

THEMATIC BRIEF

APRIL 2026

CLARE brief on building climate resilient cities



OVERVIEW

This brief outlines the research being done through the CLimate Adaptation and REsilience (CLARE) programme – a flagship research programme on climate adaptation and resilience funded mostly by the UK Foreign, Commonwealth and Development Office with co-funding from Canada's IDRC – that co-creates inclusive resilience strategies in African and Asian cities.

Several CLARE research projects aim to build urban climate resilience. These projects use inclusive, co-creative methods to understand the root causes of urban informality and intersectional vulnerability. They also explore how the dynamics of rural-urban transitions inform development in a changing climate.

Climate resilient development pathways need to be responsive to rapid urbanisation. CLARE research projects highlighted in this brief are underway to inform adaptation action in dynamic cities across the Global South.

These projects are producing gender equitable and socially inclusive research that can be used to develop climate adaptation solutions which support the most vulnerable.

As shown across CLARE projects, multi-stakeholder co-production of resilience pathways is critical. These approaches can strengthen urban planning and decision-making practices, which have tended to overlook urban-rural linkages.

BUILDING CLIMATE RESILIENT CITIES

Supporting urban communities to reduce vulnerability to climate change and co-create a resilient future

HOW CLARE IS ADDRESSING ADAPTATION FOR INCLUSIVE RESILIENT CITIES

ROOTS OF INFORMALITY

Over one billion people live in informal urban settlements globally, where climate change intensifies existing social and economic inequities.

These communities, often shaped by systemic exclusion based on gender, ethnicity, disability, age, location and income, face disproportionate disruptions to livelihoods, health and wellbeing, especially across Africa and Asia.

Transformative Research for Adaptation to Climate Change in Informal Settlements (Urban TRACS) explores how informality intersects with climate vulnerability. Working in Sierra Leone and Kenya, it partners with marginalised residents, governments, and civil society to strengthen capacities, relationships and systems for inclusive adaptation.

Urban TRACS investigates how informal governance, limited infrastructure, and social exclusion shape risk exposure.

It leverages existing data to assess vulnerability and co-develop strategies that address the structural roots of informality while promoting equitable, climate-resilient development.

The specific needs of informal settlements are often not acknowledged in adaptation planning. *Resilience of informal communities in rapid urbanization (RURBANISE)* investigates how residents of nine informal settlements in urban and peri-urban contexts across the Philippines experience climate-related hazards including typhoons, flooding and



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landslides. The project is working with homeowners' associations to explore practical, context-relevant community driven adaptation solutions.

This process also informs how the Homeless People's Federation of the Philippines, Inc. (HPFPI), can develop future interventions that lead to transformative adaptation. At the same time, it supports HPFPI's influence on upgrading and resettlement plans at the municipal level and informs national policy agendas.

The practice of inclusive and proactive municipal planning for climate resilient development is relatively recent despite more than two decades of resilience research. *Designing inclusive African coastal cities' resilience (INACCT Resilience)* has facilitated the co-creation of risk and resilience profiles for informal settlements in eThekweni (Durban), South Africa and Beira, Mozambique, to understand how extreme flood events produced different outcomes for different community groups.

Underpinned by these profiles and other outputs and key findings, INACCT Resilience is co-developing Gender-responsive Coastal Cities Resilience Planning Frameworks.

The project's learning labs bring together community members, policymakers, practitioners and technical experts to identify solutions that strengthen urban resilience in informal settlements.

These solutions require a combination of technical and policy actions, consider the need of communities to maintain or enhance their livelihoods, and tackle issues that put women and other marginalised groups in vulnerable positions.

This framework provides a city scale understanding of the potential risks informed by gender-transformative, co-designed solutions that bridge the gap between what communities need and how the municipality responds.

UNDERSTANDING INTERSECTIONAL VULNERABILITY

Pan-African and transdisciplinary lens on the margins: Tackling the risks of extreme events (PALM-TREES) is exploring the consequences of extreme events and how these are experienced by vulnerable communities depending on gender and social identities.

By reframing climate extreme events as both physical and socio-economic events, the project creates better climate information that can be incorporated into the work of local stakeholders in charge of preparedness and adaptation plans.

