SEI Stockholm Environment Institute

What counts? The state of evidence of outcomes of locally led adaptation

SEI report
September 2026

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Published by

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The appendix to this report contains summaries of contributions that were accepted for the Symposium on Strengthening Evidence on the Outcomes of Locally Led Adaptation, held 3–4 June 2026 in Bangkok, Thailand. The appendix did not undergo peer review. Symposium attendees are responsible for the content they contributed.

Cover photo

Installing a tree guard for the 14 Trees Foundation, a locally led adaptation initiative. The picture is a mosaic of hundreds of photographs of on-ground economic transactions – "every gas cylinder bought, every wage paid, every tree guard installed" – created from a system in which every expense is logged with a photograph attached. As 14 Trees describes it, the image is "quite literally, the spend on the ground rendered visible". Photo © 14 Trees Foundation, Vetale, Khed taluka, Pune district, Maharashtra, India.

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DOI: https://doi.org/10.51414/sei2026.030

This project was funded by the UK Foreign, Commonwealth and Development Office.

Foreign, Commonwealth & Development Office

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Acknowledgements

The authors thank the following, who attended the Symposium on Strengthening Evidence on the Outcomes of Locally Led Adaptation (held 3–4 June 2026 in Bangkok, Thailand), and whose evidence summaries form the appendix to the report: Marwa Akola, Prisca Benelli, Johan Bentinck, Homolata Borah, Jannatul Ferdous, Brandon Shema Gakwaya, Manju Gautam, Sadar Ginting, Rojy Joshi, Repaul Kanji, Wilson Lechón, Hayley Leck, Kearabetswe Moopelo, Rituu Nanda, Hari Krishna Nibanupudi, Innocent Deckoks Ochieng Omil, Architesh Panda, Florence Pichon, Diana Popfalushi, Ashikur Rahman, Chandan Roy, Kabindra Sharma, Asrul Sidiq, Prerna Singh, Saiqa Siraj, and Vaibhav Ganesh Sonone.

The authors thank participants at related, online events organized by SouthSouthNorth on 28 May 2026 and 17 June 2026. They specifically thank Marcela Valdivia, Alexandrea Roberts, Ekoningtyas Margu Wardani, Vanita Suneja, Thijs Schut, and Bobuchi Ken-Opurum for providing written feedback that informed the writing of this report.

The authors thank representatives from national governments of Bangladesh, Bhutan, Nepal, and the Philippines who shared their insights at a related, online roundtable hosted by the Asian Disaster Preparedness Centre on 29 May 2026.

The authors thank Mairi Dupar of the Overseas Development Institute and Janna Tenzing of the World Bank for their contributions as external peer reviewers.

The authors thank the following staff at the Stockholm Environment Institute for their contributions to the Symposium and this report: Olesia Polishchuk, Marie Jürisoo, Maya Rebermark, and colleagues at the SEI Asia Centre.

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Appendix A1

Key Messages

- **Solid evidence from a wide range of geographies, sectors and approaches suggests that locally led adaptation (LLA) is a good investment, generating positive social and economic co-benefits and building communities' capacity to adapt to climate change.**
- **The evidence base has limitations and gaps. These include a focus on short-term benefits rather than long-term resilience building, limited comparative analyses, and a critical lack of recognition and documentation of Indigenous and local knowledge on LLA outcomes.**
- **This report argues that the limited uptake of existing evidence by funders is largely caused by three divides: in underpinning values, ways of knowing (epistemologies), and prevailing practices in used by knowledge producers and funders.**
- **The report recommends actions to help bridge divides. The recommendations build on a central tenet: Generating evidence on locally led adaptation is valuable for all, and it is essential for enabling transparency, fostering accountability, aiding learning, and strengthening sustainability of adaptation action. Key among the recommendations are:**
    - **Adaptation funders and host governments** should recognize and use existing evidence to channel funding towards locally led adaptation by building on strengths, including Indigenous and local ways of knowing. At the same time, they should provide additional funding to produce evidence by adopting a dual-track approach that serves both their decision-making needs and those of communities.
    - **Knowledge producers and other actors on the ground** should continue to generate knowledge as an integral part of the adaptation mission and champion such efforts to serve aims beyond funder requirements. They should fill key knowledge gaps and synthesize evidence of LLA outcomes for uptake in national and global assessment processes, focusing particular on ethical co-production and synthesis of Indigenous and local knowledge.

Executive summary

Locally led adaptation (LLA) is a process of developing and implementing climate action in which local people, communities and institutions have the decision-making power and access to resources needed to define, prioritize, design, implement and evaluate adaptation actions that affect them. Since 2021, more than 130 organizations and governments have endorsed the Eight Principles for LLA of the Global Commission on Adaptation.[1] This signals a growing recognition that empowering local actors enables fairer and more legitimate adaptation action. Yet only a small percentage of overall international climate finance for adaptation (between 10–17%) reaches local levels. When it comes to finance for LLA, rhetoric does not match reality.

Five years after the adoption of the LLA Principles, now is an opportune moment to take stock of the ways in which LLA can build climate resilience and the reasons it has received such limited levels of climate finance support.

Major adaptation funders – including dedicated climate funds, multilateral development banks, bilateral funders, and philanthropies – assert that one reason for the persistent shortfall is a lack of clear evidence that LLA approaches build long-term climate resilience. This independent report responds directly to their call for better and more nuanced evidence on the outcomes of LLA. We draw on evidence syntheses, preparatory dialogues, a two-day symposium (held 3–4 June 2026 in Bangkok, Thailand), written evidence summaries from 30 contributors working in the field, and online pre-and post-events involving dozens of others also working in the field.

We find relatively widespread and robust evidence that LLA approaches build adaptive capacity and generate a wide range of co-benefits, along with indications of their cost efficiency. At the same time, the evidence base suffers from some methodological weaknesses and gaps: a focus on short-term benefits over long-term resilience building, limited comparative analyses, and a critical lack of recognition and documentation of Indigenous and local knowledge on LLA outcomes. It is likely that unpublished evidence – particularly that which draws from Indigenous, local, and experiential ways of evaluating outcomes – is even more widespread.

We argue current evidence is sufficient to support efforts to increase financial support for LLA. At the same time, additional support is needed to further evidence generation and strengthen our collective understanding.

We identify and describe three key divides that inhibit the uptake of existing evidence into investment and decision-making processes of adaptation funders and host governments:

- A *divide in values* between a rights-based and returns-based framing of LLA
- A *divide in ways of knowing (epistemologies)*, as actors differently define and value evidence and outcomes

1 https://gca.org/programs/locally-led-adaptation/

- A *divide in practices*, in which project cycles, limited funding, and language barriers lead to the instrumentalization of evidence generation largely for compliance in reporting rather than the generation of knowledge

To fill key knowledge gaps and help bridge these three divides, we recommend:

- Funders and governments should draw on the existing body of evidence and local knowledge on LLA effectiveness. They should also support further evidence generation in a dual-track approach that meets their decision-making needs and those of communities.
- Researchers and practitioners should fill key knowledge gaps. They should conduct longitudinal and comparative studies, examine conditions for scaling and sustainability, and collate and synthesize unpublished evidence, particularly in collaboration with local and Indigenous communities.
- Front-runner funders and governments, in collaboration with communities and knowledge brokers, should build greater flexibility into their decision-making and evaluation frameworks and processes. For example, they should combine top-down metrics with bottom-up indicators that reflect local priorities, experiences and definitions of success.

Ultimately, evidence of LLA effectiveness is only one piece of a larger puzzle. Decision-making for adaptation and investments are rarely technical processes alone. Instead, decisions are shaped by funders' need to balance political interests and governments' willingness to devolve decision-making. Increasing financial support for vulnerable communities to take adaptation actions of their own initiative is as much about justice and empowerment as it is about outcomes. Effective LLA thus demands a meaningful devolution of decision-making power to local actors, including the power to define and evaluate their own measures of adaptation "success".

Background

Why focus on locally led adaptation?

For the purposes of this report, locally led adaptation (LLA) is defined as a process that enables local actors, including communities and local governments, to have decision-making power to prioritize, plan, design, implement and evaluate adaptation actions that affect them (Soanes et al., 2021). The concept of LLA is rooted in decades of research demonstrating the effectiveness of decentralized governance models, which shift decision-making power and control over resources downward from centralized authorities to local actors and organizations (Ostrom, 1990), as well as a recognition of the importance of local, traditional, and Indigenous knowledge systems (Berkes, 2017). Its core tenet is that, given the highly localized nature of climate impacts, local actors are best positioned to understand and respond effectively to the risks they face (Rahman et al., 2023). As such, it is understood to go beyond concepts such as "community-based adaptation", by emphasizing the importance of local agency rather than participatory approaches and consultation alone (Vincent, 2023).

LLA has also been strongly influenced by long-standing decolonial critiques of international development (for example, Escobar, 2011). It should thus be understood as part of a broader advocacy movement to challenge structural inequalities in the international financial architecture, including those that shape the design and distribution of development and climate finance (Roberts & Parks, 2006). Despite efforts at reform, most decisions about which countries and communities and what types of climate action should receive international funding continue to be made by actors in wealthy countries, who provide most of the funding, and by multilateral institutions that disburse it (Ciplet et al., 2015, 2022). Many lower-income countries also remain heavily in debt, constraining their financial capacity to invest in their own adaptation (UN Enviroment Programme, 2025).

Within this context, support for LLA signals an important power shift. Since 2021, more than 130 organizations and governments have endorsed the Eight Principles for Locally Led Adaptation of the Global Center on Adaptation,[2] indicating a growing commitment to empowering local actors to take adaptation action aligned with their own priorities and knowledge. Yet, this has not been accompanied by a matching shift in financial flows. Only between 10–17% of international climate finance supports adaptation at local levels – and even less of this funding is allocated directly to the control of local actors (Treichel et al., 2025; United Nations Environment Programme, 2023). In an increasingly unstable geopolitical environment, LLA is also competing with other urgent priorities, such as energy and national security, for international investment.

Why evidence on the outcomes of locally led adaptation?

Five years after the adoption of the LLA Principles, now is an opportune moment to enhance collective understanding of the different ways LLA can build climate resilience and deliver broader benefits to a wide range of communities – and to improve

2 https://gca.org/programs/locally-led-adaptation/

understanding about why it has yet to receive higher levels of climate finance support. Momentum is also growing among researchers, practitioners and policymakers to better understand and assess adaptation effectiveness at local, as well as national and global levels. Global assessments of progress on adaptation – such as the Global Goal on Adaptation and Global Stocktake under the UN Framework Convention on Climate Change (UNFCCC) and the regular assessment reports of the Intergovernmental Panel on Climate Change (IPCC) – also demand a clearer understanding of the role LLA plays in broader adaptation efforts.

Furthermore, improved evidence can enable increased financing for LLA. In June 2025, the Stockholm Environment Institute convened a group of adaptation funders to discuss collaboration to scale up financial support for LLA.[3] During the dialogue, funders highlighted the need for stronger, more nuanced evidence on the effectiveness of LLA approaches. They argued they need better evidence of outcomes to demonstrate that LLA works not only as a process – improving local participation, equity and legitimacy of adaptation – but also as a vehicle to deliver outcomes, providing sustainable socioeconomic benefits and strengthening communities' climate resilience in the long term (Browne et al., 2025). Such evidence would also help them advocate internally and externally (to national governments, for example) to support LLA and inform more equitable investment and design decisions (Lehtman & Tyldesley, 2026).

However, many in the LLA community challenged the assertion that such evidence is lacking (Wilton Park, 2025). They contend that evidence of outcomes is already widespread but it has not enabled financial and technical support to flow – either because it has not reached key decision-makers, or because the decision-makers who have received it have not acted on it (Coger et al., 2022; Global Center on Adaptation, 2025).

The evidence that the LLA research and practitioner community generates often relies on participatory processes, lived experience, qualitative data, storytelling and locally grounded ways of knowing. These are evidence types that decision-makers either do not view to be as reliable as other types of evidence – such as cost-benefit analysis, investment appraisals and multi-criteria decision analysis – that they routinely use to assess the credit worthiness or likely financial success of proposals. It therefore lacks the degree of credibility and comparability that funders and policymakers expect. It is evidence of a different nature, outside of their conventional decision-making metrics, or in a language or format that does not fit neatly into application forms or set evaluation procedures (Falzon, 2021).

Most controversially, some contend that the evidence is not recognized or valued simply because of who produces the knowledge: marginalized groups and the poor, who face ongoing discrimination and inequalities (Olazabal et al., 2021). Still others assert that vulnerable people – bearing the brunt of climate impacts that they did not cause – should be given carte blanche to use what limited resources they receive to invest in adapting and not be expected to siphon off funds to measure outcomes. They further argue that it is not the job of traditional or marginalized communities to

3 In collaboration with the World Bank, Asian Development Bank, UK Foreign, Commonwealth & Development Office, and Agence Française de Développement.

"perform adaptation success", provide a proof of concept or carry reporting burdens imposed by funders (Eriksen et al., 2021).

Finally, many perceive the barriers to LLA as fundamentally about power (Global Center on Adaptation, 2025). They argue that funders and governments are unwilling to devolve real decision-making and financial authority to local actors. They contend that better information will not increase the share of financing to LLA as long as those in power distrust communities to use resources responsibly and effectively.

Why this report?

This report, and the collective assessment process underpinning it, responds directly to adaptation funders' demand for improved evidence on the outcomes of LLA and the broader debate within the LLA community about the validity of this demand and how to respond to it. It also seeks to inform decision-making within host governments – those currently receiving or seeking international funding – who play a critical role in shaping the policy and regulatory environments in which LLA occurs. We aim to answer three key questions:

- What is the state of evidence on the outcomes of LLA?
- If evidence exists, why is it not taken up widely in the investment and decision-making processes of funders and governments?
- How can different actors (funders, governments, researchers, practitioners, and communities) strengthen evidence and improve uptake?

Following a description of methods, the report is organized into three primary sections responding to each of these questions. The next section (Section 2) presents a novel and rapid assessment of the state of evidence on outcomes of LLA. It demonstrates that there is already a strong rationale for investing in LLA, though some significant gaps in knowledge remain. Section 3 describes the key divides in values, epistemologies and practical procedures that inhibit the uptake of existing evidence into national and international investment and decision-making processes. Section 4 suggests steps all actors should take to fill key gaps in knowledge and bridge the substantial divides between LLA knowledge holders and producers and national and international decision-makers.

Methods and limitations

This report draws on two systematic evidence syntheses, targeted preparatory dialogues, a two-day symposium, written evidence summaries from 30 contributors working in the field, and online pre-and post-symposium events. Although it responds to a request from adaptation funders, it is an independent assessment.

Systematic evidence syntheses. Two global syntheses of evidence on the outcomes of LLA were prepared in advance of the symposium, where their key findings were presented. Though both are independent analyses intended to serve broader audiences, they were also timely to inform the discussions. They are:

- "Beyond the principles: Evidence of whether locally led adaptation works in practice" (Hassan et al., Forthcoming), a research report by the International Institute for Environment and Development (IIED). The report applies an evidence and impact framework to systematically map the strength of evidence on LLA process and impact, reviewing a corpus of 106 academic and grey literature documents.
- "Locally Led Adaptation builds adaptive capacity, delivers multi-sectoral benefits, and is cost effective: Results of a systematic evidence review" (Browne et al., Forthcoming), a World Bank Policy Research Paper. The paper identifies empirical evidence of outcomes of LLA approaches from 50 academic and grey literature publications, and documents them along 6 dimensions (effectiveness, social and economic co-benefits, cost efficiency, scaling, and sustainability).

Targeted preparatory dialogues. In advance of the symposium, SEI partnered with key organizations to conduct separate dialogues with adaptation funders, national governments, and community groups. The goal of these dialogues was to capture differing perspectives on the state of and need for evidence on the outcomes of LLA.

The first dialogue was held in partnership with the UK Foreign, Commonwealth & Development Office, with the Locally Led Adaptation Funders group on 24 March 2026. Representatives from nine multilateral and bilateral funders shared their views on the types of evidence needed to support LLA investment and program design. The second input was drawn from five sessions convened by a range of organizations during the 20th International Conference on Community-Based Adaptation to Climate Change in Manila, the Philippines, held 11–14 May 2026. These dialogues and activities focused on power dynamics and the role of diverse knowledge in LLA assessment and accountability. The final dialogue was held on 29 May 2026 in collaboration with the Asian Disaster Preparedness Centre. This roundtable included four representatives of South Asian and Southeast Asian governments and assessed their evidence needs from the perspective of policy and planning to support LLA in the Philippines, Bangladesh, Bhutan and Nepal. Findings from all three dialogues were captured in short summaries and shared with symposium participants in advance.

Call for submissions of evidence on LLA outcomes. In response to an open call to gather state-of-the-art approaches and evidence beyond the published literature, 211 proposals were received. Symposium participants were selected by the organizing committee following a robust screening procedure that focused on the merit of each applicant's evidence contribution and the overall representativeness of participants.

Merit was evaluated based on relevance, interdisciplinarity and contribution to knowledge. Representation was evaluated both in terms of actor type (such as geography, gender, career age, organization) and evidence type (such as methods used, outcomes examined, scale of analysis). Thirty participants from sixteen countries contributed, representing a wide range of LLA knowledge holders and producers.

Prior to the symposium, all participants submitted short summaries of their evidence contribution following a common template. Submissions were grouped into five themes: 1) Governance models and institutions; 2) Knowledge syntheses; 3) Co-benefits; 4) Scale up, replicability and sustainability, and 5) Indigenous and local knowledge. All summaries were shared with participants in advance, and they were encouraged to review the other submissions within their theme. These summaries, largely unpublished elsewhere, are integrated throughout this report to represent the diversity of evidence available, and they can be read in full in the accompanying appendix.

Symposium. This report draws heavily on discussions and activities held during the "Symposium on Strengthening Evidence on the Outcomes of Locally Led Adaptation," held 3–4 June 2026 in Bangkok, Thailand. The symposium convened a diverse group of LLA knowledge holders and producers to share findings, collectively assess the state of evidence, and chart a forward-looking agenda to strengthen the use of evidence to inform adaptation finance and decision-making. Convened by the Stockholm Environment Institute and the Adaptation Research Alliance, it was planned with the support of an organizing committee comprised of 10 additional research institutes and universities from across the world.[4]

Participants engaged in three knowledge co-production activities designed to inform this report. Activities were based on written summaries and other syntheses, with participants organized around tables following the five identified themes of evidence. The overall goal of the activities was to ensure a level playing field between different actors and the forms of knowledge they brought to the table, to enable a balanced, collective assessment of the state of evidence on LLA outcomes from a wide range of perspectives.

In the first activity, participants critically interrogated what the terms "evidence" and "outcomes" can mean to those involved in LLA decision-making. Drawing on the summaries from preparatory dialogues and their own experiences, they evaluated demands for evidence from the perspectives of funders, national governments, researchers, and communities. Reflecting on different types of evidence and outcomes, they assessed why certain types of knowledge are or are not accepted in decision-making (Figure 1). Participants next conducted a "collaborative evidence inventory", exchanging their evidence summaries. They then reflected on the perceived value and usability of different forms of evidence (such as academic and policy research, practice-based and participatory evidence, journalism, story-based and visual approaches). Finally, in a collective brainstorming exercise, participants identified barriers and key gaps in knowledge inhibiting uptake of existing evidence into

4 The organizing committee was led by SEI with representatives of the following organizations: the Adaptation Research Alliance, BRAC Europe, Caribbean Natural Resources Institute, Climate Analytics, International Institute for Environment and Development, Least Developed Countries Universities Consortium on Climate Change, PlanAdapt, SouthSouthNorth, The University of the West Indies, and World Resources Institute.

decision-making for different groups (Figure 2). They suggested ways different actors can contribute to filling gaps and overcoming divides. For each activity, rapporteurs captured reflections and differing perspectives in structured notes following a standard reporting template.

Figure 1. Symposium participants engage in the co-production exercise "What counts as evidence?"

Figure 2. Symposium participants engage in the "collaborative evidence gallery"

Online events. The symposium was supplemented by pre- and post-online events, which expanded opportunities to reflect on key questions for short-listed applicants. The 1-hour event on 29 May 2026 drew 27 participants, who shared reflections on the symposium objectives. On 17 June 2026, SEI presented preliminary findings and recommendations to 28 participants who then provided structured feedback in breakout groups and a plenary during a 2-hour event. Six online participants then provided additional written feedback via an online form.

Analysis. Based on discussions among the symposium organizing committee, the lead authors analysed and synthesized evidence inputs into the three sections below. The evidence assessment draws primarily on the evidence syntheses and symposium participants' evidence summaries, supplemented by symposium activities assessing existing evidence. The description of divisions draws primarily on preparatory dialogues and symposium activities focused on interrogating what counts as evidence. All inputs informed the development of recommendations, especially the collective brainstorming of symposium participants. Feedback from participants in online events challenged and strengthened all findings.

Limitations. This work represents a rapid, collective assessment of the state of evidence on outcomes of LLA, but it should not be understood as a global synthesis or stocktaking exercise. The evidence summaries included here are intended to illustrate the diversity of evidence available, but they are not comprehensive. The report's overall findings are, however, underpinned by two systematic evidence reviews. The collective assessment exercises conducted during the symposium were designed to draw on a diversity of perspectives, and balanced representation was carefully considered. Nevertheless, we recognize that a small group of actors can never fully represent the wide range of views across the LLA community and beyond.

State of the evidence

Strengths

Evidence on the outcomes of LLA is *relatively widespread and robust*. IIED's systematic review – which examines both process and outcomes in local adaptation literature – finds what it characterizes as robust evidence of impact in 23 sources. Evidence is strongest in some geographies (Latin America, Pacific and Oceania, and sub-Saharan Africa) and sectors (ecosystems and natural resource management and water) (Hassan et al., Forthcoming). The World Bank systematic review finds strong evidence of outcomes in 50 academic and grey literature sources (Browne et al., Forthcoming). Case studies dominate the literature, providing both breadth and depth of information. Furthermore, the published literature likely represents only a small fraction of available evidence. For example, an analysis by the Caribbean Natural Resources Institute identifies 199 LLA actions during a 5-year period (2021–2025) in 15 Caribbean nations alone – pointing to significantly greater depth of information beyond that which is formally documented (see Appendix 1.5 (Granderson et al.)).

***LLA strengthens adaptive capacity* across a range of geographies, sectors, and approaches.** The World Bank's systematic review finds strong evidence that LLA does improve knowledge and decision-making, supports development of new and diversification of existing livelihoods, and enhances access to key resources such as water (Browne et al., Forthcoming). This finding is further reinforced in symposium participants' evidence summaries (see, e.g., Appendix 1.6 (Harikishun et al.), 2.4 (Popfalushi & Zozulia), 3.1 (Gautam et al.), 3.6 (Sidiq), 4.5 (Nanda), 4.6 (Nibanpudi), 5.3 (Rahman), and 5.4 (Sharma)). For example, an evaluation from Green Climate Fund programs incorporating LLA principles finds that projects consistently build capacity among local actors in planning, proposal development, financial management, monitoring, and implementation (see Appendix 1.2 (Bentinck et al.)). An analysis of the Least Developed Countries Initiative for Effective Adaptation and Resilience (LIFE-AR) finds similar results (see Appendix 5.2 (Pertaub et al.)).

LLA *generates myriad social and economic co-benefits*. In addition to building adaptive capacity, LLA strengthens social capital and cohesion within communities, improves access to education and healthcare, increases household income and savings, and opens new economic opportunities, especially for women (Browne et al., Forthcoming). Evidence summaries reinforce LLA's role in strengthening social cohesion (see Appendix 2.1 (Akola), 2.2 (Kanji), 2.4 (Popfalushi & Zozulia), 2.5 (Roy), and 3.2 (Leck et al.)) and additionally point to LLA's role in delivering a range of ecological co-benefits (see Appendix 2.1 (Akola), 2.4 (Popfalushi & Zozulia) and 2.5 (Roy)). Further, there is substantial evidence that LLA improves equity where marginalized groups are meaningfully included in participatory processes, though local power dynamics are not always adequately addressed (Browne et al., Forthcoming; see also Appendix 1.1 (Benelli et al.) and 2.3 (Omil)).

***LLA is a cost-efficient investment*.** A smaller number of rigorous studies find relatively high ratios of return (Browne et al., Forthcoming), with the most rigorous estimate of a £4 return in community benefits for every £1 invested (Vardakoulias & Nicholles, 2014). Findings should be interpreted with caution, however, as they were conducted in a narrow set of communities and compared LLA approaches to "business-as-usual" scenarios rather than to non LLA approaches.

Weaknesses

Evidence on the outcomes of LLA is limited by some *methodological constraints*. Both academic and grey literatures rely heavily on case studies and pilots (Browne et al., Forthcoming; Hassan et al., Forthcoming), which limits generalizability across geographies and sectors. Though qualitative, quantitative, and mixed-methods are all employed to examine outcomes, much of the evidence published relies on descriptive and perception-based assessments, with limited triangulation (Browne et al., Forthcoming; Hassan et al., Forthcoming). Overall, evidence of LLA is skewed toward evaluating process rather than outcomes (Hassan et al., Forthcoming), with local participation and social inclusion often treated as proxies for effectiveness (see Appendix 1.1 (Benelli et al.)). There is no consensus about how to disentangle process, outputs, and outcomes, or whether doing so is appropriate at all. For many LLA practitioners, the process is as important as the outcomes and the two should be evaluated in tandem (e.g., as in Hassan et al., Forthcoming; see also Appendix 3.3 (Mfitumukiza), 3.4 (Moopelo), 3.7 (Siraj et al.), 3.8 (Venkataramani)).

Existing evidence largely measures the short-term benefits of LLA *rather than its contributions to long-term resilience building*. Outcomes are often measured during or at the end of short project cycles (Browne et al., Forthcoming; see also Appendix 1.2 (Benelli et al.) and 5.2 (Pichon et al.)). Symposium participants observed they rarely had sufficient time or budget for longitudinal impact assessments within project implementation periods. The lack of longitudinal studies and long-term data limits understanding of how different approaches reduce communities' and households' vulnerability and exposure to risk over time (Browne et al., Forthcoming). It remains unclear whether strengthened adaptive capacity necessarily leads to more effective adaptation action (Brown & Westaway, 2011). Limits to measuring long-term impact are not unique to LLA, but rather reflect broader methodological challenges in measuring adaptation effectiveness over longer time scales (Dilling et al., 2019).

Furthermore, no known studies *directly compare the outcomes of LLA approaches to more centrally planned and implemented adaptation efforts* (Browne et al., Forthcoming). Establishing counterfactuals has proven methodologically challenging, as LLA is best understood as a spectrum rather than a single approach (see Appendix 1.7 (Joshi & Nisi)). Comparison between top-down and locally led interventions requires recognition of the contextual nature of LLA and must reflect how benefits of more participatory processes measure against centrally planned interventions. This is a particular weakness of existing cost efficiency studies, which compare LLA to "business as usual" or lack of investment in adaptation rather than alternative approaches (e.g., Vardakoulias & Nicholles, 2014).

The lack of comparison contributes to challenges in articulating LLA's value add or "business case". The potential role of the private sector, including small and medium-sized enterprises (SMEs), remains poorly explored (see Appendix 1.4 (Gakwaya), 5.1 (Panda & Topi)), weakening efforts to build climate resilience into the activities and outputs of SMEs, generate sustainable financial revenue streams, and create local jobs with positive spillover effects (Dupar et al., 2024).

Gaps

There are *key geographical, sectoral and language gaps*. Evidence is weak in the published literature in Europe, the Middle East and North Africa, and East and Central Asia (Hassan et al., Forthcoming). There is a strong overall bias toward English-language literature and geographies, as is common in peer-reviewed literature, contributing to key blind spots in the evidence base (Hassan et al., Forthcoming; see also Appendix 1.5 (Granderson et al.)). Key sectoral gaps include health, education, and extreme heat (Hassan et al., Forthcoming; see also Appendix 1.5 (Granderson et al.)). Symposium participants further observed a heavy agricultural focus, with a notable absence of evidence of LLA outcomes in urban contexts.

There is a *critical lack of recognition and documentation of Indigenous and local knowledge on LLA outcomes*. North America is one key exception where Indigenous approaches are well documented (Hassan et al., Forthcoming). Documented evidence tends to focus on deficits and vulnerabilities rather than capabilities, strengths, and ongoing adaptation action – including autonomous adaptation. This vital gap reflects broader challenges in recognizing and ethically integrating Indigenous and local knowledge into published literature. Symposium evidence summaries illustrate the wealth of knowledge and diverse means of understanding and evaluating outcomes of LLA grounded in local and Indigenous ways of knowing (see Appendix 4.1 (Ferdous), 4.2 (Ginting), 4.3 (Kyaw), 4.4 (Lechón), 4.5 (Nanda), 4.6 (Nibanupudi), 4.7 (Singh et al.), and 4.5 (Sonone)). This knowledge could further inform adaptation interventions and reduce reliance on intermediaries and "experts" in designing programs in the absence of direct inputs from communities.

