniable. As Younus from URC put it, monitoring "*put the problem in front of people's eyes.*" The resulting datasets also provide a reference point for assessing the effectiveness of future passive cooling interventions.

The power of participatory research: Meeting people where they are

As ACHR partners know well, participation is more than asking questions—it is about entering people's homes, lives, and daily routines. This difference was illustrated vividly in the following anecdote, shared by Hawa and Moni, two women from the Korail settlement in Dhaka.

The previous year, the two women had taken part in a survey on heat run by a city institution. The exercise involved only a handful of residents and took place in an open field, away from people's homes. Participants spoke about heat and well-being in general terms, with activities designed to test a small "cooling zone" concept. While informative, the approach was abstract: it did not connect to the everyday spaces where people live, cook, and sleep. And the cooling zone experiment ultimately failed to gain traction.

When POCAA began working directly in Korail, the approach shifted fundamentally. Team members visited houses, distributed thermometers and hygrometers, and invited residents to measure and observe heat inside their own homes. Suddenly, the problem became visible, tangible, and personal. Residents could see airflow patterns, record temperatures, and connect these directly to materials and ventilation. Curiosity spread organically: neighbors asked about the devices, wanted to know which houses were involved, and began discussing potential interventions themselves.

This home-centered approach sparked awareness, dialogue, and engagement. What had once involved only a few participants in a field became a community-wide process rooted in daily spaces and lived experiences. Participatory research, when practiced this way, is more than a method—it is a bridge. By meeting people where they are, it plants seeds of awareness, engagement, and ownership that grow from house to house, from neighbor to neighbor, and from idea to action.

7 Seeing is believing: Community exchange visits

Where possible, teams organized exchange visits between communities, turning observation into hands-on learning. These visits gave residents the chance to see cooling solutions in action, spark new ideas, and share practical experiences. In Bangladesh, Nepal, and Indonesia, participants toured upgraded settlements to witness passive cooling measures firsthand, ranging from shaded courtyards and ventilated roofing to the strategic placement of greenery.

Residents could observe how traditional techniques were locally adapted, ask detailed questions about materials and costs, and explore how similar approaches might be applied in their own neighborhoods. Just as importantly, these exchanges fostered peer-to-peer dialogue. Participants traded household tips and neighborhood-level strategies, reinforcing that solutions are achievable, culturally resonant, and can be implemented collectively. Beyond technical lessons, the visits strengthened community networks, helping residents return home with practical ideas and renewed confidence to act.

> **"We learned a lot from visiting other places. After seeing the Gaptoli housing, we were very impressed by the designs and had many conversations among ourselves. Even small interventions made a difference—bringing in sunlight and improving airflow. For example, the walls had perforations to allow air circulation, but nets were added over the openings to keep out bugs and mosquitoes. We had sometimes thought about these things before, but without knowing what to do or what really works. Now, more people in the Korail community are aware, and there is strong interest in learning more."**
>
> *—Shamol, a resident of the Korail community in Dhaka*

Building momentum through research

Organizing, amplifying, accelerating

Altogether, the project's activities show that its methodology is about much more than collecting data—it is about building collective power. The ACHR initiative is not simply studying heat impacts, but using the process to organize, amplify, and accelerate community action. By placing residents at the center—monitoring temperatures, documenting daily realities, and testing solutions—it strengthens their capacity to act together and shape responses on their own terms.

Through this process, communities are not only gathering evidence but also building momentum. The project has become a platform for organizing: connecting local groups, renewing dialogue with authorities, and nurturing leadership from within. It amplifies community voice by translating lived experience into advocacy, engaging youth and professionals, and opening public conversations about climate justice.

At the same time, it accelerates change. Data becomes leverage, shared platforms create negotiation spaces, and collaborative efforts help unlock bottlenecks for practical, scalable solutions. Research and organizing reinforce each other, turning individual initiatives into collective action. What begins as action research evolves into a broader movement for recognition, dignity, and the right to a cooler, more equitable city.

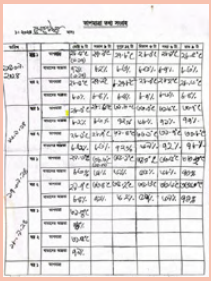
▲ *In Indonesia, Arkom and Rujak joined forces with government agencies, universities, cooperatives, and civil society groups to host a public discussion on collaboration for climate adaptation through passive cooling strategies in kampungs. The event explored policy frameworks, financing mechanisms, and practical design applications, while bringing together diverse perspectives from all these different sectors.*

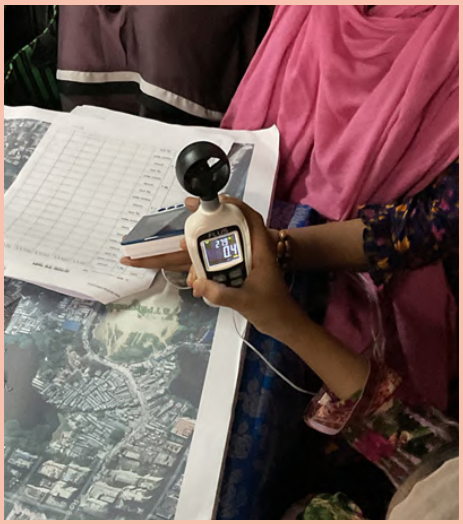
◀ *In Karachi, heat awareness has entered the classroom, with children and youth learning about the impacts of rising temperatures and their role in citywide responses. Alongside these sessions, visits to plant nurseries and urban forests exposed young people to good planting practices and highlighted the importance of natural solutions in tackling extreme heat.*

▶ *In Nepal, Lumanti brought together participants from different sectors to exchange on climate-resilient housing practices. The discussion drew on Lumanti's study of housing conditions in the Terai, highlighting the strengths of vernacular architecture and how these community practices can be sustained and improved with new technologies and policy support.*

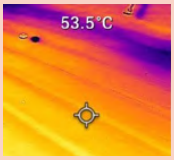
Measuring the heat, telling the story

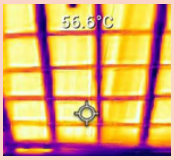
Across all cities, communities equipped themselves with simple but powerful tools—thermometers, humidity loggers, and even thermal cameras—to document the heat in their own homes. Instead of researchers working alone, families became investigators, trained to take readings at different times of day: before sunrise when the house is at its coolest, and in mid-afternoon when walls and roofs have absorbed the most heat. Templates were prepared for households, and families kept daily logs, comparing results and discussing what they revealed. This process not only produced data but also made heat a visible, shared concern in the community.

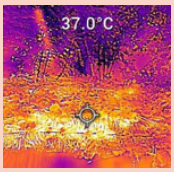


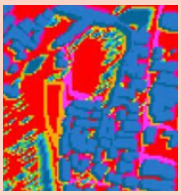


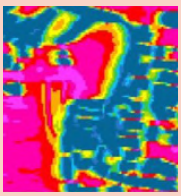
Jeetpursimara spotlight: In Jeetpursimara, Nepal, the team brought out thermal cameras, which allowed people to "see" the heat in vivid colors. Among several houses studied, two in the same lane told very different stories. One, built with mud walls and topped with corrugated iron, absorbed and radiated heat relentlessly. The other, built with bamboo and mud walls and a roof shaded with vines, stayed noticeably cooler, inside and out. The images made it easy to grasp what residents already sensed—that materials and shade matter enormously—but now with clear evidence that could feed into future housing discussions.









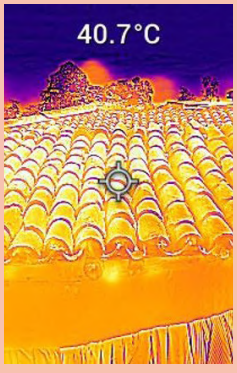


Yogyakarta spotlight: The team in Yogyakarta experimented with microclimate simulations, producing maps that combined temperature, humidity, wind speed, and radiant heat. These images showed the kampung fabric itself as a driver of heat. Narrow lanes, limited airflow, and tightly packed houses created hot spots where heat lingered long after the sun went down. Seeing their neighborhoods represented in this way helped residents and partners understand how collective issues, like density, street layout, and the absence of trees, can matter just as much as the materials of a single house.

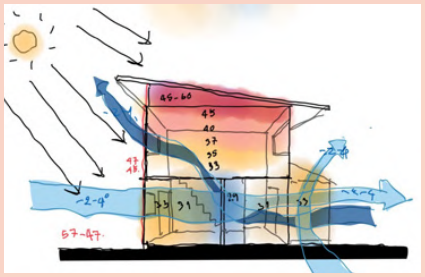
These findings underline three crucial points:

- The heat is extreme inside people's homes, and often worse than what the official weather reports suggest.
- Materials matter deeply—roofs, walls, paint colors, and ground surfaces all play a role in shaping thermal comfort.
- Shade and settlement design are critical, showing that solutions cannot stop at the level of one house but must involve whole communities.

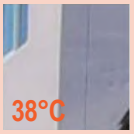
This locally gathered evidence is more than numbers. It equips communities to demand change, provides a baseline for tracking the impact of new interventions, and brings the exhausting daily reality of heat in poor settlements into visibility.