In Lagos, Nigeria, PALM-TREES investigates the impact of heat stress on communities living in informal settlements to understand how communities' livelihoods and well-being are affected. In Kwa-Zulu Natal, South Africa, the project examines the impact of heat stress on gender-based violence.

The research is exploring tools to better understand the implication of extreme events, creating diagnostics to improve the evaluation of climate models and forecasts used in Africa, and advancing metrics for monitoring changes in vulnerability and resilience.

Methods to enhance capability in high-resolution information for adaptation: Initial case studies (MECHANICS) is working with residents of informal settlements in Lusaka, Zambia to strengthen their resilience to flooding.

Lusaka has expanded rapidly in recent years, and much of this growth has occurred in informal settlements with limited infrastructure. As a result, many residents face significant flood risk during the rainy season.

By combining community-led flood mapping with kilometer-scale flood models, MECHANICS is producing detailed maps that can identify where people in informal settlements are most vulnerable to flooding, down to the ward level.

This higher-resolution understanding of flood exposure can be used to localize future preparedness plans, allowing more targeted and effective actions to reduce flood impacts.

Resilience and preparedness to tropical cyclones across Southern Africa (REPRESA) examines the impacts of landfalling tropical cyclones by looking at vulnerability and exposure in Mozambique, Malawi, and Madagascar to tropical cyclone-induced flooding.

Comprehensive quantitative modelling and mapping of compound flood risks in these countries is undertaken together with the development of open-source datasets to inform urban planning.

REPRESA's Living Labs investigate existing vulnerability profiles, communities' lived experience of tropical cyclone landfalls and early warning systems, and their uptake in informal settlements.

Through these Living Labs, stakeholders are exploring improved early warning system approaches as well as long term climate adaptation planning that considers settlement planning and infrastructure development.

MOVING TO THRIVE

When designing climate change adaptation interventions, current approaches focus on existing residents and overlook vulnerable and marginalised populations who may have the option to migrate.

Two CLARE research projects investigate how migration can be an effective and inclusive adaptation response and explore how to improve the well-being of migrants in urban destinations across South Asia: *Successful intervention pathways for migration as adaptation (SUCCESS)* in Bangladesh, Bhutan, and Nepal and *Climate Change Local Adaptation Pathways (CLAPs)* in India.

This research is co-creating evidence-based metrics to evaluate migration as an adaptation strategy. The CLAPs project is also supporting journalists in their work to report with sensitivity on migration and how climate change reshapes lives and livelihoods.

RESILIENCE IN EXPANDING CITIES

Urban areas across the ASEAN region, face intensifying climate challenges alongside rapid urban growth.

Building resilience in this region requires new knowledge, stronger research capacity and collaborative approaches that integrate physical, social, and governance dimensions.

The *Supporting Socially Inclusive Climate Adaptation & Resilience in ASEAN (CLARE-ASEAN)* initiative is conducting action-research on urban climate adaptation and resilience.

It works on urban heat management, including housing and adaptation strategies in informal and low-income urban settlements, and nature-based solutions that integrate ecological and social outcomes.

Planning, policy, and financing cross-cut these themes as enablers. The CLARE-ASEAN initiative generates context-specific evidence and locally appropriate adaptation approaches and is endorsed by the ASEAN Working Group on Climate Change, and other ASEAN bodies and policy processes.

CLARE-ASEAN supports four action-researchers projects led by local researchers in seven ASEAN member states (Cambodia, Indonesia, Lao PDR, Malaysia, Philippines, Thailand, and Vietnam).

It works in 14 cities and brings together 21 partners, promoting cross-border collaboration and knowledge sharing (see sidebar).

Co-creation with local stakeholders strengthens adaptive capacity and scales sustainable innovations. CLARE-ASEAN enhances the region's ability to adapt to urban climate change through evidence tailoring, regional engagements, networking, and dialogues.