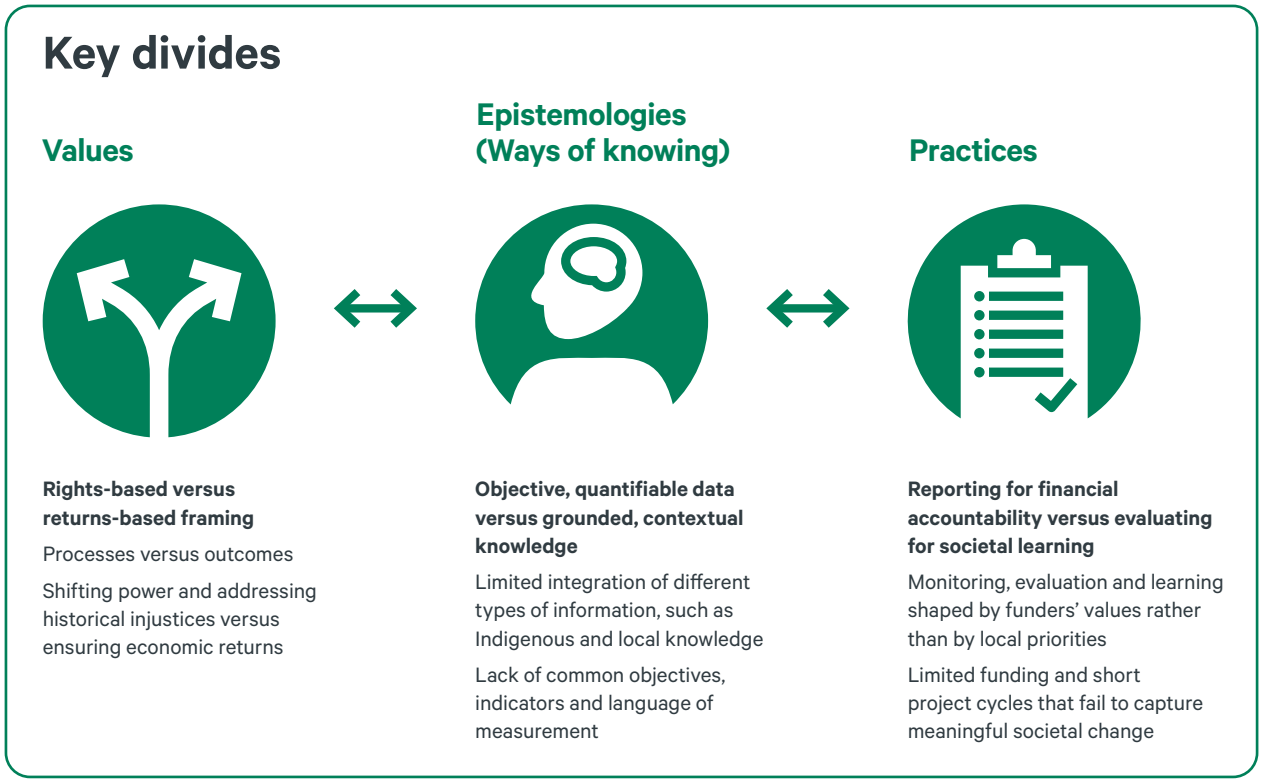
***Evidence of the scalability, replicability and sustainability* of LLA initiatives is limited and inconclusive** (Browne et al., Forthcoming; see also Appendix 1.2 (Benelli et al.)). In terms of scalability and replicability, syntheses have uncovered few documented cases of success (Browne et al., Forthcoming). The context specificity of LLA may present an inherent limit: if LLA interventions are replicated through standardized designs, can they still be considered locally led? Further, though scalability has long been equated with impact, the science behind it shows how difficult it is and that it requires long-term engagement and financial backing (Schut et al., 2020).

Likewise, sustainability poses a challenge, with few examples of LLA sustaining once external funding is exhausted or withdrawn. The few successful cases point to a potentially important role for complementarity. That is, up-scaling and sustaining have been enabled by broader partnerships and/or integration of LLA with initiatives and investments undertaken at higher levels of investment (Browne et al., Forthcoming). However, little is known about the conditions under which LLA scales and sustains, or about the role of sequencing with more centralized adaptation initiatives.

Three key divides preventing evidence uptake

If evidence that LLA works to build climate resilience is relatively robust and widespread, why has it not been taken up in financier and government decision-making? Drawing on preparatory dialogues and symposium co-production activities, we identify three key divisions – based on values, epistemologies (ways of knowing), and practical procedures – between LLA knowledge holders and producers and these decision-makers.

Figure 3. Three divides inhibiting uptake of existing evidence on LLA outcomes



A values divide: rights-based versus returns-based framing

The values divide is between a rights-based and returns-based framing of LLA. Many LLA proponents and practitioners at grassroots levels argue that investment in LLA is the right of vulnerable countries and communities. This rationale is grounded in the basic premise of climate justice: Those least responsible for climate change bear the greatest burdens of its impacts, and thus they should not have to bear the costs of adapting. The UN Framework Convention on Climate Change and the Paris Agreement have established that wealthy countries are obligated to provide support for climate adaptation to the most vulnerable. Adaptation finance, including for LLA, has thus been established as a right. Already burdened with the task of adapting to climate change, vulnerable people should not be further expected to demonstrate the effectiveness of that adaptation to funders. To many of its proponents, LLA is foremost about

addressing historical injustices, overcoming structural inequalities, and empowering local communities. Generating and evaluating impact are secondary matters – or even irrelevant – only adding burdens and siphoning off already inadequate funds.

In contrast, funders – and to a lesser extent national governments – view LLA primarily as an investment. They expect this investment to yield a return in short- and long-term benefits, in many cases not only for the investors and the communities in which they are investing but also for the broader economy and society. Increasingly, they must rationalize investment in LLA in comparison to other potential investments, as narrowing tax bases and bourgeoning public debt servicing erode economies, thus increasing the gaps expected to be met by international climate and development finance. Additionally, since most international finance for LLA continues to be drawn from public funds, funders and governments remain under pressure to demonstrate to taxpayers, and in some cases shareholders and governing boards, that limited resources are used prudently and effectively. Private finance, though a small overall contributor to LLA, usually must be motivated by a clear "return on investment".

These decisions are often not purely technical, as funders and governments balance political considerations, such as those of various contributors and recipients of funding. Governments also play an important role in establishing the institutional arrangements that do or do not enable a meaningful devolution of decision-making power and resources to local actors.

Different actors can thus share a common aim – to increase financial support for LLA – while motivated by profoundly different rationales. This misalignment explains why some LLA proponents argue that communities and knowledge holders should resist the demand for evidence of effectiveness. Accommodating these demands, they assert, risks sacrificing the rights-based foundation on which international support for LLA rests.

A divide in ways of knowing (different epistemologies)

Broadly, funders and governments have fundamentally different ways of knowing (epistemologies) than LLA knowledge holders and producers. As a result, these actors understand, value and define evidence and even outcomes differently – and in ways that influence whether and how knowledge is taken up in decision-making.

Funders and governments tend to value what they perceive to be objective evidence, generated through rigorous and scientific methods. Outcomes should be measured via counterfactuals, cost-benefit analysis, impact evaluations, and other tools of statistical comparison, such as randomized controlled trials, which are widely considered the "gold standard" of evidence. They value standardized, quantitative, and economic metrics and indicators, such as return on investment, that can be easily reported and compared. To provide funding at scale, many funders, particularly multilateral development banks, must provide generalizable evidence to shareholders that demonstrates an intervention is more beneficial than other options. Though they often recognize the value of qualitative methods, they tend to view such methods as insufficient on their own.

In contrast, though LLA knowledge holders and producers vary widely, they tend to value evidence that is co-produced or generated through participatory processes. Often, such evidence is qualitative, grounded in Indigenous and local ways of knowing, and shared through narrative, storytelling and other creative approaches. It is informed by local know-how, experiences that have played out over generations, and a street-smart-like quality about what moves people to get things done in a certain place. The value of evidence lies in its context specificity, as it is directly drawn from and can inform local decision-making.

The absence of common objectives, methods, and even language of measurement, and the dominance of Western and scientific epistemologies among funders and governments, mean that much of the knowledge produced on the outcomes of LLA is not recognized or taken up in decision-making at national and global levels. Indigenous, local, and experiential knowledge sources are often treated as supplementary rather than as legitimate sources of insight in their own right. This can narrow the understanding of outcomes and reinforce a bias towards indicators that are easier to measure, even when they do not fully capture the processes and outcomes that communities value most. Such a divide is not unique to LLA but is particularly challenging given the highly contextual nature of local adaptation.

There are some signs of a growing openness among funders and governments to alternative ways of measuring outcomes. For example, challenges have been made to gross domestic product (GDP) as a universal measure (Costanza et al., 2014). Efforts have also been made to integrate local and Indigenous knowledge into the reports of the Intergovernmental Panel on Climate Change (Carmona et al., 2026). Yet, a lack of systematic knowledge brokering between actors, made more difficult by the values divide, hampers efforts to integrate different knowledge types and the work of existing knowledge-brokering mechanisms, such as the introduction of knowledge co-production methods.

Divides in practices: project cycles and data collection

These fundamental divides in values and epistemologies in turn underpin more practical challenges in generating evidence for decision-making. The dominant, project-based approach to LLA provides financing for short, one-to-three-year cycles. In general, allocations to support monitoring, learning, and evaluation (MEL) and other institutional systems for knowledge generation are quite limited. In combination, such practices constrain opportunities for systematic and longitudinal evaluation. Generating the type of standardized evidence funders and governments value requires time, resources and expertise. Yet, outside of projects, there is limited funding for independent data collection and learning. Monitoring and evaluation are rarely locally led, and the working languages of funders often do not accord with the vernacular languages spoken in many communities. Channels to bring locally produced evidence into global debates and assessments are weak.

As a result, data collection is often instrumentalized – that is, it tends to focus on compliance with funder requirements rather than on capturing changes that are important to communities. The incentive is often to prioritize what is measurable rather

than what is most meaningful to communities. Evidence is reported in a way that highlights successes, rather than seen as an opportunity to learn and document what did not work and what needs to change. A lack of data also limits transparency and accountability within communities and hampers the depth of understanding needed to scale up measures that show promise.

Recommendations

This report rapidly brings together insights with a clear purpose in mind: bridging gaps that hinder the flow of finance and support to vulnerable populations now bearing the brunt of climate impacts for which they are not responsible. Funds have been set up specifically for this purpose, and all efforts should be made to channel finance effectively, sustainably, and in a manner that can support collective learning for LLA action.

In this unprecedented time of precarity, there is still much to understand about how to best adapt to a changing climate, and knowledge and evidence about what to do and what to avoid will almost certainly evolve. However, the inherent limitations of evidence should not be a reason to doubt investment in LLA. By contrast, limitations re-emphasize the need to continue exploring its strengths, successes and challenges.

We make the following recommendations:

For funders and governments:

Funders and governments should recognize and use existing evidence and design more flexible approaches to LLA data collection. Despite divides over how best to measure outcomes, a solid base of robust evidence from a range of geographies, sectors and approaches already exists on LLA. The evidence includes insights on building vulnerable communities' capacity to adapt, generating positive social and economic co-benefits, and securing cost-efficient investments. Funders should be more flexible and creative in capturing the benefits of LLA, including co-benefits and impacts beyond current sector- and intervention-specific performance metrics. They should consider how to reform or create specific modalities for funding LLA that allow them to bypass other institutionally limiting procedures – such as standardized MEL frameworks – and accommodate bottom-up indicators from grantees (see final recommendation below). Standardized but flexible MEL frameworks can be used to generate the large-N (large sample sizes and cases) and comparative analyses funders seek.

Funders and governments should fund improved research and evaluation to serve both their decision-making needs and those of communities. All actors have a role to play in strengthening LLA evidence systems. However, funders and governments have a particularly important responsibility because they shape the incentives, methodologies and forms of evidence that become recognized and valued. Funders should support a dual-track approach: One track should satisfy their demand for comparable, quantified evidence. A second track should support and integrate participatory, context-specific, and Indigenous and local knowledge-inclusive measurement that does not impose extractive reporting requirements.

Under the first track, funders should facilitate collection and access to data that enable generalizable, quantified and independent evidence generation on LLA outcomes. This should include support for longitudinal and comparative studies of LLA's contributions to long-term resilience building, which are difficult to undertake within the current project-based model. They should also invest in improved understanding of replication and sustainability and their potential trade-offs for LLA interventions. This work should

proceed within already funded, large-scale LLA programs, such as the Least Developed Countries Initiative for Adaptation and Resilience, and the Financing Locally Led Climate Action program in Kenya, supported by the World Bank, Denmark, Sweden, the Netherlands and KfW Development Bank.

At the same time, endorsing LLA principles means endorsing the idea that local actors should define and evaluate their own outcomes. Under the second track, funders should support evidence generation that serves communities and is useful for local level practitioners. This requires investing in long-term organizational capabilities of individuals and communities to conduct MEL, for example, through the co-development of locally led monitoring systems. It also requires recognizing that communities are not monolithic entities. MEL processes thus must respond to the values and priorities of different segments of each community. As adaptation is fundamentally a process of learning and responding to evolving risks, evidence generated by and for communities will strengthen local decision-making and enable learning and adaptive management. It will also improve transparency and accountability within communities.

Governments should play a proactive role in ensuring that evidence on the outcomes of LLA is systematically synthesized, incorporated into national adaptation planning and reporting, and reflected in global adaptation assessments. This includes integrating evidence from research syntheses, program evaluations and community-generated knowledge into key policy channels: National Adaptation Plans, Adaptation Communications, Biennial Transparency Reports and national MEL systems. Such efforts are needed to inform the Global Goal on Adaptation and the Global Stocktake under the UN Framework Convention on Climate Change (UNFCCC). Governments should also support collaboration between researchers, practitioners, and national institutions to ensure that robust evidence is synthesized in forms that are accessible and useful for the assessments reports of the Intergovernmental Panel on Climate Change (IPCC).

For researchers and practitioners:

Researchers and practitioners should leverage partnerships to build on the existing evidence base, fill key knowledge gaps, and package LLA evidence for uptake in national and global assessment processes. As demonstrated by the wealth of evidence unearthed by this report's call for open proposals, communities and local organizations are already taking substantial steps to generate knowledge on LLA outcomes. Much of this is not available in the published, English-language literature. To overcome biases and expand the knowledge base, researchers and practitioners should undertake targeted efforts to address geographical, sectoral and language gaps. For example, researchers and practitioners should coordinate regional and/or global stocktakings of LLA outcomes. Further research is also needed to define characteristics of successful LLA up-scaling, including the institutional arrangements and governance practices that enable approaches to be adapted and sustained across contexts.

Findings should be synthesized and formatted for uptake in national and global assessment processes, including the Global Goal on Adaptation, Global Stocktake

and IPCC. Such research and policy engagement efforts can be coordinated through existing platforms, such as the LLA Community of Practice and the Adaptation Research Alliance.

Researchers and practitioners should translate and collate Indigenous and local knowledge on LLA outcomes in partnership with local actors, communities and Indigenous Peoples. As case studies across the world suggest, Indigenous and local knowledge is widely used to inform and evaluate local adaptation actions, yet these efforts remain under-recognized and under-documented. Equitable partnerships and co-productions processes are needed to consolidate this knowledge into formats that actors across the globe can learn from and use to evidence best practices. Communities must be recognized as equal knowledge partners rather than as merely sources of data. They must be meaningfully involved in defining research questions, interpreting findings, owning knowledge products, and benefiting from the resulting evidence. As such, collation of Indigenous and local knowledge requires significant investment and should be coupled with the investments in long-term organizational capabilities at local levels. Because this challenge is not unique to generating evidence on LLA, researchers and practitioners should learn from and align with parallel processes, including ongoing efforts to integrate Indigenous and local knowledge into the 7th Assessment Report of the Intergovernmental Panel on Climate Change (IPCC).

For funders, governments, researchers and practitioners:

Funders, governments, researchers and practitioners should undertake targeted efforts to enable greater flexibility in the decision-making practices and evaluation frameworks and processes used by funders and governments. On the one hand, there are indications that some funders and governments increasingly recognize and value alternative ways of understanding evidence and LLA outcomes. On the other hand, Indigenous, local and experiential knowledge should not only be incorporated into existing evidence systems but should also be used to help reshape how evidence itself is understood and evaluated. To capitalize on these opportunities, front-runner funders and governments should work in collaboration with communities and accountable knowledge brokers to combine top-down metrics with bottom-up indicators that reflect local priorities, experiences and definitions of success. Such approaches will strengthen LLA evidence generation while enabling more community-legible and relevant results. This process will look different for different funders and governments. Efforts could begin within existing projects and programs, such as the Reversing the Flow program,[5] funded by the Netherlands Enterprise Agency, and the initiatives of the Green Climate Fund[6] to increase its support for LLA. Results should be disseminated to inform and encourage others. Further support should be provided by dialogues to bridge the deeper divides in values and epistemologies that have been barriers to advancing LLA.

5 https://english.rvo.nl/subsidies-financing/rtf
6 https://www.greenclimate.fund/portfolio/areas-of-work/locally-led-climate-action

References

Berkes, F. (2017). *Sacred ecology*. Routledge.

Brown, K., & Westaway, E. (2011). Agency, capacity, and resilience to environmental change: Lessons from human development, well-being, and disasters. *Annual Review of Environment and Resources*, *36*(1), 321–342.

Browne, K. E., Elhorr, J., & Tenzing, J. (Forthcoming). *Locally led adaptation builds adaptive capacity, delivers multi-sectoral benefits, and is cost effective: Results of a systematic evidence review* [Social Policy Research Paper]. World Bank.

Browne, K., El-Horr, J., Parviainen, J., & Tenzing, J. (2025). *Fostering complementarity: How development and climate financiers can scale up locally led adaptation*. Stockholm Environment Institute. https://doi.org/10.51414/sei2025.041

Carmona, R., Wong-Pérez, K., & Nisi, N. (2026). *Engaging meaningfully with Indigenous knowledges to transform IPCC assessments*. International Institute for Environment and Development. iied.org/22734iied

Ciplet, D., Falzon, D., Uri, I., Robinson, S., Weikmans, R., & Roberts, J. T. (2022). The unequal geographies of climate finance: Climate injustice and dependency in the world system. *Political Geography*, *99*, 102769. https://doi.org/10.1016/j.polgeo.2022.102769

Ciplet, D., Roberts, J. T., & Khan, M. R. (2015). *Power in a warming world: The new global politics of climate change and the remaking of environmental inequality*. The MIT Press. https://doi.org/10.7551/mitpress/9780262029612.001.0001

Coger, T., Dinshaw, A., Tye, S., Kratzer, B., Thazin Aung, M., Cunningham, E., Ramkissoon, C., Gupta, S., Bodrud-Doza, Md., Karamallis, A., Mbewe, S., Granderson, A., Dolcemascolo, G., Tewary, A., Mirza, A., & Carthy, A. (2022). *Locally Led Adaptation: From Principles to Practice* [Working paper]. World Resources Institute. https://doi.org/10.46830/wriwp.21.00142

Costanza, R., Kubiszewski, I., Giovannini, E., Lovins, H., McGlade, J., Pickett, K., Ragnarsdottir, K. V., Roberts, D., De Vogli, R., & Wilkinson, R. (2014). Development: Time to leave GDP behind. *Nature*, *505*, 283–285. https://doi.org/https://doi.org/10.1038/505283a

Dilling, L., Prakash, A., Zommers, Z., Ahmad, F., Singh, N., De Wit, S., Nalau, J., Daly, M., & Bowman, K. (2019). Is adaptation success a flawed concept? *Nature Climate Change*, *9*(8), 572–574. https://doi.org/10.1038/s41558-019-0539-0

Dupar, M., Tan, E., Baker, E., Cumming, R., Moosa, S., & Owings, L. (2024). *Empowering women in just transitions: Insights from the GLOW programme*. ODI, SouthSouthNorth, and the Climate Development Knowledge Network.

Eriksen, S., Schipper, E. L. F., Scoville-Simonds, M., Vincent, K., Adam, H. N., Brooks, N., Harding, B., Khatri, D., Lenaerts, L., Liverman, D., Mills-Novoa, M., Mosberg, M., Movik, S., Muok, B., Nightingale, A., Ojha, H., Sygna, L., Taylor, M., Vogel, C., & West, J. J. (2021). Adaptation interventions and their effect on vulnerability in developing countries: Help, hindrance or irrelevance? *World Development*, *141*, 105383. https://doi.org/10.1016/j.worlddev.2020.105383

Escobar, A. (2011). *Encountering development: The making and unmaking of the Third World* (Vol. 1–1). Princeton University Press.

Falzon, D. (2021). Expertise and exclusivity in adaptation decision-making. *Current Opinion in Environmental Sustainability*, *51*, 95–100. https://doi.org/10.1016/j.cosust.2021.03.016

Global Center on Adaptation. (2025). *Stories of Resilience: Lessons from Local Adaptation Practice*.

Hassan, A., Mitchell, P., & Acuda, A. (Forthcoming). *Beyond the principles: Evidence of whether locally led adaptation works in practice*. International Institute for Environment and Development.

Lehtman, S., & Tyldesley, S. (2026). *Pathways to locally led adaptation – Lessons for effective climate resilience finance*. Zurich Climate Resilience Alliance.

Olazabal, M., Chu, E., Castán Broto, V., & Patterson, J. (2021). Subaltern forms of knowledge are required to boost local adaptation. *One Earth*, *4*(6), 828–838. https://doi.org/10.1016/j.oneear.2021.05.006

Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge University Press.

Rahman, M. F., Falzon, D., Robinson, S., Kuhl, L., Westoby, R., Omukuti, J., Schipper, E. L. F., McNamara, K. E., Resurrección, B. P., Mfitumukiza, D., & Nadiruzzaman, Md. (2023). Locally led adaptation: Promise, pitfalls, and possibilities. *Ambio*, *52*(10), 1543–1557. https://doi.org/10.1007/s13280-023-01884-7

Roberts, J. T., & Parks, B. (2006). *A climate of injustice: Global inequality, north-south politics, and climate policy*. The MIT Press.

Schut, M., Leeuwis, C., & Thiele, G. (2020). Science of scaling: Understanding and guiding the scaling of innovation for societal outcomes. *Agricultural Systems*, *184*, 102908. https://doi.org/10.1016/j.agsy.2020.102908

Soanes, M., Bahadur, A., Shakya, C., Smith, B., Patel, S., Coger, T., Dinshaw, A., Patel, S., Huq, S., Musa, M., Rahman, F., Gupta, S., Dolcemascolo, G., & Mann, T. (2021). *Principles for locally led adaptation: A call to action*. International Institute for Environment and Development.

Treichel, P., Joshi, R., Taylor, E. M., Ridout, M., Mitchell, P., & Acuda, A. (2025). *Locally implemented or locally led? Tracking finance for community climate action* [Issue paper]. IIED. https://www.iied.org/22674iied

United Nations Environment Programme. (2025). *Adaptation Gap Report 2025: Running on empty. The world is gearing up for climate resilience – Without the money to get there*. https://wedocs.unep.org/20.500.11822/48798

United Nations Environment Programme. (2023). *Adaptation Gap Report 2023: Underfinanced. Underprepared. Inadequate investment and planning on climate adaptation leaves world exposed*. https://doi.org/10.59117/20.500.11822/43796

Vardakoulias, O., & Nicholles, N. (2014). *Managing uncertainty: An economic evaluation of community-based adaptation in Dakoro, Niger*. New Economics Foundation. https://www.nefconsulting.com/wp-content/uploads/2024/10/Managing-Uncertainty_CARE_NEFC_FINAL-for-publishing.pdf

Vincent, K. (2023). Development geography II: Community-based adaptation and locally-led adaptation. *Progress in Human Geography*, *47*(4), 604–612. https://doi.org/10.1177/03091325231166076

Wilton Park (2025). *Report: Achieving scale and sustainability: An action plan for implementing locally led adaptation*. In association with the UK Foreign, Commonwealth and Development Office. https://www.wiltonpark.org.uk/app/uploads/2025/11/Report-Locally-Led-Adaptation-Final-0711.pdf

Appendix

This appendix presents summaries of submissions accepted for the Symposium on Strengthening the Evidence on the Outcomes of Locally Led Adaptation, held 3–4 June, 2026, in Bangkok, Thailand.

The contents of the appendix are summaries of initiatives on locally led adaptation that were created by those invited to participate in the symposium. They summed up the initiatives using a form that asked for key aspects, including underpinning financial levers, main outcomes, and lessons for others.

Note: The submissions are presented largely as submitted. The contents are the responsibility of the individual contributors and were not subject to peer review.

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1. EVIDENCE SYNTHESES

1.1 **Child-centred locally led adaptation** – Benelli, P. et al.

Summary: Save the Children reviewed internal and external local led adaptation (LLA) evidence – leading it to develop an approach and a monitoring, evaluation, accountability and learning (MEAL) framework for child-centred LLA; and to plan to pilot these and advocate for uptake with funders.

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Web address: http://resourcecentre.savethechildren.net/article/locally-led-adaptation

Key organizations: Save the Children

About the initiative: Save the Children has conducted an evidence review – with a focus on internal reports and evaluations – on LLA components in programs. It is developing an LLA approach with a focus on children's leadership and participation, for uptake and scale up within and beyond the organization. This includes developing practical, concrete guidance and establishing a monitoring, evaluation, accountability and learning (MEAL) framework. Child-centred Locally Led Adaptation (CcLLA) is a structured, yet flexible, process for integrating children's perspectives and needs into adaptation planning, design, MEAL, and advocacy. CcLLA is rooted in the globally endorsed LLA Principles and aligns with human rights-based and child rights principles.

The guidance will begin to be tested through pilots in existing LLA-type projects in the Save the Children portfolio, including Green Climate Fund (GCF)-funded ones, as well as through pilots led by civil society organizations (CSOs). The evidence raised will, in turn, be used to influence key stakeholders on adoption of LLA principles for child-centred adaptation. An Advisory Group – with representation of CSOs from Indonesia, Nepal, Malawi, Palestine, and Guatemala, all compensated for their time – provides expertise and experience to ensure that CcLLA reflects the understanding and evidence-based practice of CSOs, and alignment with their preferred partnership models. The Advisory Group provides inputs and reviews the programmatic guidance and resources.

The pilots will take place between August 2026 and December 2027.

Financial levers: Save the Children is conducting this work under a consortium of 10 organizations headed by the International Institute for Environment and Development (IIED), with funds from the Government of the Netherlands. The budget for Save the Children as consortium partner is EUR 1 million. The project lasts five years and comprises two phases: the Inception Phase, now completed, involved project design with local input, while the current Implementation Phase focuses on piloting the guidance and MEAL framework, documenting adaptation actions, data collection and analysis, capacity building, and advocacy for LLA practices.

Key outcomes: We reviewed evidence from 69 climate adaptation documents (2021–2025), 44 of which internal, covering 44 countries. We assessed completed and ongoing programs, examining which LLA principles they incorporated, the extent of uptake, and performance across key evaluative dimensions.

The evidence consisted mainly of project evaluations, reports, case studies, and key informant interviews. It assessed interventions against six dimensions.

Effectiveness: Local participation and social inclusion were often treated as proxies of effectiveness, and some programs incorporating LLA principles contributed to improved resilience, livelihoods, and adaptive behaviours.

Acceptability: Strong local participation, ownership, and governance were associated with high acceptability.

Equity: Improved where marginalized groups were meaningfully included, though local power dynamics were not always adequately addressed.

Risk, scalability and cost-effectiveness: Evidence remains limited and inconclusive.

Outcomes were measured through internal monitoring, project evaluations, and external studies, typically led by INGOs with local input. Mixed-method approaches were used but often relied on descriptive or perception-based assessments. Timeframes were short (aligned to project cycles), with many interventions still underway. Evidence on children's engagement and leadership was minimal.

This work highlights how our traditional approaches to evidence generation do not align well with LLA, and how LLA may require a different way of thinking about evidence. The symposium will inform Save the Children thinking and guidance on which monitoring and evaluation approaches can be aligned with LLA's context-driven and locally defined nature.

EVIDENCE SYNTHESES

1.2 **Rapid evaluation of selected Green Climate Fund-supported projects** – Bentinck, J. et al.

Summary: This work provides a rapid evaluation of selected Green Climate Fund-supported projects with locally led adaptation (LLA) features – assessing devolved decision-making and finance, local ownership, and strengthened local capacity.

Contributors: Johan Bentinck, Learning and Knowledge Specialist; Jihye Shin, Monitoring and Evaluation Consultant; Prashanth Kotturi, Evaluation and Capacity Development Manager; Ramona Calin, Locally Led Climate Action Specialist; and Alyssa Holganza. Locally Led Adaptation Consultant. All Green Climate Fund.

Web address: https://www.greenclimate.fund/theme/locally-led-climate-action

Key organizations: The GCF does not directly implement projects. In its business model, Accredited Entities (AEs) are responsible for design of projects and their implementation. One key investment criterion is country ownership, which means that government agencies often play a key role in governance and implementation of projects (e.g. chairing steering committees and/or are co-implementing as executing entities).

Key partners for LLA-oriented projects are as far as the sample of the evaluation are:

AEs in sample of projects: National: Environment Investment Fund (Namibia); Department of Energy Antigua (Antigua and Barbuda), International: International Union for Conservation of Nature (IUCN), Save the Children (Australia); Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), International Fund for Agricultural Development (IFAD), Pacific Community (SPC), Inter-American Development Bank (IDB).

Government agencies and civil society organizations, including representation of indigenous peoples (national and sub-national).

About the initiative: This initiative is a rapid evaluation by the Green Climate Fund (GCF) Secretariat of how LLA is reflected in GCF-funded projects that were completed or have been implemented in the last 10 years. It seeks to generate evidence and lessons to inform future GCF programming, especially on the GCF Locally Led Climate Action parameters: 1) devolved decision-making and finance, 2) local ownership, and 3) sustained local capacity building. It does so through a qualitative assessment of 10 purposively selected projects drawn from 142 projects in the GCF portfolio that hit one or more of the LLCA parameters.

The work focuses on whether projects enable local actors to influence decisions, access and manage finance, shape priorities across the project cycle, and strengthen local institutions and capacities over time. While many projects include participatory design, community engagement, and capacity-building, genuinely locally led features are strong where local actors have authority, flexible support, and a meaningful role in implementation.

The context spans multiple regions, mainly adaptation and cross-cutting projects in Africa, Asia and Pacific, Latin America and the Caribbean, and small island contexts. The projects involve Accredited Entities, government institutions, local organizations, communities, and Indigenous Peoples and marginalized groups.

The projects address climate risks such as drought, floods, ecosystem degradation, water insecurity, and livelihood vulnerability.

Financial levers: The evaluation was conducted by the GCF Secretariat's own staff in 2025, and was requested by the Office of the Chief Investment Officer. It covered grant- and loan-funded field-based projects, with co-finance and in-kind contributions from countries. The evaluation examined projects financed through GCF modalities such as enhanced direct access (EDA) and simplified approval processes (SAP).

Key outcomes: The evidence comes from triangulating document review, portfolio analysis, remote interviews with Accredited Entities, and synthesis of interim and final evaluations. It captures three core dimensions of LLA: 1) the extent to which decision-making and finance are devolved, 2) the degree of sustained local ownership across the project cycle, and 3) whether local institutions and communities build practical capacity to lead climate action.

The evaluation finds that the strongest and most consistent evidence relates to capacity building, which is well documented across sampled projects and has supported local actors in planning, proposal development, financial management, monitoring, and implementation. Some projects also show gains in inclusive participation, administrative reliability, and women's engagement in local decision-making and project implementation.