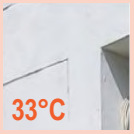


Bangkok spotlight: In Bangkok's communities, surface temperatures were measured inside and outside of homes, and across different ground surfaces in the settlement. Even within a single room, the difference was striking: walls near the ceiling registered several degrees hotter than those closer to the floor, showing how heat collects and lingers in upper spaces with no outlet.



Outside, the lessons were equally clear. Two neighboring houses painted almost the same—one nearly white, one light gray—recorded a 5°C difference in surface temperature.





And ground surfaces told their own story: concrete pavements scorched at 46°C, while bare soil right next to them stayed closer to 33°C. For residents, this was an eye-opener: something as simple as color or paving could completely change the temperature people live with.

When Heat Hits Differently:

Factors that amplify heat in poor communities

It's becoming clear that heat punishes some homes more than others. In poor communities across Asia, the experience of extreme heat is shaped by far more than climate alone. It is built into the very fabric of settlements—through the materials used in construction, the layout of homes and streets, and the density of households. These physical realities, combined with insecure tenure and neglected urban planning, shape how heat is experienced. Understanding these interconnected conditions is a critical first step in identifying how heat exposure is *produced* and how it might be *reduced*.

1 How materials affect indoor heat

Families in low-income settlements often rely on the cheapest and most durable materials, even if these trap heat. Thin tin sheets, corrugated iron, and cement blocks are common choices because they are affordable and require little maintenance. Yet they absorb and retain heat, making homes unbearably hot. In Nepal, one widow explained, "*I don't have anyone to help with maintaining my roof. That's why I chose a corrugated iron roof for my house. It's durable and requires little upkeep, which is a relief for someone like me.*" Even subtler choices matter. In Sri Lanka and Thailand, surface temperature measurements revealed that darker paint absorbed far more heat, while lighter finishes helped keep interiors cooler.

Another clear example comes from the Philippines. In 2013, TAMPEI worked with a resettlement community to study how different housing typologies shaped thermal comfort. Bamboo frames, compressed earth blocks, conventional concrete hollow blocks, and prefabricated structures were monitored for temperature. Bamboo and earth block homes were consistently the coolest, while concrete and fiber cement homes were the hottest. For residents, the study translated everyday discomfort into clear evidence: natural, locally available materials perform better under heat. Yet despite these benefits, such materials are increasingly avoided, seen as less durable or "modern" than concrete and metal alternatives.

Across contexts, the story is consistent: people build with what they can afford, not what keeps them cool. Even so, small decisions in materials and design can make the difference between unbearable heat and tolerable living conditions.

2 Housing design and layout

If building materials are unforgiving, the way houses are designed and used can make conditions even worse. In many poor settlements, homes are extremely small—often just one or two rooms that must serve as living, sleeping, and sometimes cooking spaces. This congestion causes heat to build up quickly, with little chance for air to circulate. As Seema explains of homes in Karachi: "*There's no space to make changes. Where people do have a little room, they might add a small window or install an exhaust fan—but overall, the houses are extremely congested.*"

Low ceilings, a common cost-saving measure, intensify the problem by trapping hot air. Small or absent windows are another critical factor. In some settlements, houses are built wall-to-wall on three sides, leaving almost no possibility for openings. Even where windows exist, families often keep them shut, for safety, to block rain, or to keep out insects. In Colombo, for example, security concerns mean windows are closed most of the day. In Davao, row houses made from precast concrete have openings only at the front and back; once residents extend their homes to the edges of their plots, airflow is almost entirely cut off.

Internal arrangements can compound these structural issues. In Dhaka, assessments revealed houses so tightly packed with bulky wardrobes and beds that even existing windows could not be opened fully. A similar issue arose in Yogyakarta, where home interiors were mapped to work out alternative furniture arrangements that improve airflow. Similarly, in Colombo, awareness activities encourage families to keep homes less cluttered—engaging children as well, helping make "cooler homes" a shared responsibility.

These experiences show that adaptation is a matter of trade-offs between security, affordability, and habitability. In some cases, small behavioral or organizational changes, such as decluttering or rearranging furniture, become as important as architectural ones.

Lessons from passive cooling attempts

Passive cooling is not a completely new idea for many communities. In the Philippines, for example, homes in Iloilo City built more than a decade ago with support from TAMPEI included design features intended to improve ventilation and thermal comfort. Jaloujie-type windows were placed just below the roofline to enhance airflow, and setbacks between houses were introduced to allow for cross-ventilation and open space.

But over time, these features did not always deliver the comfort they promised. During the long and heavy monsoon season, rain poured in through the roof-level openings, forcing families to cover them with tarpaulins, plastic sheets or other improvised coverings. Setbacks and side spaces, initially designed for light and airflow, were soon enclosed—families built extensions, fenced in their lots, or put up boundary walls to maximize indoor space and ensure security.

As Sonia, a community organizer, reflected: "*In the design workshops, we explain that windows should be a certain width, or that houses need setbacks at the sides and in front. But even when we build them that way, people eventually cover them. Then it becomes so hot inside that the house feels like an oven. When we ask why, they say: 'We covered it because what if a thief comes inside? We need to feel protected'.*"

These experiences highlight that passive cooling is not impossible, but it cannot succeed in isolation from people's everyday concerns. Families prioritize safety, privacy, protection from rain, and the need for extra space over abstract design principles. What may look sound on paper can end up being reversed in practice. And yet, these experiences are as valuable as any success story: they underline a key lesson that solutions must be co-created and adapted to daily realities, not applied as rigid architectural prescriptions.

"There are many limitations—small plots, many people, and the need to build cheaply and quickly. Cooling gets forgotten. But with this project, communities can learn, and architects can also consider it more carefully in future designs."

—Ruengyuth, Community Organizations Development Institute, Bangkok

3 Settlement fabrics and heat

The physical fabric of settlements directly affects how heat is felt. Narrow lanes, tightly packed houses, and extensions spilling into shared spaces all limit airflow. In Bangkok's Baan Mankong projects, families often extend kitchens into back lanes to separate cooking from living areas, but these extensions block air circulation and trap heat between houses. Elsewhere, families also build fences or boundary walls to secure their plots. As a community leader in the Philippines explained, "*People can become very protective of their spaces; based on their own past experiences, they want to secure what they have.*" While understandable, these interventions further restrict air circulation and turn already dense neighborhoods into sealed pockets where heat easily accumulates.

A second challenge is the absence of greenery and shade. In crowded settlements, there is rarely room for large trees or open spaces, and shade becomes a scarce resource. As Hin, a Thai community architect, observed, "*When settlements have no trees, surface temperatures can reach 55 to 60°C. You can't walk barefoot, and you can't sit outside in that kind of heat.*" Without trees or shaded courtyards, stepping outdoors offers little relief from the sun.

Concrete surfaces and paved lanes compound the problem. Lanes are often paved for accessibility or raised to protect against flooding, leaving little or no soil for planting. At the same time, these hard surfaces absorb and radiate heat throughout the day, increasing temperatures and intensifying discomfort for residents.

Whether in planned upgrading projects or self-built settlements, the pattern is similar: land is scarce, so maximizing space for houses takes priority over cooling features like ventilation, greenery, or shade. This land-use logic may be practical, but it leaves neighborhoods across cities struggling with hotter, less livable environments.

4 Surroundings and urban infrastructure

The broader environment in which poor settlements are located often intensifies the heat burden. Many communities are pushed to the margins of cities, squeezed beside highways and industrial zones where concrete, steel, and asphalt dominate the landscape. These surfaces absorb and radiate heat throughout the day, feeding the urban heat island effect and amplifying discomfort in nearby homes.

In Jakarta, kampung dwellers noted how large-scale infrastructure projects disrupt local microclimates. Toll roads and flyovers often come at the cost of mature trees, stripping neighborhoods of shade and natural cooling. Similar frustrations arise in the Philippines: "*When there's flooding, the government builds with concrete to elevate the roads, and that contributes to the heat. There's no more space for soil and sand, everything is cemented!*" Residents note the irony: interventions meant to solve one crisis, like flooding, can worsen another, like extreme heat.

These accounts underscore a broader challenge: infrastructure development is rarely planned with climate sensitivity in mind, often eroding the balance of urban microclimates. For marginalized communities already living in precarious conditions, these decisions translate into even higher exposure.