4 CLARE-ASEAN ACTION-RESEARCH PROJECTS:

- 1. Be-Housing: Beyond Housing Types (Jakarta, Surabaya, Semarang, Indonesia; Selangor, and Malaysia):** Investigating how urban settlements in Indonesia and Malaysia experience heat. Through multi-stakeholder collaboration, the project identifies practical heat mitigation strategies that can inform more sustainable and equitable urban planning.
- 2. NbCLARE: Nature-Based Solutions for Climate Adaptation & Resilience (Bangkok, Thailand; Vientiane, Lao PDR; Ho Chi Minh, Vietnam; Cameron Highlands, Malaysia; Bali, Indonesia):** Developing practical guidelines for designing and implementing nature-based solutions in selected ASEAN cities, aiming to strengthen climate resilience and sustainable urban development across the region.
- 3. HAMR: Heat Adaptation in the Mekong Region (Nakhon Ratchasima, Thailand; Phnom Penh, Cambodia; Hanoi, Vietnam):** Co-developing evidence-based and inclusive strategies to reduce urban heat risks through urban heat modelling, scenario analysis and vulnerability assessments, and evidence-based policy briefs and recommendations.
- 4. CAPE: Climate Action and Participatory Experiments (Quezon City, Philippines; Can Tho City, Vietnam):** Advancing understanding of grassroots-led urban climate experimentation in Southeast Asia to complement existing climate plans in the focus areas, such as Quezon City's Enhanced Local Climate Change Action Plan 2021–2050.



The Unlocking Resilience through Bottom-up Action-research and multi-scalar Networks (URBAN) project is an initiative of CLARE partner, the *Adaptation Research Alliance (ARA)*. Its work innovated the way in which co-production for urban resilience is approached.

Its five research projects investigated how to influence power relations and the politics of cities that drive generation of risk and urbanisation processes.

Drawing on the Strengthening and Enhancing Contextual Urban Resilience (SECURE framework), the project supported partners in India, Kenya, Myanmar and the Philippines to design and deploy urban living labs that are grounded in the political, institutional, economic and cultural realities of each city.

Through this approach, URBAN aimed to strengthen inclusive urban governance, improve access to finance and resources for local actors, support the implementation and scaling of co-produced resilience solutions, and foster learning and influence across cities and scales.

WATER USE PATHWAYS

Groundwater plays a critical role in sustaining water supplies in tropical drylands where the reliability of surface water is under strain due to climate change. Despite the role of groundwater in adaptation strategies, it is critically overlooked in research.

Climate Adaptation and Resilience In Tropical drylands (CLARITY) addresses the complex challenges of water resilience at the river-basin scale in the rapidly developing rural-urban interfaces of the Maradi-Katsina region across Niger and Nigeria, the drylands of central Tanzania, and across Raichur and Chintamani-Chikkaballapur districts in Peninsular India.

Marginalised groups' lived experiences with water management are collected through video diaries and by trained 'para-hydrologists'.

The data is then analysed to assess rural/urban water management practices. This information informs how climate models can be adapted to more effectively evaluate gender sensitive and climate resilient water use pathways.

The project is examining how urban resilience can be strengthened by managing the shallow aquifer systems while preparing for climate extremes.

They do this through lake rejuvenation and recharge efforts in Chintamani Transformation Labs, alongside incentive-based electricity-saving measures for farmers in the rural-urban interface. This is also done through expanded groundwater monitoring networks in Dodoma and the Maradi-Katsina transboundary Transformation Lab.

Transformation Labs, or T-labs, are multi-stakeholder engagements for testing and scaling potential solutions and producing practical and policy-relevant knowledge products to influence policy and practice.

ENHANCING SOUTHERN CONTRIBUTIONS TO THE IPCC SPECIAL REPORT ON CITIES

The Enhancing inclusive Global South participation in the IPCC *Special Report on Climate Change and Cities* (Inclusive SRCities) project works to bolster participation and contributions from Global South urban climate change experts to the *Intergovernmental Panel on Climate Change* (IPCC) seventh assessment cycle.

Inclusive SRCities has recruited seven early-career urban adaptation experts from across the Global South to take on the role of Chapter Scientists. These individuals work alongside Coordinating Lead Authors who have volunteered to lead the author teams in drafting the assessment report.