The evidence shows that meaningful devolution of authority and finance remains limited in many cases, with participation often confined to consultation or specific project stages and strategic control retained by national institutions, intermediaries, or centralized panels. Outcomes were assessed primarily through qualitative analysis rather than standardized metrics, because LLCA-specific indicators are not yet well developed in GCF systems and project logframes emphasize activities and outputs rather than shifts in agency, control, or long-term institutional change.

Positive findings were that capacity building is common and often useful; the main limitation was that many projects are better characterized as locally implemented rather than truly locally led. It was further observed that most projects demonstrated strong climate results and high effectiveness of delivery, although that was beyond the scope of the analysis.

Lessons for others: A key lesson is that measuring locally led adaptation outcomes requires looking beyond activities, outputs, and participation to whether authority, resources, and practical decision-making actually shift to local actors over time. This evaluation found that standard project monitoring often captures delivery more easily than agency, accountability, or durable institutional change.

It also showed that local ownership, devolved finance, and capacity are interdependent: progress in one area is difficult to sustain without progress in the others. One-off training is rarely enough; continued, practice-based support is more likely to strengthen lasting local capacity. Methods and indicators cannot be applied mechanically, because governance systems, intermediary roles, and social context differ widely. The findings are likely to remain relevant because they point to structural issues in delivery and measurement rather than one-off implementation problems.

For decision-makers, the main implication is that stronger guidance, better indicators, more effective adaptive management, and more intentional project design are needed if climate finance is to move from consultation and local participation toward genuinely locally led climate action. The potential of project, cross-project, and wider knowledge management is high, on which GCF desires to work with partners. The role of the private sector on advancing LLA is of further area interest of interest for GCF. Engaging private Accredited Entities will be a present and future challenge.

EVIDENCE SYNTHESES

1.3 **Systemic literature review of locally led adaptation** – Browne, K. et al.

Summary: A systematic literature review finds that locally led adaptation strengthens adaptive capacity, delivers social and economic co-benefits, and is cost-effective, but faces challenges in scaling and sustainability.

Contributors: Katherine Browne, Senior Research and lead of the International Climate Risk and Adaptation team at the Stockholm Environment Institute (SEI): Jana El-Hor, Global Lead for the Social Dimensions of Climate Change at the World Bank Group; Janna Tenzing, Specialist on the Social Dimensions of Climate Change at the World Bank Group.

Key organizations: Stockholm Environment Institute, World Bank Group

About the initiative: This study presents a systematic review of evidence on the outcomes of locally led adaptation and locally led climate action (LLA/LLCA). Drawing on 49 independent peer-reviewed and grey literature evaluations published between 1992 and 2025, the review examines whether locally led approaches improve adaptation effectiveness, generate social and economic co-benefits, deliver cost-efficiency, and support scaling and sustainability. The analysis finds strong evidence that LLA/LLCA strengthens adaptive capacity by improving climate-informed decision-making, supporting livelihood diversification, strengthening food and water security, and building social cohesion and economic opportunities. Available evidence also suggests relatively high returns on investment compared to business-as-usual approaches. However, evidence on long-term sustainability and scaling remains limited. The review defines “locally led” using the World Bank’s operational framework, focusing on initiatives that devolve decision-making and finance to local actors, use participatory and inclusive processes, and integrate climate information into planning and investment decisions.

Financial levers: The research examined evidence from internationally financed LLA/LLCA initiatives funded by a wide range of actors, including multilateral development banks, vertical climate funds, bilateral development agencies, UN agencies, and philanthropic or NGO-supported programs. Cases reviewed included initiatives supported by the World Bank, Adaptation Fund, Global Environment Facility (GEF), UN Capital Development Fund (UNCDF) LoCAL Facility, CARE International, BRACED (Building Resilience and Adaptation to Climate Extremes and Disasters), CGIAR-linked programs, and bilateral donor-funded adaptation programs.

The evidence base covered projects implemented between approximately 1992 and 2025, though most evaluations and studies reviewed were published after 2015.

Key outcomes: The project produced a systematic evidence review assessing whether locally led adaptation and climate action approaches deliver measurable adaptation and development outcomes. The review synthesized evidence from 49 independent studies (33 peer-reviewed and 17 grey literature evaluations) covering internationally financed LLA/LLCA initiatives across multiple regions and sectors.

Key findings include:

- Strong evidence that LLA/LLCA strengthens adaptive capacity by improving climate-informed decision-making, livelihood diversification, food security, and water access.
- Strong evidence of social co-benefits, including strengthened social cohesion, trust, participation, women's empowerment, and improved access to education and healthcare.
- Evidence of economic co-benefits, including increased household income, savings, livelihood opportunities, and access to markets.
- Emerging evidence that LLA/LLCA can be cost-effective, with several studies estimating returns ranging from roughly USD 3 to USD 11 for every USD 1 invested.
- Limited evidence that initiatives successfully scale or sustain outcomes over long periods without continued institutional and financial support.

The evidence captures outcomes of LLA by applying the World Bank's LLCA operational framework, focusing on initiatives that combine:

1. devolved decision-making and finance,
2. inclusive and participatory processes, and
3. the use of climate information in local planning and investment decisions.

Outcomes were measured through qualitative, quantitative, and mixed-method evaluations conducted by independent researchers and evaluators. Methods included household surveys, interviews, participatory assessments, cost-benefit analysis, and longitudinal project evaluations. Most evaluations examined outcomes one to three years after project completion, though a smaller number assessed impacts over longer periods.

Lessons for others: The review highlights both the promise and the current limitations of measuring the outcomes of LLA. A central finding is that LLA consistently generates measurable short-term gains in adaptive capacity and broader development outcomes, but much less evidence exists on whether these gains translate into long-term resilience, scaling, or sustainability.

One key lesson is that measuring adaptation outcomes requires moving beyond narrow climate metrics alone. Many of the strongest outcomes identified in the review were indirect but highly important for resilience-building, including livelihood diversification, strengthened social networks, improved water access, women's participation, and increased household savings. These outcomes often reinforce one another and contribute to adaptive capacity in ways that are difficult to isolate through conventional project evaluation frameworks.

The review also revealed important methodological challenges. Many evaluations relied heavily on participant perceptions because long-term climate resilience is inherently difficult to observe and quantify over short project cycles. Baseline data were often limited or inconsistent, and most studies evaluated projects shortly after implementation. As a result, there remains uncertainty about whether observed gains are durable over time. In many cases, the "right" things were only partially captured:

evaluations frequently measured immediate outputs and short-term benefits more effectively than long-term institutional transformation or resilience trajectories.

Another lesson is that approaches to measuring LLA outcomes are only partially transferable across contexts. While broad categories of outcomes – such as adaptive capacity, social cohesion, or livelihood resilience – appear consistently relevant, the specific indicators and pathways of resilience vary substantially depending on geography, governance systems, livelihoods, and climate risks. Locally grounded and participatory evaluation approaches therefore remain essential.

The review suggests that positive outcomes are most likely to endure where locally led initiatives are embedded within broader governance systems and linked to longer-term financing, planning, and institutional support. Evidence from Kenya, Zambia, Rwanda, and the Pacific indicates that complementarity between local initiatives and higher-level government systems is critical for sustaining and scaling results. By contrast, many short-term pilot projects struggled to continue once external funding ended.

These findings have important implications for decision-making:

- They strengthen the case for increasing investment in LLA/LLCA by demonstrating that locally led approaches can deliver adaptation, development, and economic co-benefits simultaneously.
- They suggest that funders and governments should prioritize longer time horizons, independent evaluation, and institutional integration rather than isolated pilot projects.
- The evidence underscores that scaling LLA is not simply about replicating local projects, but about building durable systems that shift decision-making power, finance, and accountability closer to local actors over time.

EVIDENCE SYNTHESES

1.4 National household study of economic, health and gendered costs of climate change and adaptation in Rwanda – Gakwaya, B. S.

Flooding in Rwanda. Photo: Brandon Gakwaya Shema / Paul Watkiss Associates & Vanguard Economics Ltd.

Summary: A national household study quantified the economic, health, and gendered costs of climate change and adaptation for Rwandan households across four hazard types.

Contributor: Brandon Shema Gakwaya

Key organizations: Paul Watkiss Associates (UK, consortium lead); Vanguard Economics Ltd. (Rwanda, in-country research lead); Nepal Development Research Institute, NDRI (Nepal); Institute of Marine Sciences (Tanzania).

Funded by the UK Foreign, Commonwealth & Development Office (FCDO) and the International Development Research Centre (IDRC), Ottawa, under the Climate Adaptation and Resilience (CLARE) Programme.

About the initiative: The ECONOGENESIS Rwanda study, led by Vanguard Economics within a consortium coordinated by Paul Watkiss Associates, generated household-level evidence on the economic costs of climate change including loss and damage and adaptation, with explicit attention to gender equality and social inclusion (GESI). The study used a mixed-methods approach combining 140 qualitative interviews across 10 districts with a survey of 2,450 households across 21 districts. It quantified damage costs, income losses, health impacts, response expenditures, and adaptation investments across six hazards: floods, landslides, windstorms, drought, soil erosion, and heat.

Vanguard Economics is Rwanda-based with deep field presence; the study design was grounded in community engagement before quantitative data collection began, with GESI embedded throughout using intersectional analysis across gender, age, disability, and socio-economic status. Though Rwanda contributes only 0.003% of global emissions, an estimated 11.5% of households experience a climate shock annually, with impacts falling disproportionately on rural, poor, and female-headed households. Findings are incorporated into Rwanda's third generation Nationally Determined Contribution (NDC 3.0) and feed into the broader ECONOGENESIS programme spanning Rwanda, Nepal, and Zanzibar.

Financial levers: Funded by FCDO (UK) and IDRC (Canada) under the CLARE Programme. Multi-year; Rwanda data collection completed 2024–2025. No finance disbursed directly to households; evidence informs national and international climate finance. Community mechanisms examined include village savings and loan associations (VSLAs) (used by 71% of respondents), Rwanda's Vision 2020 Umurenge Programme (VUP) social protection scheme, and household savings and loans. An estimated 22% of households had no source of finance during climate events; the figure rose to 28% among female-headed households. The study finds that subsidized instruments, grants and concessional loans are needed to unlock household adaptation. High costs are the primary barrier across all income groups.

Key outcomes: Quantitative and qualitative evidence on household-level climate loss, damage, and adaptation in Rwanda:

- National cost: ~USD 300 million annually (2.3% of GDP, 2024) from floods, landslides, windstorms, and droughts; broader estimate reaches USD 440 million (3.4% of GDP).
- Hazard exposure: 388,000 households (11.5%) experience at least one climate shock annually (Integrated Household Living Conditions Survey 7 (EICV7), 2024); drought affects the most households.
- Direct damage: Landslides average USD 4,280/household; floods USD 2,920/household; female-headed households bear higher losses as a share of income.
- Income impacts: Incomes fell from USD 93 to USD 58 (-38%) after floods; only one-third of flood-affected households fully recovered.
- Poverty: Global Multidimensional Poverty Index (MPI) scores worsened after all hazards; ~half of vulnerable households fell into poverty; poor households often fell into severe poverty.
- Health: Mental stress most reported (20–28% of households); children faced highest injury and disease burden; 979 fatalities recorded 2016–2023.
- Gender: Women bear a triple care burden; an estimated 28% of female-headed households had no finance source during events vs. 19% of male-headed households.
- Adaptation: High costs, not lack of awareness, are the primary barrier across all income groups.

Evidence drawn from 2,450 household survey, qualitative individual in-depth interviews (IDIs), and EICV7, disaggregated by gender, age, disability, poverty, and geography.

Lessons for others: On measuring outcomes of locally led adaptation:

Household-level adaptation is largely invisible to conventional frameworks, which focus on infrastructure and aggregate losses. The most consequential decisions selling livestock, repairing a roof, replanting after a flood are made at household level, often by women, and rarely captured in national statistics. Measuring them requires mixed methods: qualitative research to identify what matters, and quantitative surveys to establish scale.

Challenges encountered

Recall bias was a consistent challenge for diffuse costs such as income losses and unpaid care time, mitigated through careful questionnaire design and triangulation with secondary data. It is difficult to monetize intangible costs, mental health impacts, the triple care burden, and repeated displacement. This means that the headline cost figure is almost certainly an underestimate. Reaching the most marginalized (elderly, persons with disabilities, remote female-headed households) required deliberate investment in qualitative case studies.

Transferability

The mixed-methods framework, qualitative grounding, and representative survey (scaled using national data) are transferable to any low- or middle-income context with household survey data. Embedding intersectional GESI analysis from the outset, rather

than as a separate component, consistently yields richer findings. ECONOGENESIS is applying this comparatively across Rwanda, Nepal, and Zanzibar.

Durability of findings

Without sustained investment in adaptation, impacts will worsen. Hazards are increasing; household coping mechanisms are being depleted by repeated shocks. Returning in five to ten years without policy change would likely reveal higher costs, deeper poverty transitions, and slower recovery among the most vulnerable groups.

Influence on decision-making

This evidence aims to contribute to the following: make the economic case for scaling climate finance to household level; inform social protection and adaptation program design; and embed GESI in Rwanda's adaptation planning. Concretely, integrate climate sensitivity into Rwanda's VUP; strengthen VSLAs as financial resilience mechanisms; deliver climate information through channels that reach women where they work.

The central lesson that adaptation cannot be achieved through infrastructure investment alone, and that human costs borne by women, children, the elderly, and the poor must be made visible and resourced applies well beyond Rwanda.

EVIDENCE SYNTHESES

1.5 **Mapping locally led adaptation in Caribbean small island developing states** – Granderson, A. et al.

Summary: This research maps locally led adaptation actions in Caribbean small island developing states, whether contributing to livelihoods, ecosystems and addressing inequities, and the level of access to finance for these actions.

Contributors: Ainka Granderson, Resilience Programme Manager, Candice Ramkissoon, Senior Technical Officer, Aditi Thanoo, Technical Officer and Dr. Kerresha Khan, Technical Officer, Caribbean Natural Resources Institute (CANARI)

Key organizations: This research is being conducted by CANARI in collaboration with 7 local Caribbean partners, barbudanGO, Caribbean Coastal Area Management Foundation, Gilbert Agricultural and Rural Development Centre, Green Heritage Fund Suriname, Mulokot Foundation, The Cropper Foundation and Ya'axche Conservation Trust.

Web address: https://canari.org/projects/generating-ambition-for-lla/

About the initiative: This research explores the following: the extent to which locally led adaptation (LLA) actions are being implemented across Caribbean small island developing states (SIDS); how well these actions are aligned with the LLA Principles and contributing to livelihoods, ecosystem health and addressing systemic inequities; and the level of finance allocated for these LLA actions. It is being implemented from 2025 to 2027 by CANARI and partners. Phase 1 involved mapping over 500 climate actions across Caribbean SIDS from 2016 to 2025, led by civil society, frontline communities and other local actors; and analysing the extent of focus on LLA actions, their outcomes, and funding amounts and sources. This helped identify gaps in terms of implementation and access to finance and key recommendations for moving forward. It also identified good examples of LLA for further documentation as case studies and for further in-depth research on LLA outcomes in Phase 2. Key outputs for Phase 1 include a database and geographic information system (GIS) story map of mapped initiatives, scoping report and summary infographics that will be completed by August 2026. Key outputs for Phase 2 include a policy brief and in-depth case studies to be completed by 2027.

Financial levers: Approximately EUR 25 000 provided for this research under the Generating Ambition for Locally Led Adaptation (GA-LLA) program, which is funded by the Government of the Netherlands.

Key outcomes

Key phase 1 findings:

- Identified 199 LLA actions across 15 countries from 2021–2025, an increase from ~100 from 2016–2020.
- Documented that actions were implemented by a range of local actors: women's, youth and church groups, Indigenous and Maroon communities – in collaboration with national NGOs, universities, government and regional agencies
- Actions spanned climate-smart agriculture (crops and livestock), fisheries and mariculture; coral reef, mangrove and forest restoration; early warning systems

and disaster management; improved energy access and security; climate-resilient infrastructure; integrating Indigenous local knowledge and digital technologies; and climate justice.

- Actions identified were generally well aligned with LLA principles 2 (addressing structural inequities faced by marginalized groups), 4 (investing in local capabilities) and 8 (collaborative action and investment), but weak on principles 3 (easy access to patient, predictable funding) and 5 (building robust understanding of climate risk and uncertainty).
- Funding for locally led adaptation is largely small grants (up to USD 50 000), but some larger grants (around USD 500 000 to USD 1 million) for national or multi-country projects and loan schemes for households and enterprises. The majority of grants (70%) came via the Global Environment Facility Small Grants Programme, but bilateral funders and private foundations are also important.
- Key outcomes from actions related to the following: recognizing Indigenous and Maroon communities' land and cultural rights in Belize, Dominica, Guyana and Suriname; improved access of disabled persons to community services and disability-inclusive policies in Antigua and Barbuda and Grenada; strengthened value chains, market access and value-add products for women farmers and rural women producers and youth development and entrepreneurship enhancing employment and income generation across all islands, particularly growth in hydroponics, apiaries and eco-tourism; improved health and extent of mangrove, coral reef and forest ecosystems but on very small scale (e.g. a few hectares).

Lessons for others: This research offers insights from Caribbean SIDS where there is limited research and data on LLA, although there is strong interest in climate adaptation at local to national to regional levels and growing calls to strengthen the policy and finance landscape to better support this. It centres on actions led or co-led by frontline communities and civil society, and highlights the amount and sources of funding for these actions. By contrast, many recent studies focus on finance for National Adaptation Plans (NAPs) and government-led initiatives in the region.

However, there have been challenges and limitations. Key challenges for Phase 1 are reliance on desk review and targeted key informant inputs. Phase 2 will involve more in-depth data collection via focus groups, participatory workshops and citizen journalism/storytelling to capture LLA outcomes on well-being, livelihoods and ecosystems. Even with the planned Phase 2 research, a longitudinal study that explores outcomes both quantitatively (e.g. increase in income, % access to energy, food and water, % population below poverty line, area of ecosystems conserved/with improved health) and qualitatively (e.g. policy changes, attitudinal and behavioural changes) five years and ten years post-intervention would be ideal. This would help us better understand the long-term sustainability and durability of LLA outcomes.

Limitations include local government initiatives not included in mapping, as only Belize, Suriname, Jamaica, and Trinidad and Tobago have active local government mechanisms in the Caribbean. There was a focus on English-speaking CARICOM countries; Spanish-speaking Dominican Republic and Cuba and overseas territories of France, Netherlands, UK and US were not mapped.

EVIDENCE SYNTHESES

1.6 **Voices for Just Climate Action Programme: Evidence from the Next Level Grant Facility** – Harikishun, A. et al.

Summary: The Next Level Grant Facility channelled small, flexible funding through local intermediaries to enable grassroots, locally led climate action across seven countries.

Contributor: Ameil Harikishun, Tiffany Chalmers, Charlotte Scott, SouthSouthNorth; SouthSouthNorth; Voices for Just Climate Action

Key organizations: SouthSouthNorth

Web address: https://voicesforjustclimateaction.org/our-impact-areas/the-next-level-grants-facility/

About the initiative: The Next Level Grant Facility, established in 2021 under the Voices for Just Climate Action program, sought to address a key gap in climate finance by increasing access to timely, flexible and context-appropriate funding for grassroots and frontline organizations. It did this by devolving decision-making and grant management to locally embedded fund managers across seven countries (Brazil, Bolivia, Indonesia, Kenya, Paraguay, Tunisia and Zambia), who provided small grants alongside mentorship, accompaniment and adaptive support. Over short grant cycles, the initiative supported both emergency response and longer-term resilience-building activities, reaching over 2.46 million people across 648 initiatives.

What makes the facility locally led is its emphasis on shifting power and decision-making closer to communities. Fund managers used contextual knowledge, flexible processes, and participatory approaches to identify priorities and support actors, including informal groups, first-time grantees, and environmental defenders who are often excluded from formal climate finance. The initiative operated in diverse and often high-risk contexts, addressing climate risks such as floods, drought, food insecurity, ecosystem degradation and threats to civic space, while strengthening local agency, partnerships and institutional capacity.

Financial levers: Primary funding was provided by the Ministry of Foreign Affairs of the Netherlands (via the Voices for Just Climate Action program) between 2023 and 2025

- Total facility value: ~ EUR 3.37 million
- Total disbursed to local grantees: ~ EUR .43 million (72%)
- Delivery mechanism: decentralised sub-granting through local fund managers in seven countries

Key outcomes: The NLGF research demonstrates clear and measurable outcomes for locally led adaptation. The analysis draws on a mixed-methods dataset, including 192 grantee surveys, 62 interviews, fund manager inputs, and facility-wide monitoring data. The analysis combines quantitative indicators with qualitative insights to capture both tangible results and broader institutional change. Evidence shows strong community-level outcomes: 95% of grantees reported visible changes, including increased climate awareness (78%), ecosystem restoration (65%), improved food security (47%), and strengthened preparedness for climate risks (41%). These findings show that small, flexible grants can deliver practical and locally relevant adaptation outcomes within short timeframes.

The evidence also highlights catalytic and institutional results. A majority of grantees (76%) reported forming new partnerships, while 28% secured additional funding, indicating that initial investments helped unlock further resources and collaboration. In several cases, initiatives contributed to municipal planning, local governance engagement and policy-related processes, demonstrating influence beyond direct project delivery.

Outcomes were measured primarily through self-reported survey data, triangulated with qualitative interviews and validated by fund managers over short grant cycles of three to nine months. While this limits assessment of longer-term impacts, the combined evidence provides a credible, practice-based picture of how locally led adaptation can deliver both immediate resilience gains and emerging institutional effects.

Lessons for others: Measuring the outcomes of locally led adaptation requires going beyond narrow, output-based metrics. While traditional indicators capture delivery (e.g. number of projects or activities), the evidence shows that meaningful outcomes also lie in shifts in access to finance, partnerships, institutional strengthening, and locally relevant resilience gains. This suggests that measurement frameworks for locally led adaptation should capture both tangible results and broader systemic effects, including who benefits, how resources flow, and what changes at community and institutional levels.

A key strength of the approach was the use of mixed methods, combining quantitative survey data with qualitative interviews and fund manager insights, to capture both measurable outcomes and less visible changes such as organizational capacity and collaboration.

However, several challenges emerged. Limited monitoring, evaluation and learning (MEL) capacity among grantees constrained data quality, and the short duration of grants (three to nine months) limited the ability to assess longer-term impacts. There were also inherent trade-offs between maintaining low-barrier, accessible systems and introducing more rigorous reporting requirements. As a result, while many important changes were captured, some systemic and longer-term outcomes remain under-represented in the evidence base.

The approach to measurement is partially transferable across contexts. Core principles such as proportionality, flexibility, and the use of mixed methods are widely applicable and critical for capturing locally led adaptation outcomes. However, implementation must be adapted to local contexts, capacities and constraints, particularly in settings with informal actors or restrictive regulatory environments.

In terms of durability, many outcomes such as partnerships, strengthened local organizations and integration into local governance processes show potential for longer-term impact. However, their persistence depends on sustained funding, continued support and alignment with local systems. Without these, gains may not endure over five to ten years.

The evidence should inform decision-making by encouraging a shift toward more flexible, locally managed finance, greater investment in intermediary support, and broader definitions of success that reflect the realities of locally led adaptation.

EVIDENCE SYNTHESES

1.7 **Comparative research on impacts of different locally led adaptation approaches** – Joshi, R., & Nisi, N.

Summary: Comparative research explores how different locally led adaptation approaches shape project design, community partnership and ownership.

Contributors: Rojy Joshi, Researcher, International Institute for Environment and Development (IIED), and Nora Nisi, Researcher, IIED

Organizations: IIED, Caribbean Natural Resources Institute (CANARI); Philippine Action for Community-Led Shelter Initiatives, Inc. (PACSII)

About the initiative: This comparative research seeks to strengthen understanding of how different interpretations and applications of locally led adaptation (LLA) shape project design, implementation, participation, and community ownership across adaptation initiatives. The study examines four case studies: two in Antigua and Barbuda and two in the Philippines, across housing, infrastructure, livelihoods, and ecosystem sectors. In Antigua and Barbuda, these include a project aimed at building resilience to hurricanes and climate extremes led by CANARI and a project supported by the Green Climate Fund (GCF) on strengthening resilience to hurricanes. In the Philippines, these include a project on community-led housing initiatives implemented by PACSII and a social housing project led by the Quezon City Government. These projects have different approaches to local participation and decision-making.
The research combines document review and key informant interviews to explore governance structures, financing arrangements, capacity-building, structural inequalities, and climate risk integration. The work contributes to broader efforts to strengthen evidence, collective learning, and advocacy on what meaningful locally led adaptation looks like in practice and how it can influence more equitable and effective adaptation programming.

Financial levers: The research is supported through the funding from the UK Foreign, Commonwealth & Development Office (FCDO), with additional support from the Netherlands-funded Generating Ambition for Locally Led Adaptation (GALLA) partnership, which advances LLA implementation, evidence generation, and advocacy.

The case study projects included in the research are supported by different funders. The "CSOs for Disaster Resilience initiative in Antigua and Barbuda" is funded by the Inter-American Foundation with follow-on support from the Natural Infrastructure for Caribbean Resilience (NICaR). The "Integrated physical adaptation and community resilience" project is funded through the GCF's Enhanced Direct Access (EDA) mechanism. Similarly, the "5 model cities in Muntinlupa" in the Philippines is funded by the SELAVIP Foundation, with partnerships between community networks, local government and NGOs; and the Bistekville project in Quezon City is a partnership between Habitat for Humanity, local government and revolving community finance mechanisms.

Key outcomes: The research is underway. Key outcomes expected include development of a comparative understanding of how different interpretations of locally led approaches influence adaptation project design, governance, participation,

financing, and implementation processes. Rather than categorizing projects as LLA or non-LLA, the research will demonstrate that locally led approaches exist across a spectrum, with projects integrating varying degrees of local leadership, ownership and participation. The research also contributes to evidence on how governance structures, fund-flow mechanisms, and capacity-building initiatives shape the community experiences and perceptions of ownership. This highlights the importance of examining not only the project outcomes, but also the processes through which adaptation is designed and implemented.

Early insights suggest that locally led approaches are rarely fixed at the point of design but evolve through ongoing processes. Further, the work also suggests that intermediary organizations play a significant role, particularly in creating space for community voice. The work also highlights the importance of funders to operate in a largely flexible manner, trusting implementers to determine how projects are delivered. Comparative qualitative analysis will be forthcoming as we have further findings and insights emerging from the ongoing research.

Evidence is being generated through review of project-related documents and key informant interviews. The study triangulates documentary evidence with stakeholder perspectives to better understand experiences and perceptions. The research outcomes are assessed through comparative qualitative analysis across four case studies in Antigua and Barbuda and the Philippines.

Lessons for others:

Locally led adaptation should not be understood as a singular concept but rather as a spectrum of approaches through which local leadership, participation, ownership, and decision-making are integrated into adaptation processes. Further lessons could be shared as we complete the research. We see this research as an early step in trajectory in understanding what different approaches would work to generate evidence on value addition of LLA. Findings will be framed around what each approach enables and what challenges it creates, including if and how locally led approaches did not function as intended. At a time when LLA is gaining more and more traction, this will help policymakers and funders draw on the evidence to make contextually appropriate decisions, rather than simply to affirm LLA as a concept.

It is difficult to apply a strict counterfactual to LLA research. This research was initially envisaged to be a counterfactual analysis, how an LLA approach compares to a non-LLA approach in relation to outcomes of the adaptation initiative. However, the methodological lesson is the difficulty of applying a strict counterfactual to LLA research, especially as we intend to draw from already completed projects. First, deliberately commissioning non-LLA projects as comparison cases (such as randomized controlled trials) is not something we would recommend as it raises ethical concerns and is not aligned with the LLA principles. Second, identifying directly comparable non-LLA projects proved challenging as this would mean ensuring comparability/similarity in terms of geography, sector, scale, timeline of implementation, and scope. Third, we will require completed projects (ideally two years post completion) so that resilience outcomes have had time to materialize and can be assessed with reasonable confidence.

2. CO-BENEFITS

2.1 Reviving conflict-affected ecosystems in Sudan – Akola, M.

Summary: A national forest landscape restoration project in Sudan uses multi-stakeholder partnerships to address food insecurity and strengthen livelihoods in conflict-affected communities.

Contributors: Marwa Akola, Head of the Research and Studies Unit at the Deriba Center for Environmental Studies (DCES), Sudan.

Web address: https://deribacenter.org/reviving-nature-restoring-hope-land-preparation-in-louni-forest/

Key organizations: Deriba Center for Environmental Studies (DCES)

About the LLA initiative: The Reviving a Conflict-Affected Ecosystem project in Sudan is a locally led forest landscape restoration (FLR) project implemented in Lowni village, Abu Hajar Locality, Sinnar State. First launched in 2025, the project aims to rehabilitate degraded agricultural and wetlands, restore forests, building meaningful multi-stakeholder partnerships, and improve food insecurity and livelihoods for conflict-affected communities. The project addressed climate risks, including land degradation, deforestation, loss of biodiversity and wetlands, declining agricultural productivity, and food insecurity. It also addresses peace-related risks associated with competition over natural resources.

The initiative is part of an ongoing and national forest landscape restoration effort, with multiple chapters representing different states/locations across Sudan. The Lowni forest was the first chapter. Subsequent chapters depend on the provision of administrative and financial resources by the Deriba Center for Environmental Studies (DCES), non-governmental organizations (NGOs and INGOs), community contributions, or government support.

Participants working to help restore the Lowni forest as part of the Reviving a Conflict-Affected Ecosystem project in Sudan. Photo: Reviving Conflict-Affected Ecosystem project, Sinnar State project, Deriba Center for Environmental Studies

The project uses the taungya system (combining growing food crops and planting forest trees) as an agroecological approach. It relies on collaborative governance through multi-stakeholder partnerships (grounded in system-model change in socio-political realities). The partnerships involve three stakeholders with a provision for private-sector engagement through social and environmental responsibility. Chapter duration ranges from 2 to12 months. It begins through either stakeholders' request or DCES proposal followed by consultation and memorandum of understanding. A locally led adaptation committee and project teams are then formed with 60%-65% community representation.

Financial levers: Both the Lowni project and its follow-up research project activities were funded by the Deriba Center for Environmental Studies (DCES) through its institutional resources over a period of nine months. This included one month of restoration activities, six months of securing and monitoring the restored land, and two months of the research activities. The support covered operational costs related to implementation activities, incentives, monitoring, security, data collection, and data analysis. In addition, the Lowni local community members – including smallholders, leaders, and volunteers – contributed in-kind support. They did this through consultations on and discussions of challenges, resources, timeframes, and approvals of and implementation methods for the most appropriate ways for undertaking both projects. They also physically participating in restoration and monitoring activities.

