





Water & Food Systems Resilience

Communities Navigating Climate Uncertainty in Africa

About Transitions Research

Transitions Research is a social science research collective. We examine radical transformations shaping our future, including both urbanisation and the emergence of a climate-resilient society. Our research on urban resilience foregrounds social vulnerability, the differential impact on marginal social groups and communities. Our expertise is focused on driving climate action that's inclusive and participatory by engaging with diverse stakeholders to co-create and test resilience solutions that address challenges of the most vulnerable.

About the Adaptation Research Alliance

The Adaptation Research Alliance (ARA) is a global coalition responding to the urgent challenges faced by vulnerable communities from climate change. Their membership is made up of researchers, funders, policymakers, development bodies and community-based organizations committed to action-oriented research for adaptation that supports climate resilient futures.

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This report has been shaped by insights, reflections, and experiences shared by members of the Adaptation Research Alliance through their Tracking, Learning, and Sharing (TLS) program. Their perspectives have been integral to framing the findings and recommendations presented here.

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Overview





Across Africa, communities are navigating the deep and growing intersections between water, food, and climate change. The rhythms that once shaped farming, food security, and water availability are becoming harder to predict. Rain falls late or not at all. Water sources dry up or overflow. Crops fail not just from drought, but from the uncertainty of what comes next. These shifts are not abstract risks for the future; they are already reshaping how people eat, farm, and survive.

Women, youth, and smallholder farmers stand at the heart of these challenges, carrying much of the burden as they seek to secure food and water for their families. Yet they are also at the forefront of solutions- restoring land, protecting water sources, reviving local seeds, and building new forms of resilience from the ground up. Their work is often unseen, unrecognized, and under-supported, but it is already driving change where formal systems have struggled to keep pace.

Through the Adaptation Research Alliance's Africa TLS Learning Journey 2024–25, ARA members from the African region came together to exchange experiences, to explore the lived realities of water and food systems under climate stress, and to learn from the innovations already taking root. This report brings forward those voices, highlighting the strategies, struggles, and insights shared by participants from across the African continent.

What emerges is not just a picture of vulnerability, but of agency. Communities are not passive recipients of risk; they are active agents of adaptation, drawing on deep knowledge, resourcefulness, and collaboration. This learning journey reinforces that resilience is not built solely through policies or infrastructure; it grows through relationships, through trust, and through systems that recognize and support people's capacity to lead change.



Key Insights



Local solutions exist but whose knowledge counts shapes whose solutions get funded

Across Africa, communities are restoring land, securing water, and diversifying food systems through women's leadership, youth action, and peer learning. These efforts work but remain overlooked because they don't fit formal models of resilience. Recognizing and resourcing these actors is not inclusion; it's how resilience is already being built.

Water and food systems are deeply connected in people's lives but remain siloed in policy, weakening resilience at the nexus

Agriculture, water, health, and climate policies often work in isolation, creating gaps where risks multiply. Participants emphasized that resilience strengthens when these sectors align, as seen in local initiatives linking nutrition, water, and agriculture. Yet governance rarely reflects this reality. Unlocking resilience means moving beyond institutional silos to policies that match how communities actually adapt.

Bridging these silos is possible participants identified clear, practical entry points for action

Four key areas emerged where integrated action can strengthen resilience: aligning irrigation with climate-smart agriculture to protect food production; linking nutrition and water access through schools and communities; recognizing ecosystem restoration as critical infrastructure for both agriculture and water security; and improving early warning systems to address food and water risks together. These are not abstract ideas; they reflect grounded opportunities where policy, funding, and practice can converge to deliver resilience now

Learning Agenda

The learning agenda of the ARA 2025 TLS Africa - Regional Knowledge Symposia focused on Water and Food Systems Resilience. This was shaped through a participatory process led by ARA members working in the region.

As part of the Tracking, Learning and Sharing (TLS) initiative, members from across Africa were invited to identify themes most relevant to their contexts and learning priorities. Through this process, participants highlighted food system resilience, at the intersection of water challenges emerging from climate change, as the pressing adaptation challenge to be further explored collectively.