These Chapter Scientists provide invaluable research and coordination support that is often inaccessible for Global South Coordinating Lead Authors, who typically lack access to external funding sources more often available to their peers from the Global North.

The project team leads the onboarding of Chapter Scientists to support them in understanding their unique role, participating in Lead Author meetings, and navigating the IPCC report development process. All 15 Chapter Scientists on the Special Reports on Climate Change and Cities benefit from ongoing networking and capacity strengthening on inclusive leadership, knowledge-brokering, and data visualisation through tailored training and peer learning opportunities.

Inclusive SRCities is bridging gaps in equity and representation, fostering a more balanced and inclusive global assessment process that addresses the priorities relevant to stakeholders tasked with advancing climate action in cities, especially across the Global South.

STRENGTHENING CAPACITIES TO ADAPT

Climate change poses a major threat to sustainable urban development in Asia, where high population density, rapid urbanisation, and significant climate risks converge. Local governments, as frontline responders closest to affected communities, play a critical role in adaptation.

Yet, despite ongoing efforts, many officials lack the knowledge and technical capacity needed to design and implement inclusive climate strategies.

The *Enhancing local capacities in Socially Inclusive Resilience in Asia (SIRA)* initiative addresses this gap by building the skills of local governments and climate practitioners to engage diverse stakeholders and co-create resilient solutions.

Operating in the Philippines and Indonesia in Southeast Asia, and Nepal and Bangladesh in South Asia, SIRA strengthens technical capacity to deliver climate actions that are inclusive, equitable, and sustainable.

By enhancing local capacity, SIRA helps scale effective adaptation, reduce vulnerability, and advance holistic urban resilience across the region.

The *Tuwe Pamoja* Project is working to strengthen the critical capacities of a broad range of urban actors to co-design and implement nature-based solutions (NbS). The starting point is to strengthen not only capacities to generate data, but also capacities to