Key outcomes: Several ecological, social, and institutional outcomes were achieved:

1. Establishment of a multi-stakeholder partnership between the DCES, Sinnar Forests National Corporation, and the local community through a memorandum of understanding (MOU).
2. Restoration of 50 feddans of degraded forest land using the taungya agroecological restoration system.
3. Distribution of 100 kg of seeds and planting 500 seedlings.
4. Increased awareness among farmers about environmental protection and sustainable forest management practices.
5. Improved mental well-being among host and displaced surrounding communities & government staff through active participation in forestry restoration and locally led adaptation activities.
6. Contribution to peacebuilding and social cohesion by reducing potential competition over limited natural resources and promoting peaceful coexistence through shared resource management.
7. Increased willingness of communities to participate in LLAs and collaborative FLR.

The evidence and measurement data capturing these outcomes are related to the following:

1. Evidence that was collected and documented by the project team at the beginning (signed memorandum of understanding); during the project on a daily basis (field reports, implementation records, photographs, videos and social media posts); and at the end (testimonies). These show community engagement and activities.
2. Research includes findings of the survey and key informant interviews with community leaders, Forests National Corporation staff, and farmers to identify challenges and opportunities; assess livelihoods and forestry changes; measure satisfaction and acceptance measures; gain insights on the multi-stakeholder partnership; and use remote sensing images to report changes in vegetation cover. These were collected by trained data collectors selected from the community and

were analysed, measured, and disseminated by the DCES head of research and studies unit within two months of completion of the project.

Lessons for others: The project demonstrates several lessons and takeaways. These include understanding that implementing locally led adaptation projects in conflict-affected settings requires conflict-sensitive and flexible monitoring, evaluation, accountability, and learning (MEAL) frameworks that balance power dynamics between stakeholders while prioritizing local lived realities over rigid structures and top-down quantitative metrics. We also learned that projects must be carefully analyzed to ensure that implementers do not exacerbate local tensions or contribute to maladaptation.

Local actors, particularly women and youth, must have the power to define success and evaluate progress using locally framed indicators rather than externally imposed metrics, as project success may hold different meanings to local communities. Furthermore, given the instability in conflict settings, MEAL approaches must remain iterative and adaptive, allowing continuous reevaluation of forestry landscape restoration within an insecure and unstable context.

Another lesson was that tracking accountability among government partners/representatives can present a "high" and "most likely to happen" risk, and taking measures around this matter can develop negative outcomes, such as delaying or risking the implementation of locally led adaptation (LLA) activities. Power imbalance and dictation also emerged as a challenge through both pre- and post-implementation stages. To minimize these risks, integrating local communities not only as beneficiaries but also as intermediaries between the NGOs and government entities proved essential for the success of LLA measures in conflict settings. Another core element is to train project teams on conflict resolution and peacebuilding skills. Thus, we recommend the development of a "conflict resolution and peacebuilding" manual for those who implement LLAs in conflict and post-conflict settings.

Additional challenges related to government bureaucracy were the complexity of obtaining and finalizing important approvals for the project to commence. This situation has led to considerable delays in the project activities.

Moreover, many partner representatives expected incentives or financial compensation for their involvement in the LLA, either for their roles in making decisions or monitoring. This affected the budget. As a result, we learned that LLA measures implemented in conflict settings must include a higher overhead cost or a wider financial margin to accommodate such expenses.

Based on the results from our evaluation follow-up and data collected from stakeholders involved, it is clear that conflict-affected communities and state governments welcome LLA initiatives that fulfill their needs and solve their problems. Research findings revealed that the LLA approach is successful and could be replicated in similar fragile settings. However, integrating a multi-stakeholder partnership strategy, strengthening active participation among all major stakeholders (local community, NGOs, INGOs, and government representatives), and adding seats for the private sector would further improve outcomes.

CO-BENEFITS

2.2 **Sanchay/CulTool** – Kanji, R.

Summary: The intervention sough to reduce heat vulnerability and water stress in Jodhpur using resilience talks led by women, risk mapping led by youth, and the revival of "water wisdom" – of which informed the creation of the city's first Heat Action Plan.

Contributors: Repaul Kanji, Co-Founder & Technical Lead of GRRID Corps; Sriparna Sil, Co-Founder & Managing Partner of GRRID Corps; led the scientific communications with the community; Jeevan Madapala, Assistant Professor, Rajiv Gandhi University of Knowledge and Technology, who led the technological innovation and prototyping with the community; Bhola Saha, Assistant Professor, The Royal Global Assam University, who led the architectural study embedded within the larger project; Siddhartha Das, GRRID Corps, who led the cinematographic documentation of traditional knowledge; and Nishi Jain, GRRID Corps, who led the community networking and engagement aspects of the project.

Web address: https://grridcorps.org/

Key organizations: GRRID Corps (Green, Resilient, Risk-Informed Development); the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM), Sambhali Trust, Mehrangarh Museum Trust

About the LLA initiative (one paragraph summary): GRRID Corps' intervention sought to reduce heat vulnerability and water stress in Jodhpur, known as India's "blue city", which is home to 1.5 million people facing extreme heat and weakening water systems. The intervention treated women's traditional knowledge and youth civic engagement as climate infrastructure, not add-ons. The initiative responded to rapid urbanization that is eroding centuries-old cooling practices, courtyard design, and water wisdom held by women, artisans, and elders.

Women in Jodhpur are custodians of traditional knowledge and co-implementers of locally led adaptation against climate hazards. Photo: Siddhartha Das, GRRID Corps

Over two years (2022–2024), GRRID worked with 25 women community leaders and hundreds of youth and children to co-document vernacular construction, the role of water bodies, household cooling strategies, and lived experiences of climate risk. This knowledge fed into Jodhpur's first Heat Action Plan and culminated in Sanchay, India's first community-authored documentary of a city's riskscape.

It is locally led because women and youth were not beneficiaries but co-researchers, co-designers, and co-communicators, leading risk mapping, water-system documentation, climate storytelling, and behaviour-change modelling. Decision-making and knowledge validation rested with community members. The result was lasting local agency: continued community demand, greater confidence among women in civic climate spaces, and recognition by Nature-based Solutions (NbS) Awards, ICCROM, and the UN Human Settlements Programme (UN-Habitat) as proof that culture-rooted adaptation works.

Financial levers: The initiative was funded generously by the Swedish Postcode Foundation through ICCROM, over a year.

Key outcomes:

- **Policy outcome:** Traditional knowledge and women's practices were formally integrated into Jodhpur's first Heat Action Plan, shifting municipal policy from generic templates to context-specific, heritage-based heat resilience for a city of 1.5 million.
- **Social and behavioural outcomes:** Twenty-five women community leaders were trained as co-researchers and resilience facilitators. Their influence was modelled through agent-based simulation across a synthetic network of 300 community members, revealing that action intent and confidence (38.3% gain) spread significantly faster than abstract climate knowledge (24.1% gain). This validated women-led, neighbourhood-level governance as an effective locally led adaptation (LLA) mechanism.
- **Cultural and communicative outcomes:** Residents co-created "Sanchay" – India's first community-authored documentary of a city's riskscape—where women, youth, and elders narrate their own vulnerabilities and solutions, turning lived experience into public climate intelligence.

Evidence and evaluation: Outcomes were captured through mixed methods over two years (2022–2024). Primary data came from participatory workshops, household surveys, and storytelling sessions led by community members themselves. Policy uptake was verified through official Heat Action Plan documents and municipal acknowledgements. External validation included the NbS Awards 2024 (Enabler category), ICCROM profiling, and UN-Habitat recognition. Community demand for continuation ("calls requesting subsequent phases") provided qualitative proof of sustained local ownership. All evaluation combined internal GRRID analysis with community co-validation, ensuring outcomes reflect genuine local agency rather than external reporting.

Lessons for others:

1. **Measure agency and action—not only awareness.** A central learning was that the most meaningful LLA outcomes are shifts in local agency: who speaks, who is trusted, who convenes others, and who feels confident to act. In Jodhpur, modelling showed that action intent and confidence spread faster than abstract climate knowledge. If you only measure awareness, you miss the core of locally led change.
2. **Combine "soft" evidence with "hard" uptake.** LLA is often dismissed because outcomes are seen as intangible. Jodhpur shows you can pair community-led qualitative evidence (stories, lived experience, documentary outputs, participant reflections) with hard signals like policy uptake (integration into a city Heat Action Plan), and external recognition (ICCROM, UN-Habitat, NbS Awards).
3. **Document local knowledge like infrastructure, not folklore.** Replicators should treat vernacular practices (cooling, water use, building design) as a "resilience asset inventory". The credibility jump came from respectful documentation plus validation through climate/thermal reasoning and structured analysis. This makes it legible to engineers, planners, and funders without stripping it of cultural ownership.
4. **Build for co-authorship, not consultation.** Locally led does not mean "we asked for feedback." It means residents are co-researchers, co-designers, and co-communicators. In practice, this requires time for trust, shared decision-making, and visible ownership (e.g., community-authored storytelling products like Sanchay). The documentary was not an add-on; it was evidence of agency and a tool for diffusion.
5. **Expect challenges – and plan measurement accordingly.** Common challenges included: translating local narratives into formats policy teams accept; avoiding extractive data collection; and attribution (many factors shape resilience). Not everything "right" is easily measurable in one cycle. Norm shifts and women's leadership maturation take time. A practical solution is to use mixed methods: baseline/endline surveys, participatory scoring, network mapping, and longitudinal check-ins (6, 12, 24 months).
6. **Transferability: yes, but adapt the indicators and messengers.** The measurement approach is transferable, tracking agency, diffusion and uptake. The cultural entry points, however, are context specific.
7. **Durability: likely, if institutions and local leaders stay engaged.** We expect findings to endure because the intervention invested in social infrastructure (women leaders, youth capacity, shared narratives). If revisited in 5–10 years, the specific behaviours may evolve, but the stronger likelihood is that communities retain the capability to organize and adapt.
8. **How evidence should influence decisions.** Decision-makers should use LLA evidence to (a) fund leadership and facilitation, not just hardware; (b) embed traditional knowledge into planning standards; and (c) prioritize interventions that demonstrate both community ownership and measurable diffusion.

CO-BENEFITS

2.3 **Strengthening storytelling for locally led adaptation** – Omil, I.D.

Summary: This project embraced storytelling and media to showcase locally led adaptation in Kenya.

Contributors: Innocent Deckoks Ochieng Omil, Founder & Managing Director, Eco-Sanctify Consultants Limited, and Consultant, Youth For SDGs Kenya - Partnership between Youth for SDGs Kenya and Africa Uncensored under Voices For Just Climate Action Project.

Key organizations: Eco-Sanctify Consultants Limited.; Africa Uncensored; Youth For SDGs Kenya; Hivos (Funding Organization).

About the initiative: The project sought to strengthen climate communication pathways by amplifying locally led adaptation (LLA) experiences through collaborative and participatory storytelling approaches. The project brought together grassroot journalists, communicators and other climate stakeholders through, among others, a fellowship approach. It was focused on driving and shaping public debate on climate change in Kenya through communications and media engagements that elevate communities' climate realities and actions. The project provided authentic dialogue spaces between stakeholders in media, communication and climate change programs. The project combined a mix of technical learning sessions, coaching engagements, field-based engagements, multimedia storytelling approaches and policy discourses.

Key thematic areas that were tackled included; climate adaptation, climate finance and psychology of communication. The engagements at Yatta Farm highlighted the importance of experiential field-based learning, and also provided demonstrations on how grassroot communities are propagating on-ground adaptation solutions. The project also provided story grants that supported multimedia climate storytelling, enabling fellows to produce climate-related stories rooted in local realities and practical lived experiences.

Work at Yatta Farm in Kenya. Photo: Innocent Deckoks Ochieng Omil

Financial levers: The program was implemented under The Voices for Just Climate Action (VCA) Project through collaborations involving civil society, media actors and climate governance stakeholders. It was a collaboration between Youth For SDGs Kenya and Africa Uncensored. The flexible program support enabled activities such as a fellowship, coaching sessions, fieldwork experiential learning, story grants and participation in a regional climate convening at the Africa Climate Week (ACW), held in Gabon. A crucial lesson from the program was that flexible financial support and strategic partnerships can play a key, catalytic role in strengthening locally grounded climate justice narratives, and support participation of journalists and communicators in adaptation conversations.

Key outcomes: A major milestone under the initiative was the strengthening of climate storytelling capacities among grassroot journalists and communicators from various regions of the country. Fellows gained practical skills in multimedia storytelling, pitching climate stories, framing of climate justice narratives, practical skills in adaptation reporting and engaging wider audience on framing and tackling climate issues. The project also showcased the value of community-centered and participatory storytelling approaches in surfacing locally led adaptation experiences that are often overlooked within formal narratives. Through the field engagement at Yatta, interviews, multimedia production and storytelling processes, fellows were able to document adaptation experiences grounded in local knowledge.

An important insight emerging also, was that storytelling should not only be taken as a communication tool but also as a legitimate evidence generator of locally led adaptation outcomes. A 'narrative' approach helps reveal dimensions of adaptation that are difficult to capture through conventional metrics alone. These dimensions include:

- Inclusion of marginalized voices.
- Shifts in awareness and attitudes.
- Strengthened community urgency.

The program also contributed to strengthening linkages between grassroot realities and policy discourses. Participation in forums such as The Africa Climate Week, enabled fellows to connect grassroot adaptation realities to the regional and global climate conversations. The project further helped unpack structural barriers affecting climate communication approaches in the country. These barriers included; limited coverage and prioritization of climate issues, language barriers and insufficient embedding and localization of climate narratives.

Lessons for others: One noble reflection from the project is that adaptation evidence systems should broaden beyond qualitative and quantitative indicators to include participatory narrative and community-centric and indigenous forms of knowledge. The project demonstrated that local context adaptation outcomes become more visible and relatable when communities are not only accommodated as beneficiaries but as knowledge holders and contributors to adaptation learning processes.

Another key lesson was in the value of moving climate learning beyond formal institutional approaches into on-ground contexts. As an ongoing reflection throughout the program, it was clear that knowledge management and advancement should

increasingly be engaged with spaces where tangible grassroot adaptation actions are taking place.

The fellowship approach and coaching sessions also showed that investment in journalists, communicators and storytellers can amplify and strengthen the wider adaptation ecosystem by improving how climate issues and solutions are documented, interpreted and shared with the public, policymakers and other key stakeholders.

Further, the fellowship also opened up the fellows to other prestigious opportunities that further strengthened their credentials regarding climate communication such as under the Y. Eva Tan Conservation Reporting Fellowship program. The experience also highlighted the importance of collaboration across media, civil society, youth groups and other key climate stakeholders in strengthening climate communication and amplifying locally grounded adaptation voices.

CO-BENEFITS

2.4 **Rozsadnyk: an eco-education and nature therapy space** – Popfalushi, D., & Zozulia, A.

Summary: Rozsadnyk is an eco-education and nature therapy space in Lviv that combines nature-based solutions, climate adaptation and therapeutic gardening to strengthen local resilience.

Contributor: Diana Popfalushi, Chairwoman of Board of the Ukrainian Climate Network, project manager at the non-government organization, Plato, co-lead of the eco-education and nature therapy space, Rozsadnyk, and co-host of the podcast, Poyasnyzaeco; Anzhelika Zozulia, Chairwoman of the Board of Plato and co-lead of Rozsadnyk

Web address: https://rozsadnyk.lviv.ua/en/home/

Key organizations: NGOs Plato and Ecoterra, with the support of local authorities.

About the initiative: Rozsadnyk is an eco-education and nature-therapy space in Lviv, Ukraine. Since 2021, the initiative has sought to transform an abandoned greenhouse site into a public space that strengthens local climate resilience, environmental awareness, social cohesion and wellbeing through nature-based solutions and community stewardship. The project combines community gardening, reuse and circular resource practices, therapeutic horticulture, biodiversity-supporting landscaping, and climate education. Planned long-term development (2025 onwards) also includes climate-responsive reconstruction of historic greenhouses.

Rozsadnyk is locally led because it emerged from grassroots civic action. The initiative relies on participatory approaches including volunteer gardening, public workshops, research walks, co-design discussions, and community programming.

Participants in a therapeutic horticulture session conducted by Rozsadnyk in October 2025. Photo: Iryna Fedoseienko / Plato

The initiative operates in the context of wartime Ukraine, where climate adaptation intersects with displacement, social trauma, food insecurity, environmental degradation and pressures on urban infrastructure. It addresses climate risks including overheating, stormwater runoff, biodiversity loss, reduced access to green space, and declining community resilience. Particular attention is given to vulnerable groups including internally displaced people (IDPs), women, older residents, and people in need of psycho-emotional support.

Financial levers: About UAH 6.5 million (USD 150 000) was mobilized over the period from 2021 to 2025 through grants, targeted purchases, charitable contributions, volunteer and team inputs, and co-investment from the park's balance-holder.

We outline key financial features:

- The initiative is highly diversified, which lowers dependence on any one donor and is itself a resilience factor, indicating strong local ownership.
- We do not yet have an earned-revenue model or a dedicated long-term monitoring/maintenance budget, because there are no legal forms for that in Ukraine.
- The amount of support that was raised directly from locals or other people from Ukraine is small because of the allocation of personal funds to help the army and the military volunteers.

Key outcomes:

- **Resilience and adaptive capacity:** Rozsadnyk developed relevant infrastructure including around two dozen garden beds, four composters, and a Green Bank initiative that propagated more than 1,000 seedlings in 2025. **Evidence:** project documentation, public guides, and site monitoring. **Outcomes:** practical adaptation skills, local resilience, and resource-sharing capacities.
- **Reuse and circular resource practices:** reusing former greenhouse infrastructure, reclaimed bricks and concrete, organic waste composting, and permeable pathways. **Evidence:** project materials, excursions, and public communication documenting reuse practices. Outcomes: environmental awareness, behavioral change, and circular resource use.
- **Nature-based solutions (NbS):** permeable pathways, biodiversity-supporting planting, rainwater-sensitive design, mulching, insect hotels, urban food growing, and climate-resilient species propagation. **Evidence:** educational guides, participation records, and documented site practices. **Outcomes:** urban climate adaptation, biodiversity support, cooling, infiltration, and environmental literacy.
- **Demonstrative adaptation infrastructure:** A 2025 reconstruction concept for the former greenhouses proposes a variety of adaptation measures. **Outcomes:** demonstrative climate-responsive infrastructure and adaptation learning.
- **Wellbeing and social cohesion:** Therapeutic horticulture activities, women-focused nature therapy, and inclusive community gardening involved IDPs, older women, and vulnerable groups. More than 4700 participants joined over 270 events by 2025. **Evidence:** participation data, testimonials, guides, and program documentation. **Outcomes:** wellbeing, emotional regulation, belonging, inclusion, and public participation.

Lessons for others:

Rozsadnyk suggests that locally led adaptation (LLA) in urban settings is often most effective when adaptation is not framed only as climate protection, but as a bundle of immediately meaningful community benefits: safer and cleaner space, food and plant growing skills, belonging, emotional relief, and a tangible way to act during a crisis. That combination appears especially important in Ukraine's wartime setting, where care, cohesion, and environmental action are interdependent rather than separate agendas.

The governance lesson is equally important. Rozsadnyk moved from volunteer clean-ups to co-governance: a 2021 memorandum supported joint development with municipal actors, and a 2025 five-year cooperation agreement appears to have further stabilized the model. The participation case study (https://plato.lviv.ua/wp-content/uploads/2024/01/zelena-partysypacziya-e.pdf) conducted by our NGO Plato also shows that governance was not only institutional but social: Volunteers helped shape priorities; subgroups took responsibility for specific functions; and consultation methods informed the spatial concept. This is a strong argument that LLA outcomes depend as much on process quality and trusted relationships as on technical adaptation measures.

Equity outcomes appear strongest where the project deliberately combined inclusive format design with targeted outreach. Raised beds and access-oriented DIY guidance supports older people and those with mobility limitations; consultation was tested through multiple low-barrier methods; and programming explicitly engaged IDPs, women in vulnerable situations, and other groups often peripheral to formal climate-policy spaces. A useful practitioner lesson is that inclusion was not treated as a side-benefit, but as part of the design of adaptation itself.

Recommendations

For practitioners: Invest early in visible, low-cost, collectively built interventions that produce fast social value while laying a base for more technical adaptation measures later.

For donors: Fund multi-year flexible support that covers not only events, but stewardship time, monitoring, maintenance, weather-proof infrastructure, and simple outcome measurement.

For evidence initiatives: The immediate next step would be a light but credible monitoring framework covering participant profiles, repeat engagement, plant survival, amount of rainwater stored, compost volumes, heat/shade perceptions, and short wellbeing measures before and after therapeutic activities.

CO-BENEFITS

2.5 **Locally led adaptation of climate-vulnerable coastal communities in the Indian Sundarbans** – Roy, C.

Summary: Long-term research in the Indian Sundarbans examines locally led adaptation, climate vulnerability, and livelihood resilience in coastal communities.

Contributors: Dr. Chandan Roy, Assistant Professor, Department of Economics, Christ University, Bengaluru, India

Key organizations: Christ University, Bengaluru, India; Indian Council of Social Science Research (ICSSR), Government of India; local panchayats and community stakeholders in the Sagar Block, Indian Sundarbans

About the initiative: This contribution is based on long-term field engagement and research in the Indian Sundarbans since 2009. The initiative incorporates M.Phil and PhD work, published journal articles and book chapters, and an ICSSR-funded project completed in February 2026 under the leadership of the author as Principal Investigator.

The initiative examines how climate-vulnerable coastal communities adapt to cyclones, flooding, salinity intrusion, erosion, water insecurity and declining livelihood opportunities in the fragile deltaic environment of the Sundarbans. The study focuses on small farmers, fishers, women, migrant households and other vulnerable groups across coastal villages. It uses household surveys, focus group discussions, stakeholder consultations and long-term field observations to understand local adaptation responses and changing livelihood patterns. Findings show that communities adapt through livelihood diversification, anticipatory migration, mangrove protection, rainwater harvesting, pond restoration and community-led resource management practices.

Photo: Dr. Chandan Roy, Assistant Professor, Department of Economics, Christ University, Bengaluru, India

The initiative is locally led because adaptation practices are largely developed and managed by local communities using Indigenous knowledge, informal institutions, collective decision-making and locally available resources. The findings highlight links between climate risks, livelihoods, water security, ecosystem sustainability, migration and public health. The findings also support community-based climate adaptation policies in vulnerable coastal regions.

Financial levers: The recent phase of the initiative was externally funded through an Indian Council of Social Science Research (ICSSR) empirical research project led by the author as Principal Investigator. The ICSSR-supported project was conducted during 2025–2026 and completed in February 2026. Earlier M.Phil and PhD field research in the Indian Sundarbans, beginning with M.Phil research in 2009, was primarily self-supported by the author with limited institutional academic support. Institutional support was also provided by Christ University, Bangalore, India. The initiative relied mainly on household surveys, stakeholder consultations, focus group discussions and long-term field observations across vulnerable coastal villages.

Key outcomes:

1. **Planned migration as adaptation:** Households used seasonal and anticipatory migration to reduce livelihood risks from cyclones, erosion, salinity intrusion and declining agricultural productivity. Planned migration often reduced rehabilitation costs and livelihood disruption compared to reactive migration during or after disasters.
2. **Climate-resilient livelihood diversification:** Communities diversified livelihoods through goat rearing, duck farming, fisheries-related activities, betel leaf cultivation, wage labour and small businesses to reduce dependence on climate-sensitive agriculture.
3. **Community-based freshwater management:** Local adaptation practices such as pond restoration, rainwater harvesting, freshwater storage and water-sharing systems helped improve water security in saline and disaster-prone villages.
4. **Ecosystem-based adaptation:** Mangrove plantation and local ecosystem conservation strengthened natural protection against cyclones, erosion, tidal flooding and saline intrusion while supporting fisheries and local livelihoods.
5. **Community risk-sharing and local institutions:** Informal support networks, collective decision-making and local cooperation systems played an important role in disaster preparedness, recovery and resource sharing during environmental shocks.
6. **Integrated adaptation practices:** Communities responded through interconnected livelihood, water, migration, ecosystem and social adaptation strategies rather than isolated interventions.

The evidence comes from field engagement in the Indian Sundarbans from 2009 to 2026 using surveys, interviews, focus groups and observations. The author evaluated outcomes through comparative assessments across various research phases.

Lessons for others:

The experience from the Indian Sundarbans shows that locally led adaptation (LLA) becomes more effective when communities are directly involved in identifying risks, managing resources and shaping adaptation responses. Many adaptation practices observed during the study were low cost, locally managed and developed through long-term environmental experience alongside external institutional support. One important lesson for other climate-vulnerable regions is that adaptation strategies become more sustainable when communities are treated as active decision-makers rather than passive beneficiaries.

A key lesson from the study is that measuring LLA outcomes requires going beyond infrastructure or income indicators alone. Household resilience, migration decisions, ecosystem restoration, livestock adaptation, water security, informal support systems and local knowledge are equally important but are often difficult to capture through standard quantitative methods. The study therefore combined surveys, qualitative interviews, focus group discussions and repeated field observations to better understand lived experiences and changing adaptation practices.

Several challenges emerged during the research because many adaptation outcomes were gradual, informal and continuously evolving. One important finding was the difference between proactive and reactive migration patterns. Households that migrated earlier based on environmental risk awareness were often able to reduce long-term livelihood disruption, avoid repeated disaster losses and lower rehabilitation costs. Reactive migration after cyclones or severe erosion frequently resulted in distress movement, insecure employment, debt, housing instability and social disruption.

The study also observed a gradual transition from climate-sensitive paddy cultivation toward betel leaf cultivation in selected areas affected by salinity intrusion and declining agricultural productivity. Betel leaf cultivation required relatively smaller landholdings, generated higher market returns and provided faster income recovery compared to traditional paddy farming under changing environmental conditions. Similarly, many coastal households shifted from cattle rearing toward duck farming and goat rearing because ducks and goats adapted better to saline water conditions, flooding, degraded grazing land and fodder scarcity.

Another important lesson is that communities increasingly shifted from mangrove extraction toward mangrove plantation and ecosystem restoration as low-cost natural protection against cyclones, erosion and tidal flooding. These locally grounded adaptation practices offer valuable lessons for other coastal and delta regions facing climate uncertainty and resource constraints.

3. GOVERNANCE MODELS AND INSTITUTIONS

3.1 **Bridges: building climate resilience through strengthened communication** – Gautam, M. et al.

Summary: Bridges, a multi-country initiative aims to support last mile-users to uptake adaptive and protective behaviours using localized and simplified weather and climate information.

Contributors: Manju Gautam, Research Manager, Bridges Project; Khandokar Hasanul Banna, Project Director, Bridges Project; Kassahun Suleman, Senior Advisor, Climate; Karen O'Connor, Research Manager; Sonia Whitehead, Head of Research

Web address: https://www.bbc.co.uk/mediaaction/our-work/climate-change-resilience/bridges-project

Key organizations: BBC Media Action, Norwegian Agency for Development (NORAD) - (funder)

About the initiative: BBC Media Action has been implementing Bridges in Bangladesh, Kenya and Nepal from 2024 until 2027. The initiative aims to produce outputs that encourage communities vulnerable to extreme weather events to take weather- and climate-informed actions and decisions that build their resilience.

The project has adopted an ecosystem approach: engaging key stakeholders across the weather, climate and information services (WCIS) value chain, including working with national meteorological and disaster risk authorities, weather experts and local media.

Meteorological agencies and local media are provided with capacity-strengthening support to produce and disseminate content that provides weather and climate information in a simple, easy-to-understand and more actionable way for people.

A female audience member from Samburu County, Kenya, planted trees after listening to the local radio programme produced under the Bridges project. Photo: BBC Media Action

To ensure the programming meets the needs of last-mile users, feedback is gathered from the communities and fed into the development of the content.

Bridges is generating learnings and evidence on the role of effective WCIS in supporting vulnerable communities make informed decisions.

Bridges operationalizes several core principles of locally led adaptation, particularly those concerning participation and community feedback, local ownership of communication processes, strengthening local communication ecosystems through trusted local institutions, and supporting locally contextualized and actionable climate information services for vulnerable community groups.

Financial levers: Bridges is externally funded by the Norwegian Agency for Development Cooperation (NORAD), over the period of three years (2024 to 2027). The annual budget for the project is about NOK 24 million.

Key outcomes:

- **Strengthened capacity of local institutions and media houses:** The training and mentoring has built the skills of media practitioners to effectively communicate weather and climate information. Evidence indicates improved understanding of different audience needs, helping journalists to promote locally relevant adaptation solutions.
- **Improved knowledge and uptake of locally relevant adaptation practices resulting economic resilience of vulnerable communities:** Audiences are using the weather information to make better livelihood decisions on income diversification, planting, harvesting and irrigation, which has helped reduce crop losses and increase productivity.
- **Enhanced inclusion and equity:** Weather, climate and adaptation information under Bridges reaches diverse and underserved groups, including women, pastoralists, fisherfolks, farmers, youth, and other vulnerable communities. For example, in Kenya and Nepal, Bridges partners with community-based organizations (CBOs), which organize outreach activities in the community reaching the vulnerable groups.

Outcomes are measured by an independent evaluation and in-house monitoring conducted by a research and learning department. Initially, a baseline was conducted with 7000+ people across the three countries. The qualitative midline and independent evaluations that were conducted will be followed up by a robust evaluation.

Lessons for others:

- **Integration of local knowledge and local realities:** Effective adaptation communication requires not only translating scientific forecasts into accessible formats but also recognizing and integrating local knowledge and lived experience. It is important to portray local contexts, tell stories of local people that audience can relate to, and convey locally relevant and very practical coping strategies.
- **Need of tailored communication approaches for adaptation uptake:** Our recent midline assessment found that some formats of communication did not resonate

with the communities that the project intended to reach, which meant that the audiences did not engage with that content and in turn, did not learn from it.