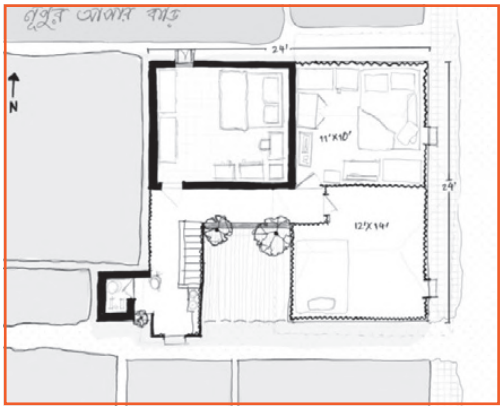
5 Tenure, rights, and control

Tenure dynamics are another invisible driver of heat stress. Who controls the house often determines whether mitigation is possible at all. Many residents are tenants, renting small rooms or attached units, which leaves them with little authority to make structural changes. In Dhaka's Korail settlement, Hawa explained: "*If there are 100 houses, there might be 100 owners, but as many as 500 families living there.*" Tenants' suggestions—such as planting trees or making small improvements—are often dismissed by landlords with the ultimatum: "*If you don't like it here, you can move out.*"

This imbalance is reinforced by the different living conditions of landlords and tenants. Owners often occupy sturdier brick houses, while tenants are confined to flimsy rooms roofed with galvanized iron sheets. Because landlords do not experience the same intensity of indoor heat, they are less inclined to invest in adaptations. As one Karachi resident summed it up: "*In rented homes, adaptation is largely up to owners.*"

Renting also creates a sense of impermanence. Families who fear eviction are understandably reluctant to invest in improvements. In Dhaka, families explained: "*Even if tenants want to intervene, they think in the back of their minds that they are only temporarily there, so there is a lack of motivation.*"

The result of these property dynamics is that multiple families sharing a single compound are effectively blocked from measures like adding windows, repairing roofs, or planting shade trees. These entrenched power relations deepen vulnerability, especially where resources are scarce and relocation is difficult.



This drawing from the POCAA study in Korail, Dhaka, shows the stark contrast in building quality: the landlord's room in the upper left corner is made of brick, while the adjoining rental rooms are built with iron sheets, creating very different experiences of heat.

Heat risks are built into poverty and place

These "contributing factors" to heat are not just technical flaws but are deeply tied to poverty, tenure insecurity, and planning systems. Poor families accept dangerous materials because they are cheap and durable. Settlement density is a by-product of land scarcity and exclusion from formal housing. Tenants are blocked from making changes by landlords. And livelihoods force people outdoors in the hottest hours of the day.

Heat risks in informal settlements are therefore both social and spatial. Any solution must reckon with both the built environment and the lived realities that shape how communities cope with rising heat.

6 Crowded homes and heat stress

Heat is felt most intensely in overcrowded homes, where cramped living arrangements increase discomfort far beyond outdoor temperatures. In Karachi, six or seven family members may share a single room that serves as a bedroom, kitchen, and storage space, all in one, making relief from heat nearly impossible. Crowding amplifies the perception of heat: humidity from breathing and sweating, combined with the lack of personal space, creates an atmosphere that feels heavy and suffocating. Everyday activities add to the strain. Cooking releases heat and moisture into rooms where families sleep and gather, and poor ventilation lets even a small stove push temperatures to extremes.

In these homes, heat is not only retained but intensified. The combination of physical constraints, human activity, and dense occupancy turns interiors into the hottest and most stressful spaces in settlements, leaving households at greatest risk during extreme heat events.

7 Occupations and daily routines

Heat exposure for poor communities extends directly into their livelihoods. Many low-income residents rely on work that keeps them under direct sunlight: construction workers in Bhuj, rickshaw drivers in Dhaka, and street vendors in Jakarta all spend long hours outdoors. In Nepal's Jeetpursimara, a large share of households depends on agriculture, where laboring in fields during peak heat is unavoidable. Factory workers often endure poorly ventilated conditions that worsen indoor heat. The same applies to the many, especially women, who earn through home-based businesses, such as tailoring.

White-collar workers or those with flexible schedules may have options to work in cooler environments, but the urban poor face constant heat stress, with few opportunities for respite. This reality highlights how livelihoods, household roles, and working conditions are central to understanding vulnerability to heat, shaping who suffers most in the city's rising temperatures.

> **Women and children hang out at the entrance of the house, while men have greater freedom to go to the nearby teashop or the road. Beyond the houses, most public spaces are male-dominated, and there are very few places for everyone—just tiny niches along the road or small courtyards.**
>
> *—Hawa, a community member in Dhaka*

When the Heat Hits Home:

Impacts on urban poor communities

Once we understand why heat settles so heavily into poor communities, the question becomes: *how does it actually shape people's lives*? Across the project sites, the stories are strikingly similar yet always carry local twists. Heat is not just a matter of discomfort but a force that quietly reshapes routines, decisions, and opportunities. Testimonies from residents and partners reveal impacts that reach into every corner—undermining physical and mental health, constraining livelihoods, driving up energy costs, and influencing how families inhabit and experience their homes. In both subtle and dramatic ways, heat reorganizes daily existence. Collectively, these accounts show how communities themselves describe the many ways it presses in on their homes, work, wellbeing, and sense of dignity.

Relief from the heat is scarce, as indoor temperatures often climb almost as high as those outside, leaving little space to escape the sweltering conditions.

The daily toll of extreme heat

Bodies under strain

For many families, heat makes itself felt first through the body. Testimonies from across the region describe a familiar list of ailments—rashes, headaches, dizziness, dehydration, and fevers—often hitting children, the elderly, and people with pre-existing conditions the hardest. Some diagnoses may differ from medical definitions, yet all reveal the body's acute response to heat and harsh living conditions.

The skin is usually the first to suffer. Red rashes, prickly heat, and sores are widespread, especially among children and outdoor workers. In Colombo, a woman described how her newborn grandchild developed persistent red spots, while in Jeetpursimara, children's rashes often became open wounds from scratching.

Strain on the cardiovascular system is another recurring theme. In Bhuj and Karachi, communities report rising cases of hypertension and even heart attacks among younger adults—once conditions mostly linked with old age. "*They can't cope with the heat, and perhaps it also has to do with the immune system*," explained Vishram in Bhuj. Dizziness, fatigue, and blood pressure fluctuations compound these risks, while respiratory illnesses are aggravated by overheated homes. Mothers in Yogyakarta worried that children sleeping on bare floors to stay cool were more exposed to asthma and coughs.

Acute heat-related illnesses, like heatstroke, exhaustion, cramps, and fainting, are frequent and feared. In Jeetpursimara and Karachi, residents described heatstroke as one of the most dangerous outcomes, often striking outdoor workers. Prolonged dehydration adds another layer of risk, contributing to kidney problems such as stones, especially in areas where drinking water is scarce or saline.

The indirect impacts of heat multiply these challenges. Sleeplessness is nearly universal, leaving families fatigued and children unable to focus in school. Malnutrition and dehydration weaken immunity, increasing susceptibility to illnesses like colds and influenza. Poor ventilation, stagnant water, and limited access to fans or protective measures also heighten exposure to mosquito-borne diseases. As a Karachi resident explains, "*When we cannot run the fans, mosquitoes bite us even more, spreading malaria.*" Water scarcity adds another layer of risk: "*When water is scarce, people drink whatever they can find, and children get diarrhea.*" Heat is not a single illness; it acts as a catalyst, triggering a web of health problems that affect the skin, heart, lungs, kidneys, and overall wellbeing.

> **"My husband collapsed once from the heat. But if we don't work, we don't earn—and if we don't earn, we have to compromise. Our first priority is to feed our children."**
>
> *—Khimiben, a community member in Bhuj*

Livelihoods and the cost of heat

Many urban poor depend on daily wage work, where each day's earnings must cover that day's needs. This leaves little margin for disruption. Yet, when heat rises, the balance quickly unravels. Across countries, masons and construction workers toil under the sun, tuk-tuk drivers spend long hours in open vehicles without shade, and vegetable vendors walk the streets exposed to scorching heat. These livelihoods unfold outdoors, where there is little escape from rising temperatures.

One of the first effects of heat is reduced productivity. In Colombo, Maheshwararaja explained: "*Without proper rest, the quality of labor suffers.*" Exhaustion is not only carried over from sleepless nights—it also builds hour by hour in the blazing heat. In Dhaka, Shamol recounted how a small job spiraled out of control: the laborers he hired could not maintain their pace in the heat, causing delays that in turn multiplied the costs. "*What should have cost 10,000 taka ballooned to 70,000*," he said. Across settlements, day laborers describe the combined toll of restless nights and long, punishing workdays, leaving them unable to sustain normal output.

People adapt where they can, but adjustments rarely close the gap. In Jeetpursimara, agricultural workers shift routines to early mornings and evenings to avoid the midday sun. Families in Dhaka pace themselves with frequent breaks or work irregular hours. Rickshaw drivers, for example, often operate in short bursts before retreating to recover from the heat.

Income losses are immediate. Missed workdays due to illness, shortened hours, or sheer physical limits reduce household earnings. In Nepal, some employers now hire laborers for only half a day, arguing that longer hours are unproductive. This results, as workers put it, in "*half the wage and half the food.*" In Bhuj, conditions are equally harsh. Khimiben, a construction worker, described how bosses push relentlessly: "*Bring this mortar, bring that brick,*" with no room to pause, knowing that refusing means losing the day's pay.

For vendors of perishable goods, heat brings additional losses. Vegetable sellers in Bhuj lose nearly a third of their produce on hot days. Without cooling equipment, vegetables wilt by afternoon, and even discounted evening sales often leave much stock unsold. Income declines not only from fewer customers but also from the difficulty of keeping goods fresh.