Building on this, Transitions Research, in consultation with our local partner, ACTS, refined the regional focus to explore the water-food-climate nexus and the role of governance and policy in strengthening resilience. The learning journey brought together member organisations to co-define key questions, identify gaps, and share practical insights from across Africa.

This report draws from four key inputs: a review of member publications on the topic, presentations at regional symposia, participatory focus group discussions, and policy dialogues, to understand how local and regional actors in Africa are addressing water and food security challenges under climate change.

Documented Practices

From member publications we see how the local actors in different parts of Africa have been working in the nexus of water security and food system resilience in practice. The key takeaway here is a clear snapshot of what local and regional actors are already doing to strengthen settlement resilience under climate change





Restoring a Degraded Ethiopian Watershed for Water and Livelihood Security

January 27,0000 - By Mularesh Temberga, Francisco Bestimelli and Francia Subvence" - Colombings by Widom 2 Francia Subvence

Farmers rediscover benefits of traditional small grains in Zimbabwe







'Not just a museum': Kenya's seed bank offers unexpected lifeline for farmers



Glimpse of Member Publications on Climate Change and Water and Food Systems Resilience



Regional Focus

From our review of member publications, we observed how water insecurity and food system resilience intersect in practice across regions and thematic areas. ARA members have been working within different focus areas across the following regions:

Members from East Africa particularly Kenya, Tanzania, and Uganda placed strong emphasis on water security, agriculture, and community resilience, documenting how local initiatives respond to drought, rainfall variability, and soil degradation.

West Africa, including Ghana, Burkina Faso, and Nigeria, had members with research largely centred on food security and climate adaptation, with a focus on livelihood diversification and the role of local institutions in addressing vulnerability.

Members working in Southern Africa, represented by South Africa, Zambia, and Malawi, demonstrate a more integrated approach that connects climate, water, and food systems, often through institutional and policy-oriented analyses.

North African evidence from members in Egypt highlight the intersection of water management and clean energy as a key strategy for sustainable resource use.

Central Africa, particularly the Democratic Republic of Congo, remains less represented in the literature by ARA members, with existing studies mainly addressing ecosystem restoration and mobility as adaptation responses.



Insights from Collective Dialogue

Resilience in Practice

The following synthesis highlights patterns and distinctive perspectives emerging across Africa from the presentations shared during the symposia These insights are reflections of specific initiatives and illustrate how communities, governments, and organizations are advancing adaptation through diverse yet interconnected strategies. The original presentations that informed this summary are available here.

Regenerative Agriculture & Ecosystem Restoration

In project areas in Tanzania, organisations shared how women and youth are restoring degraded land through regenerative farming, agroforestry, and organic soil practices. In Malawi, programmes focused on improving soil fertility through manure, composting, and community-managed seed banks, linking food security with nutritional health. From the Democratic Republic of Congo, organisations highlighted community-led reforestation and small-scale household restoration efforts helping families rebuild livelihoods following floods and displacement.

Community-Led Learning & Local Ownership

Organisations working in Tanzania and Malawi showcased farmer field schools and demonstration plots where farmers learn directly from each other rather than external trainers. In the DRC, traditional storytelling, cultural leadership and seed-sharing practices were shown as methods of safeguarding biodiversity and knowledge. From Ghana, youth collectives demonstrated how composting, waste reuse, and urban agriculture are being used to strengthen livelihoods and build local ownership of solutions.

Seed Systems & Agrobiodiversity

Organisations in Zambia shared work on community seed banks and participatory seed breeding to maintain local seed diversity and farmer control. In the DRC, traditional seed-saving practices were described as both cultural heritage and a resilience strategy. Malawi's contributions referenced gene banks and local crop preservation as critical to food and nutrition resilience.

Governance & Implementation Gaps.

In river basin projects such as the Great Ruaha in Tanzania, organisations described conflicts over water use, weak enforcement of existing regulations, and shrinking water flows despite formal policies. Similar issues were reported from Malawi and Nigeria where plans and strategies exist, but coordination, data, enforcement and financing remain limited.