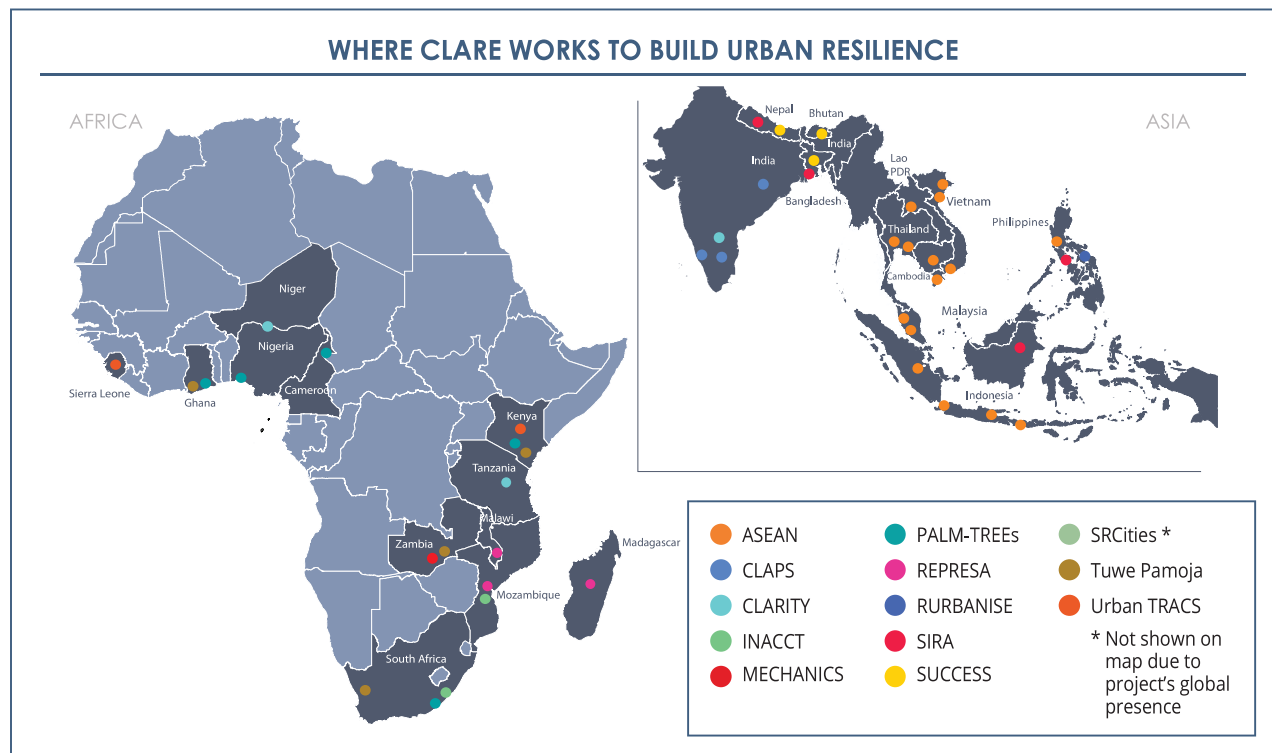


Electronic-Participatory Rural Appraisal underway during Raichur T-Lab in India (CLARITY)

work with this evidence base, and to understand the trade-offs associated with nature-based solutions.

The project's key focus cities are Cape Town (South Africa), Lusaka (Zambia), Accra (Ghana) and Nairobi (Kenya), where the work supports decisions around planning, implementation, and policy related to NbS.

The project draws on a Climate Resilience Development Pathways (CRDPs) framing, and works in deep collaboration with Slum Dwellers International (SDI) networks and practices.





INCLUSIVE MULTI-STAKEHOLDER APPROACHES

The lived experiences of vulnerable urban communities are documented through a variety of methods including:

- Participatory data collection such as walking workshops (INACCT Resilience)
- Photovoice (SUCCESS, PALM-TREES, INACCT Resilience)
- Climate risk narratives (INACCT Resilience)
- Audio & visual material (Urban TRACS)
- Video diaries (CLARITY)
- Longitudinal life-histories (SUCCESS, CLAPs)
- Participatory mapping with communities (RURBANISE, PALM-TREES, Urban TRACS)
- Social media tools explaining climate change impacts on marginalised groups (Urban TRACS)
- Aspirational Mapping and Visioning and pathways analysis (CLARITY)
- Training para-hydrologists in communities to collect and analyse data (CLARITY)
- Conducting participatory games to assess collective action responses to groundwater management (CLARITY)
- Electronic Participatory Rural Appraisal (e-PRA) methods to have a shared, spatial understanding of local water, land, and livelihood dynamics by combining community knowledge with high-resolution maps (CLARITY).

Moving beyond conventional consultation and validation approaches, these CLARE projects involve multi-stakeholder and multi-level engagement as well.

This is done with the development and integration of different types of knowledge through co-creation labs (INACCT Resilience, REPRESA, CLARITY, RURBANISE, PALM-TREES, CLARE-ASEAN).

It is also done with tailored training events and Town Hall COPs (SIRA), and foresight workshops (SUCCESS) to co-produce knowledge, make sense of data, learn, evaluate solutions, carry out collaborative analysis of existing plans and policies, and co-develop climate resilient development pathways and tools.

In the *Research for Impact in CLARE working paper*, Rawden and Carter (2024) define co-creation labs to involve “working collaboratively to create new ideas in response to a particular problem”.

By bringing together a range of stakeholders, including marginalised communities, these labs encourage the sharing of ideas in an atmosphere of trust, learning, exploration, and reflection from a variety of viewpoints, and lived experiences.

The ‘laboratory’ type approaches used by the CLARE projects highlighted in this brief are particularly suitable to tackle systemic and multi-sectoral challenges in urban contexts.

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Learn more about CLARE:
www.clareprogramme.org

Photos:

Front: New knowledge from the SUCCESS project improves understanding of how migration can be an effective adaptation strategy. Credit: Amina Maharjan

Page 5: A collaborative ePRA session in the Chintamani T-Lab, where community members and researchers work with high-resolution maps to discuss local water and land dynamics. This forms part of CLARITY's broader effort to understand water resilience challenges across rural-urban interfaces. Credit: CLARITY

Back: Tuwe Pamoja builds capacity for making informed decisions around planning, implementation and policy related to nature-based solutions in cities in Africa. Credit: Robyn Walker



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