At the same time, expenses rise. Families coping with reduced earnings spend more on medical care and energy. Puja from Jeetpursimara described this double burden: "*Not only do we lose the day's income if we get sick from the heat, but we also have to spend more to visit the health center or buy medicine*." Families face a cycle of working harder while earning less and managing higher costs, all under physically demanding conditions. For urban poor households, heat is a constant strain on livelihoods.

Education interrupted

Extreme heat is increasingly disrupting education, as governments and families struggle to protect children while preserving their right to learn. In recent years, school closures have become common. Bangladesh, Nepal, Pakistan, and the Philippines have all reported instances where classes were suspended for days or even weeks when temperatures soared beyond safe levels. While necessary to protect students, these measures interrupt learning and disrupt daily routines, often announced with little notice, leaving families scrambling to adjust childcare, work, and study schedules.

Even when schools remain open, classrooms are far from comfortable. Parents in Jeetpursimara described having to urge their children to attend school despite stifling heat, while teachers in Karachi reported that small, overcrowded rooms without proper ventilation made lessons almost impossible. Overheated environments drain students' energy and concentration, turning classrooms from spaces of learning into spaces of discomfort.

Schools are beginning to explore ways to adapt. In Nepal, communities are considering shifting lessons to cooler morning hours to reduce exposure during peak heat. In the Philippines, a shift of the academic calendar to match international standards placed the hottest months—April and May—squarely within the term, forcing schools to weigh a return to the old schedule. These examples show that even school calendars now collide with seasonal heat, reshaping children's educational experiences.

Responses such as blended learning or temporary closures often shift the problem to the home environment. As one parent observed, "*When the classes are suspended, children go home, but home is just as hot—sometimes even worse than the school.*" Online or hybrid learning also adds costs for electricity, cooling, and internet access, further straining household budgets. From the moment children step into the sun to travel to school, to the hours spent in hot classrooms or homes, sweltering conditions undermine both learning and wellbeing.

"My friend runs an air cooler shop, and he said that last year he sold more coolers than in his whole life combined. People can't change their roofs or walls easily, but at least they can buy a cooler for 5,000–8,000 rupees to get some relief. Still, with frequent power cuts, even that isn't always enough."

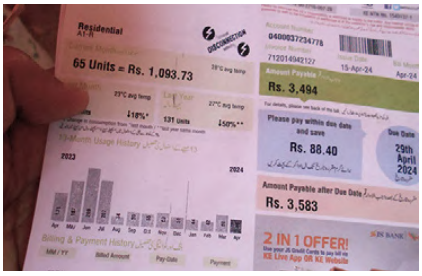
—Vishram, Setu organization, Bhuj

The struggle for energy

For many urban poor households, electricity is the primary shield against extreme heat, but it is often unreliable and costly. In many cities, families endure extended outages during peak summer heat, leaving them unable to run even a single fan. In Jakarta, multi-day blackouts have forced households to sleep outdoors, wherever space allows, in search of relief. In Karachi, when the grid becomes overburdened, low-income settlements are among the first to face repeated shutdowns.

Even where power is available, the financial toll can be crushing. Running multiple fans for hours each day stretches already tight household budgets. In Yogyakarta, even purchasing an additional fan represents a noticeable burden. In Colombo, some families have had their electricity cut off entirely due to unpaid bills, as high costs became unbearable against meager earnings. In Dhaka, intermittent supply forces households to run several fans in short bursts, doubling or even tripling monthly bills. As Shamol explained, "*If we normally spend around 2,000 takas on electricity, in the summer this can go up to 5,000 or 6,000.*" Frequent voltage fluctuations also damage equipment like fans and small appliances, adding repair costs to already strained finances.

The challenge extends beyond affordability. In marginalized settlements, fragile and improvised wiring systems struggle to handle the surge in power demand during heatwaves. Overloaded circuits can spark short circuits or fires, turning the very systems meant to provide relief into hazards. For households depending on fans or pumps, electricity becomes both a lifeline and a risk—a reminder that even technical coping mechanisms can deepen vulnerability when built on unstable foundations.



Scarce water, growing risk

Extreme heat puts enormous pressure on urban poor communities, and nowhere is this more evident than in the struggle to access safe and reliable water. As temperatures rise, households drink more, bathe more frequently, and use extra water simply to stay safe and comfortable. Yet resources are rarely sufficient. In Yogyakarta, residents report showering up to three times a day to cope with the heat, while in parts of the Philippines, the number can rise to five times daily, driving water bills up by more than a third during peak heat.

Water supply often cannot meet this increased demand. In Bhuj, piped water may arrive only twice a week, forcing families to ration during the hottest months. In Yogyakarta, shortages can persist for weeks, worsened by prolonged dry seasons. "*In summer, we face a shortage of water supply when we need it the most. Getting clean drinking water is a challenge*," observed Rana in Karachi. This mismatch between need and availability forces families to rely on costly alternatives: in Bhuj, many purchase water from private tankers, while in Yogyakarta, households invest in deepening wells.

The consequences extend far beyond cost and inconvenience. When heat peaks and supply fails, many families turn to unsafe or contaminated water sources out of desperation. Shallow wells often dry up during heatwaves, pushing residents to draw from sources exposed to runoff and waste, while underground water can carry bacteria and parasites that thrive in higher temperatures—leading to stomach infections and skin diseases. The combination of extreme heat and unsafe water creates a dangerous feedback loop, where coping strategies meant to cool the body can instead undermine health.

Heat impacts at a glance

HEALTH
- Dermatological issues
- Cardiovascular strain
- Respiratory problems
- Acute and chronic heat-related illness
- Indirect and compounding effects
- Cross-cutting effect: sleeplessness

LIVELIHOODS AND INCOME
- Productivity losses
- Shortened working hours
- Lost income
- Added costs

EDUCATION
- School closures
- Uncomfortable classrooms
- Adjusted timetables
- Home learning challenges
- Disrupted routines

WATER AND SANITATION
- Increased water demand
- Scarcity and unreliable supply
- Higher costs
- Unsafe sources
- Health risks

ENERGY ACCESS
- Blackouts and outages
- High costs
- Equipment damage
- Safety risks

CARE WORK
- Exhausting household labor
- Water collection stress
- Physical strain and fatigue

MENTAL HEALTH AND WELLBEING
- Sleep disruption
- Rising stress and anxiety
- Irritability and aggression
- Social strain

Extreme heat doesn't just cause discomfort; it reshapes how households use their homes. In many urban poor settlements, even small multi-storey houses function effectively as single-storey ones during the hottest hours, with upper floors avoided at peak heat. Upper levels heat up quickly due to direct sun exposure, poor insulation, and limited ventilation, making them unbearable during the day. This forced restriction reduces comfort and privacy, limits movement, and further constrains household functionality, turning already cramped spaces into even tighter living environments.

Care work and daily tasks

Extreme heat reshapes the work of caring for a household, making daily tasks more physically demanding and time-consuming. Cooking in cramped kitchens with poor ventilation or open fires becomes a challenge, with stoves, firewood, and trapped heat adding to already stifling conditions. Fetching water—often from crowded communal pumps, distant wells, or shared municipal sources—requires multiple trips each day, exacting both effort and time. Bathing children, washing clothes, and maintaining basic hygiene all take longer in the blazing heat, especially when multiple family members need care simultaneously.

Routine care for the sick or elderly is also strained. Heat forces caregivers to improvise strategies to cool or reposition bodies, manage hydration, and maintain comfort without the energy, resources, or safe spaces to do so effectively. The cumulative effect is fatigue and physical depletion, as families stretch themselves to meet essential needs in environments that offer minimal relief. Daily survival itself becomes a form of labor, with tasks once taken for granted demanding constant attention, endurance, and careful coordination under high temperatures.

Minds under pressure

Heat doesn't just affect the body—it also takes a heavy toll on minds and moods. The psychological impact is less visible but deeply felt across the studied cities. Evenings stretch long into the night as temperatures remain high, disrupting sleep cycles and leaving people fatigued, anxious, and less able to manage work and household responsibilities. As residents in Jeetpursimara explained, "*The evenings have been so hot lately that we often stay outside until 11 o'clock, only going to bed once it cools down.*"

The pressure is also evident in behavior. Residents noted that heat increases agitation and irritability: "*People in our settlements are often more aggressive because of the heat and discomfort. In other places with more green and shade, you can see the difference—people's daily attitudes are calmer,*" explained Maheshwararaja from Colombo. Similar dynamics appear in Pakistan, where stress within households and neighborhoods sometimes escalates into conflict or even violence. These psychological strains can also worsen physical health, contributing to headaches, high blood pressure, and other stress-related conditions.

Underlying these effects are the structural conditions of poor settlements: overcrowded homes, limited shade, and overstretched infrastructure magnify stress for all residents. These pressures gradually erode patience and coping capacity, straining family life and social relationships. Addressing heat is therefore not merely a matter of physical comfort, but also one of mental wellbeing and social cohesion.