- **Reach alone is not enough:** High audience reach does not necessarily translate into meaningful adaptation outcomes. Trust, relevance, accessibility, and the ability of communities to act on information are equally important dimensions of effectiveness of locally led adaptation.
- **Evidence generation methods:** Evidence can be generated through qualitative methods such as case studies from local partners documenting stories of change at the individual level. This can be useful for capturing local behaviour change. In Bridges, we are in the process of producing videos capturing the individual stories of change at the audience level.
- **Measurement challenges:** It is always difficult to isolate the impact of media interventions, as people are exposed to a lot of information, and can't recall specific programs easily. The media landscape is rapidly changing, particularly in Bangladesh and Nepal, and this has meant that finding people exposed to project information has been harder. We have addressed this by looking at weather and climate information overall, and asking people what they recall, and aligning that to content we know has been covered in the output supported by the project. This also highlights the importance of using social listening and digital analytics for data validation and triangulation and identifying other non-traditional methods to assess the program's contributions.
- **Importance of measuring process-oriented outcomes:** Bridges highlighted the importance of measuring process-oriented outcomes linked to locally led adaptation, including participation, trust, local ownership, feedback responsiveness, and the strength of relationships between communities, media actors, and climate information providers.
- **Long-term systems strengthening:** In terms of sustainability of the outcomes, we expect the findings around knowledge and understanding, and uptake of adaptive practices, to last beyond the project. Once individuals experience the benefits of these practices, they are less likely to go back to the old ways of doing things. Also, the skill development amongst practitioners at media organizations is aimed to last beyond the project so that content and communication on weather and climate information continue at a local level.

GOVERNANCE MODELS AND INSTITUTIONS

3.2 **Co-producing strengthening coastal city resilience in Mozambique and South Africa** – Leck, H. et al.

Residents of the Quarry Road West Informal Settlement, Durban, South Africa, prepare for floods, creating toolkits and planning for early warning system responses. Photo: ICLEI Africa and INACCT Resilience Project

Summary: A coastal city resilience project strengthens locally led flood adaptation in informal settlements through co-produced early warning, risk knowledge and community learning.

Contributors: Dr Haley Leck, Local Governments for Sustainability (ICLEI) Africa; the Designing Inclusive African Coastal City Resilience (INACCT Resilience) project. The project is a partnership between ICLEI Africa, the University of KwaZulu-Natal, eThekwini Municipality, University of Eduardo Mondlane, community representatives in Durban, South Africa, and Beira, Mozambique. The work reflects the collective contributions of researchers, practitioners, municipal officials, and community representatives involved in co-producing flood risk knowledge, strengthening community-based flood early warning systems, and supporting cross-settlement and cross-border learning. Contributors include Prof Catherine Sutherland (University of Kwazulu Natal), Prof Genito Maure (Eduardo Mondlane University), Dr Kate Strachan (ICLEI Africa), Joanne Douwes (ICLEI Africa), Clara Marais (ICLEI Africa), Nicolas Gate (ICLEI Africa), Smiso Bhengu (eThekwini Municipality), Dr Sean O'Donoghue (eThekwini Municipality), and Sibongile Buthelezi (Community Researcher, University of KwaZulu Natal).

Web addresses:

- https://africa.iclei.org/project/inacct/
- https://clareprogramme.org/project/designing-inclusive-african-coastal-cities-resilience-inacct-resilience/

Key organizations: ICLEI Africa, University of Kwazulu Natal, Eduardo Mondlane University, eThekwini Municipality, Beira Municipality

About the initiative: INACCT Resilience supports LLA in flood-prone informal and peri-urban settlements through community-based flood early warning systems, co-produced risk knowledge and participatory resilience planning. The focus is on research and practice-based learning. Target areas are Beira, Mozambique, and Durban, South Africa, with particular attention on Durban's Quarry Road West informal settlement, where community knowledge, local communication networks and municipal forecasting systems have been integrated over time.

The work responds to contexts where flood risk is intensified by informality, insecure tenure, limited services access, poverty and uneven inclusion in formal disaster risk management systems. INACCT strengthens flood preparedness and anticipatory action by combining scientific and technical forecasting data with lived experience, local observation, and practical testing of early warning and evacuation tools. It is locally led as residents are involved not only as warning recipients, but as co-producers of knowledge, acting as risk interpreters, knowledge holders, and co-designers. Interactive methods (e.g. arts-based methods) surface local priorities, evidence-based local and Indigenous knowledge, and track adaptation outcomes. The initiative is informing efforts to scale up community-based, flood early warning approaches to

additional settlements, while supporting cross-border learning with Beira. Early warning systems are treated as LLA pathways connecting immediate disaster risk reduction with long-term resilience and development justice.

Financial levers: INACCT Resilience is supported through externally funded research-for-impact and adaptation learning finance from the UK government and by the International Development Research Centre, Ottawa, Canada, as part of the Climate Adaptation and Resilience (CLARE) research programme. The INACCT Resilience project was launched in April 2023, with a project end date of August 2026. This research also draws on the Research for Impact Opportunities Fund and Capacity Strengthening Responsive Fund initiatives implemented under the broader INACCT Resilience project, funded by CLARE.

Key outcomes: INACCT Resilience provides evidence that locally led adaptation (LLA) outcomes include not only reduced exposure to climate hazards, but also strengthened preparedness and responsiveness, trust building and local agency, institutional collaboration and more equitable adaptation processes. The project speaks to several LLA outcomes. It has strengthened flood preparedness and anticipatory action by supporting community-based early warning practices that combine local observations, community communication networks, municipal forecasting systems and practical evacuation toolkits (e.g. loudhailers, whistles, bells). It contributes to trusted warnings by helping translate technical and scientific information into locally meaningful messages, grounded in residents' experience of flood thresholds, evacuation constraints and vulnerabilities. The project has supported stronger local ownership and agency, with residents contributing as risk identifiers, interpreters, knowledge holders and co-designers rather than as passive recipients of information. Inclusive collaboration has been strengthened between communities, researchers, practitioners and municipal actors, creating channels through which informal settlement realities can better inform flood risk governance. The work has generated evidence for scalable but context-sensitive resilience, informing scaling out to other settlements. The evidence draws on transdisciplinary and action-oriented research, capturing both tangible and less visible LLA outcomes: changes in preparedness, trust, collaboration, local leadership and the ability to act before and during flood events. A key symposium contribution is that the project has broadened evidence for LLA outcomes by showing the value of participatory, co-produced, lived, visual and narrative methods alongside technical data.

Lessons for others:

1. The project shows that LLA outcomes are not only produced through technical solutions, but through the relationships and capacities that make those solutions locally meaningful. In flood early warning systems, the key question is not only whether accurate information is generated, but whether it is locally relevant, people trust it, understand it, can act on it, and are able to shape how warnings are designed and communicated. For informal settlement communities, locally led adaptation depends on whether early warning is connected to context and lived realities, including the histories and geographies of place, insecure tenure, limited drainage, lack of safe evacuation options, livelihood pressures, social networks and uneven access to municipal services.

2. The project demonstrates the importance of recognizing communities as producers of evidence. Residents hold detailed knowledge of flood histories, local thresholds, drainage blockages, social vulnerabilities, communication pathways and practical response options. They also hold indigenous knowledge which offers different types of knowledge on, and interpretations of, climate, risk and adaptation. Methods such as photovoice, arts-based methods (e.g. Play-Dough modelling), learning labs, participatory risk mapping and community co-design. These emphasize the value of social science and make this knowledge visible in ways that conventional technical monitoring systems often miss. These methods are particularly important for assessing outcomes such as agency, trust, confidence, ownership and collaboration.
3. The project suggests that measuring LLA requires attention to both material and relational outcomes. Reduced losses and improved preparedness matter, but so do changes that are less tangible. These include stronger relationships between communities and municipal actors, greater confidence to interpret and communicate risk, improved recognition of local and Indigenous knowledge, and more inclusive adaptation decision-making. These outcomes are often harder to quantify but are central to whether adaptation is sustainable and equitable.
4. The project highlights the development dimensions of LLA. Flood risk in informal settlements is not only a climate hazard problem; it is shaped by poverty and inequality, infrastructure deficits, insecure land, inadequate sanitation, drainage challenges and historical exclusion from formal planning. Locally led adaptation therefore needs to be understood as part of wider development and justice agendas. Early warning can reduce harm, but its effectiveness depends on whether people have the resources, infrastructure, services and institutional support needed to act.
5. The approach is transferable as a set of principles rather than as a fixed model.

GOVERNANCE MODELS AND INSTITUTIONS

3.3 **Collaborative learning for locally led adaptation in Uganda's Cattle Corridor** – Mfitumukiza, D.

Summary: An initiative builds capabilities for collaborative learning for locally led adaptation to climate change in smallholder farming communities in Uganda.

Contributors: David Mfitumukiza and Celia Kenyangye, Makerere University, Kampala, Uganda

Key organizations: Makerere University; Norwegian University of Life Sciences

About the initiative: This initiative builds capabilities for locally led adaptation decision-making in Uganda's Cattle Corridor. This region is characterized by heightened climatic variability, including erratic rainfall patterns and recurrent droughts. The initiative fosters partnerships among researchers, local governments, farmers, and their support networks to develop adaptation solutions grounded in local realities. Over the past four years, collaborative learning activities of the initiative have centered on farmer groups identifying, prioritizing, and planning for their adaptation needs. Farmers continuously share these plans with potential collaborators to solicit support and advocate for integrating their priorities into formal planning processes. The collaborators include model farmers, local government technical officers, political leaders, non-governmental organizations (NGOs), and private-sector actors.

The initiative intentionally breaks down barriers to participation, enabling marginalized populations to ensure diverse voices, traditions, values, and identities are respected. By making appropriate use of the best available resources and diverse knowledge systems, this co-creative approach aims to improve sustainability of climate adaptation efforts and outcomes. Ultimately, it empowers local communities to take control of their futures through a stronger sense of adaptation process ownership.

Financial levers: The initiative is funded, primarily, by the Norwegian Programme for Capacity Development in Higher Education and Research for Development (NORHED) with a budget of approximately USD 150 000 from 2022 to 2027. Additionally, the project relies on direct resource contributions from participating farmers, with in-kind support from Kiboga District Local Government and Makerere University. Various collaborators also provide additional support to the farmers. This initiative is an integral part of the action-oriented research project, "Co-creating Knowledge for Local Adaptation to Climate Change in Least Developed Countries (LDCs)", funded by NORHED. The project aims to strengthen inclusive, collaborative knowledge creation with local communities, local and community-based organizations, and local governments. It focuses directly on the needs, contexts, and diversity of those most affected by climate change.

Key outcomes: This evidence is gathered through farmer collaborative learning plans, meetings, participatory learning-by-doing activities, learning forums, dissemination devoted events, group discussions, field observations, farmer narratives, and workshop reports. Progress is jointly evaluated by farmers, researchers, representatives of local government, and other collaborators.

The collaborative learning plans document locally led decision-making, demonstrating that the farmers are able identify their own adaptation priorities and shape the direction of the process based on local realities.

Improved knowledge co-creation by bringing together farmers, researchers, extension workers, local community and government actors, non-governmental organizations, and model farmers to exchange ideas and jointly blend indigenous, experiential, and scientific knowledge to counter climate risks like drought.

Learning forums and dissemination events capture change in adaptive capacity and amplify local voices, as farmers present their priorities and field experiences directly to technical and political leaders to influence wider governance and district-level planning and practice.

Field observations and interactions around learning-by-doing practices track behavioral change and adaptive capacity. The activities involve farmers testing, adapting, and applying techniques such as soil and water conservation structures, agroforestry tree selection. These are mostly undertaken using local resources.

Documentation of farmer narratives captures the level of inclusion and ownership by tracking how women, youth, elderly farmers, and persons with disabilities experience the process. Through the process, specific socio-ecological enablers and barriers affecting participation are monitored and documented.

Lessons for others:

Measuring LLA outcomes

- Dedicated focus on measuring LLA processes outcomes rather than just physical outputs. This includes tracking and understanding changes in behavior, local agency, and ownership.
- Embed evaluation and learning throughout LLA initiatives by assessing progress iteratively from design to implementation.
- Diversify data sources and types to validate empowerment.

Challenges in implementation

- Some individuals in local governments and communities find it very difficult to adjust to locally led initiatives because of deep-rooted disempowering impacts of top-down, externally defined and projectized approaches to adaptation.
- Related to the point immediately above are misaligned expectations. Some farmers expected immediate financial or material support, leading to attrition when not met. In addition, high weather risks drive youth toward immediate cash activities like motorcycle taxis (boda bodas).
- Difficulties in managing social power dynamics during collaborative learning. For example, farmers with more income, higher education or male participants often dominate and capture discussions in newly formed collaborative learning groups.
- Livelihood divergence. Divergent needs and interests between crop and livestock farmers can lead to local resource conflicts.
- Financial constraints are barriers to implementation of adaptation plans both by local communities and local governments.

Transferability of the evaluation approach

- The participatory process and its evaluation are transferable, but the indicators themselves need to be aligned to the adaptation context. This is because multi-stakeholder reflection and learning frameworks adapt to any community-led initiative. But there will always be context constraints because local socio-ecological realities, agricultural calendars, and cultural norms vary across regions.

Durability

- Structural findings on issues around power dynamics, seasonal labour conflicts, and cash expectations are durable and are likely to persist, for some time as core obstacles to community organizing
- Technical needs on learning priorities for local adaptation (such as specific tree choices) will shift as climate patterns worsen or technology evolves.

Influence on decision-making

- Collaborative learning for locally led adaptation to climate change informs local government and community planning. The farmers we able to confidently and directly present co-created action plans to sub-county and district planners to secure institutional backing.
- Locally led adaptation prevents maladaptation by grounding climate policies in local experiential knowledge, hence avoiding context-blind, harmful interventions.
- Locally led collaborative learning can incentivize flexible funding. Results prove that donors must provide flexible, patient financing that adapts to seasonal farming dynamic timelines.

GOVERNANCE MODELS AND INSTITUTIONS

3.4 **Empowering actors: evidence-based narratives for adaptation** – Moopelo, K.

Summary: The program works by enabling partnerships between communities, civil society organizations, and local institutions to improve resilience to climate impacts.

Contributors: Kearabetswe Moopelo, Programs Officer, Networks and Advocacy at the New Economy Hub (NEH). NEH is incubated by the Africa Climate Foundation and is established with the aim of driving investments, technologies and people towards an economy powered by renewable energy that benefits all people. NEH supports partners building the foundations of a just energy transition by enhancing public access to accurate, relevant, and inclusive information. We work with partners to deepen civic engagement and build community power in the transition and equip civil society actors to drive high-impact campaigns and shape national and global agendas.

Web addresses:

- https://neweconomyhub.org/partnering-for-a-new-economy/
- https://oxpeckers.org/
- https://radioworkshop.org/

About the initiative: The locally led adaptation (LLA) initiative seeks to strengthen climate resilience by shifting decision-making power, resources, and implementation directly to communities most affected by climate change. It aims to achieve this by supporting locally defined adaptation priorities, strengthening community institutions, and enabling collaboration between communities, civil society organizations, and local government over a medium- to long-term period focused on sustained resilience building.

It is locally led because communities identify their own climate risks, draw on Indigenous and lived experience, and actively design and govern adaptation responses rather than receiving externally imposed solutions. The initiative operates in climate-vulnerable contexts across Africa, particularly areas affected by recurrent droughts, floods, food insecurity, and environmental degradation. It involves rural communities, women's groups, youth networks, and local authorities responding to climate shocks and structural inequality.

Radio Workshop uses radio, podcasts, and audio storytelling to create "opportunities for youth dialogue, leadership, and citizenship in communities across Africa". Photo: Radio Workshop

Financial levers: We are the funders. We funded both Oxpeckers and Radio Workshops, and we have funded these for more than two years.

Key outcomes: The project/research generated evidence on how LLA processes are emerging within climate, energy, and economic justice spaces, particularly through grassroots knowledge systems, participatory governance, and community-driven policy engagement. Key outcomes include strengthened articulation of LLA frameworks within the New Economy Hub ecosystem, improved synthesis of community narratives on climate impacts and energy transitions, and enhanced linkage between local experiences and broader political economy debates shaping adaptation finance and governance.

These outcomes directly relate to the symposium by contributing grounded evidence on how adaptation is operationalized at the community level and how structural inequalities influence climate-resilience pathways. Outcomes are assessed through participatory reflection processes, workshop feedback, convening reports, and ongoing qualitative monitoring conducted by the New Economy Hub and partner organizations. Evaluation is continuous and iterative, typically reviewed over quarterly and annual cycles, with validation through stakeholder feedback and synthesis reporting.

Lessons for others: The experience of working within the New Economy Hub on LLA-related research and convening processes highlights that measuring outcomes requires a shift away from purely technical or output-based indicators toward approaches that capture power, agency, and relational change. A key takeaway is that LLA outcomes are often intangible and iterative, including shifts in who participates in decision-making, how knowledge is valued, and whether communities can meaningfully influence adaptation priorities. These changes are not easily captured through conventional logframes or short-term indicators.

A central challenge has been determining whether the “right” things are being measured. Traditional monitoring frameworks tend to prioritize quantifiable outputs such as number of workshops, participants, or policies influenced, while under-capturing deeper transformations such as community confidence, legitimacy of local knowledge, or redistribution of decision-making authority. As a result, there is a risk that what is measurable becomes what is prioritized, rather than what is most meaningful for LLA.

The experience suggests that mixed-method, participatory evaluation approaches are more appropriate. These include narrative documentation, stakeholder reflection sessions, participatory feedback loops, and qualitative case-based evidence. However, even these approaches require careful facilitation to avoid bias and ensure that marginalized voices are not overwritten by institutional actors. Measurement is therefore not neutral; it reflects power relations within the adaptation ecosystem itself.

The approach is partially transferable across contexts, but not without adaptation. While participatory and qualitative methods are broadly applicable, the specific indicators, cultural framing, and governance contexts vary significantly between communities and countries. This means that evaluation frameworks must remain flexible and locally co-designed rather than standardized across contexts.

In terms of durability, the findings suggest that LLA outcomes are not static. They are highly context dependent and may evolve as political, environmental, and funding conditions change. If revisited in five to ten years, some outcomes such as strengthened community networks or institutional partnerships may persist, but their influence and effectiveness could shift depending on governance dynamics and climate pressures.

Ultimately, this evidence should inform decision-making by reinforcing the importance of funding long-term, locally defined processes rather than short-term project outputs. It also highlights the need for donors and policymakers to prioritize accountability systems that value lived experience, relational change, and community authority in adaptation governance, rather than relying solely on quantitative performance metrics.

GOVERNANCE MODELS AND INSTITUTIONS

3.5 **Bridging the Perceptions Gap: Understanding divides in measuring Locally Led Adaptation** – Parviainen, J.

Summary: "Bridging the Perceptions Gap" is a comparative analysis supporting the development of a taxonomy for categorizing diverse interpretations, assumptions and values underpinning the collection of data and associated evaluation of adaptation evidence outcomes, including how success is conceptualized and understood.

Contributor: Janne Parviainen, Research Fellow, Stockholm Environment Institute

Key organizations: Stockholm Environment Institute

About the initiative: This work deepens the understanding of the ways in which different actors (financiers, national governments, academia, local communities, and indigenous groups) collect and measure "evidence" regarding locally led adaptation (LLA) outcomes, and what values and norms shape discourses and practices across these groups. This will be achieved by coding relevant documents and performance reports made available by financiers; national adaptation plans (NAPs) and policy documents of selected national governments; relevant publications and grey literature from local communities and Indigenous Peoples; and frameworks and approaches developed by non-governmental organizations and academic actors. Systematic discourse analysis will be conducted to unearth values and norms associated with reporting standards, alongside assumptions made regarding metrics for evaluating success (and whether these align with real-world conditions and experiences). Building such an understanding is central to support the scale up and financing of LLA, given the absence of consensus regarding what can be considered "good" adaptation (and by whom).

Financial levers: This work targets reporting associated with LLA grant- and loan-mechanisms in efforts to identify what types of evidence is valued or privileged for decision-making, and how these may differ from the perspectives and priorities of other actors when it comes to measuring LLA success. It is written as a part of the symposium on *Strengthening evidence on the outcomes of locally led adaptation*.

Key outcomes: Although not targeting LLA outcomes per se, this evidence provides critical foundation for advancing discussions between financiers and other actors by providing an understanding where actors are *coming from*. It sheds light on priorities and values that shape the ways in which evidence is collected and evaluated, and what may limit the use of alternative knowledges to support investments and decision-making. These include, but are not limited to, the institutional norms and values that necessitate quantitative measurement, aggregation, and indicatorization of interventions to their lowest possible denominators – usually to demonstrate financial returns rather than capturing impacts that programs have had on peoples' lives. Targeted frameworks and methods include the World Bank's *Common Approach to Measuring Climate Results* framework; the Adaptation Fund's *Strategic Results Framework;* and the *Integrated Results Management Framework* used by the Green Climate Fund. To understand the priorities and perspectives of national governments, analysis will target approaches such as the Organisation for Economic Co-operation

and Development (*OECD) Framework for Measuring Progress in Adapting to a Changing Climate,* and NAPs that include specific indicators as a part of their planned monitoring, evaluation and learning (MEL) system. These will be compared to other recognized indicators, frameworks, and metrics (including the 59 indicators for the Global Goal on Adaptation of the UN Framework Convention on Climate Change (UNFCCC); local and Indigenous knowledges; and academic discourses on measuring adaptation outcomes. The work supports the interpretation of divergent values and norms, and logics underpinning the design of evaluation metrics (categorized into themes from coded data for the purposes of comparison).

Lessons for others: The development of standardized indicators for assessing LLA outcomes is an enormous challenge. This is not only due to the lack of consensus regarding goals, successes, or the immense diversity of adaptation interventions across sectors, but also due to the epistemological and ontological clashes between lived experience, environmental change, and the discourses of scientific, governmental, and financial worlds which govern LLA debates. To date, no attempt has been made to bridge these perspectives through an analysis regarding tensions and differences, and how the (implicitly neoliberal) values associated with reporting standards of governments and funders shape how LLA outcomes are (or can be) described. Yet, to connect grassroot actors, local communities, and Indigenous groups with financing – if the assumption is that a productive alignment can be achieved – boundary organizations must understand associated power dynamics, tensions, and misalignment to begin the development of a shared (or at least mutually intelligible) language for describing and measuring LLA outcomes.

GOVERNANCE MODELS AND INSTITUTIONS

3.6 **Village-led regulations to protect and manage communal lands** – Sidiq, A.

Summary: Community-led village regulations in Indonesia strengthen climate resilience by protecting communal land, sustainable resource management, and local governance.

Contributors: Asrul Sidiq, PhD, lecturer, Department of Architecture and Planning, Syiah Kuala University, Aceh, Indonesia; affiliate researcher, International Centre for Aceh and Indian Ocean Studies and the Resilience Development Initiative; and co-founder of Kota Tanyoe, a social enterprise dedicated to community empowerment and urban initiatives in Aceh.

Key organizations: Syiah Kuala University; International Centre for Aceh and Indian Ocean Studies (ICAIOS)

About the initiative: This initiative examines locally led adaptation (LLA) in Lam Apeng village, Aceh, Indonesia, through a community-developed village regulation (qanun) focused on protecting communal land and strengthening sustainable natural resource management. The initiative seeks to enhance long-term climate resilience, local equity, and adaptive capacity in a rural community facing environmental pressures, land-use change, and climate-related risks. Based on ethnographic and participatory research conducted over several years as part of PhD fieldwork, the study explores how local institutions govern natural resources, mediate external interventions, and sustain collective action.

The initiative is locally led because the regulation and governance mechanisms were developed and implemented by village actors themselves, including customary leaders, local government, and community members. Rather than relying on externally designed adaptation programs, the initiative builds on local knowledge, social norms, and community institutions to define priorities and manage communal resources. The approach emphasizes participation, accountability, and locally legitimate decision-making.

Photo: Asrul Sidiq

The project focuses on rural communities in Aceh that depend on communal land and natural resources for their livelihoods. It addresses climate and environmental risks associated with ecosystem degradation, resource exploitation, and changing environmental conditions that threaten livelihoods and social cohesion.

Financial levers:

- The initiative was not implemented as a stand-alone, externally funded adaptation project, but emerged through community-led governance processes in Lam Apeng village, Aceh, Indonesia.
- The development and implementation of the qanun gampong (village regulation) were primarily supported through local community participation, village leadership, and existing village governance mechanisms.
- The research documenting and analysing the initiative was supported through PhD research conducted at the Australian National University between approximately 2020 and 2025.
- Additional support came from collaboration with local institutions and community stakeholders in Aceh.
- No large, dedicated, external donor budget was attached specifically to the village initiative itself; activities were implemented incrementally over several years through local institutional processes and community engagement.

Key outcomes:

Locally led adaptation (LLA) outcomes in Lam Apeng village, Aceh, emerged through community-driven efforts to protect communal land and strengthen local governance in response to land commodification, extractive pressures, and climate-related vulnerability. In January 2022, village leaders, customary elders, and residents collectively enacted a Village Regulation on the Restoration of Adat Sovereignty in Natural Resource Management, formalizing customary principles into enforceable village rules. The initiative strengthened communal land protection, adaptive capacity, social cohesion, accountability, and local autonomy, and it limited speculative land sales and external exploitation.

The evidence is based on ethnographic PhD research conducted over several years in Aceh. The work includes interviews, focus group discussions, participant observation, village deliberations, and analysis of village regulations and governance practices. The research captures outcomes often overlooked in conventional LLA metrics, including collective agency, legitimacy, community trust, and the role of historical memory in resilience-building.

The findings show that resilience outcomes depend not only on technical adaptation measures but also on locally legitimate institutions, effective leadership, social cohesion, and accountability. The study also demonstrates that externally driven interventions can undermine resilience and equity when they bypass local governance systems. Outcomes were evaluated qualitatively through longitudinal field engagement, cross-village comparison, and analysis of changes in governance practices, land management, and community perceptions over time.

Lessons for others:

The research highlights several lessons for measuring and evaluating LLA. First, many important LLA outcomes are difficult to capture through conventional quantitative indicators alone. In Lam Apeng, key outcomes included strengthened collective agency, legitimacy of local institutions, social cohesion, trust, leadership, and the protection of communal land systems. These dimensions became visible mainly through long-term ethnographic engagement, participant observation, interviews, and community narratives rather than short-term project metrics.

A major challenge was that externally driven evaluation frameworks often prioritize measurable technical outputs while overlooking locally meaningful institutional and social changes. The research suggests that the “right” things are not always measured in LLA, especially outcomes related to power relations, local autonomy, historical memory, and the capacity of communities to negotiate external pressures. This is particularly important in contexts where adaptation is closely tied to land governance and social relations.

The findings suggest that qualitative, participatory, and longitudinal approaches are essential for understanding LLA outcomes. While the specific governance arrangements in Aceh are context dependent, the broader lesson is transferable: adaptation is more likely to be effective and durable when rooted in locally legitimate institutions and community-defined priorities. However, measurement approaches should remain flexible and context-sensitive rather than standardized across all settings.

The durability of outcomes will depend on future political, economic, and environmental pressures. Some gains may persist because they are embedded in local institutions and village regulations, but they could also be challenged by changing leadership, market pressures, or external interventions. This highlights the need to understand resilience as an ongoing social and political process rather than a fixed outcome.

The evidence suggests that policymakers, donors, and practitioners should place greater emphasis on strengthening local governance capacity, accountability, and community institutions, rather than focusing only on short-term, technical adaptation projects or predefined performance indicators.

GOVERNANCE MODELS AND INSTITUTIONS

3.7 **Climate Bridge Fund** – Siraj, S. et al.

Summary: The Climate Bridge Fund, a Bangladeshi trust fund, finances and supports local non-governmental organizations to lead climate adaptation in vulnerable urban areas, delivering patient, predictable funding where it matters most.

Contributors: A team of people from the Climate Bridge Fund: Saiqa Siraj, Head of the Secretariat; Nirendra Natha Sarkar, Lead, Quality and Impact; Soburun Nessa Chowdhury, Specialist, Communications and Knowledge Management; Md. Ashadudzaman Asad, Deputy Head of the Secretariat

Web address: https://explore.brac.net/program/climate-bridge-fund/

Key organizations: BRAC; Climate Bridge Fund (CBF); KfW

About the LLA initiative: CBF is a pioneering trust fund established in 2019 by BRAC with financial support from the KfW Development Bank. Operating in Bangladesh, one of the world's most climate-vulnerable countries, CBF addresses the adaptation needs of urban populations, climate-induced displaced persons, and those at risk of displacement due to flooding, cyclones, salinity intrusion, river erosion, and sea-level rise.

CBF works primarily in low-income, urban settlements, supporting community-driven, gender-responsive adaptation interventions. Its work involves climate-smart water supply systems; inclusive sanitation facilities; climate-resilient livelihoods; housing infrastructure, including eco-friendly cookstoves; improved connectivity through drainage and walkways; and health and psychosocial support for overall well-being. Its endowment model awards predictable grants and long-term technical support to local non-governmental organizations (NGOs) and civil society organizations, free from volatile donor cycles. To support implementation of locally led adaptation (LLA) projects, CBF has funded 26 localized projects through 20 implementing partners. These projects, to date, have reached at least 638,000 participants.

CBF-funded projects are distinctly locally led. Local organizations and communities identify context-specific priorities to co-design and implement projects, while engaging directly with local government, particularly city corporations and municipalities. CBF strengthens local institutional capacity through hands-on technical assistance to tackle emerging climate risks.

Financial levers: CBF combines an endowment fund model for long-term sustainability with a depleting fund model for flexible emergency financing, positioning itself as a catalytic mechanism to address local adaptation finance gaps. The trust fund's innovative climate financing mechanism has been used since its inception in 2019, with an estimated overall budget of USD 5 million, covering both grants awarded and operational costs.

The Climate Bridge Fund has supported climate-adaptive and disability-inclusive livelihoods. Photo: Christian Para, Rajshahi City Corporation

CBF's complementary financing windows are designed to address different aspects of climate resilience. These are:

1. Endowment Modality: Climate Change Window (CCW). This operates solely on income generated by capital investments, with returns funding adaptation projects, supporting long-term resilience
2. Depleting Modality: Emergency Response Window (ERW). This operates as a depleting fund, providing rapid, flexible support during crises such as the Covid-19 pandemic and other acute crises.

