Transitions Research

Grounding Success of Heat Adaptation

Learning What Heat Adaptation Success Means to Communities

Preliminary Insights

Aug 28th, 2025

Background

Extreme heat is intensifying across the Global South. In response, adaptation efforts, ranging from early warning systems to cool roofs- are already underway at household, community, and institutional levels. Yet one critical question remains: **How do we know if these are working?**

Our work on the *Community Driven Heat Solutions Compendium* over the past two years surfaced a consistent observation from the solution implementors - most of them are facing challenges in scaling heat adaptation efforts. Many strategies have a potential to scale, but have little evidence on their long-term effectiveness to support growth. Without learning what works, we risk opportunities to prioritise, refine and scale strategies that deliver meaningful outcomes.

Challenge with traditional evaluation approaches

Our observations from the ground on how success is currently assessed points out challenges with traditional project level M&E approaches in use. Hazards are intermittent and compounding; exposure and vulnerability shift as communities and institutions adapt; and isolating the effect of any one intervention is difficult. Project cycles are short while benefits emerge over seasons or years. Effects are highly place-and group-specific, much relevant activity sits in informal systems beyond administrative data, and repeated surveying can burden those most at risk. Conventional evaluation often lean toward externally driven reporting, missing local priorities and practice, and emphasise inputs/outputs over the outcomes people value. The result is that what's easiest to count can crowd out what is needed to inform decisions to scale.

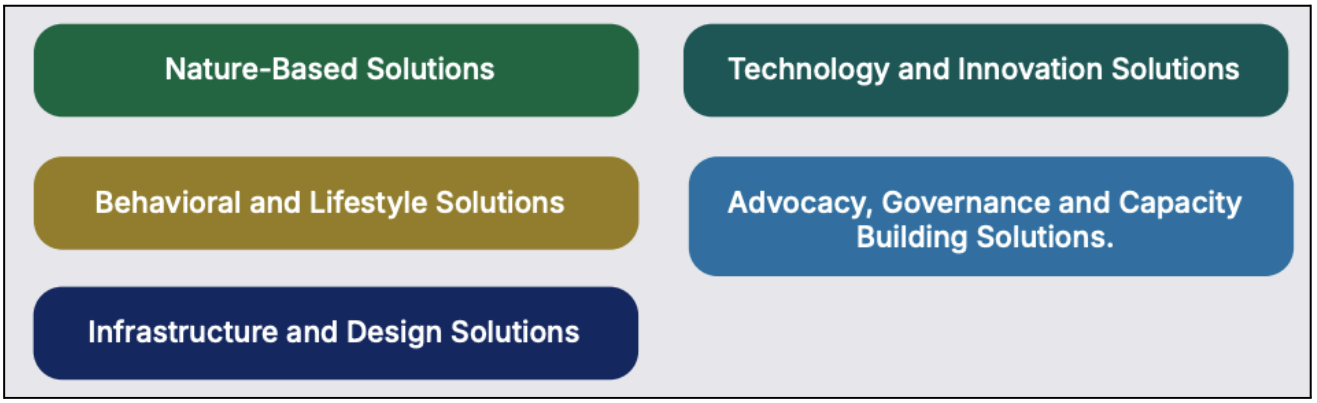
The Opportunity

There is a clear opportunity to redesign evaluation around community experience when it comes to complex aspects such as heat adaptation. People know best how heat affects their daily lives, work hours lost, health impacts, school attendance, safety in public spaces. They can help define what success really means. By centering community priorities and lived experiences, we can design evaluation approaches that are relevant, sustainable, and locally owned with communities invested in tracking and improving outcomes.

Workshops at a Glance

In May 2025, Transitions Research, in collaboration with the Adaptation Research Alliance, convened a **workshop at CBA19 in Brazil: *Who Defines Success? Community Voices in Evaluating Heat-Health Solutions.*** The session sparked powerful reflections on grounded evaluation, community-led metrics, and the urgent need to reimagine how we assess adaptation outcomes. Crucially, the session's core message that communities themselves must help define what success looks like also emerged as one of 11 Key Messages formally endorsed by the 400-strong adaptation community at CBA. This recognition signalled broad consensus across the field that new, more inclusive evaluation approaches are urgently needed.