Unsurprisingly, it's all connected

Heat is rarely experienced in isolation. In low-income urban communities, its effects ripple through daily life like tension in a tightly woven web—pulling on one thread sets others in motion. Health, livelihoods, education, water access, energy, and social wellbeing are not separate challenges; they are interdependent nodes in a household ecosystem. The strategies families use to cope with one challenge often create pressures elsewhere, producing complex feedback loops that intensify vulnerability rather than relieve it.

Consider a typical day in a densely populated settlement. Households rise early to fetch water or prepare meals before the sun peaks. Time spent collecting water or standing in queues reduces hours available for income-generating work, which in turn limits resources for other essentials. Cooking schedules are adjusted to match electricity availability, so at least a fan can provide some relief. Fatigue from all these micro-adjustments reduces capacity for work or school. When health conditions are exacerbated by heat, incomes are reduced while expenses for medicine rise. And with tighter resources, paying the next electricity bill becomes harder, sometimes leading to power being cut off for non-payment. Together, these pressures form a tight loop of cause and effect, where one compromise feeds into another and small setbacks spiral into significant hardship.

This interconnected reality explains why piecemeal interventions rarely succeed. Providing water without addressing cooling or income security, for example, may alleviate one strain while leaving others unmitigated. Effective responses must recognize the **links between health, livelihoods, education, energy, water, and social wellbeing**, and design solutions that reduce cascading risks rather than shift burdens from one part of the household ecosystem to another. In essence, heat is not just a matter of temperature—it is a systemic challenge that threads through every aspect of life in vulnerable communities.

High-risk groups: Who suffers most?

Extreme heat affects everyone in low-income settlements, but its impacts are not evenly distributed. Vulnerability is shaped not only by physiology but also by the roles people play within households, their mobility, access to resources, and the structural inequalities embedded in settlement environments. Age, gender, health, and socio-economic position intersect, creating layers of exposure and risk.

Women: Bearing the brunt of domestic heat

In most communities, women carry the heaviest load of caregiving. Many are homemakers, looking after children, the elderly, and sick family members in small homes. In Yogyakarta, Arief contrasts his wife's day with his own: "*She faces the heat continuously, from morning until night, while I go to an air-conditioned office.*" Care work under these conditions is relentless. Daily chores compound the burden, as Seema emphasizes in Karachi: "*Homemakers don't get any holiday, not even during extreme heat!*" Cooking over stoves or open fires, supporting children's education, and fetching water from crowded pumps exposes women to the full brunt of heat.

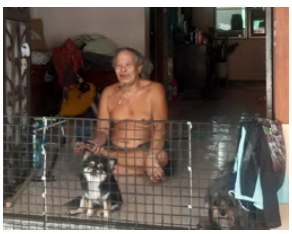
For pregnant women, the challenge is even greater. Khimiben in Bhuj recalled, "*When my daughter-in-law was pregnant, the power cuts made things very difficult. Without electricity, she felt unwell all the time.*" In many places, traditional dress codes further limit comfort and movement, requiring women to remain covered in public or around male relatives.

Extreme heat also restricts women's mobility outside the home. Cultural norms often confine women indoors, while streets, courtyards, and teashops remain male-dominated. In Dhaka and Karachi, women often gather in front of their homes because few public spaces are both accessible and socially acceptable—and even fewer offer shade or relief from the heat. As Hawa notes, "*We want to escape the heat in our homes, but there's nowhere suitable for women.*" All these conditions intensify domestic labor, limit women's freedom of movement, and deepen everyday inequalities.

Children: Small bodies, big risks

Children are especially vulnerable to heat, both physically and socially. Their smaller bodies warm up faster and are more prone to dehydration—a constant concern for parents, since kids often don't pay attention to drinking enough water. In many settlements, children have little choice but to be outdoors during the hottest hours. As one Colombo resident described, "*Some children don't mind, even if it's hot, they still play outside. But in the evening, they're more tired, and they can't concentrate on their schoolwork.*"

These physical stresses have clear social and educational consequences. Stifling classrooms and overheated homes sap energy and attention, making school attendance and concentration a daily challenge. Learning opportunities and play are limited, shaping how children grow, develop skills, and move through their communities. Heat affects not only their health but also their daily experiences and future potential.



Elderly: Where heat meets frailty

Older residents face layered vulnerabilities as well. Age-related declines in mobility and the ability to regulate body temperature make even modest heat increases risky. Chronic health conditions further worsen under sustained heat. In Colombo, one resident explained, "*My house is very small, a single story with a roof made of aluminum sheets. My elderly wife recently had surgery, and the heat inside is unbearable and poses serious risks for her.*" Despite their physical limitations, many older people in Jeetpursimara's settlements try to move outside in search of shade, even though this effort increases their exhaustion and exposure, and shaded areas often provide only partial relief. Economic and social pressures compound these risks. Families stretched thin often cannot provide continuous care or supervision for older members. Lumanti in Nepal observed that financial hardship often means both men and women go to work, leaving no one behind to look after the elderly.

Intersecting vulnerabilities

These risks rarely exist in isolation. A child in a small, sun-exposed home faces dehydration alongside food insecurity, disrupted schooling, and parental fatigue. An elderly person in the same household may experience compounded stress from caregiving responsibilities, poor ventilation, and limited access to cooling or healthcare. Women with young children often juggle their own exposure, childcare, and domestic labor, with only a few protected spaces available outside the home. Each factor amplifies the others, creating layered exposures that go beyond simple heat effects.

In short, heat intensifies existing vulnerabilities. Social norms, household roles, spatial constraints, and economic hardship intersect to make women, children, and the elderly more exposed and less able to respond. Effective interventions must therefore go beyond housing or material fixes, addressing the everyday realities of these groups—access to shade, water, safe communal spaces, reliable energy, and healthcare. Understanding the intersectional nature of risk is crucial for designing policies and programs that truly reduce harm.

Coping with Heat:

From just getting by to creative local solutions

When the heat inside your house becomes unbearable, you don't wait for a government program or a technical fix—you make do with what you have. Communities across Asia are not only experiencing rising temperatures but are also actively finding ways to cope and adapt. While the pressures of heat are severe, households and neighborhoods have developed strategies that reflect resilience, solidarity, and creativity. These range from daily survival tactics to organizing collective solutions that extend beyond the household, showing how ingenuity, collaboration, and persistent experimentation allow people to shape their environment and make homes and shared spaces more livable.

Getting through the heat: Quick fixes

On the hottest days, life in these neighborhoods turns into a cycle of ad hoc responses. Families draw on two main repertoires: small shifts in daily routines and the inventive use of readily available cooling "tools". These tactics bring only momentary comfort, yet they illustrate how households rely on constant patchwork solutions just to get by. From everyday habits to practical improvisations, these quick fixes reveal the ingenuity—and limits—of coping under relentless heat.

In Karachi, many residents sleep on their rooftops at night to escape indoor heat.

Families often resort to thin mats on the floor, where surfaces stay slightly cooler.

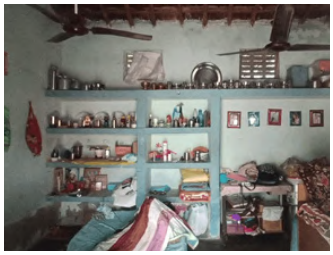
Trees within communities, though scarce, become essential gathering spots for relief and shade.

Everyday routines for comfort

The first line of defence against the heat is usually a daily routine of small behavioral adjustments. Across the region, people adapt their schedules around the rhythm of rising and falling temperatures. Bathing several times a day is perhaps the most universal response, from Bhuj to Davao. Sleeping habits also shift: in Colombo and Yogyakarta, thin mats are rolled out on the floor, where it feels cooler than the bed, while in Karachi, many spend nights on rooftops despite risks of theft or mosquitoes. Cooking times are adjusted to avoid peak heat, with food preparation shifted to early mornings or late evenings in Bangkok or Dhaka. Ventilation is another constant workaround; at night, doors and windows are opened in the hope of catching a breeze—though, as one resident put it, "*It brings little relief, and always with security concerns.*"

Many also seek shaded or cooler spaces within or beyond their communities. Verandas in Jhenaidah and courtyards in Jeetpursimara become go-to spots for temporary relief. The search for a breeze can occupy much of the day: Maheshwararaja from Colombo explains, "*I usually take my chair and sit under the big tree until the evening, but, when I return home, the heat is often so unbearable that I leave again and return to the tree.*" In the Philippines, residents share that visiting malls or other air-conditioned public spaces has become an increasingly common way to escape the heat.

Alongside these behavioral strategies, families also use whatever tools and materials are at hand to keep cool. Fans play a central role, running day and night where electricity is available. To boost their effect, people invent low-cost hacks: in Dhaka and Davao, ice buckets are set behind the fan blades, turning them into "poor people's air-con." In Bangkok, small, affordable USB-chargeable mini-fans with ice cube trays have also made their way into the settlements. When outages stretch too long, others fall back on handmade fans.