Grounded Realities from Across Africa

During the co-creation exercise as part of the TLS symposia members mapped lived experiences of climate stress across Africa's water and food systems. Participants reflected on how these pressures shape livelihoods, expose inequalities, and influence local decision-making. Through dialogue and group mapping, participants surfaced shared and unique challenges, as well as the strategies they are using to adapt. These discussions offered grounded insights into where resilience is emerging and what continues to limit it. The original drafts, handwritten group worksheets written by participants during the focus group discussions are available in the appendix.

Shared Challenges

Climate Stress and Livelihood Loss

Participants across regions described prolonged droughts, erratic rainfall, floods, and rising temperatures as the defining pressures on daily life. These conditions have disrupted farming, fishing, and livestock rearing, resulting in food shortages, reduced income, and water scarcity. Crop failures, drying of rivers, and loss of pasturelands have deepened rural poverty and pushed many families into crisis.

Inequality and Vulnerability

Women, children, and youth were consistently identified as the most affected groups, reflecting both economic and social vulnerabilities. Their livelihoods depend heavily on natural resources, yet they have limited control over land, credit, and decision-making spaces. The added burden of collecting water and fuel, especially during drought, intensifies gendered stress.

Fragile Systems and Governance Gaps

Participants noted that while local coping mechanisms exist, their efforts are often undermined by weak infrastructure, limited credit access, and poor coordination. Inadequate storage, lack of early warning systems, and slow government response leave people exposed to recurring climate shocks. In some contexts, NGOs and local initiatives are stepping in to fill policy and financing gaps.



Regional Realities

Despite common patterns, regional nuances were evident.

- From Burkina Faso, participants working in displacement-affected areas shared that competition over land and water between internally displaced people and host communities is creating tensions and affecting social cohesion in certain localities.
- From Mali and the wider Sahel region, organisations described how extreme
 heat, forest fires, and loss of vegetation have reduced access to wild fruits and
 natural resources particularly impacting women who rely on fruit collection for
 livelihoods.
- From the Democratic Republic of Congo (DRC), participants noted that urban flooding, damaged infrastructure, and recurring disease outbreaks are intensifying vulnerability in informal settlements where they operate.
- From Kenya, organisations shared that prolonged drought and rising food prices have forced some households to migrate from rural farms to informal urban settlements, affecting children's school attendance and access to food.
- From Zambia, participants highlighted that hunger and livestock losses are not only due to climate variability but also linked to limited economic resources and weak support systems for rural farmers.
- From Nigeria, organisations working in environmental management shared that deforestation, mining, and poor waste disposal in some areas have worsened land degradation and water pollution.

Voices of the Most Affected

Participants described the visible toll of these intersecting crises: children leaving school, families abandoning farmland, and women walking longer distances for water and firewood. Youth unemployment and migration were recurring concerns. Communities are adapting as best they can, but the capacity to cope is stretched thin, revealing the urgent need for more responsive systems and support.



Pathways of Resilience

Local Innovation and Learning

Communities are turning experience into knowledge through farmer field schools, village-level training, and peer-to-peer learning. In Tanzania and Malawi, these spaces are helping farmers test new crops, composting techniques, and organic inputs, while youth networks in Ghana link waste reuse with food production.

Restoring Ecosystems

Ecosystem recovery is central to adaptation efforts. Reforestation, mangrove planting, and construction of stone terraces have revived degraded lands and improved soil and water retention. In the DRC, household ecosystem restoration is reconnecting biodiversity, livelihoods, and food security on the same plot of land.

Securing Water and Food

Communities are improving access to water through earth dams, irrigation schemes, and conservation agriculture. Nutrition-sensitive programs such as school feeding initiatives and livestock distribution have reduced hunger and improved learning outcomes for children.

Inclusive Action and Partnerships

Where state support is limited, local institutions are filling the gap. Urban groups have created savings-led funds to co-manage climate finance, while research partnerships in Nigeria and Ghana have strengthened farmer participation in policy design. Collaboration between NGOs, communities, and researchers is expanding access to information, finance, and tools for planning.