Key outcomes:

LLA principles 1–8

- Principle 1: All projects are co-designed and implemented by local NGOs in consultation with local government and communities across 5 highly vulnerable cities.
- Principle 2: Projects Prioritize climate-displaced individuals in urban settlements, women's representation, reduced gender income gaps, increased decision-making power, and disability-inclusive approaches.
- Principle 3: The endowment fund invested USD 13.6 million in a seed fund generating ~USD 0.60 million in annual income. The fund provides stable, long-term financing, independent of rigid donor cycles, enabling multi-year planning that short-term grants cannot sustain.
- Principle 4: Proposal development embeds key features: technical assistance, adaptive management, and fiduciary compliance, strengthening 20 local NGOs as sustainable community anchors.
- Principle 5: Community-level risk mapping is mandatory per CBF's Environmental, Social, and Gender Safeguarding checklist. Local NGOs identify urban

vulnerabilities, and they design targeted responses built to 10–15-year climate projections, combining scientific data with local knowledge.

- Principle 6: Quarterly field monitoring and annual workplan reviews enable active program adjustment, including mid-term evaluation by BroadPeak. When climate shocks and the pandemic overlapped, CBF mobilized an additional €10m for emergency response, adaptive financing at speed.
- Principle 7: Downward accountability enforced as rigorously as upward reporting. Community participatory monitoring and feedback mechanisms, alongside an independent Advisory Committee, Trustee Board, and KfW oversight with transparent competitive proposal evaluation.
- Principle 8: The initiative unites bilateral finance; national scale, local NGOs; and municipal government under one operational framework, earning formal recognition in Bangladesh's National LLA Framework and citations in publications by the UN Framework Convention on Climate Change (UNFCCC), Organisation for Economic Co-operation and Development (OECD), and the International Institute for Environment and Development (IIED) as a replicable model.

Lessons for others:

Ultimately, what makes CBF replicable is its dual commitment to stable, patient financing and an embedded learning culture. However, endowment structure and local government engagement strategies emerged from Bangladesh's specific governance landscape and may not be transplanted wholesale.

- **The endowment model is CBF's most structurally distinctive contribution to the LLA finance debate. By investing the seed fund in government treasury bonds, CBF generates stable annual income, insulating programming from volatile donor cycles and enabling multi-year planning that time-limited grants cannot sustain.** This predictability allows CBF to maintain long-term partner relationships, fund iterative learning, provide post-project operations and maintenance support, and mobilize rapidly when shocks demand it. Demonstrated when CBF pivoted an additional EUR 10 million to emergency response during overlapping Covid-19 pandemic and climate crises without dismantling ongoing resilience work. For replication, two conditions are non-negotiable: sufficient upfront capital to generate meaningful annual income, and a strong institutional steward with fiduciary credibility and local embeddedness to deploy it equitably, one that commands trust across government, civil society, and communities simultaneously. Where those conditions exist, the endowment approach offers what the current climate finance architecture largely fails to provide: patient, predictable, locally accessible funding treating adaptation as a long-term institutional commitment rather than discrete projects.
- **The CBF framework is transferable. Flexible finance, embedded capacity strengthening, community co-design, and iterative learning apply across contexts.** Process quality determines sustainability: community-led Operation & Management committees kept WASH infrastructure functional after project closure; trained youth change-agents continued to follow up on health work independently. However, cost estimates resulting from climate shocks can impose a financial burden on participants. CBF's flexible funding absorbed the shortfall

through project contingencies rather than imposing default costs on vulnerable households.

- **CBF's experience across 26 projects confirms that significant LLA outcomes are invisible to standard metrics.** Health interventions drove disease knowledge from 46% to 95.5% at endline, with 99% adopting preventive practices; alternative livelihoods enabled women to contribute 13% reduction in the gender income gap. Measuring LLA requires frameworks tracking both what was built and who was empowered.
- **Findings rooted in institutional relationships are more durable than those tied solely to infrastructure.** CBF's endowment model absorbs real-world shocks without stalling delivery; its capacity-building initiatives and regular learning workshops institutionalize continuous improvement; and its feedback loops and learning-agile cultures are embedded structurally, not added retrospectively.

GOVERNANCE MODELS AND INSTITUTIONS

3.8 **Climate Resilient Villages** – Venkataramani, V. et al.

Summary: Climate Resilient Villages, a pioneering initiative funded by the state government of Tamil Nadu, India, aims to operationalize locally led adaptation and resilience-building actions in 11 villages in the state.

Contributors: A team from the Climate Resilience Practice (CRP) program at the World Resources Institute (WRI) India: Vivek Venkataramani, Associate Program Director; Dr. Nambi Appadurai, Director; Dr. Anjana Rajagopalan, Manager; Vishvak Kanna, Senior Project Associate; Dr. Ananya Chakraborty, Senior Program Research Specialist; Munawar Irfaan, Senior Project Associate; and Harish Palani, Senior Program Research Specialist, Energy Programme, WRI India.

Web address: https://www.tngcc.tn.gov.in/project/climate-resilient-village/

Key organizations: WRI India

About the initiative: The Climate Resilient Villages (CRV) initiative is being piloted in 11 climate-vulnerable districts. The pioneering project is funded by the state government of Tamil Nadu. It offers a unique model of a subnational government integrating locally led adaptation (LLA) and climate resilience in village development planning in India. Killai, a coastal community in Cuddalore, Tamil Nadu, India was the first pilot site. Killai is home to nearly 1000 people from an Irula community that relies on fishing and mangrove tourism for their livelihoods. They have been negatively affected by floods and cyclones.

Mangrove restoration is an integral part of the Climate Resilient Villages initiative in Tamil Nadu, India.
Photo: World Resources Institute India

The project aims to develop the feasibility report and detailed project reports (DPRs) that facilitate the implementation of locally led resilience and adaptation-building actions on the ground across 11 villages. The CRV sites are selected based on climate and socioeconomic vulnerabilities, inputs from district and block-level government officials. The project assessed the biophysical, socioeconomic, and climate vulnerabilities of local communities in the select villages and co-developed sustainable actions that help build resilience across key sectors that are tied to the local livelihoods. These included identifying the gaps and needs, through bottom-up approaches, consultations with marginalized groups and women, actions across key sectors such as drought and flood-proofing water infrastructure, alternate livelihoods through plastic and glass upcycling, renewable energy, fisheries, mangrove and turtle conservation, eco-tourism, etc.

Financial levers: The project is funded and owned by the Government of Tamil Nadu having an initial budget of 80 lakh per site from the state funds. Thereafter, the government has leveraged additional funding support from the World Bank for the coastal districts under the Tamil Nadu Coastal Restoration Mission (TNSHORE). The project runs over a period of 4 years across 11 districts, and the government is looking to scale this up across all 14 coastal districts.

Key outcomes:

Through its interventions, the project aims to achieve outcomes around tailored, cost-effective action, community ownership, and direct socio-economic gains. The first CRV office was launched in September 2025 to include two project management unit (PMU) staff hired from the local community to track implementation and its outcomes.

The actions implemented so far are as under:

- The turtle hatcheries established provided jobs for 25+ people.
- 20KW rooftop solar solutions were established over 4 public buildings, a green school and installation of solar streetlights which has resulted in significant power savings and emission reductions to the tune of 80 tons CO_2e per annum.
- The project has also cleaned and planted mangroves along 3.5kms of the Buckingham Canal.
- An e-boat has also been introduced in the Pichavaram Mangroves on a pilot basis to reduce pollution and reduce disturbance to wildlife
- The local town Panchayat has provided an in-principle buy-in to sign an agreement with a social enterprise to recycle and upcycle plastic and glass waste
- The project has helped provide livelihood opportunities for women by engaging them vermicomposting, waste recycling, turtle hatcheries, and mangrove plantations.

The PMU will routinely collect data and capture it in the CRV dashboard created to monitor the progress made in the program. This will be tracked and scrutinized by the district and state administration. The PMU staff provide monthly email updates to the district administration and digitize data on the interventions and the metrics of monitoring, evaluation and learning (MEL) developed for this purpose.

Lessons for others:

A. The outcomes of LLA are easier to achieve if mainstreamed with conventional development planning processes and finances.

The outcomes need to be monetary in some way or the other when we deal with the most marginalized and vulnerable communities. They face multiplicity of challenges through scarcity of natural resources, food security, livelihoods, access to land titles, markets and inadequate representation in local decision-making.

LLA measures are often results of very flexible decision-making at the grassroots level to ensure sustainability of actions. Hence, the MEL needs to be dynamic and responsive to changes as well.

B. Often, the low-hanging fruits amongst LLA and resilience-building actions that are easily achievable may not be a dire need for local communities. It is important to balance out the actions possible based on the local political economy. Given budgetary constraints, the local administration may prefer tangible, low-cost measures to be implemented. Livelihoods, and capital-intensive hard infrastructure, need more emphasis. Adaptation funding mitigation or vice versa often sees a better buy-in from the local administration.

It is also extremely crucial to integrate community dynamics, for instance, dominant communities may have relatively greater ownership of assets, decision making influence, access to markets or even finances. However, to avoid community-based differences and inertia in delivering resilience actions to the most backward target communities, at times community level benefits to the relatively less marginalized or dominant community become necessary.

C. The findings can be durable in part. For instance, once they reach a particular scale, plastic and glass upcycling-related social enterprises can offer livelihoods and be sustainable. Similarly, for flood proofing, EcoBlocs (modular crates made of recycled plastic), which have been recommended, will only help in water recharge, reduction in salinity, and reduced flooding. Also, a reasonable income can flow to tribal communities through the scale up of e-boats in the mangroves and remittance of tourism fees to local communities through mangrove councils.

However, durability is not a given. Solar panels need continuous maintenance. Similarly, mangrove plantations and turtle hatcheries need constant monitoring and community participation. Government changes often affect policies and conservation actions. The Buckingham Canal clean-up can be maintained only through sustained behavioural changes in reducing plastic dumping. Community-based differences and inequalities in access and distribution of water can be difficult to change through a small project. Similarly, the Irula migrant communities in this region do not have land titles, further complicating basic service provision.

D. The work should inform mechanisms for integrating LLA and resilience actions with development (through, for example, designs and MEL frameworks).

4. INDIGENOUS AND LOCAL KNOWLEDGE

4.1 **Rohingya refugee-led climate adaptation through gardening and bamboo planting** – Ferdous, J.

Summary: Rohingya refugees lead their own climate adaptation through gardening, bamboo planting, and fuel-sharing without external funding.

Contributors: Jannatul Ferdous, PhD., Associate Professor, Department of Public Administration, Comilla University, Bangladesh

Key organizations: Association for Social Advancement and Rural Rehabilitation Work for Humanity (ASARR)

About the initiative: This initiative seeks to document, validate, and strengthen locally led adaptation (LLA) practices among Rohingya refugees in the Balukhali settlement complex (Camps 8–10) in Cox's Bazar, Bangladesh – one of the world's largest and most climate-vulnerable displaced populations. It seeks recognition and modest flexible funding for informal, community-driven adaptation strategies, which refugees are already using, over a two-month period (March - April 2026). It does this through participatory action research, community storytelling and dialogue between the informal leaders of refugees and the camp authorities and humanitarian agencies.

It is "locally led" as it is designed and driven by refugee women and informal community facilitators (e.g. Halima and Abdur Rahman in the case studies), and not by external organizations. The power to choose which adaptation practice should be documented and supported is in the hands of community knowledge holders who make the decision. The context is the Rohingya refugee camps of Ukhiya Upazila, Cox's Bazar where about 120 000 to 130 000 Rohingya refugees were residing in the study area. Climate risk factors covered are monsoon flooding, landslides, cyclones (such as Cyclone Mokha 2023), scarcity of fuel and resources and soil erosion. The initiative

Tending to plants in the Balukhali refugee camps, Cox's Bazar, March–April 2026. Used with informed consent of participants. Photo: Jannatul Ferdous / Association for Social Advancement and Rural Rehabilitation Work for Humanity (ASARR)

focuses on refugees' own local knowledge, informal governance and women-led cooperation as legitimate and effective evidence of LLA that is typically missing from formal adaptation finance.

Financial levers:

- No external funding was received for the core research (March–April 2026). The study was self-funded by the author, covering fieldwork costs (travel, local accommodation, interpreter fees through the Association for Social Advancement and Rural Rehabilitation Work for Humanity (ASARR) at approximately USD 730 total.
- In-kind support provided by ASARR, facilitating camp access, participant engagement, and culturally sensitive communication at no cost.
- The adaptation practices documented (gardening, bamboo planting, fuel sharing) operate on zero budget. Refugees use salvaged materials, seeds from markets or neighbours, and voluntary labor.

Key outcomes:

1. **Informal governance helped mitigate the impact of disasters.** Halima's bamboo planting program on slope areas with institutional instability (which was not approved in the camp) suffered only minimal landslide damage during the 2021 monsoon season compared to the untreated slopes. Neighbour-to-neighbour warnings occurred within hours; by contrast formal warnings took place with within 24 to 48 hours.
2. **Women led food security measures.** Rahima and Nasima created community and household gardens of papaya, pumpkin and chili with traditional seeds and without any outside assistance within six to eight months. Collective replanting helped gardens to withstand Cyclone Mokha (2023).
3. **Fuel-sharing networks prevented fuel shortages.** During rainy seasons, there is no shortage of cooking fuel in Asma's informal group of women who share fuel among themselves, and this is recorded weekly through self-report in a frequency matrix.
4. **Post-disaster mutual aid arrived faster than formal aid.** The community-based child/youth and elderly space for the children of Mariam came up organically and opened within 4 hours of landslide event, while formal shelter space took 72 hours.

Evaluation is participatory and refugee-led. The indicators of success identified by community members are: children's safety after the event; the survival of fruit trees; bartering of fuel (successful, weekly) and the frequency of neighbors informing each other about dangerous situations (daily during the monsoon).

The lived-experience, participatory knowledge, and storytelling evidence directly responded to the call for expanding "evidence" beyond technical metrics and is compelling for capturing LLA outcomes, including equity (unrecognized women's leadership) and effectiveness (informal systems beating formal systems) and methodological innovations (refugee-defined success).

Lessons for others: Measures of trust, promptness of neighbors' responses, and whether children can play safely after a landslide, which are critical to refugees' satisfaction with the service, are not captured by conventional technical indicators

(drainage pipes installed, ration cards distributed). Measuring LLA outcomes requires refugee-defined metrics, such as "how many families shared fuel this week" or "how quickly did informal warnings arrive before monsoon rains". These are measurable, participatory, and contextually valid.

The most serious was the restriction of gardening and planting of bamboo by the camp authorities, who had first classified such measures as "unauthorized". This has shown that a lot of times, LLA is not even enabled. The other difficulty was that women such as Halima and Asma were the actors of adaptation but were not recognized as such in formal records; the results of their adaptations needed to be captured through their oral histories. Yes, these were the right things captured as refugees themselves validated the findings. Long-term mental health effects of gardening, however, did not get recorded, and, according to participants, were just as important as the food.

Participatory measurement – based on narratives – is highly transferrable, as long as outsiders give up on defining what "success" should look like. Indicators (fuel sharing, bamboo planting) are context specific to camps where there is scarcity of resources. But the approach – which involves engaging with the target community, inviting them to decide on their own resilience indicators, mapping informal networks, and recording their outcomes prior to external arrival – is applicable to any humanitarian context. If you take one set of indicators to be another, what does not transfer?

Informal LLA is lasting. Refugees will adapt again and again. Specific outcomes (such as Halima's bamboo grove) may also be affected by the cutting down of vegetation by camp authorities or by the moving of refugees. Many LLA practices could disappear or change in 5–10 years if they are not properly recognized and funded. The danger is that this resilience is not being paid and recognized, nor is it being overused. Support of informal governance is not enough to be documented; it must be institutionalized to achieve fundamental change.

Recommendations

Policymakers/funders should:

1. Facilitate the use of micro-grants (USD 500–1,000) directly to informal refugee groups, without registration.
2. Adopt "do-not-prohibit" policies for low-risk adaptation activities such as gardening and bamboo planting rather than "permission-based" policies.
3. Adopt new evidence standards to accept narrative knowledge, participatory knowledge, and community-validated evidence along with quantitative knowledge.
4. Map and co-plan with informal leaders, not just formal majhis.

If these changes do not occur, LLA is invisible and unfunded, despite its effectiveness.

INDIGENOUS AND LOCAL KNOWLEDGE

4.2 **Adaptation to forest loss by Suku Anak Dalam communities in Indonesia** – Ginting, S.

Summary: This work examines how Suku Anak Dalam communities in Merangin Regency, Jambi Province, Indonesia, adapt to forest loss through food practices, ecological memory, and local knowledge.

Contributor: Dr Sadar Ginting, Co-Founder and Executive Director, Dialogue Empathy Ecology Peace EnGender (DEEP EnGender), Indonesia.

Web address: https://en-gender.globaldeepnetwork.org

Key organizations: Dialogue Empathy Ecology Peace EnGender (DEEP EnGender), Indonesia

About the initiative: This work examines how Suku Anak Dalam communities in Merangin Regency, Jambi Province, Indonesia, understand and respond to environmental change through their own knowledge, food practices, oral testimony, and local signs of change. It is grounded in field engagement from December 2023 to May 2024, followed by continuing community engagement through DEEP EnGender. The work focuses on how the Suku Anak Dalam knowledge holders describe forest loss, polluted rivers, declining access to wild foods, land dispossession, and the expansion of oil palm and rubber plantations, and how these changes affect food security, ecological memory, and everyday livelihood practices.

The locally led element lies in where the analysis begins: with their own accounts of what has changed, what has been lost, what remains possible, and what forms of resilience matter to them. The work is based on repeated field engagement, in-depth interviews, trust-building, culturally grounded interpretation, and documentation of local food and regeneration practices. Given the stigma often attached to the Suku Anak Dalam communities, the contribution is careful not to treat their vulnerability as a cultural deficit. Instead, it situates food insecurity and constrained adaptation within forest loss, insecure land access, and exclusion from decisions affecting their survival.

A Suku Anak Dalam community member and researcher document local food plants and ecological knowledge during field engagement. Photo: Sadar Ginting / DEEP EnGender

Financial levers: My doctoral field research was supported through academic research arrangements, including the Chiang Mai University Presidential Scholarship and support from the World Wildlife Fund (WWF) Education for Nature Program through the WWF Trudy Fellowship. My continuing engagement with Suku Anak Dalam communities has also received modest activity-based financial support. The support has mainly covered field coordination, travel, communication, documentation, dissemination, youth engagement, and community activities. The overall budget is modest and activity-based rather than annualized. There is no single fixed long-term budget attached to this contribution. Funding has been provided across different stages: doctoral field research from December 2023 to May 2024, followed by continuing community engagement through DEEP EnGender.

Key outcomes: The findings are drawn from fieldwork and continuing engagement with Suku Anak Dalam communities.

1. **Adaptation under reduced forest access.**
When forest access was still available, the Suku Anak Dalam food practices relied on selective harvesting, careful foraging, sustainable hunting, river-based food sources, and respect for ecological regeneration. Today, these practices are much more constrained by forest loss and plantation expansion. Current responses include small-scale cultivation near settlements, food sharing, planting or restoring useful food plants, and collecting remaining resources in degraded landscapes.

2. **Local signs of environmental change.**
Knowledge holders identify change through concrete ecological losses: polluted rivers, fewer fish, declining wildlife, disappearing forest tubers, reduced availability of medicinal plants, fewer wild fruits, and blocked or altered foraging routes.

3. **Food insecurity as loss of land, memory, and dignity.**
Food insecurity is not only a matter of food quantity. It also involves the loss of forest-based food knowledge, weaker intergenerational learning, reduced autonomy over land and food, and the erosion of dignity when communities must depend on degraded or insecure food sources.

4. **Social and ecological co-benefits.**
Where Indigenous knowledge and land access remain meaningful, food practices can support biodiversity care, resource regeneration, food sharing, intergenerational learning, and community solidarity. These co-benefits become harder to sustain when land, forest, and river access are restricted.

These outcomes are assessed through qualitative interpretation, reflection with local knowledge holders, and documentation of local practices.

Lessons for others: Assessment of locally led adaptation should begin with indicators defined by local knowledge holders. In the Suku Anak Dalam context, outcomes are not adequately captured by income, food quantity, crop production, or external assistance alone. Knowledge holders identify change through ecological signs: disappearing forest tubers, wild fruits, medicinal plants, fish, wildlife, clean rivers, and foraging routes.

These signs are historically grounded knowledge produced through long-term relations with the forest.

The Suku Anak Dalam communities are often described through deficit-based labels, as if food insecurity, limited formal education, or limited access to services were cultural problems. My field engagement suggests that such framings obscure the structural conditions that produce vulnerability, including forest loss, land dispossession, polluted rivers, and weak recognition of Indigenous rights. For evidence on locally led adaptation to be credible, the process must avoid reproducing stigma. It should recognize Indigenous people as knowledge holders and rights holders, and clarify how claims are generated, interpreted, and checked with those represented.

Oral testimony, lived experience, and locally guided documentation can provide credible material when the process of collecting, interpreting, and checking is clear. Testimonies about hunger, forest loss, food sharing, changing food preferences, and planting or regeneration efforts show how adaptation is experienced, constrained, and made meaningful.

The findings also show that adaptation should not be romanticized. The Suku Anak Dalam communities continue to respond through foraging, food sharing, small-scale cultivation, and regeneration efforts. However, these responses occur under land insecurity, forest conversion, pollution, and limited recognition of Indigenous rights. Assessment therefore needs to distinguish between resilience that strengthens autonomy and coping that records survival under pressure.

This approach is transferable as a method, but not as fixed indicators. Other communities will define meaningful outcomes through their own landscapes, histories, hazards, and governance realities. What can be replicated is the process: build trust, work with local knowledge holders, document locally defined indicators, support safe and locally guided evidence generation, and make limitations explicit.

Over time, some outcomes may remain, especially food-sharing ethics, ecological memory, youth engagement, and the desire to restore useful food plants. However, findings may change if land access declines further, younger generations lose opportunities to learn from the forest, or documentation creates new risks if not governed carefully. For decision-making, this work supports Indigenous-led monitoring, long-term field engagement, land and forest access, safe documentation, and funding that communities can help define according to their priorities.

INDIGENOUS AND LOCAL KNOWLEDGE

4.3 **Trust as infrastructure** – Kyaw, P. T.

Summary: PlanAdapt helps carry Nepal's local evidence into locally led adaptation debates, showing how 17 years of trust shaped resilience, livelihoods and agency.

Contributors: Phuu Thit Kyaw, Research Analyst, PlanAdapt ; Mark Holmes, Executive Director, The Glacier Trust; Nivedita Joshi, PlanAdapt Fellow, PlanAdapt; Martin Rokitzki, Founder and Managing Director, PlanAdapt

Web address: https://theglaciertrust.org/

Key organizations: PlanAdapt; The Glacier Trust; EcoHimal Nepal; the Himalayan Community Development Forum (HICODEF); local farmer groups, school groups and local governments in Solukhumbu, Mandan Deupur and Nawalparasi

About the initiative: Trust as Infrastructure brings together The Glacier Trust and PlanAdapt to share 17 years of work with Nepali partners and hill and mountain communities. The initiative shows how locally led adaptation grows when local organizations and farmers hold real authority over decisions, resources and knowledge. Through long partnerships with EcoHimal Nepal, HICODEF, farmer groups and local governments, the work supports agroforestry, organic farming, coffee-based layer farming, nurseries, school gardens, local markets and training. It has worked across Solukhumbu, Kavrepalanchok and Nawalparasi, where farmers face erratic rain, dry winters, landslides, soil loss, water stress and rising costs.

A man operates a coffee-hulling machine in a village processing space. Photo: The Glacier Trust

It is locally led because Nepali partners and community members decide what is needed, test methods, and keep the work going beyond short projects. PlanAdapt's role is to act as a knowledge broker. We help carry the message from Nepal into the symposium and wider locally led adaptation (LLA) evidence debates, but we do not replace the voice or authority of Nepali partners. The evidence gallery will make this visible by asking visitors to judge evidence artifacts and then compare their judgement with local meaning. The aim is to show why evidence from communities can be strong locally, yet still not reach policy and funding decisions.

Financial levers: The Glacier Trust raises funds through individual donors, fundraising through crowdfunding, grants from trusts and foundation, and partner support. The Glacier Trust states that all donated project money goes to directly to projects, with core costs covered through high-value donors. Ideally, projects would proceed only when all funds are secured, but need and momentum often mean that only outline funding is in place at project start. Over 17 years, funding has supported practical work by Nepali partners including EcoHimal Nepal and HICODEF, focusing on deep connection and support in a few locations rather than light touch across several. The annual budget of each project generally sits between GBP 16 000 to 20 000 (USD 21 000 to 27 000), offering excellent value for money.

Key outcomes: Evidence comes from project records, partner reports, farmer experience, photographs, community stories and long-term observation across 17 years. It captures outcomes that short evaluations often miss: trust, local authority, skill, agency and the ability to respond during shocks. It also captures visible results reported by The Glacier Trust. In Kavrepalanchok, The Glacier Trust reports 6083 farmers trained in climate-smart agriculture; 82 118 seedlings planted; 103 polyhouses built, 12 school agroforestry gardens and 77 percent of surveyed farmers increasing income. In Nawalparasi, The Glacier Trust reports that over 1300 farmers are involved in organic coffee-based agroforestry, nearly 40 000 coffee seedlings planted and coffee parchment production rising from 54.5 kg in 2020 to 1554kg in 2025. In Solukhumbu, since 2017, 2725 farmers have been involved in planting 418 000 seedlings, transforming the area into an agroforestry success story and revolutionising livelihoods.

These outcomes are measured through Nepali partner reports, training records, nursery and market records, household surveys, project visits, photographs and community accounts. PlanAdapt helps organize and communicate this evidence for policy and finance audiences, while keeping its local meaning clear. The evidence relates to the symposium because it asks what counts as proof of LLA outcomes. It shows that numbers are useful, but they do not tell the full story unless they sit beside local knowledge and long relationships.

Lessons for others:

LLA evidence needs time. A short project can measure a training, a nursery or a market, but it may miss whether people keep using knowledge when the project is over, whether they trust the partner enough to ask for help during a crisis, and whether local groups can make decisions without waiting for an outside actor. This work suggests that trust is both a condition for LLA and an outcome of LLA.

Knowledge brokering must be undertaken with care. PlanAdapt's role is to carry the message from Nepal into spaces where policy and funding decisions are made. This means translating evidence into language that others can use, while making clear that the knowledge comes from Nepali partners and communities. Knowledge brokering should not turn local experience into a PlanAdapt story. It should help the message travel with context, power, and credit intact.

Evidence should be shown in more than one form. Numbers show reach and change. Stories, photos, and quotes show meaning, power, and ownership. The evidence gallery turns this into a simple exercise. Visitors first label evidence in their own language. Then they compare it with local captions. This can show the gap between donor evidence and local evidence in a simple way.

The main challenge is not only missing evidence. It is that evidence from communities may not be recognized because it comes through stories, photos, local experience, or partner trust. This creates a translation gap and a recognition gap. Funding systems often want evidence that is quick, tidy, and easy to compare. LLA outcomes are slower and more relational. This does not mean they cannot be measured. It means measurement must include local voices, partner records and signs of agency, not only outputs. This evidence should influence decisions by making funders and governments ask whether their rules build trust or weaken it.

As an organization, The Glacier Trust has stripped back reporting needs from partners, moving towards headline numbers sitting alongside photographs and farmer case studies, ensuring that evidence is meaningful and not onerous. This is then relayed to donors in a similar style. As a small charity receiving relatively small grants, donors are much more interested in individual stories and real-world impacts than exact numbers, although these are still important. We also work with partners in a balanced relationship, where challenges are openly discussed and solutions co-created.

Gaps in funding, due to the project-to-project nature of NGO financing, create uncertainty, threaten momentum, and stretch trust relationships. Whilst The Glacier Trust's projects all include the move to self-sustaining and self-funding models within the communities, this takes time to achieve and requires several project phases. Funding for "more of the same" is much more difficult to find than "new and shiny".

INDIGENOUS AND LOCAL KNOWLEDGE

4.4 **Adaptation infrastructure: traditional knowledge and subnational governance in Ecuador's Andean and Amazonian regions** – Lechón, W.

Summary: Traditional knowledge and subnational governance address adaptation, resilience, and climate-related losses and damages in Andean and Amazonian communities of Ecuador.

Contributor: Wilson Lechón, Instituto Internacional para el Medio Ambiente y el Desarrollo (IIED)

Key organizations: Instituto Internacional para el Medio Ambiente y el Desarrollo (IIED); Consorcio de Gobiernos Autónomos Provinciales del Ecuador, CONGOPE

About the initiative: This research initiative generates evidence on climate change impacts on biodiversity and Indigenous communities in Ecuador's Andean and Amazonian regions, demonstrating that traditional knowledge systems and subnational governance structures constitute pre-existing adaptation infrastructures. Using the Comprehensive Climate Impact Quantification (C-CIQ) methodology, participatory assessments, and quantitative indices, it documents both economic and non-economic loss and damage.

Its locally led character is defined by the co-construction of biocultural indicators with communities – validated locally, anchored to a community-defined 1980 baseline. This process captures intangible losses invisible to conventional economic frameworks. Participating groups include Shuar (Pastaza), Kichwa, and mestizo communities (Carchi, Imbabura), totalling 120 direct participants. Climate hazards addressed encompass droughts, frosts, extreme rainfall, water source depletion, human-wildlife conflict, and biocultural erosion.

A meeting in the Andean region of Ecuador. Photo: Wilson Lechón / Instituto Internacional para el Medio Ambiente y el Desarrollo (IIED)

Financial levers: The initiative operates through a multi-source financing model (2024–2026): CONGOPE provides institutional support for subnational climate coordination. IIED (London) serves as the primary scientific and financial backer, supporting research, publication, and fieldwork. Naturaleza y Cultura Internacional (NCI) and the Confederation of Indigenous Nationalities of the Ecuadorian Amazon (CONFENIAE) facilitate engagement with Amazonian Indigenous communities. The lead researcher contributes personal time and resources. No centralized external funding exists. Dissemination and implementation capacity remains limited.

Key outcomes: The initiative yields multidimensional evidence across economic, ecological, and sociocultural domains. In productive terms, 85% of Andean agricultural activity is climate-affected, with 100% losses during extreme events and average annual damages of USD 807 456. Differentiated Regional Resilience Indices – 42.86/100 (Amazon) and 55.94/100 (Andes) – reveal that greater ecosystemic integrity confers relative resilience, while agrarian transformation amplifies Andean vulnerability.