Water is another crucial cooling agent. In Jeetpursimara, Rabi described how families sprinkle mud floors: "*We let the water evaporate, and when we come back into the house, it's much cooler and fresher.*" In Dhaka, brick and concrete roofs are watered to reduce heat gain, while in Davao, residents spray walls and paved lanes outside their homes. In Colombo, damp cloths are draped over windows or curtains sprayed with water, then fans circulate the cooled air throughout the room.

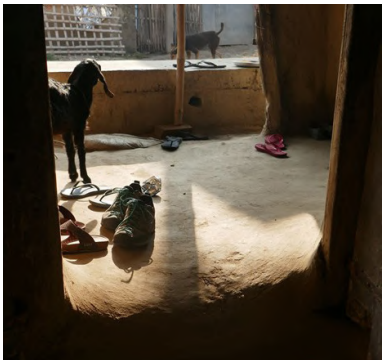
Temporary shading is also common. In many neighborhoods, strips of cloth, plastic sheets, or bamboo mats are stretched across walls, lanes, or courtyards to block the sun during gatherings or festivals, though usually removed once the immediate purpose has passed.

Amid many constraints, residents adapt their daily behaviors and make creative use of whatever simple tools are at hand: curtains and textiles, water and ice, fans, or shading. These measures—fragile, repetitive, and imperfect—provide brief relief during the hottest times, keeping homes livable for the moment while families remain alert to the next wave of discomfort.

Beyond survival: Creative and resourceful practices

Even as urban poor households rely on these short-term fixes, they do more than just cope. Beyond daily tactics, families experiment with more deliberate, resourceful strategies to make their homes and communities cooler and more livable. These practices are not taught in technical manuals or handed down by architects. They emerge from years of living with the heat, sharing ideas across neighborhoods, and refining what works. And they go beyond "mere survival": they involve rethinking roofs and walls, reworking kitchens, planting greenery, and experimenting collectively with new ideas.

Blocking the heat



Roofs and walls are the starting point for managing heat, and across settlements, families have devised inventive ways to keep indoor temperatures down. In Dhaka, residents stretch jute mats, wooden planks, or a *chandoya* (large cloth sheet) beneath corrugated iron roofs to reduce glare and heat. In Jeetpursimara, households lay thatch over cement tiles or drape cloth beneath the roof. In Colombo, some roofs are painted white, while others are fitted with heat-reflective foil beneath bedroom ceilings—a more costly but effective measure. In Davao, families with greater means install double roofs or insulation boards, showing the spectrum of strategies across income levels.

Walls and floors are adapted as well. Traditional mud walls in Jeetpursimara provide natural cooling, while straw layers on floors add insulation against both heat and cold. In Dhaka, the poorest households press cardboard or recycled posters against walls to create makeshift heat barriers. In Bangkok, some communities are testing metal-sheet "sandwich" walls embedded with insulation—an innovation that reflects local curiosity about new materials. Across these practices, creativity is the common thread, turning homes into cooler, more livable spaces through low-cost and often improvised solutions.

Letting air move

Even with structural adaptations, heat can accumulate indoors, making ventilation essential. Yet cramped housing often limits airflow, requiring households to improvise. Across cities, families follow similar principles: cutting compact openings, lowering partitions, or using exhaust fans to push air through.

In Dhaka's Korail, where houses are squeezed wall-to-wall and windows are blocked by furniture or sacrificed for privacy, residents improvise: installing exhaust fans high on walls, carving out tiny openings wherever possible, or leaving a narrow gap beneath the roof ridge to let hot air escape. Brick houses require more deliberate measures, such as small windows near ceilings, lattice panels, or perforated metal sheets below cooking stoves, which allow airflow without exposing interiors.

In Jeetpursimara, unplastered *bati tati* walls (bamboo wattle), along with transoms above doors and lowered partitions, allow hot air to pass through walls and circulate between rooms. In Karachi, iron grills and cement lattice provide ventilation, while in Colombo, kitchen smoke vents double as outlets for hot air. Some families in Bangkok install louvers just below the ceiling—a small tweak that can change the comfort of an entire room. These modest interventions show how communities continuously reshape homes to the climate, making ventilation both an art and a survival strategy.

In Nepal, thatch is placed over cement tiles or iron sheet roofs to keep rooms cooler.

A few households in Colombo have painted their roofs white to reflect heat.

Heat-reflective foil installed under the ceiling is a more costly yet effective solution seen in Colombo.

Low-cost improvised solutions to improve air circulation are common in Karachi.

Windows with adjustable louvers in this house in the Philippines allow air to flow in.

A small garden brightens the front of a house in one of the Baan Mankong projects.

Where soil is scarce, residents in the Philippines find creative ways to bring in greenery.

Every little corner is used to add plants and greenery inside the settlements.

In Bangkok, residents stretch sheets between houses to create shaded spaces.

Shaded spots inside Jakarta's communities double as places for gatherings and celebrations.

Bringing nature in

Alongside structural adaptations and ventilation, vegetation is one of the most visible and effective ways to cool homes and shared spaces. Even in cramped conditions, households find ways to cultivate green pockets, from trees and shrubs to rooftop and vertical gardens, and even hydroponic installations.

In Korail, Dhaka, the Nogor Abad group started a plant nursery during the pandemic, distributing seedlings that have since grown into small rooftop and courtyard gardens, providing both shade and vegetables. In Kampung Marlina, Jakarta, narrow alleys were transformed into vertical gardens after a recent upgrading project, turning underused spaces into green, productive corridors. In Jeetpursimara and Davao, bamboo bushes and fruit trees planted around houses provide extra shade and help cool the surrounding air. Covering walls and roofs with creepers is another common strategy across all cities.

Across these examples, greenery is far more than decorative: it is a practical, low-cost way to significantly improve comfort, complementing other household adaptations.

Choose your trees wisely: A lesson from Bangkok

In one Baan Mankong housing project, residents proudly planted big shade trees when they first moved in, hoping to cool their new community. The trees grew fast, offering relief from the sun and a place for neighbors to gather. But ten years on, the story took a turn: the roots spread deep and wide, cracking the concrete and damaging the foundations of the houses. Now the community faces the painful decision to cut them down. It's a reminder that even the best intentions can bring new challenges—and that cooling the city with greenery needs careful planning for the long run.

Sharing the shade

Communities also create comfort through collective practices, shaping shared spaces and routines to ease the heat together. In Dhaka, kitchens are often shared by multiple households, reducing both indoor heat and fuel costs, while Jhenaidah, with its more rural character, features many outdoor kitchens. In Jakarta and Yogyakarta, women frequently cook in shaded communal areas, combining practicality with social connection.

Beyond cooking, residents actively create shaded pockets where daily life can unfold. Neighbors stretch cloth or bamboo mats across courtyards and narrow lanes, or set up semi-private corners where people can rest and gather. These spaces become important anchors within the settlement—places to sit together, chat, or even hold small events like karaoke, turning heat relief into moments of joy and solidarity.

These shared rhythms of cooking, resting, and socializing help households cope in ways that go beyond physical adjustments. Through these practices, neighbors also exchange tips and lessons learned from trial and error, turning everyday routines into a living store of community wisdom that spreads resilience throughout the settlement.

A mini catalogue of reponses

Sprinkled water on floors and walls.

Wet cloths and curtains cooling the air.

Temporary shading elements across streets.

A chandoya (large cloth) under a roof in Dhaka.

Insulated metal sheet "sandwiches" as walls.

Wooden planks under the roof as a heat barrier.

Concrete lattice elements commonly used in Karachi.

Perforations under cooking areas to release air.

Open transoms above doorways in Jeetpursimara.

Creepers providing shade in front of houses.

Small pockets of greenery amid limited space.

Plants forming a cool barrier in front of Bangkok homes.

A courtyard used for gatherings in Jeetpursimara.

Open shared kitchens in Jhenaidah and Jakarta.

Common shaded areas for community gatherings.

Between creating and coping:

Lessons from local practices

Amid daily struggles and trade-offs, communities hold a wealth of local knowledge. Many of the measures adopted by urban poor households to cope with heat go far beyond quick fixes. They are rooted in lived experience, born of necessity, observation, and careful trial and error. From sprinkling water on floors to rooftop gardens and reconfigured kitchens, residents constantly test what works and what doesn't. Together, these efforts reveal a culture of experimentation and ingenuity that turns everyday survival into a process of learning, subtly challenging assumptions about where expertise lies.

But communities are not only knowledgeable—they are *active*. Households and neighborhoods invest significant time and effort to make these strategies work, often supporting one another along the way. Adaptation is therefore not a single act but a continuous process of coordination and care. As Rani, a practitioner in Yogyakarta, observed: "*Can we all agree that communities are doing way more for heat mitigation than municipalities or governments?*"

These practices, while rooted in local realities, carry lessons that reach far beyond each settlement. Documenting them reframes the narrative around vulnerability and highlights agency, creativity, and collective problem-solving in the face of crisis. From pilot projects to broader initiatives, these experiences can inform adaptation strategies elsewhere, turning local innovations into a shared and evolving toolbox of solutions. Ultimately, adaptation is not only possible; it is already happening—quietly, creatively, and effectively—within the communities most affected by heat.