Emergency and Early Response

Communities have mobilized quickly during disasters, relocating families from floodand landslide-prone areas, organizing local rescue efforts, and maintaining food supplies through collective storage and relief. Early-warning initiatives, though limited, are beginning to emerge in several regions.



Regional Realities

While approaches often overlap, distinct pathways have emerged across regions.

- From Ghana, an organisation working with tree-crop farmers shared how they are
 using digital tools and climate risk assessments to support diversification of cocoa,
 cashew, and coconut farming as a way to stabilise incomes under changing climate
 conditions.
- From Uganda, organisations highlighted locally developed charcoal-based cooling and storage technologies that communities are using to reduce food spoilage and extend the shelf life of perishable produce.
- From the Democratic Republic of Congo (DRC), one organisation shared householdlevel ecosystem restoration efforts where families combine agroecology, tree planting, and small income-generating activities, with intentional inclusion of women and youth.
- From Nigeria, organisations spoke about co-creating research priorities with farmers and local institutions focusing on resilient seeds, soil regeneration, and small-scale irrigation to inform adaptation planning and strengthen evidence for policy.
- From urban areas in East Africa, organisations working in informal settlements shared examples of community-managed funds that allow residents to participate in local budgeting processes and access small-scale climate finance to support water and food security initiatives.

Voices of Resilience

Across regions, participants described resilience not as a single intervention but as persistence in the daily work of repairing land, restoring trust, and rebuilding livelihoods. Women's groups leading tree planting, youth volunteering in urban cleanups, and farmers testing new crops were recurring images of local leadership. Many noted that these actions begin small, a single well, a shared savings group but gradually reshape community confidence.

Community-Informed Policy Directions



Amidst discussions on challenges and resilience, participants also turned their attention to governance, identifying who holds the power to enable change. Through an immersive exercise titled "Write to a Policymaker," community-based organizations drafted direct messages to the decision-makers they most wanted to reach. These were not external recommendations but grounded appeals drawn from lived experience. They reveal who communities trust, who they struggle to engage, and what support they believe is needed to make adaptation locally led and lasting. The original drafts, policy letters written by participants during the focus group discussions are available in the appendix.

Who Communities Are Trying to Reach

Across participants from ten countries in the region, the letters were addressed mainly to national ministries of water, agriculture, environment, and finance, with additional focus on local governments, Members of Parliament, and county-level executives. This shows that CBOs still view policy power as centralized, even when action is local. Notably, very few messages targeted private-sector actors or regional bodies, suggesting a missing layer of engagement in financing, innovation, and inter-country learning.



What Communities Are Asking For

Integration of Adaptation into Everyday Governance

CBOs want climate adaptation to be part of planning, budgeting, and monitoring, not a separate agenda. They called on environment, water, and agriculture ministries to embed resilience indicators into local development plans.

Reliable and Inclusive Water Access

Across Tanzania, Kenya, Malawi, and The Gambia, participants asked for investments in irrigation, boreholes, and wetland management. They emphasized that communities should co-design and co-manage these resources rather than being only beneficiaries.

Support for Climate-Smart and Diversified Agriculture

Ghana, Nigeria, and Burkina Faso participants urged ministries to expand extension services, promote drought-tolerant crops, and improve post-harvest management. They stressed training, local seed systems, and incentives for smallholders as essential.

Funding Mechanisms that Reach the Local Level

Many CBOs asked parliaments, treasuries, and county offices to dedicate funds for resilience. Examples include The Gambia's call for a co-governed city fund, Zambia's proposal to earmark local resilience allocations, and Kenya's plea for climate-health financing. They also pointed to a missing link **funding mechanisms that communities can directly access** rather than through multiple intermediaries.

Stronger Disaster Preparedness and Early Warning

Uganda, Kenya, and Zambia participants repeatedly asked for early warning systems for floods and mudslides, with practical measures such as rescue centers and communication channels in high-risk areas.