Non-economic losses are equally significant: 80% of participants directly link biodiversity to cultural identity, evidenced by the abandonment of ancestral crops (quinoa, maize, chochos), the restriction of Kichwa language fluency to those over 50, and climate-driven changes in traditional dress. Fifteen emblematic Amazonian species have disappeared from community territories, glacier coverage has retreated 52%, and 70% of youth migrate to cities, generating structural “climate debts”.

Evidence is constructed by comparing community-perceived changes from 1980 to 2025 at 10-year intervals, using normalized social, cultural, economic, and environmental indicators co-validated with participants (March 2025 – February 2026). The application of epistemic pluralism – through co-constructed biocultural indicators – captures intangible impacts invisible to conventional metrics, demonstrating that local communities are primary generators of adaptation-relevant knowledge and justifying hybrid evaluation frameworks for locally led adaptation outcomes.

Lessons for others: A central methodological finding is that LLA outcomes cannot be assessed exclusively through standardized economic or biophysical indicators. The most profound losses – cultural identity erosion, disruption of intergenerational knowledge transmission, and community psychosocial stress – remain systematically invisible to conventional frameworks. The co-construction of biocultural indicators (agroecological calendars, native seed diversity, Indigenous language use linked to agricultural practices), anchored to a community-defined 1980 baseline, proved essential to capturing these dimensions while legitimizing the process with participating communities.

The primary methodological challenge involved the economic valuation of ecosystem services within Indigenous knowledge systems that do not assign monetary value to nature – an imposition that risks epistemic colonialism. The C-CIQ framework addressed this tension through comparative normalized indices that quantify relative impacts without requiring full monetization. Nonetheless, critical gaps persist. The interdependence between community mental health and biodiversity loss and cumulative food system impacts demand One Health approaches not yet integrated into the current framework.

The C-CIQ approach is transferable, provided that indicators are co-constructed with each territorial community rather than applied universally. Contexts with distinct knowledge systems will require greater investment in culturally competent facilitation. Regarding durability, documented impacts on biodiversity, glaciers, and productive systems reflect processes with structural inertia. Worsening trends are expected given unresolved root causes (absence of agricultural insurance, state disengagement, extractivism). Cultural losses, however, risk irreversibility, making immediate policy action critical.

For decision-makers, this evidence challenges the primacy of external finance and technological transfer as adaptation solutions. It positions subnational governance structures and traditional knowledge systems as high-legitimacy, pre-existing adaptation infrastructures.

Three concrete policy actions follow:

1. **Integrate biocultural indicators into national loss and damage monitoring systems.**
2. **Design climate agricultural insurance covering total production losses.**
3. **Redirect climate finance toward existing community governance mechanisms, avoiding parallel structures that erode local institutional capacity.**

INDIGENOUS AND LOCAL KNOWLEDGE

4.5 **Addressing Root Causes (ARC) program** – Nanda, R. et al.

Summary: The Addressing the Root Causes of Exploitation in South Asia (ARC) initiative of the Global Fund for Children works with 21 non-governmental organizations (NGOs) across the region to support community and youth action on their challenges, including climate risks, through a community-led process (using The Constellation's Support, Appreciate, Listen-Learn, Transfer-Community Life Competence Process (SALT-CLCP)).

Contributors: Global Fund for Children, Rituu B Nanda, Tyas Pusposari, Indrani Chakraborty, Md. Shanawaz, Shristi Joshi and John Hecklinger

Web address: https://globalfundforchildren.org/initiative/addressing-the-root-causes-of-exploitation-in-south-asia/

Key organizations: Global Fund for Children (GFC), serving as an intermediary grant-making organization, and 13 community-based NGO partners across Bangladesh and India (community groups, women's collectives, youth and adolescent groups, senior citizen associations, and local-self governments across multiple sites). Contributing partner organizations:

- Santiram Bari, Ashirbad Mymensingh, Bangladesh
- Anuradha Bhosle, Avani Sanstha, Kolhapur, Maharashtra, India
- Lipika Gupta, Development of Health & Agricultural Rehabilitation Advancement (DHARA), Satkhira, Bangladesh
- Parvez and Brinty, Alokito Kori, Munshiganj, Bangladesh
- Humaira, Bangladesh Rural Economic Development (BRED), Pabna, Bangladesh
- Hriday Ghosh, Dhagagia Social Welfare Society (DSWS), Sandeshkhali, Sunderbans, India
- Lakshmikanta Singh, Ethnic Community Development Organization (ECDO), Sylhet, Bangladesh
- Sadia Jafrin, Grow Your Reader Foundation (GYRF), Mymensingh, Bangladesh
- Shova Chhetri, Hill Social Welfare Society (HSWS), Alipurduar, India
- Dalia Roy, Jeevika, West Bengal, India
- Dheeraj Lepcha, Rural Aid, Alipurduar, India
- Vaibhav Sharma, Safe Society, Gorakhpur, India
- Bappa Das, Suchana, Santiniketan, West Bengal, India

About the initiative: The ARC initiative of the Global Fund for Children supports 21 community-based organizations across Bangladesh, Nepal and India to strengthen the capacity of communities, children, and young people to tackle the root causes of marginalization, of which climate vulnerability is an increasingly central dimension. Communities drive the process from the start. Using The Constellation's SALT-CLCP approach, villages identify their own strengths, build a shared vision, evaluate themselves, and choose their own priorities. They lead the design, implementation, and measurement. Through knowledge fairs, communities also learn directly from one another. In 15 of the 21 NGOs, no thematic focus is set in advance. Communities themselves decide what matters most.

Trellis farming by a Bangladesh community in an area with high salinity levels. Photo: DHARA

The ARC initiative spans different settings: saline-affected coastal communities in Satkhira facing cyclones and soil degradation; flood-prone riverbank settlements in Pabna and Mymensingh; tea garden communities in Alipurduar and Sylhet; a nomadic river (Bede) community in Munshiganj; Dalit and Indigenous communities; and an urban, senior citizens' group in Kolhapur. Climate hazards include salinity intrusion, waterlogging, flooding, water scarcity, food insecurity, dengue, and plastic and organic waste. Responses have been led by women, older people, adolescents, youth, Indigenous Peoples, Dalits, nomadic groups and children.

Financial levers: GFC provides intermediary grant funding support through four funding agencies. GFC staff also provide non-financial support including organizational development; community leadership training; and monitoring, evaluation and learning (MEL).

Where communities require access to external resources, NGOs build linkages with government schemes/services. Community contribution examples. In Pabna, eight families collectively raised BDT 13 000 over two years to install a drainage system. In Satkhira, saline-tolerant vegetable seeds were distributed free of cost by Jamuna Boudi, a community social worker who had preserved the seeds over five years. In Pahariapara, one family donated land, and twenty-two households contributed mud, wood, and bamboo. In urban Kolhapur, senior citizens devote time to collect plastic from homes.

Timeframe: November 2023 onwards

Budget: Not publicly disclosed

Key outcomes: This project documents how communities in Bangladesh and India are responding to issues, including climate-related stresses, using local and Indigenous knowledge, collective action, and community-owned resources. Evidence is drawn from community self-assessments, outcome framework, facilitator blogs, videos and case documentation.

Key outcomes include:

- Expansion of homestead and nutrition gardens in saline and flood-prone areas, improving food access and generating small incomes.
- Community-led water and drainage solutions through pooled community contributions and the restoration of rainwater systems.
- Revival of local knowledge and low-cost adaptation practices such as saline-tolerant seed preservation, trellis farming, composting and mud construction.
- Environmental action through community-led plastic collection, tree planting, and waste-management initiatives.
- Gender-related outcomes, including women negotiating higher wages and accessing reproductive health support.
- Increased confidence and capacity among communities to analyse problems and implement long-term solutions.

The GFC, NGOs and communities are continuously reflecting on the outcomes and adapting their response. Blogs, self-assessments and regular "After Action" reviews serve as ways of reflection and learning. There was an external documentation of work in March 2025. No evaluation has been done so far.

Alignment to locally led adaptation (LLA) – The initiative reflects current LLA thinking that adaptation should be designed, implemented, monitored and evaluated by local actors themselves rather than through top-down approaches. The SALT-CLCP approach builds ownership at all levels from design to implementation and through to self-assessment. This approach also focuses on strengthening the facilitation capacity of NGO community facilitators.

Lessons for others:

1. **Community-led adaptation processes are dynamic, context specific and often produce outcomes that conventional project frameworks fail to capture.** Once people came together to discuss daily challenges, they identified and acted on the issues affecting their lives. Many of these issues were linked to climate risks. Fixed monitoring frameworks focused only on pre-planned indicators can miss the most important changes.
2. **Community-led outcomes are rarely isolated.** Changes in food security, health, leadership, confidence, gender roles and collective action are closely connected and need to be understood together.
3. **A strength-based approach is key to harness the indigenous knowledge and assets that already exist in communities.**
4. **A power shift from NGOs to communities and within communities is crucial.**

Challenges: Documenting intangible changes in the early stages is difficult because shifts are in confidence, relationships or social norms rather than visible actions. Community facilitators needed time to recognize and document these changes. Community members did not always report actions immediately, so some outcomes became visible only later – showing the importance of repeated documentation cycles. The experience highlighted gaps in what was measured. Some outcomes need longer tracking to understand whether they lead to resilience. This is the case, for example, with seed-preservation practices, women's health outcomes linked to salinity, and long-term tree survival.

Transferability: The SALT-CLCP approach – which makes use of self-assessments and an outcome-harvesting framework to capture outcomes, and blogs for reflection – is transferrable across different settings.

Durability: Many outcomes appear to be durable because communities invested their own labour, money, and leadership into the actions. Such actions need long-term support so that this mindset is embedded in the community across generations. However, community action alone cannot absorb worsening climate pressures without access to services, and government responses.

Decision-making:

- Funding processes should fund long-term community ownership and action.
- Differentiate between community-based organizations (CBOs) and the communities they work with.
- Examine the spectrum of participation in terms of community ownership.
- Allow flexibility for communities to define their own priorities without prescribing thematic areas. Local context can vary from community to community.
- Communities should lead adaptation efforts, while institutions should respond to the gaps communities which cannot address alone. NGOs and governments can support what communities cannot do on their own.
- Encourage strength-based approaches to address the challenge of a dependency mindset in communities. Develop their critical and evaluative thinking.
- Adaptation frameworks should value changes in agency, collective ownership and local decision-making alongside physical infrastructure or technical outputs.

INDIGENOUS AND LOCAL KNOWLEDGE

4.6 **Older people-led local and community adaptation to climate impacts and shocks** – Nibanupudi, H. K.

Summary: Older women lead intergenerational, community-based climate adaptation across South Asia through OPAs, traditional knowledge, and resilience in water, food, and livelihoods.

Contributor: Hari Krishna Nibanupudi, climate change adviser, HelpAge International

Web address: https://www.helpage.org/what-we-do/climate-change/

Key organizations: HelpAge International, Grameen Vikas Vigyan Samiti (GRAVIS), HelpAge Vietnam, Restless Development, Foundation for Older Persons Development (FOPDEV)

About the initiative: The initiative empowers older people, especially women, to lead in inclusive climate adaptation, recognizing all ages and genders as community leaders and knowledge bearers, thus strengthening local resilience. It supports older people's associations (OPAs), intergenerational learning, community groups and partners in identifying climate risks, reviving traditional ecological knowledge, improving water and food security, diversifying livelihoods, enhancing early warning and evacuation, and shaping local adaptation plans.

The initiative leverages South Asian program experience from India, Nepal and Bangladesh, and it learns from intergenerational climate action in Vietnam, Ethiopia, Uganda and Nepal. It tackles risks like drought, heatwaves, unpredictable rainfall, floods, cyclones, salinity, livelihood losses and food insecurity.

Older people taking care of their urban garden in Ciudad Bolívar locality, Bogotá, Colombia. Photo: Nelson Andrés Tamayo Gaviria / HelpAge International

The initiative is locally led because communities themselves – particularly older women, older people's groups, youth groups, and local facilitators – determine priorities, solutions, and implementation.

In Rajasthan, older women and OPAs lead water harvesting, seed banks, and resource management. In Nepal, older and younger people co-design climate responses. In Bangladesh, OPAs support cyclone preparedness, saline gardening, and advocate for excluded older women. Overall, the initiative is a long-term, locally driven adaptation model, developed from community practices between 2022 and 2024 and 2024 and 2027.

Financial levers: The initiative was funded by internal HelpAge investment and external project funding. Key financial levers included:

- EU funding for India-based older people-led adaptation work, including community institutions, water security, seed systems and resilience-building through OPAs.
- The International Union for Conservation of Nature (IUCN) and the International Climate Initiative (IKI) support for the Latin America and Caribbean Urban Ecosystem-based Adaptation–Age-Friendly Communities work, with a documented budget requirement of approximately USD 450 000 across advocacy, demonstration interventions, knowledge products and scaling activities.
- Internal HelpAge resources for other learning, documentation, policy engagement and pilot activities across Nepal, Bangladesh, Vietnam, Ethiopia and intergenerational climate action work.
- In-kind and partner contributions, including local facilitation, community mobilization, technical support and engagement with local authorities.

Key outcomes: This work showcases how community institutions identify risks, respond practically, and influence local systems.

- **Strengthened local adaptive capacity:** In India, older women and OPAs revived traditional water-harvesting systems such as taankas and khadins, strengthened seed banks, and improved food, water, and livelihood security. OPAs in 100 villages supported natural resource management, early warning and community resilience.
- **Improved livelihood resilience and dignity:** In Ethiopia, the project supported more than 1500 households, including older people, widows, and women-headed households, by combining aloe vera soap production, beekeeping, drought-tolerant livestock, and Satellite Assisted Pastoralist Resource Management (SAPARM)-supported pastoral decision-making. More than 500 women received training in entrepreneurship and cooperatives.
- **Enhanced intergenerational social cohesion:** In Nepal and Uganda, 101 older and younger participants joined separate and joint climate dialogues, reducing blame, strengthening trust and generating practical next steps for locally owned adaptation.
- **Integrated adaptation and mitigation:** In Vietnam, older people-led Intergenerational Self-Help Clubs piloted bamboo and biochar models that improved soil health, stored carbon, reduced emissions, and created new income sources.
- **Urban ecosystem-based adaptation and age-friendly planning:** In Latin America, older people and intergenerational groups co-designed urban gardens and public space adaptations, generating environmental resilience, social inclusion, and health and well-being benefits.

- These outcomes were mainly assessed through monitoring, case documentation, qualitative review, participant testimony, partner reflection, and policy analysis from 2022 2025.

Lessons for others:

- **Locally led adaptation should be measured not only through physical outputs, such as gardens, water structures, livelihood assets, or training, but also through changes in agency, inclusion, trust, leadership and local decision-making power.** The evidence from India, Nepal, Bangladesh, Ethiopia, Vietnam and the Nepal–Uganda intergenerational dialogues shows that adaptation outcomes are stronger when older people, especially older women, are recognized as knowledge holders and leaders rather than only as vulnerable beneficiaries. OPAs in Rajasthan, for example, supported water harvesting, seed banks, early warning and natural resource management, while intergenerational platforms helped combine older people's ecological memory with youth skills and advocacy.
- **Both material and social resilience should be measured in adaptation. In Ethiopia, livelihood diversification, SAPARM-supported pastoral decision-making, and women's cooperative training helped stabilise food access, reduce livestock risk, and restore dignity and leadership among older people.** In Nepal and Uganda, intergenerational dialogue fosters trust, reduces blame, encourages shared problem-solving, and promotes follow-up actions. These social outcomes are valid indicators of locally led adaptation, even if they are harder to quantify than income, crop yields, or participant numbers.
- **Conventional monitoring often misses key aspects of locally led work: problem definition, knowledge sources, inclusion of marginalised groups, and strengthening local institutions.** Disaggregated indicators are weak, and ecological knowledge is often undocumented or anecdotal, despite its adaptive value in water, seeds, salt-tolerant crops, and ecosystems.
- **Take an adaptable approach emphasizing principles over a fixed model.** Start with local institutions, trusted facilitators, and an intersectional lens. Incorporate both older and younger knowledge.
- **Connect community priorities to government systems.** The Nepal–Uganda experience highlights the importance of language, culture, gender norms, and power dynamics. Older people engaged more when facilitators used local languages, and when dialogue respected age and gender hierarchies.
- **Findings are durable when local institutions like OPAs, youth groups, cooperatives, and municipal links are sustained beyond project funding.** They may not endure if support is short-term, symbolic, or disconnected from social protection, finance, and governance. Evidence should guide donors and governments to fund community institutions, include older people in adaptation planning, measure social cohesion and leadership, and use local knowledge to inform policy and investment decisions.
- **Donors should recognize older people, especially older women, as knowledge holders and leaders of community-led adaptation, not merely as vulnerable beneficiaries.** Climate finance must directly support community-led adaptation, steered by older people's associations, intergenerational knowledge platforms, and locally rooted solutions such as rainwater harvesting, seed conservation, nutrition gardens, and age-inclusive disaster preparedness.

- **Funding frameworks should value lived experience, ecological memory, and narrative evidence alongside technical metrics.** By reducing institutional mediation, decentralizing resources, and integrating age-disaggregated LLA indicators into adaptation reporting, donors can strengthen equity, accountability, and long-term resilience in areas where climate impacts are most intensively experienced.
- **Community-led adaptation is not a practice imposed from outside.** It is resilience shaped by people, rooted in place, memory, and lived experience. In this context, community-led adaptation is not a project delivered to people; it is resilience shaped by people, rooted in place, memory and lived experience

INDIGENOUS AND LOCAL KNOWLEDGE

4.7 **The 14 Trees Foundation: a grassroots ecosystem restoration initiative to transform barren land into a thriving forest** – Singh, P. et al.

Summary: 14 Trees Foundation is transforming barren Indian lands into thriving forest ecosystems, creating a living laboratory where ecology, community, design and technology meet.

Contributor: 14 Trees Foundation via Prerna Singh, foundation volunteer; Dr. Pravin Bhagwat, Founder; Medha Bhagwat, Creative Lead; and other foundation volunteers

Web address: https://www.14trees.org/

Key organization: 14 Trees Foundation

About the initiative: 14 Trees Foundation is a grassroots ecosystem restoration initiative founded in 2013 in Vetale village, Khed taluka, Pune District, India, with the mission to "re-forest India by creating forests on uncultivable and barren land". Over five decades, this landscape had lost its forest cover through a self-reinforcing cycle of deforestation, annual burning, water-table collapse and loss of arable land. 14 Trees breaks this cycle through an integrated approach: rainwater harvesting via 130+ storage and percolation ponds (holding ~156 million litres), native species reforestation, and structurally embedded livelihoods for local Adivasi communities.

Workers install a tree guard for the 14 Trees Foundation, a locally led adaptation initiative. The picture is a mosaic of hundreds of photographs of on-ground economic transactions – "every gas cylinder bought, every wage paid, every tree guard installed" – created from a system in which every expense is logged with a photograph attached. As 14 Trees describes it, the image is "quite literally, the spend on the ground rendered visible". Photo: 14 Trees Foundation, Vetale, Khed taluka, Pune district, Maharashtra, India

To date the work spans 2000+ acres, 300 000+ trees, 500+ native species, 300+ Adivasi workers employed and 70+ villages across 22 talukas in 2 districts. Climate risks addressed include drought, groundwater depletion, biodiversity loss, soil erosion and agricultural collapse. What makes it locally led – and distinctive – is that the work has been built as a living laboratory: an open space where people from all walks of life (Adivasi workers, ecologists, designers, technologists, artists, students, urban donors) bring their own skills and passions, ideate freely, and iterate towards the bigger mission. Adivasi workers are co-stewards, not implementers of an external design. Community ownership has grown organically as neighbouring villages and gram panchayats (village councils) now proactively offer land for replication.

Financial levers: 14 Trees is not singularly funded. It began self-financed by the founders, sustained by friends who believed in the work, and scaled through a crowdsourced model. There is no anchor donor. It is supported by a mix of small and large contributions.

How donors have supported the work:

- Dedicating trees (₹2,000 / ~$20): individuals plant trees in someone's name for milestones, weddings, reunions, awards, honours, remembrances. Each carries a locally crafted gift card and QR-linked dashboard; larger dedications grow into groves with event dashboards.
- Blanket donations (₹1,500 / ~$15): QR-linked dashboards, used by corporate social responsibility (CSR) and bulk donors. Such donations are often used to plant trees for site visitors who cannot afford their own, in keeping with our principle that every footfall leads to a tree planted.
- In-kind contributions from volunteer technologists, designers, ecologists, architects and others.

Key outcomes: 14 Trees produces formal reports and dashboards for funders and auditors who need them, but the primary objective of our evidence system is to communicate the work in a way that connects with people at a human level.

Outcomes captured:

Ecological recovery: ~22% improvement in vegetation health (as measured by Normalized Difference Vegetation Index (NDVI) and Normalized Difference Moisture Index (NDMI); bird species rising from ~15 to 85+; recovery of native forest across 2000+ acres; restored water tables enabling agriculture on previously barren land; ongoing carbon sequestration study across plantations, grasslands, grazing lands and burn-affected areas.

Livelihood and community outcomes: 300+ Adivasi workers employed; emergence of community microenterprises (tree guards, gazebos, 8 Naturals (plant nurseries), Sprih (climate-tech platform)); 70+ villages engaged; neighbouring gram panchayats (village councils) proactively offering land for replication.

Who generates the evidence, and how:

- Adivasi workers on site are the primary stewards of operational impact data (photography of every expense, tree, transaction; geotagged tree records updated annually).
- Tech volunteers from urban areas build the supporting tools – including image-recognition systems (Massachusetts Institute of Technology (MIT) collaboration with Google Cloud Vision APIs (machine-learning services)) that convert site photographs into automated dashboard updates.
- Volunteers with ecological backgrounds conduct and verify biodiversity data.
- Volunteers with design backgrounds translate raw data into creative displays: collages, zines, gift cards, dashboards and installations.

Time frames:

- Biodiversity surveys conducted approximately every two years, or earlier when site enthusiasts spot a new species and prompt a fresh survey.
- Water tables tracked monthly across all ponds on site.
- Livelihood and expenditure data captured continuously, at a minimum, daily, and often more frequently.
- Tree-level data updated annually per tree.

Lessons for others: Three lessons feel especially relevant to the locally led adaptation (LLA) evidence conversation:

1. **Creative and technical talent are LLA inputs in their own right — not luxuries layered on top.** The most striking thing about 14 Trees is how authentic ground work and creative articulation reinforce each other. Every collage tile, every dashboard entry, every photo on the expense log traces to a real transaction. The authenticity is what makes the creative articulation credible; the creative articulation is what makes the authentic work visible. Designers, technologists, ecologists and artists are not auxiliary to the restoration. They are part of how the restoration becomes legible to itself and to the world.
2. **Decentralized, visual evidence and traditional funder reporting are not in tension.** Adivasi workers are the primary stewards of impact data, using photography and simple tools that bypass literacy barriers. This decentralized, visual evidence can be aggregated and translated into traditional funder language whenever required. In practice, once trust is established and funders are deeply connected with the project, that translation is rarely asked for. Connection becomes the accountability.
3. **Stakeholder alignment is the precondition, not the byproduct, of replicability.** The initiative works because every stakeholder's interest is aligned by design. Workers receive livelihoods and emotional connection. The project team has space to express creativity. Donors receive radical transparency in a form that connects with them. The deeper innovation is not any single tool but this configuration.

Challenges: First, building trust with the local community took years and significant initial capital. Second, giving all volunteers free space to explore what they want to do was a real risk the founding team took. It required patience, produced heavy workloads on a handful of people who had to keep the show running, and at times required

friends who believed in the work to put in money from their own pockets temporarily. That kind of initial faith and risk appetite is a human trait that is often hard to find.

Durability: The evidence system is highly durable. Data are backed up across cloud servers and offline records, stored in many creative forms, and designed by people who understand data and technology from the inside out. Community ownership of restoration also tends to deepen rather than erode as results compound.

Transferability: The approach travels. Most regions are rich with individuals who have genuine passion to make the world better and bring a diverse spectrum of skill sets. What is needed to make this configuration work elsewhere is risk appetite and patience.

Implications: Funders and frameworks should broaden what counts as legitimate evidence to include community-generated, visual, dynamic systems. They should invest in the enabling conditions (risk appetite, patient capital, volunteer ecosystems) that let such systems emerge.

INDIGENOUS AND LOCAL KNOWLEDGE

4.8 **Community-led climate adaptation through women's leadership and convergence with public systems**
– Sonone, V. G.

Summary: Professional Assistance for Development Action (PRADAN) is a community-led climate adaptation initiative in the Central India Tribal Region that combines women's leadership, natural resource management, and convergence with public systems.

Contributors: Vaibhav Ganesh Sonone, Executive at Professional Assistance for Development Action (PRADAN)

Web address: https://www.pradan.net/

Key organization: Professional Assistance for Development Action (PRADAN)

About the initiative: The initiative focuses on strengthening climate resilience among Indigenous communities in Dhamanpani village, Madhya Pradesh, India, through locally led adaptation (LLA) approaches. Implemented through long-term engagement by PRADAN, the initiative seeks to address climate risks such as water scarcity, land degradation, and distress migration by combining community-led planning with integrated natural resource management and convergence with public schemes such as the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) and Gram Panchayat Development Plans (GPDP). The process has involved women's collectives, Gram Sabha institutions, and local community members in identifying vulnerabilities, prioritizing adaptation actions, and strengthening local governance processes over multiple years. Interventions have included watershed development, soil and moisture conservation, water harvesting, land restoration, and diversification of livelihoods.

The initiative is locally led because communities define priorities, participate in decision-making, and shape implementation processes, while PRADAN facilitates local capacity-building, stakeholder mobilisation, and convergence with public systems. The adaptation process evolved through co-creation among communities, PRADAN, and local governance stakeholders. The initiative underscores the significance of women's leadership, community institutions, and local ecological knowledge in fostering equitable and sustainable climate resilience.

Land in Dhamanpani Village, Madhya Pradesh, India, shown before and after interventions undertaken through the PRADAN initiative. Photo: Vaibhav Ganesh Sonone and the PRADAN Mohgaon Team

Financial levers: The initiative was supported through the convergence of multiple public and institutional funding sources between 2019 and 2023. Major financial support came from government programmes including MGNREGS, State Rural Livelihoods Mission (SRLM), and the Agriculture Department, which supported natural resource management, livelihood strengthening, and community institution-building activities. PRADAN provided facilitation support, technical guidance, community mobilization, institutional strengthening inputs throughout the process, and support for piloting intervention. The initiative was not funded through a single external climate adaptation grant; rather, it relied on aligning existing public resources with community-led adaptation priorities through convergence-based planning and implementation.

Key outcomes: Despite receiving 1200 mm annual rainfall, Dhamanpani village faced severe water scarcity, poverty, and distress migration affecting 90% households. Women walked long distances daily for water amid widespread anaemia and malnutrition.

Against this backdrop, the initiative contributed to improved water security, restoration of degraded land, reduced distress migration, strengthened women's leadership, and enhanced participation in local governance and adaptation planning. More than 200 acres of degraded land were restored through watershed and land treatment interventions, improving soil moisture retention and agricultural productivity. Irrigation access improved across approximately 21 acres, enabling crop diversification and reducing climate-related livelihood risks. Community members also reported a decline in distress migration from nearly 90 per cent of households to around 50 per cent over time, which they associated with improved water availability, local employment opportunities, and renewed confidence in agriculture.

The evidence combines quantitative and qualitative approaches collected between 2019 and 2023 through community institutions and PRADAN field teams. Quantitative evidence included land restoration, irrigation coverage, and migration trends, while participatory methods captured changes in women's agency, community decision-making, and local perceptions of resilience through Gram Sabha discussions and community reflections.

The initiative demonstrates that adaptation outcomes are not only technical or infrastructure-based, but also social and institutional, highlighting the importance of women's leadership, collective decision-making, and community-defined evidence in strengthening locally led adaptation.

Lessons for others: A key learning from this experience is that the outcomes of locally led adaptation (LLA) cannot be understood only through technical or infrastructure-based indicators. While measures such as restored land area, irrigation coverage, and reduced migration are important, many significant adaptation outcomes are social and institutional in nature. In Dhamanpani, strengthened women's leadership, improved community participation in decision-making, strengthened local institutions, and increased confidence in farming practices were equally important indicators of resilience. This suggests that measuring LLA requires combining quantitative indicators with participatory, community-defined, and lived forms of evidence.

One challenge was that many of the outcomes that communities considered most meaningful, such as women's agency, collective confidence, social cohesion, and local ownership over decision-making, were difficult to capture within conventional monitoring frameworks. Standard evaluation systems often prioritize easily measurable outputs, while overlooking relational and governance-related dimensions of adaptation. The experience highlighted the importance of involving communities directly in defining what resilience and successful adaptation mean within their own context.

The approach to measurement and evaluation used in this initiative may not be fully transferable across contexts in a standardized way, because locally led adaptation is deeply shaped by local social, ecological, and institutional realities. However, the broader principle of combining technical indicators with community-defined evidence and participatory processes is highly transferable across contexts. Adaptation assessments should therefore remain flexible and context-specific while recognizing common principles such as inclusion, local leadership, and community ownership.

Many of the outcomes observed are likely to remain durable over time because they are linked not only to physical assets but also to strengthened local capacities and institutions. Community ownership, women's participation, and stronger local governance processes can continue to shape resilience beyond the duration of specific projects, although continued institutional support and responsive public systems remain important.

This evidence suggests that decision-making on climate adaptation should move beyond top-down planning approaches and invest more directly in local institutions, women's leadership, and community-driven processes. It also highlights the importance of designing adaptation financing and monitoring systems that value community knowledge, participatory governance, and social inclusion alongside conventional technical indicators.

5. SCALE UP, REPLICABILITY AND SUSTAINABILITY

5.1 **Inclusive Climate Finance for Vulnerable Communities in the Asia Pacific** – Panda, A., & Topi C.

Summary: The Inclusive Climate Finance for Vulnerable Communities in the Asia Pacific initiative seeks to strengthen locally led adaptation by helping vulnerable communities co-develop and finance practical, bankable climate solutions with private, public and local partners.