Building on this momentum, in **August 2025, the Climate Adaptation Learning Lab (CALL) at Transitions Research hosted a virtual workshop** with 200+ registrations across 50 countries, and ~100 live participants—researchers, practitioners, and funders focused on extreme heat—aimed at surfacing and refining community-led metrics that partners can use to better evaluate, improve, and scale heat adaptation in their contexts. Building on the *Heat Solutions Compendium*, as a follow up to ground-truth the strength of the solutions pooled, participants were assigned to the thematic track where they felt most equipped to assess nuances of the solutions being evaluated.



Thematic categories of solutions in the Heat Solutions Compendium

Across five thematic breakout rooms , participants reflected on:

1. what successful heat adaptation looks like from different perspectives;
2. which metrics are currently in use and their gaps; and
3. credible alternative metrics that better capture meaningful outcomes.

Key Insights from Workshop Discussions

In reflecting on what is conventionally measured, participants across both workshops consistently held that most current metrics are **proofs of delivery** (assets installed, alerts issued, attendance logged), useful for compliance, but weak for decisions about who benefits, for how long, and whether systems adapt. Their meaningful metrics thought process shifted evidence along three axes:

- **Time**, shifting from event snapshots to trajectory signals (retention, maintenance uptime, replication, early clinic visits) that forecast risk and durability;
- **Equity**, moving from totals to who counts (women's safe-use share, informal workers' hours, access in low-income settlements); and
- **Legitimacy & uptake**, prioritising institutional anchoring (improved finance & policy inclusion) that determines scale.

Participants also broadened the definition of valid evidence to include lived experience (comfort, safety, and agency) and to capture cross-sector spillovers. For example, shade should be assessed not only for temperature reduction but for its effects on worker productivity, school attendance, and mental well-being. They also called for better-resourced monitoring and explicit feedback loops so community-generated data informs budget allocations and scale-up decisions, rather than remaining a reporting formality.

Across both workshops, discussions signaled a recognition of the gaps and a decisive shift: from post-event outcomes to system capacities, from technocratic checklists to legitimacy and equity, and from stand-alone pilots to institutional pathways. *Perceptions and lived experience are not "soft" data; they are often the decisive indicators of whether adaptation is working.* Inputs from participants suggest that to move forward, measurement must capture (1) human experience and social norms, (2) institutional embedding and financing, and (3) cross-sector effects rather than siloed outputs.

1. Rethinking What Counts as Evidence

The Measurement–Meaning Paradox

Participants across groups revealed a structural paradox: what is easiest to measure (surface temperature, number of shelter users, trees planted, work absences), while necessary are often incomplete by missing what is most meaningful to communities (sense of safety, mental health, dignity, agency). In *Infrastructure-themed solutions*, "discomfort" and daily life changes were flagged as missing; in *Behavioural change-themed solutions*, long-term retention of protective habits was noted as untracked; in *Advocacy and capacity building-themed solutions*, mental health and social trust emerged as blind spots. The risk is not a trade-off between measurable and meaningful, but stopping at measurable and assuming it equals success. For example, while counting trees may be an easy measure, success of the intervention will depend on metrics like survival rate, hours people spend in shaded areas, and women's use.

The Role of Subjective and Perception-Based Metrics

Participants across groups highlighted the importance of perceptions, self-reported comfort, agency, and sense of safety. Whether through community surveys, social media narratives, or local knowledge, subjective data was seen not as "soft" but as critical for understanding adaptation success. This points toward a critical shift: privileging lived experience as evidence, alongside biophysical or economic indicators, to build legitimacy and relevance in evaluation of heat adaptation solutions.

Equity as the Missing Lens

Across groups, the most consistent "missing element" was equity. Who is left out? Do women, informal workers, or marginalized groups experience access to cooling infrastructure, healthcare services or are part of decision-making? Participants noted that conventional metrics rarely disaggregate impacts, leaving invisible those most vulnerable. Success cannot be assumed if adaptation deepens inequities. Embedding access and equity into evaluation is therefore an imperative.

2. Shifting from Events to Systems

From Reactive, Incident-Based Symptoms to Proactive System Capacity

Most existing metrics were reactive and incident based: hospital visits, dehydration cases, absenteeism, illness reports, or post-event perception surveys. But when asked what was missing, participants envisioned systemic and anticipatory markers e.g., readiness of healthcare facilities, whether outdoor worker hours shift in advance of advisories, whether solutions are co-created and retained by communities, or whether local government institutionalises a measure. This suggests a shift from measuring outcomes of a single heat event to assessing the adaptive capacity of systems over time.