Inclusive and Accountable Decision-Making

CBOs emphasized inclusion of **women**, **youth**, **and Indigenous Peoples** in all levels of climate governance. They are asking for genuine participation in county budgets, monitoring frameworks, and adaptation plans not consultation after decisions are made.

Linking Food, Health, and Climate

Several groups called on health and agriculture ministries to treat nutrition and food security as part of resilience policy. Kenya's proposal for climate-health financing and Ghana's focus on dietary diversification reflected a systems perspective.



Gaps Communities Highlighted

The gaps are not about what communities lack, but about what systems are not yet providing. They point to missing links between local practice and formal policymaking.

Participation gaps: Communities are rarely involved at the stage where decisions or budgets are made, even though they are consulted later for implementation.

Coordination gaps: Ministries of water, agriculture, and environment work in silos, leading to fragmented actions and diluted accountability.

Financing gaps: Existing funds do not reach community-led projects directly; access is constrained by bureaucracy and lack of local financing mechanisms.

Information and technology gaps: Early warning systems, weather data, and research outputs do not reach those who need them most.

Engagement gaps: Very few CBOs mentioned private-sector actors, researchers, or regional climate bodies (think tanks) as partners revealing limited channels to influence beyond government ministries.



Way Forward

The learning journey across Africa revealed that building resilience in water and food systems goes beyond improving agricultural practices or managing scarce resources. True resilience lies in transforming how decisions are made: in governance that includes communities, in partnerships that bridge science and practice, and in knowledge that flows both ways between local actors and policymakers. Strengthening Africa's food and water futures will depend on recognising communities not just as beneficiaries of adaptation, but as co-creators of solutions shaping the continent's response to climate change.

The resulting pathways for action offer distinct directions for stakeholders.





For Researchers and Practitioners

Bridging Science, Local Knowledge, and Practice

Reframe Knowledge Systems

Encourage partnerships where scientific, traditional, and experiential knowledge are equally valued. Document and scale community-driven innovations in climate-smart agriculture, water conservation, and nutrition-sensitive interventions.

Co-Design Locally Grounded Research

Move beyond externally driven studies by designing research with, not just for, communities. Build on participatory evidence from farmers, women's cooperatives, and youth networks to ensure findings translate into practical adaptation strategies.

Strengthen Learning Platforms

Invest in regional knowledge exchanges that link practitioners across countries to share what works. Enable feedback loops between local actors and regional networks to accelerate adaptation learning and peer support.





For Policymakers and Funders

Transforming How Support Reaches Communities

Localise Governance and Decision-Making

Shift from consultation to co-decision. Institutionalise frameworks that empower communities to identify priorities, manage water and food resources, and hold decision-makers accountable for adaptation outcomes.

Finance What Works Locally

Simplify access to climate finance for community-based organisations and cooperatives. Support flexible, small-grant mechanisms that recognise informal institutions and enable experimentation at the local level.

Integrate Systems Thinking in Policy

Adopt policies that treat water, food, and climate resilience as interconnected systems. Strengthen cross-ministerial coordination and integrate local data into national adaptation plans and budgets.

Invest in Inclusion

Prioritise gender-responsive and youth-inclusive programmes that recognise women and young farmers as central agents of change. Ensure that adaptation funding, training, and governance processes actively reach marginalised groups.

As this learning journey continues, the voices of African members point to a clear direction: resilience will not come from isolated projects, but from rebalancing power and participation across the water-food-climate nexus.

The insights shared through this process offer a roadmap for how adaptation can be built from the ground up anchored in trust, equity, and collective learning.

Appendix

Learning Journey Methodology

The learning journey on water and food systems in Africa was designed as a participatory process grounded in the work and experiences of ARA member organisations. Members working across different African regions contributed case studies on how water and food systems are being affected by climate change and how communities are responding in practice.

During this process, organisations presented case studies and examples from their ongoing projects, sharing how climate change is affecting water security, agriculture, food systems, and ecosystems in the regions where they work, as well as the locally led actions being taken in response. Alongside the presentations, interactive group exercises were held. In the first activity, participants discussed and documented the challenges and resilience strategies observed in water and food systems. In the second activity, participants wrote policy messages addressed to specific decision-makers, identifying which institutions they wanted to engage, what support was required, and what gaps still persist.