Contributors: Architesh Panda, Research Fellow, and Corrado Topi, Senior Research Fellow, Stockholm Environment Institute (SEI), SEI Asia Centre, Bangkok)

Web address: https://iccap-website-mockup.netlify.app/#work-packages

Key organizations: Stockholm Environment Institute, Bangkok

About the initiative: The Inclusive Climate Finance for Vulnerable Communities in the Asia Pacific (ICCAP) initiative seeks to strengthen locally led adaptation by helping vulnerable communities identify, assess, and finance practical climate adaptation solutions that respond to their own priorities and risks. It aims to achieve this by bringing together local communities, financial-service providers, microfinance institutions, government actors, civil society organizations, and other partners to co-develop adaptation solutions and examine how these can become financially viable, socially inclusive, and implementable. Through multi-stakeholder engagement and practical bankability assessments, the initiative supports a pathway from locally identified needs to solutions that can attract appropriate public, private, blended, or concessional finance.

The initiative is locally led because local actors are central to identifying climate risks, prioritizing adaptation options, validating solutions, and shaping delivery and financing pathways. The context includes climate-vulnerable communities facing risks such as floods, droughts, heat stress, water insecurity, livelihood disruption, and climate-related income shocks. The initiative focuses particular attention on smallholder farmers, women, low-income households, and other underserved groups.

Financial levers: Externally funded by the International Climate Initiative (IKI), 2024–2029

Key outcomes: The evidence generated by the initiative focuses on how locally identified adaptation (LLA) needs can be translated into practical, inclusive, and financeable solutions. It captures LLA outcomes through a combination of policy analysis, financial service provider engagement, multi-stakeholder action labs, vulnerability tracking, product development processes, and evidence synthesis. The evidence is not limited to final investments. The evidence also documents the intermediate outcomes that make LLA possible.

Key outcomes include:

- Improved enabling conditions for inclusive green finance, including identification of policy gaps, capacity building for policymakers, and dialogue on inclusive green taxonomies.
- Strengthened capacity of financial service providers, with 14 financial service providers supported to design, test, and prepare client-centred green financial products.
- Locally co-created adaptation solutions, developed through six multi-stakeholder action labs involving communities, local actors, financial service providers, government, and civil society partners.
- Greater investment readiness of adaptation solutions, including assessment of feasibility, bankability, social inclusion, and potential financing pathways.
- Emerging evidence on inclusive adaptation finance outcomes, including whether solutions respond to local climate risks, vulnerable groups' needs, and the practical constraints of finance delivery.

These outcomes are measured and evaluated through project monitoring, stakeholder engagement records, vulnerability and needs assessments, product development milestones, pilot testing, investment readiness assessments, and synthesis of evidence from the multi-stakeholder action labs.

Lessons for others: LLA outcomes should be measured beyond finance mobilized or products delivered. The key is whether local actors shaped priorities, solutions, and financing pathways.

The main challenge is that standard finance metrics do not fully capture local relevance, inclusion, or adaptation value. ICCAP therefore combines process evidence, vulnerability tracking, product development, and investment-readiness assessment.

The approach is transferable in its overall structure, including co-creation, vulnerability assessment, finance readiness, and evidence synthesis. However, specific indicators must be adapted to local hazards, livelihoods, institutions, and financial markets.

Some findings may change over time as climate risks, local needs, and finance conditions evolve. However, the core lesson is durable: LLA works better when local priorities are linked early to realistic financing and delivery pathways.

This evidence can help governments, funders, financial service providers, and development partners decide which local solutions are feasible and worth supporting. It also helps identify where public, private, or blended finance can make locally led adaptation more scalable.

SCALE UP, REPLICABILITY AND SUSTAINABILITY

5.2 **Least Developed Countries Initiative for Effective Adaptation and Resilience** – Pertaub, D., et al.

Summary: The Least Developed Countries Initiative for Effective Adaptation and Resilience (LIFE-AR) is a long-term initiative led by the member countries to strengthen their ability to access, manage and use climate finance for locally led adaptation.

Contributors: David Pertaub, Researcher, International Institute for Environment and Development (IIED); Bethany Donithorn, Head of Learning for the Least Developed Countries Initiative for Effective Adaptation and Resilience (LIFE-AR), IIED; Maryline Mangenot, Communication Manager for LIFE-AR, IIED; Scovia Akot, Uganda LIFE-AR Focal Point in the Climate Change Department, Ministry of Water and Environment; Yamikani Idriss, Environmental officer and LIFE-AR national focal point of the Environmental Affairs Department, Ministry of Natural Resources and Climate Change of Malawi; Simret Terefe, Ethiopia LIFE-AR Focal Point in the Ministry of Planning and Development; Marthe Baro Ky, Environmental inspector and Burkina Faso LIFE-AR Focal Point in the Permanent Secretariat of the National Council for Sustainable Development

Web address: https://www.life-ar.org/en

Key organizations: Least Developed Countries Initiative for Effective Adaptation and Resilience (LIFE-AR); Least Developed Countries (LDC) Group on Climate Change

About the initiative: Climate finance fails to deliver for LDCs. It is too fragmented, too difficult to access, and too disconnected from local priorities and realities. LIFE-AR has been working for more than six years to reverse that trend. It works alongside LDC governments and communities to demonstrate that a model that shifts power, resources and decision-making into the hands of LDC governments and communities is possible.

Residents queueing to vote for their representatatives in their parish climate change committees in Lomeris-Kabong, Uganda. Photo: LIFE-AR Uganda

LIFE-AR places strong emphasis on country delivery through national platforms, cross-country peer learning, strategic partnerships, and evidence-based influencing to help drive reforms in climate finance and ensure sustainable, locally driven adaptation outcomes.

The initiative is grounded on supporting participating countries to build the systems, governance, and capabilities needed at national and local levels to plan and deliver adaptation actions. It also supports countries in developing their own capacity to secure and manage climate finance. Key principles of LIFE-AR include ensuring that at least 70% of climate finance goes to communities, and ensuring that communities themselves decide which investments will bring resilience. Across LIFE-AR countries, communities selected varied approaches, with investments in infrastructure, women's empowerment, and capacity building of soft skills.

LIFE-AR focuses on long-term impact and building capabilities in countries and communities over years. The initiative is guided by the LDC 2050 Vision and the LIFE-AR 2030 strategy.

Financial levers: LIFE-AR operates a semi-pooled fund supported by the following: Irish Aid, the UK Foreign, Commonwealth & Development Office, Quadrature Climate Foundation (QCF), ClimateWorks Foundation, and, previously, by Environment and Climate Change Canada and the US Department of State. The semi-pooled fund allows budget flexibility and puts communities in the driving seat. Countries are aware every year of their allocated budget. Communities decide on priority investments and allocate funds accordingly. This also allows the initiative to move beyond a fragmented model in which each development partner requires separate reports. In addition, budget-revision approval processes have been simplified, enabling countries to reallocate budgets as priorities evolve. This innovation replaces top-down, command-and-control program design with adaptive planning.

To provide countries with funds to support communities and strengthen their systems, LIFE-AR functions with an average budget of around GBP 7 million a year.

Key outcomes: LIFE-AR shows that evidence on locally led adaptation (LLA) must combine measurable outputs (e.g. percentage of finance delivered to the local level) with locally generated, participatory evidence of empowerment and system change.

Key outcomes of LIFE-AR:

- Stronger national systems
- Community agency – inclusive, community-led decision-making that integrates marginalized groups and addresses gender equity and social inclusion
- Equitable finance flows – ≥70% of climate finance targeted to local level and community priorities
- Strengthened national and local capabilities to plan and deliver adaptation
- Strengthened national-local coordination and stakeholder representation through LDC-led platforms that scale across diverse country contexts
- Ongoing learning on operationalizing LLA at scale.

What is the evidence?
Evidence is system level and process focused. Financial support flows to local actors, governance changes, participatory planning outputs, and cross-country learning. The initiative captures LLA by showing shifts in decision-making power, resource allocation, and locally driven implementation.

How are outcomes measured?

- Methods: mixed monitoring, evaluation and learning (MEL) processes that include quantitative indicators and participatory qualitative evidence, and assessments of climate risk and vulnerability
- Who measures? LDC governments, local authorities, local communities and development partners
- Timeframes: iterative regular monitoring, bi-annual and annual reporting over the long term (to 2030–2050)

Lessons for others: LIFE-AR demonstrates that effective LLA requires a shift from short-term, project-based measurement toward long-term, system-level outcomes. Hence, the focus should go beyond outputs. Measurement should capture whether power, finance and decision-making are genuinely devolved to local actors. They should also examine whether improvements occurred in institutional capabilities, governance and inclusivity. (See: https://www.life-ar.org/en/about-life-ar/why-is-life-ar-different)

A key insight is that *how* adaptation is delivered is as important as *what* is delivered. Participatory, locally owned MEL systems are essential to reflect community priorities, behavioural change, and gender equality and social inclusion – dimensions often missed by "business-as-usual" MEL.

Challenges measuring LLA outcomes
The initiative's experience highlights challenges in capturing the "right" outcomes. Systemic changes, such as empowerment, trust and institutional strengthening, are difficult to quantify and attribute. This creates tension between accountability requirements and meaningful learning. This tension underscores the need for more context-sensitive MEL approaches and the use of adaptive, mixed-method approaches. Such approaches, which LIFE-AR has used, are better suited to the complexity of LLA. (See: https://cmsllahub.gca.org/assets/sor2025-chapters/ch2_sor25---resilience,-made-local---life-ar-and-local.pdf)

Transferability of measurement approaches
The initiative's experience shows that while LLA principles are broadly transferable, measurement frameworks must be tailored to context. Countries implementing LIFE-AR have adapted approaches differently, reflecting variations in governance systems, capabilities, existing initiatives and political realities. Therefore, replication of measurement approaches depends on applying LLA principles, through flexible, locally grounded metrics, rather than with standardized indicators.

Sustainability of findings
Because LIFE-AR focuses on institutional transformation and long-term resilience pathways to 2030–2050, many outcomes – such as strengthened governance systems and improved national and local capabilities – are designed to last beyond the life

of the initiative. However, sustainability depends on continued political commitment, predictable finance and continuous learning to ensure that implementation is adaptive to evolving climate risks.

Implications for decision-making

Evidence from the initiative calls for a fundamental shift in how adaptation is financed and managed, including evidence of what works and what does not work for locally led adaptation, particularly in MEL. We argue for efforts to:

- Invest in systems, institutions and capabilities, including MEL capabilities. Local actors must be able to shape priorities and success criteria. MEL systems must be locally designed and led.
- Embed MEL as a learning and decision-support tool. It should not be used only for compliance.

Overall, LIFE-AR shows that measuring LLA effectively demands far more than simply tracking delivery. It requires aligning evidence systems with the core goal of transforming who decides, who benefits, and how resilience is built.

SCALE UP, REPLICABILITY AND SUSTAINABILITY

5.3 **Climate Action Journey: Working toward locally led adaptation at scale** – Pichon, F., et al.

Summary: Through a novel methodology, the Climate Action Journey, National Societies empower communities in driving their own adaptation solutions through participatory risk assessments, locally led adaptation plans, and strategic partnerships.

Contributors: Florence Pichon, Ninni Ikkala-Nyman, Fleur Monasso

Web address: https://www.ifrc.org/document/scaling-locally-led-adaptation

Key organizations: The International Federation of Red Cross and Red Crescent Societies (IFRC), Red Cross Climate Centre, National Red Cross and Red Crescent Societies in more than 45 countries.

About the initiative: The IFRC and the Red Cross Red Crescent Climate Centre work with its National Red Cross and Red Crescent Societies to apply the Climate Action Journey (CAJ), a novel methodology to scale locally led adaptation (LLA). This approach is designed to operationalize the Principles of LLA and to shift practice from community-based to genuinely locally led action, by:

- intentionally combining national climate risk assessments with local knowledge;
- strengthening long-standing community partnerships and bridging with cross-sectoral, national partnerships; and
- ensuring that climate risks – both current and future – shape discussions and decisions by and with communities.

The National Societies act as facilitators, supporting community-led decision-making instead of pre-designed interventions. The CAJ has been introduced in 45 countries, with pilot LLA projects first implemented in Malawi, Nigeria, and Pakistan, expanding to 14 countries by 2024. Implementation covers a wide range of climate hazards, predominantly floods, droughts, cyclones, and extreme heat. The initiative extends across communities already living at the sharp end of the climate crisis. The approach is ongoing, with a mid-term review completed in early 2026 and a revised CAJ 2.0 under development.

Financial levers: The CAJ has been financed through the IFRC's Global Climate Resilience Platform (GCRP), drawing on multiple bilateral and institutional donors. Funding is externally sourced and project-based, channelled to National Societies through IFRC. It was highly affected by cuts in 2025 to the US Agency for International Development (USAID). Overall budget figures vary by country.

One lesson from the evaluation is that funding timelines have generally been too short relative to the scope of the work. Implementation of a new concept takes time and can't be rushed.

Key outcomes: Evidence draws from the from the CAJ Mid-Term Review, which covers 2023–2025, and the IFRC/RCCC Scaling Up LLA report. Because many initiatives are still at early or interrupted stages, the review is explicitly process-oriented rather than impact-focused.

The most consistently documented outcome in the mid-term review is institutional. For participating National Societies, the CAJ created a valuable and practical way to embed climate action into the way they work. As of November 2025, reviews show that 35 climate working groups were established, 25 community vulnerability and capacity assessments were conducted, 25 local adaptation and resilience plans were produced, and 30 new government partnerships on climate were forged. For many National Societies, this was the first time climate had been formally and systematically integrated into strategic planning and community engagement.

At community level, participatory risk assessments gave communities a voice in identifying climate risks and designing responses. The Malawi Red Cross used the Enhanced Vulnerability and Capacity Assessment (EVCA) process to identify locally specific adaptation priorities that included resilient housing, climate-smart agriculture, agroforestry, and early warning systems. Community members described it as a shift, indicating that they are now asked what is needed instead of "receiving" projects as previously had been the case. "It wasn't a 'business as usual' approach where we design programs in our offices. Instead, communities identified their own challenges and developed their own actions." This created a sense of ownership and empowerment, as described by Malawi Red Cross staff.

For the National Societies, the lack of funding pipeline can damage trust and undermine credibility. This happened in part when USAID funding was cut in 2025.

Lessons for others: The effectiveness of the CAJ has been shaped less by the methodology itself than by the conditions under which it is implemented. Across contexts, similar patterns emerged in what enabled progress and what constrained it.

One key lesson is that the solutions proposed by vulnerable community groups are not always climate smart. Often communities express their short-term humanitarian needs, which are sometimes at odds with long-term sustainable planning. And what is good for one community, might not necessarily be good in the long term for neighbouring communities. These are all delicate conversations to have at the community level with in-country experts, local and sometimes even national authorities and organizations.

The CAJ's stepwise structure provided National Societies with a clear entry point and shared pathway for climate action, contributing to relevance and early uptake. However, effectiveness was strongest where the methodology was applied flexibly, allowing sequencing and depth to be adapted to National Societies' capacity and context. Rigid application, particularly under compressed timelines, limited learning and ownership. This underscores the importance of preserving methodological coherence while enabling contextual adaptation.

Consistent, high-quality technical support emerged as a critical enabler of relevance, effectiveness, impact, and scalability. Where National Societies received ongoing

accompaniment – beyond initial training – tools were applied more confidently, outputs were of higher quality, and external credibility increased. Conversely, where support tapered early, gains were harder to sustain. This highlights the role of facilitation and quality assurance – from national to local levels, not just tool provision.

Leadership buy-in and dedicated staff time were consistently associated with stronger progress. Where National Societies' leadership actively championed climate action and embedded CAJ processes into existing systems, momentum was sustained despite external pressures. Where ownership was weaker or engagement was perceived as externally driven, progress was more less durable. Meaningful National Societies' involvement in design and sequencing decisions reinforced ownership and contextual fit.

Establishing timelines aligned to National Societies' capacity and making resourcing predictable were essential for quality implementation. Extended timeframes enabled learning, adaptation, and trust-building at the community level. Where the CAJ was implemented on project timelines of 12–18 months, the result was often a national assessment phase that consumed most of the available time, leaving too little for the community work that the whole approach is built around. In contexts where timelines were longer and funding was stable, the depth of community engagement was much deeper. Realistic timelines are a precondition for LLA and in the CAJ 2.0 the community engagement will start much earlier in the process.

SCALE UP, REPLICABILITY AND SUSTAINABILITY

5.4 **Community-led adaptation in climate-vulnerable, humanitarian settings** – Rahman, A.

Summary: Community-led climate adaptation in Bangladesh strengthens resilience, restores ecosystems, and relies upon inclusive decision-making in climate-vulnerable communities and humanitarian settings.

Contributors: Md. Ashikur Rahman, Climate Adaptation and Disaster Risk Reduction (DRR) Practitioner, Bangladesh.

Key organizations: Helvetas Bangladesh (September 2023 to December 2024),A International Union for the Conservation of Nature (IUCN) (August 2018 to December 2022). The project was funded by the Swiss Agency for Development and Cooperation (SDC) through Helvetas and the UN ELVETAS) and the UN Refugee Agency (UNHCR) and the IUCN. The Bangladesh Office of the Refugee Relief and Repatriation Commissioner (RRRC) was the main administrative authority for camp.

About the initiative: This initiative focuses on strengthening locally led adaptation (LLA) in climate-vulnerable humanitarian settings in Bangladesh, particularly in the Rohingya camps and host community areas of Ukhiya and Teknaf in Cox's Bazar, from August 2018 to December 2023. The initiative aimed to reduce climate and environmental risks, including landslides, floods, drought, soil erosion, and ecosystem degradation, while strengthening resilience and disaster preparedness among vulnerable Rohingya and host communities. Key interventions included plantation and reforestation activities such as slope stabilization and riparian plantation, alongside disaster risk reduction (DRR) measures including bamboo-made stairs and bamboo-based slope protection structures. These activities were implemented through community participation and local labor engagement, ensuring active involvement of affected populations in planning, implementation, and maintenance processes.

A Rohingya refugee camp in Bangladesh shown after planting and ecosystem restoration efforts. Photo: Md. Ashikur Rahman

The initiative is locally led because community members, volunteers, local authorities, and community-based groups directly identified risks, prioritized solutions, and implemented adaptation actions based on local knowledge and lived experiences. As project staff, I supported implementation through projects managed by IUCN and Hevetas, funded by UNHCR, the World Food Programme (WFP), and SDC in coordination with the RRRC and local government institutions.

Financial levers: The initiative was externally funded through humanitarian and climate adaptation financing mechanisms supporting ecosystem restoration, disaster risk reduction (DRR), and community resilience in Rohingya camps and host communities in Cox's Bazar. From 2018–2022, implementation by IUCN was funded by UNHCR, while from September 2023–December 2024, implementation by Helvetas was funded by SDC.

The initiative was administered under the authority of the RRRC through Camp-in-Charge (CiC) offices in camps and coordinated with the Office of the Deputy Commissioner and local government (UNO offices) in host community areas. Coordination was supported through the Inter Sector Coordination Group (ISCG), particularly through the Energy and Environment Network (EEN) and other cross-sector working groups.

Key outcomes:

Key outcomes of the initiative included strengthened climate resilience, reduced environmental risks, improved ecosystem restoration, and enhanced disaster preparedness among vulnerable Rohingya and host communities in Cox's Bazar. Major achievements included reduced slope erosion and landslide risks through plantation of native tree species, riparian plantation, and bamboo-based slope stabilization structures; improved community participation in adaptation planning and implementation; increased awareness of environmental protection and disaster risk reduction (DRR) practices; and stronger collaboration among communities, local authorities, and humanitarian actors.

The evidence draws on field monitoring data, participatory assessments, geographic information system (GIS) and site observations, community consultations, focus group discussions, project progress reports, and environmental restoration tracking conducted during my engagement from 2018 to 2024. It captures locally led adaptation outcomes by documenting how community members and volunteers contributed to identifying risks, implementing adaptation measures, and maintaining resilience structures using local knowledge and labor-based approaches.

Outcomes captured include strengthened resilience, ecosystem restoration, reduced disaster risks, community ownership, participation of vulnerable groups, and improved environmental conditions across camp and host community areas. These outcomes were measured through regular monitoring visits, plantation survival assessments, slope stabilization observations, beneficiary consultations, and coordination reviews conducted by organizations including IUCN, BRAC, the Agency for Technical Cooperation and Development (ACTED), and Helvetas, in coordination with the RRRC, local authorities, and sector coordination platforms over multi-year implementation periods.

Lessons for others:

A key lesson from this initiative is that measuring the outcomes of locally led adaptation (LLA) requires combining technical evidence with community knowledge and lived experiences. Quantitative indicators alone cannot fully capture outcomes such as community ownership, participation, trust, local leadership, and behavioral change. Participatory monitoring, community consultations, field observations, GIS analysis, and feedback from volunteers and affected populations were therefore essential for understanding how adaptation measures contributed to resilience and environmental restoration in both Rohingya camps and host community areas in Cox's Bazar.

One major challenge was balancing donor reporting requirements with locally meaningful indicators. While physical outputs such as plantation coverage, slope stabilization, and infrastructure maintenance were measurable, social outcomes such as strengthened local capacity, inclusion, and long-term ownership were more difficult to quantify within short project cycles. The humanitarian context, environmental degradation, recurring climate hazards, and population mobility also created challenges for long-term monitoring and sustainability assessments.

The experience shows that participatory and community-based monitoring approaches can be transferable across contexts because they strengthen local engagement, accountability, and adaptation ownership. However, evaluation methods should remain flexible and context-specific due to differences in climate risks, governance systems, and social conditions.

Assessing the long-term durability of findings in the Rohingya context remains challenging because the Rohingya population is forcibly displaced from Myanmar and future repatriation conditions remain uncertain. If large-scale repatriation occurs, adaptation outcomes and community structures may significantly change over time. However, environmental restoration measures, local capacity strengthening, and knowledge gained among both Rohingya and host communities may continue to provide long-term benefits if institutional and community support are maintained.

This evidence should influence adaptation decision-making by encouraging governments, donors, and humanitarian actors to prioritize community leadership, nature-based solutions, and participatory evidence systems within climate adaptation programming and policy processes.

SCALE UP, REPLICABILITY AND SUSTAINABILITY

5.5 **Spring rejuvenation in the Darjeeling Himalayas** – Sharma, K.

Summary: A community-led spring rejuvenation initiative in the Darjeeling Himalayas restoring water access for indigenous households through participatory springshed management.

Contributor: Dr. Kabindra Sharma

Key organizations: The South Asia Consortium for Interdisciplinary Water Resources Studies (SaciWATERs), Sikkim University, the National Mission on Himalayan Studies (NMHS)

About the initiative: This initiative is a community-led spring rejuvenation program in the Darjeeling Himalayas, where an estimated 50% of natural springs are drying up due to erratic rainfall, land degradation, deforestation, and climate change. It sought to restore reliable drinking water access for Indigenous communities, strengthen local water governance, and generate credible adaptation evidence. Through participatory springshed management, communities identified critical recharge zones of failing springs. Restoration measures – reforestation with locally appropriate species, contour trenching, and percolation pits – were designed and carried out collectively. Every site was selected by community members; every intervention was maintained by them. Indigenous ecological knowledge shaped the diagnostic and implementation process throughout. Community members, including Indigenous youth, were trained as para-hydrogeologists, taking substantive roles in monitoring and data collection continuing beyond the formal project period. Scientific tools such as geographic information system (GIS)-based springshed mapping validated and documented community knowledge rather than replacing it. The initiative addressed climate risks including seasonal and

Researcher Kabindra Sharma crouches at the outflow of a community spring in rural Darjeeling, using a portable water testing kit to measure basic water quality parameters (such as pH, turbidity, and bacterial indicators). This represents an effort to introduce basic scientific tools into communities where water sources have traditionally been protected through spiritual and cultural means. Photo: Prasanga Limbu, Field Assistant, Field Visit, National Mission on Himalayan Studies Project

permanent spring failure, affecting drinking water access, food production, and gender equity, as women and girls disproportionately bear water collection burdens.

Financial levers: The initiative was supported by the National Mission on Himalayan Studies (NMHS) for three years.

Key outcomes:

- **Water security:** Measurable improvements in spring discharge were recorded across intervention sites. Reliable water access was restored for over 200 indigenous households that had experienced seasonal or permanent spring failure, reducing water collection burdens for women and children and supporting household health and farming.
- **Ecosystem restoration:** Reforestation and soil conservation measures have begun reversing localized land degradation around springshed recharge zones, reflecting the inseparability of ecological recovery and water security in mountain systems.
- **Community resilience and governance:** Local water governance structures were strengthened; a cohort of trained para-hydrogeologists was developed; and participatory monitoring systems were established that continue beyond the formal project period. Communities now hold both knowledge and practical tools to respond to changes in their springs.
- **Knowledge co-production:** Combining indigenous ecological knowledge with scientific methods (GIS-based springshed mapping, hydrological assessment) produced evidence credible to both communities and external institutions, demonstrating that frontline communities are knowledge producers, not merely recipients of technical assistance.

Evidence was measured through quantitative indicators (spring discharge, households with restored water access) and qualitative documentation of participatory processes, carried out by community-trained para-hydrogeologists and project staff, with monitoring continuing beyond the formal project period.

Lessons for others:

Measuring LLA outcomes: Rigorous evidence does not require external researchers or formal institutional frameworks. Much of the evidence here was generated by the community through participatory monitoring, with local specificity that external teams would have been unlikely to achieve. Measurement should be something communities can own and lead.

Challenges: A recurring challenge was the tension between Indigenous knowledge systems and scientific tools. Communities in the Darjeeling Himalayas have traditionally protected springs through spiritual and cultural custodianship – sacred groves, local deities as guardians of water. Introducing scientific testing instruments was perceived by some as implying distrust of traditional protection systems. Successful navigation required framing scientific tools as complementary to, not replacements for, indigenous custodianship, building trust while enabling evidence collection.

Were the right things measured? The initiative captured outcomes across water security, ecological restoration, governance capacity, and knowledge co-production, giving a more complete picture of LLA than any single metric would. However, outcomes such as restored dignity, reduced gendered burden of water collection, and strengthened intergenerational knowledge transmission remain difficult to quantify and are underrepresented in formal evidence frameworks. Future approaches should make greater space for these.

Transferability: The participatory springshed management approach is transferable to other mountain spring-dependent communities, particularly across the Hindu Kush Himalaya region. The principle is transferable; the specifics must be locally rooted, as indigenous indicators, species knowledge, and community institutions differ across landscapes and cultures.

Durability: Outcomes are expected to be durable because they are maintained by community institutions rather than external actors. Para-hydrogeologists trained during the initiative continue monitoring independently. Ecological restoration outcomes will strengthen over time. The main risk is continued climate pressure on spring hydrology, which could outpace community-led restoration without sustained external support and policy recognition.

Influence on decision-making: This evidence should inform local water governance decisions; regional and national spring rejuvenation policy; and international LLA funding frameworks. It demonstrates that indigenous mountain communities are effective agents of adaptation, not simply vulnerable populations requiring assistance. Recognition of community-generated evidence as legitimate policy input is a systemic change this and similar cases collectively call for.

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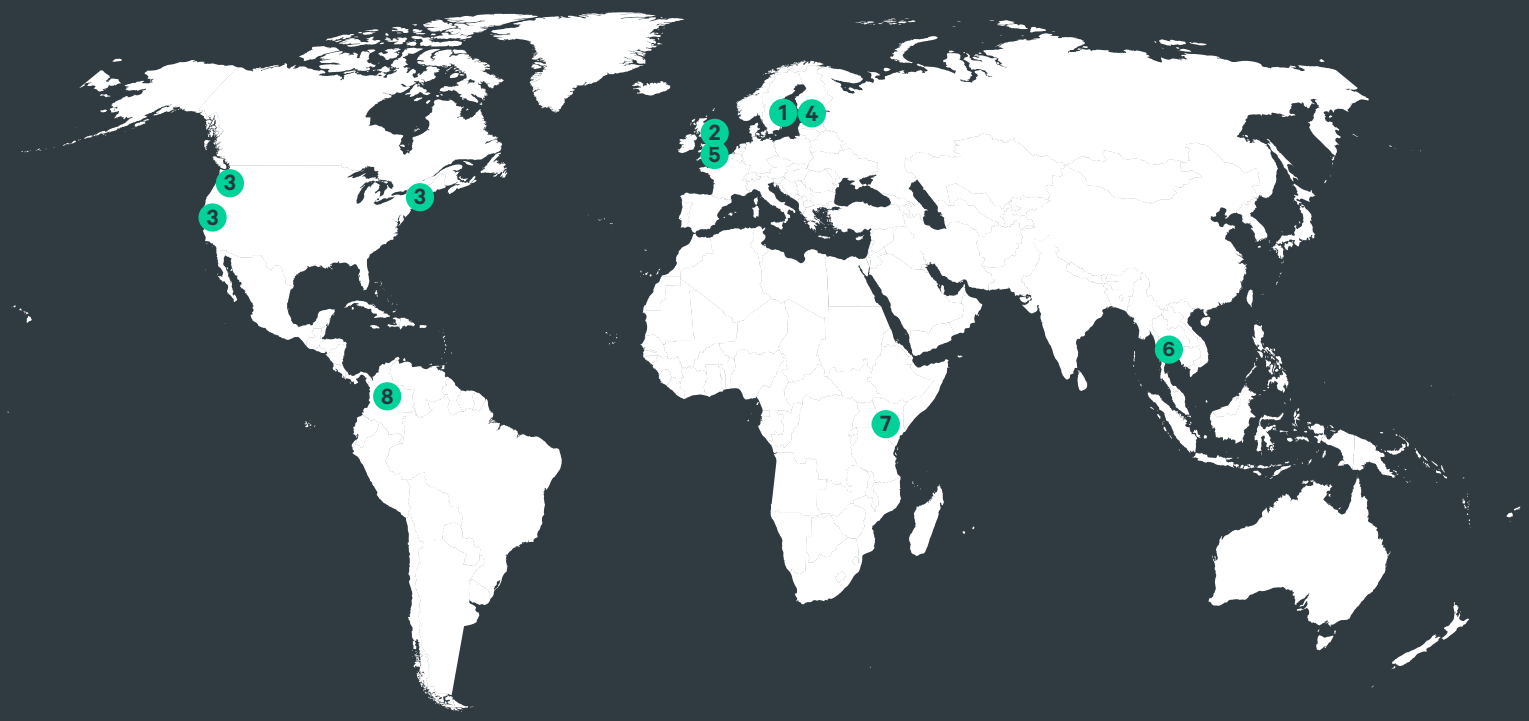

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