Ambivalent practices: Risks and trade-offs

Not every coping strategy is a perfect solution. Many fall into a grey zone, offering relief from the heat while creating new challenges. Fans running 24 hours, for example, provide immediate comfort but push electricity bills far beyond what families can afford. In dense settlements, households close windows or add barriers to block the sun, but this also traps heat, restricts airflow, and dims natural light. Temporary shading, water sprinkling, or wet cloths help cool rooms, yet they require continuous attention and offer only partial relief.

Spatial constraints also shape trade-offs. In many places, limited space means clutter and storage often obstruct ventilation, yet families cannot "simply" remove belongings. Moving downstairs or sleeping on the ground floor offers relief from sweltering upper floors but further limits the use of already tiny homes. Even measures often celebrated as low-cost or low-effort, such as greening, carry risks or require constant upkeep.

Documenting these ambivalent practices is crucial. They reveal the difficult decisions families navigate daily, balancing relief from heat against cost, safety, and spatial limits. Understanding both the benefits and unintended consequences helps practitioners design interventions that build on local inventiveness while avoiding pitfalls communities have already encountered. Heat adaptation is rarely a single, straightforward solution; it is a continuous negotiation between what is possible, affordable, and safe in each home and settlement.

> **"With the fan, we just circulate the same hot, dry air. There's no ventilation, so it only moves the heat around."**
>
> *—Vijayakumari, a community member in Colombo*

> **In summer, the government does two things. They cut the electricity in informal settlements, even though they are supposed to maintain supply. And they suspend the water when demand rises. Because of this, our problems multiply—we have no electricity, no water.**

—Rana, Urban Resource Center, Karachi

Beyond Coping:

Cooling, inequality, and the struggle for housing

Cooling is often framed as a technical problem: a matter of building materials, construction methods, or energy-efficient appliances. Yet who suffers most from extreme heat—and who can shield themselves—shows that cooling is not only about design or technology. It follows the sharpest lines of inequality, revealing who is valued in the city and who remains exposed.

For the urban poor, cooling cannot be separated from housing. It is tied to the land they are allowed to occupy, the materials they can afford, and the planning systems that determine their access to services. Putting cooling on the housing agenda means treating it not as a private consumer choice but as a structural question of collective wellbeing. It requires examining how housing struggles are organized, how communities negotiate, and why worsening climate conditions demand urgent, systemic solutions.

Why resilience alone is not justice

Across Asia's poor settlements, families show remarkable resourcefulness in coping with heat. From adjusting routines to adapting homes, they draw on deep local knowledge and effort. Their strategies demonstrate creativity, but also highlight a harsh reality: households are left to manage escalating environmental stress largely on their own, with little material, financial, or institutional support.

Even the most inventive coping strategies have limits. Cramped housing, poor ventilation, lack of green spaces, and under-serviced infrastructure cannot be offset by household fixes. Relief is often temporary, and many practices introduce new risks—exposure to traffic, pollution, or unsafe spaces. Coping also carries hidden costs: higher bills for water, electricity, or medical care, and added physical strain, further burdening those with the least to spare. What appears as resilience on the surface is in fact a marker of vulnerability.

Resilience, as commonly framed, is not enough. If resilience simply means enduring hardship or "bouncing back," it risks normalizing the expectation that vulnerable communities should continue bearing the heaviest costs of climate impacts. Resilience without justice shifts responsibility downward, praising households for surviving heat without addressing why they face it in the first place.

The lesson is clear: coping helps people through today, and resilience may stretch survival a little further, but neither delivers fairness or dignity on its own. True resilience must be rooted in justice: structural solutions that reduce exposure, improve housing, and guarantee safe and equitable access to cooling. Only then can resilience move beyond survival to become transformative.

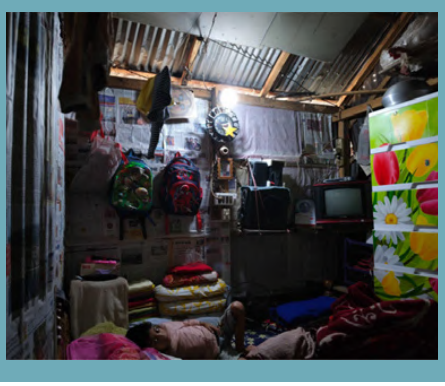
Climate change and deepening inequalities

If coping does not equal resilience, and resilience without justice risks becoming an empty slogan, then we must look at how climate change deepens existing inequalities. Extreme heat exposes the architecture of privilege itself, tracing the boundaries of protection and neglect across the city.

For wealthier families, relief is woven into daily life. Air-conditioned homes and offices, insulated walls, and shaded streets mean that exposure can be minimal. Children spend their days in cooled classrooms, professionals work in climate-controlled offices, and leisure unfolds in malls or cafés designed to seal heat out entirely. For low-income households, by contrast, these options are absent or severely limited.

The divide becomes sharper when responsibility is considered. Those least protected from heat also contribute least to the conditions that drive it. Their energy use and carbon footprints are negligible compared to the consumption patterns of affluent households. Yet the very tools that protect the wealthy—particularly air conditioning—are also major drivers of emissions. What shields privileged families in the short term worsens the crisis in the long run, intensifying exposure for those with the fewest protections. In this way, inequality operates on two levels: who suffers most from the impacts, and who contributes most to the causes.

Heat, then, is not only a climatic force but also a magnifier of injustice. It sharpens divides between rich and poor while producing new exclusions, where safety itself becomes a rare benefit. Without deliberate intervention, climate change will not simply raise temperatures; it will deepen vulnerabilities and widen the gap between those insulated from heat and those at risk.



“Passive, community-led ways of dealing with heat deserve more recognition. Expensive technologies aren’t feasible for a country like ours—the government needs to recognize that. Through this project, we hope to influence at least the local authorities.”

—Lumanti, Lumanti Support Group for Shelter, Kathmandu

Putting COOLING in the Housing Agenda

Adequate housing is more than four walls and a roof—it is about protection and the ability to live comfortably. In a warming world, this must include shielding residents from extreme heat. Framing cooling as part of the right to adequate housing underscores a critical point: homes should not only sustain life, but also allow people to live with security and dignity.

The reality for many low-income communities is very different. Rising land values push poor families onto the hottest, least serviced plots, while land deemed “undesirable” becomes their only option. Power cuts during peak demand, intermittent water supply, and limited access to shaded public spaces often reflect broader policy and governance priorities. Even where housing programs exist, they frequently prioritize unit counts over livability, delivering homes that rarely account for high temperatures, poor ventilation, or access to cooling infrastructure. These gaps highlight how planning, regulation, and program design often overlook climate resilience for the urban poor.

Despite these structural barriers, communities are far from passive. Their struggles over land, tenure, and upgrading reveal the close link between housing and cooling. **When residents fight for secure plots, they are also advocating for shade, airflow, and access to essential utilities that reduce indoor temperatures. Resisting relocation to peripheral sites preserves both livelihoods and the cooler conditions of central neighborhoods. Demands for drainage, trees, or reliable electricity are simultaneously calls for safer, cooler, and more livable homes.** In this sense, the fight for housing rights is inseparable from the fight for thermal comfort and protection from extreme heat.

By embedding cooling into housing advocacy, communities assert their rights while signaling the need for structural solutions. Addressing inequities in land, housing, and infrastructure is essential to reduce heat exposure and ensure that all residents—regardless of income—can live securely, comfortably, and with dignity.

From Crisis to Solutions:

Collective power for cooler homes & cities

This newsletter has traced how extreme heat permeates every corner of daily life, while also showing how residents are already experimenting, organizing, and negotiating for relief. Taken together, these accounts point toward solutions. Every description of discomfort carries an implicit demand. When a mother explains that her children can no longer play outside, she highlights the need for shaded, breathable spaces. And when families record indoor temperatures that soar beyond safe levels, they underscore the urgency of rethinking building materials and layouts.

What emerges from these stories is not just a catalogue of local struggles, but the foundation of an agenda. They reveal what matters most, where existing systems fail, and how people are beginning to reimagine their environments. These lessons provide the groundwork for action: co-designing building adaptations and nature-based interventions, strengthening systems of organizing and financing, and finding ways to scale solutions across neighborhoods and cities.

Imported "fixes" or top-down prescriptions can play a role, but they cannot substitute for the practices and priorities already embedded in communities. The most durable, equitable, and scalable solutions will be those that grow from lived realities and connect cooling directly to housing struggles. The knowledge is here. The challenge now is to act on it.

Foundations for solutions: What we already know

The starting point for solutions is recognizing that cooling is not a private matter. Much mainstream discourse treats it as such: buy a fan, paint a roof, adjust your routine. But heat is experienced collectively. A bare street radiates into every home, a settlement without airflow traps everyone inside, and a city grid under strain affects all residents. Piecemeal fixes may provide short-term relief, but without changes to the shared environment, they remain fragile.

This understanding already exists within communities. Residents repeatedly describe how improvements must extend beyond individual households. As Ainun in Yogyakarta put it, "*To improve housing requires collective action, a collective agreement on how we use and arrange space. For this to work, everyone needs to understand the problems and why we must act together.*" Her words capture a principle evident throughout these accounts: solutions must be social as much as technical.