Focus Group Discussions

As part of the Africa regional symposium, members took part in a structured co-creation exercise titled "Narratives of Water and Food Systems Resilience."

- 1. Mapping Stories of Challenges and Resilience: Participants were invited to write a real story from their context focusing either on a challenge related to water or food systems, or on an example of local resilience. The handwritten notes can be found here. These stories were first shared within small groups. Each group then identified, One shared theme that connected multiple stories, and One unique element that reflected a distinct experience or innovation. Groups then exchanged their story maps with another table, added observations or questions, and finally shared key insights in plenary. This activity helped build a collective understanding of recurring challenges such as water scarcity, food insecurity, displacement, and inequalities, while also highlighting grounded resilience strategies led by communities, women's groups, farmers, and local organisations.
- 2. Writing to a Policymaker: In the second activity, participants translated their experiences into policy language. The letters are attached <u>here</u>. Each group was asked to address a specific policymaker such as a Ministry of Water, Agriculture, Environment, Treasury, local government, or Member of Parliament and write a short policy message. The format followed:

To: [Policymaker / Institution]

Recommendation: [Proposed Solution]

These notes reflected what community-based organisations and local actors are asking of policymakers, not external recommendations, but direct messages from practitioners working on the ground. The request ranged from investments in water infrastructure, climate-smart agriculture, and community-managed funds, to land rights for women, recognition of mobility as adaptation, and inclusion of health and nutrition in climate policy.

Analysing the Data

The insights in this report are based primarily on handwritten notes, worksheets, and verbal inputs shared during these two activities. These datasets were reviewed and organised thematically to identify recurring patterns such as water insecurity, food system vulnerability, governance gaps, locally led innovations, and calls for policy support. A complementary review of member publications helped situate these focus group insights within broader work being carried out by ARA organisations in Africa. Together, the presentations, focus group discussions, and policy messages form the evidence base for this section. All interpretations remain grounded in what was shared by participating organisations rather than generalized assumptions about countries or regions

Participating Organisations in the TLS Symposiums

The learning journey engaged ARA's Africa members, with deeper insights gathered from those who participated in the regional knowledge symposiums.

- 1.ABEFAB Action communautaire pour le Bien-être de l'enfant et de la femme au Burkina
- 2.ACTS Africa Centre for Technology Studies
- 3.Association des Exploitants Miniers Artisanaux pour la Pacification et la Reconstruction de l'Ituri
- 4. Association des Jeunes Agriculteurs du Mali
- 5.Centre for Climate Change Adaptation and Mitigation (CCCAM)
- 6.Centre for Communities Education and Youth Development (CCEYD)
- 7.Centre Mathieu Badolo de recherche, développement et transfert
- 8.Centre Oecuménique pour la Promotion du Monde Rural
- 9.Community Action for Health & Development (CAHED)
- 10.Community Empowerment and Development Association
- 11.Conservation of Nature for Survival (CONASU)
- 12.Conservation Society of Sierra Leone
- 13.Dialogue on Shelter for the Homeless in Zimbabwe Trust
- 14.Easytech Farm Solutions Limited
- 15. Foundation for Community Driven Development
- 16.GAYO Green Africa Youth Organization
- 17.Institute of Climate and Environment, SIMAD University
- 18.KASA Initiative Ghana
- 19.Mamo Gardens Model Farm Initiative
- 20.MKAAJI MPYA asbl
- 21.Mozambique Ministry of Land and Environmental and Commonwealth Youth Climate
- Change Network in Mozambique
- 22.Nature Cares Resource Centre
- 23.Resilient40
- 24.Simon Diedong Dombo University of Business and Integrated Development Studies, Wa
- 25.Sustainable Solutions for Life
- 26.The Desert Research Foundation of Namibia
- 27.The Federal University of Technology, Akure, Nigeria
- 28.University of The Gambia
- 29.World Inspiring Network
- **30.Young Lawyers Foundation**
- 31. Women's Life and Wellness Foundation