Success as Legitimacy, Not Just Effectiveness

Participants repeatedly hinted that what makes an adaptation effort succeed is not just whether it "works" technically, but whether it is recognized and valued by institutions and communities. For example, *inclusion of Heat Action Plans in master plans*, or *local government institutionalising measures* were suggested as metrics. These aren't about heat outcomes directly but about institutional recognition. This reframes success: an intervention is only durable if it becomes legitimate in the eyes of both state and society.

The Importance of Sustainability and Ownership

Participants framed success as community ownership and long-term sustainability. They pointed to maintenance and replication—"if people maintain the activity or if it is being replicated elsewhere"—as evidence that solutions fit local routines and persist beyond projects. They stressed peer capacity "locals that created or managed the solution should train others" so knowledge and authority remain in the community. This signals a shift in evaluation: track maintenance, peer-to-peer training, replication alongside outputs to assess whether adaptations are locally held, self-sustaining, and improving systems over time.

3. Integration and Pathways Forward

The Case for Cross-Sectoral Metrics

Each sector of heat adaptation solutions has its own set of metrics e.g. increase in green cover for nature-based solutions, user uptake for technology interventions, temperature reduction for infrastructure solutions. But adaptation is intersectional: a single intervention can cut across health, labour, environment, and governance simultaneously. Current siloed metrics obscure these overlaps and can also double count the same effect in multiple silos while duplicating evaluation burden. For instance, a shaded street is not just cooler but also improves worker productivity and reduces health risks. Without integrated frameworks, evaluation misses these cascading, interconnected benefits.

Cooling with Co-Benefits

Several participants highlighted that heat adaptation measures also delivering mitigation co-benefits should count as a success factor - fixing the problem for the long term over a short-term bandage approach. For example, cool roofs that lower energy demand while delivering thermal comfort to occupants. Treating these as success metrics when evaluating heat solutions creates an entry point for integrated climate action and cross-sector budgets where both adaptation and mitigation move together.

Heat Action Plans: Policy Tool and Capacity Pathway

As Heat Action Plans (HAPs) emerge as a key policy tool in addressing extreme heat, along with looking at including M&E processes within plans, participants discussed inclusion of HAPs in wider master plans as a measure of their own success. However, it is also noted that the process of making the HAP is useful in itself, as it creates technical knowledge. This shows that a HAP serves a dual function: as both a formal policy document and a capacity-building exercise. A successful HAP, therefore, is not just about its final content, but about the collaborative process that leads to its creation, fostering a shared understanding and building local expertise. With many regions across the Global South yet to develop HAPs, this makes a case for starting the process even as institutionalisation is being fixed in parallel. The development process itself builds and serves as a measure of adaptive capacity.

Looking Forward - Partnering on Community-Driven Evaluation

These workshops were an important beginning: for the first time, a diverse group of experts, practitioners, and community voices came together to interrogate how we measure success in heat adaptation. But this is only the start. The complexity of the subject - spanning technical, social, and institutional dimensions, cannot be resolved in two convenings. What we now have is momentum: a growing community of practice and a sharper view of the questions that must guide the next phase of work.

What these workshops made clear is not just what we know, but the many questions that remain unanswered - questions that now need to guide our next steps.

Questions that persist and need continued deliberation:

- What are metrics, alternative to conventionally used ones, that can track real success over time and how can communities meaningfully own these metrics?
- What are cases of community-driven metrics in practice that we can learn from?
- Which metrics travel across settlements & geographies, and what local calibration is needed?

Questions sparked by the workshops themselves:

- How can perception data be combined with scientific data to form robust, actionable, indicators?
- Who inside communities is best placed to capture which signals? While community ownership of data and processes may be desired for sustainability, how do we ensure it is not a burden for those most at-risk?
- How can community metrics be embedded in institutional systems so that data reliably triggers action?

The next step in this work is to systematically answer these open questions, with the support of the Community of Practice that has emerged from these workshops. We invite researchers, practitioners, and funders to partner on this ongoing work on community-driven evaluation of heat adaptation. The growing field of heat adaptation solutioning needs practical approaches that centre community knowledge in tracking heat adaptation outcomes and turn M&E into a learning system, not a reporting compliance. We will come back to you as we identify the best ways to progress this work, but in the meantime, if you have ideas or additional questions we should explore, please reach out to us at evita@transitionsresearch.org. Collaboration and shared learning are essential to move the needle as the scale and urgency of adaptation grow.