From these stories, three foundations for solutions come into focus:

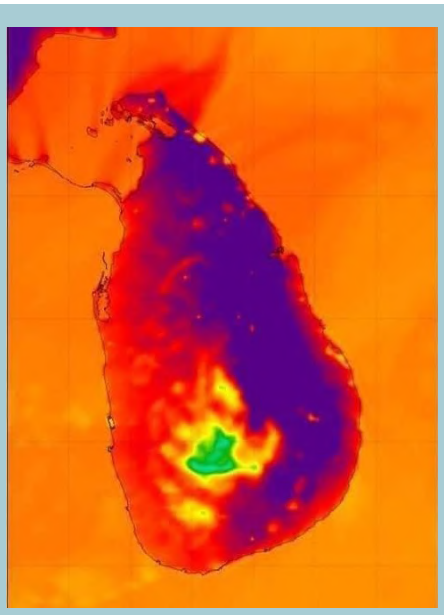
1. **Cooling as a collective condition.** Comfort cannot be secured within the four walls of a single home if the wider neighborhood remains bare, congested, and overheated. Collective approaches—whether planting trees, redesigning courtyards, or opening airflow—are essential.

2. **Adaptations already emerging on the ground.** Residents are not waiting for perfect blueprints. They are adjusting building layouts, experimenting with roofing, mobilizing savings, and involving youth in surveys and design. These practices show both ingenuity and the potential for replication.

3. **Cooling as inseparable from housing justice.** Heat compounds existing struggles with tenure insecurity, inadequate infrastructure, and overcrowding. Residents know that solving heat in isolation is impossible: it must be integrated into the broader fight for safe, dignified housing.

Collectively, these foundations move the conversation beyond emergency coping. They establish a platform for the next stage: building principles, partnerships, and strategies that translate local wisdom into durable solutions at scale.

> **"If improvements happen in my house, neighbors see them and may copy them. A few visible examples in Korail can become role models, inspiring others across the neighborhood."**
>
> *—Shamol, a community member in Dhaka*



The urgency of now

The time to put cooling on the housing agenda is not in the distant future—it is now. The climate crisis is accelerating, and with it, the risks of extreme heat. Across Asia, hot days are multiplying, heatwaves intensifying, and humidity pushing perceived temperatures to dangerous levels. For households already living in inadequate housing, every additional degree compounds the risk.

When temperatures rise, water grows scarce, food prices soar, and health risks multiply. For low-income communities, these are not separate challenges but interconnected symptoms of a planning system that has long ignored the realities of heat. As one resident in the Philippines said, "*It's not only how hot your house is; when the wells dry out, waste piles up, and disease spreads, one problem leads to another.*" Recognizing thermal comfort as a basic need is therefore essential—not just for wellbeing, but for the resilience of cities as a whole.

The political moment adds to the urgency. Across the region, governments are investing heavily in housing, infrastructure, and climate adaptation. Yet heat, and the urban poor most exposed to it, too often fall through the cracks. Every home built today without attention to thermal comfort locks families into decades of discomfort, higher energy costs, and preventable health risks. Neglecting cooling in housing policy now means entrenching vulnerability for generations to come.

"Some of the settlements we work in were upgraded 10 or 15 years ago, when the heat issue was less pronounced. Now, as heat becomes an increasingly pressing concern, we can apply these principles to every new or upgraded project. With data from different houses, we can adapt solutions to various typologies."

—Ranjith, Sevanatha Urban Resource Center, Colombo

Principles for moving forward

If communities already hold the seeds of solutions, the question becomes: *how do we nurture and expand them*? The experiences collected in this newsletter suggest three principles that can guide the path ahead. These are not abstract ideals, but concrete lessons distilled from practice across cities.

1 START FROM LIVED REALITIES

Cooling strategies must begin with what people already do and know. Residents are experts of their environments: they understand where airflow is blocked, which building materials trap heat, which courtyards stay shaded, and how household routines shift with the seasons. Ignoring this knowledge leads to "solutions" that are impractical, unaffordable, or irrelevant. Strengthening community innovations through technical validation, improved materials, or modest financial support creates interventions that are both effective and trusted.

2 STRENGTHEN COLLECTIVE CAPACITY

Heat is not only a technical challenge; it is also political. Individual coping strategies cannot substitute for collective organization. Pooling household savings allows families to afford upgrades that would be impossible alone. Collective negotiation gives residents greater leverage with landowners and local officials. And shared knowledge—neighbors learning from each other, youth documenting local heat conditions, women's groups actively exchanging tips—makes adaptation scalable. As one resident from Bhuj explained, "*Alone, we are busy with survival; together, we can demand change.*" Strengthening collective capacity ensures that cooling is not a luxury, but a shared right.

3 FORGE PARTNERSHIPS ACROSS LEVELS

Community strategies can go far, but scaling requires connections with institutions, technical experts, and policy frameworks. Across contexts, partnerships take many forms and constellations—from tools like the Community Action Plans in Nepal to ward- and district-level committees in Bangkok, as well as collaborations with academics, media, activists, and artists—that help build upon and expand community initiatives. The region is abundant in examples showing that when communities retain leadership and expertise, partnerships add reach, resources, and legitimacy.

Together, these principles form the scaffolding for future work. They remind us that solutions will not emerge from laboratories or government offices alone. Nor can they be left solely to overburdened households. The way forward lies in combining local ingenuity, collective strength, and multi-level collaboration. Only then can cooling become not just a coping mechanism, but a pathway to more just and resilient cities.

Bridging to action: Partnerships and scaling

If collective strength is the foundation, partnerships are the bridges that connect community wisdom with broader systems of support. No single neighborhood can shoulder the burden of cooling alone. Municipal policies, technical expertise, and financial resources are essential to move promising experiments into solutions at scale. The challenge is not merely to "add" external support, but to build partnerships that respect and amplify the practices communities have already established.

Partnerships provide political leverage: a single household can be ignored, even a neighborhood association can be sidelined. But when communities bring allies—universities, NGOs, federations, or regional networks—their demands become harder to dismiss. This is how cooling moves from a household coping strategy to a recognized public priority, embedded in building codes, housing programs, and urban development plans. Partnerships provide legitimacy, access, and reach—but only when grounded in community leadership.

Scaling these efforts also requires new financing mechanisms. Collective savings and bulk purchases go far, but external funding, municipal budgets, and climate adaptation resources must be unlocked to bring passive cooling into the mainstream. Multilevel partnerships also create entry points for technical support: communities define their needs, and technical actors—allied professionals and public officials—refine designs. Without these bridges, effective solutions risk remaining isolated pilots.

Across the region, community-driven initiatives demonstrate how partnerships transform local ingenuity into broader impact. In Nepal and India, youth groups use civic media and data collection to bring community observations directly to municipal authorities, improving responsiveness and planning. In Indonesia, housing cooperatives and street vendor associations organize together to negotiate needs, manage savings, and coordinate local upgrading. In Bangladesh, collaborations between communities and architects are gaining recognition for their participatory design approaches, demonstrating the legitimacy of community-led co-creation and drawing the attention of universities and planning institutions to this alternative, bottom-up method. Each example illustrates the same principle: when communities hold the pen, partnerships can turn localized action into systemic change.

Ultimately, partnerships are not a substitute for grassroots strength—they are multipliers. They create channels through which local knowledge travels upward into policy, while resources and recognition flow downward into neighborhoods. In a context of rising climate risks, connecting these levels will determine whether passive cooling remains a patchwork of local fixes or evolves into a movement that reshapes housing and urban policy.

Looking ahead: Toward cooling solutions

This newsletter has mapped how heat disrupts daily life and how communities across Asia are already taking action. Their inventiveness and collective strength show that solutions are not only possible—they are already in motion. What comes next is to build on these foundations: to co-design cooling strategies with communities, strengthen their systems of organizing and financing, and scale up passive solutions that fit local realities.

The next issue in this series will turn more directly to these solutions. It will showcase building adaptations, nature-based approaches, and models for collective action that can make homes and neighborhoods cooler, healthier, and more resilient. Above all, it will carry forward the principle at the heart of this work: that cooling is not a privilege, but a shared right, and that the best solutions begin with the people who are already creating them.

Some of the many existing levers for change

In Nepal and India, youth use civic media to document community issues and shape development agendas.

In Bangladesh, practitioners, communities, and authorities work together to foster a culture of co-creation.

In Jakarta, communities are organizing and advocating for recognition as housing cooperatives, enabling them to lead the upgrading and development of their neighborhoods.

Toward cooler homes and fairer cities . . .

“Until today, people have faced urban heat mostly as individuals. Some have a fan, some go outside to find shade, but most coping happens alone. With a collective approach, we can learn together what really makes a difference: ventilation, better materials, and new ways of keeping homes cooler. That way, comfort doesn’t depend on stepping outside. It only becomes possible when we learn together and co-produce solutions.”

—Arief, a community member in Jakarta

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