

Locally Led Climate Action for Sustainable Community Resilience

Giriraj Amarnath¹, Carol Mweemba², Emilian Manishimwe³ and Barbara van Koppen⁴

¹ International Water Management Institute (IWMI), Colombo, Sri Lanka

² World Vision, Lusaka, Zambia

³ Water Integrity Network (WIN), Nairobi, Kenya

⁴ International Water Management Institute (IWMI), Pretoria, South Africa

Locally led climate action has emerged as a critical approach to address the challenges posed by climate change at the grassroots level. As the impacts of climate change intensify, communities around the world face a wide range of vulnerabilities such as extreme weather events, water scarcity, rising sea levels, and disruptions to lives and livelihoods. In this context, locally led climate action emphasizes the importance of empowering local communities to take ownership of their adaptation strategies. Research interventions therefore need to focus on transformative measures to ensure the longer-term resilience of local communities to the continued effects of climate change.

The CGIAR Initiative on Climate Resilience (ClimBeR) aims to do just this. ClimBeR works with a diverse range of partners to transform the climate adaptation capacity of food and agricultural systems in low- and middle-income countries, reduce vulnerability to climate change at its roots, and support countries to adapt and build equitable and sustainable futures. The Initiative also aims to empower women, youth, and underrepresented groups through multilevel polycentric governance – one of four workstreams which sit under its Governance for Resilience (G4R) research area.

The Governance for Resilience (G4R) work-streams utilize relevant frameworks to improve horizontal and vertical coordination, enable responsiveness to climate shocks, facilitate long-term planning for adaptation, and nurture champions of change across local communities to achieve transformative impact.

Local smallholder communities who are often hit the hardest by climate change, will have greater agency through stronger representation in decision-making on climate adaptation solutions. Local leadership in planning and implementation of climate adaptation interventions builds stronger and more resilient communities with effective, efficient, just, and sustainable solutions to climate-related challenges.

ACTION for resilience

ClimBeR's Locally led Climate adaptation Champion (ACTION) Grant Program focuses on interventions that are driven and implemented at the local level, with the involvement and leadership of community members, organizations, and local governments. These interventions are tailored to the specific needs, priorities, and context of the community and aim to build resilience against the impacts of climate change. The ACTION Grant Program identifies rewarding, inspiring and sustainable local innovations that can be scaled through knowledge sharing among communities and within polycentric governance structures of governments and other support agencies for transformative adaptation to climate extremes.

The selection and implementation of locally led climate adaptation methods, as part of the ACTION include the following:

1. Identify specific climate-related challenges that the community faces, such as extreme weather events, floods, droughts, or increased temperatures.
2. Conduct a vulnerability assessment to determine which communities or smallholder farmers are most at-risk and identify the areas that require the most attention, as prioritized by the communities. Data collection and engaging with local stakeholders in a participatory diagnosis of current and future impacts of climate change also needs to be a part of this process.

3. Co-create a plan with the community, including marginalized women and men, that is tailored to specific needs and local contexts, to better adapt to the identified risks and build resilience. This includes a wide range of possible interventions (see Box 1).
4. Provide appropriate technical, financial and institutional support and community contributions, to facilitate communities' implementation of the adaptation plan through partnerships with local government, organizations and other stakeholders.
5. Undertake regular monitoring and evaluation of the project's progress and impacts on health, nutrition,

income and other livelihood dimensions and adjust the strategies as needed to ensure that the intended goals are met.

The upscaling and institutionalization of polycentric governance requires the widespread sharing of knowledge, such as lessons learned and best practices. Doing so helps meet the clear demand for increased horizontal cooperation across sectors and vertical coordination from local to national and international scales and vice versa, among local actors, public and private sectors. This in turn creates greater commitment and mobilizes more resources for local adaptation priorities and resilience building.

Box 1. Examples of locally led climate adaptation interventions in ACTION.

1. Build green infrastructure: This involves planting trees and vegetation, creating green spaces, and promoting natural drainage systems to reduce the risk of flooding and improve air quality. Green infrastructure also offers benefits such as shade, cooling, and habitat for wildlife.
2. Promote sustainable climate-smart agriculture: This includes using sustainable farming practices, such as crop and nutritional diversification, conservation tillage, and water management, to reduce the impacts of drought, flooding, and other climate-related challenges on food production.
3. Develop early warning systems: This involves creating and implementing systems to detect and respond to weather and climate-related hazards, such as floods, storms, and heatwaves. Early warning systems can help communities prepare and respond to disasters more effectively.
4. Provide climate-smart energy solutions: Promoting the use of renewable energy sources, such as solar and wind power, and fostering energy-efficient practices can reduce greenhouse gas emissions and reduce energy costs.
5. Create community-based disaster risk reduction plans: This involves engaging with community members and local organizations to develop plans for responding to and recovering from disasters such as floods, storms, and wildfires. These plans can help reduce the risk of loss of life and property damage during disasters.
6. Improving community-based water tenure for enhanced and sustainable resilience: This involves the provision of a reliable water source during the dry season, and protection against floods and storms. This improves health and well-being, reduces food insecurity, and promotes economic development. The use of groundwater – the planet's largest storage – can be particularly effective.

ACTION to build resilience to climate extremes and water resource variability

The CGIAR initiative on Climate Resilience will demonstrate three locally led adaptation interventions by integrating climate resilient strategies into planning and decision-making processes and communities, to enhance their resilience to climate extremes and water resource variability. Adaptation efforts must be context-specific and involve

multi-stakeholder collaboration to effectively address the challenges resulting from an ever-changing climate. Three locally led innovations are summarized below from Zambia, Kenya, and Sri Lanka.

1. ZAMBIA: COMMUNITY-LED SOLAR-POWERED BOREHOLE FOR WATER-RESILIENCE

ACTION is catalyzing community-led climate adaptation in the Hanzila community of the Monze district in Southern Zambia, in collaboration with local authorities. Figure 1 shows the generic stepwise planning process that is followed (van Koppen et al. 2020).



Figure 1. Community-led climate adaptation generic planning and implementation process.

Step 1: Initiating Collaboration

The site selected is prone to some severe climate change impacts, i.e., droughts and floods. Together, community members, including men, women, and children, collaborate with ACTION facilitators and local government representatives, who explain the outcome of the community selection process and the broad scope of ACTION's mandate. The mandate is to address climate change related challenges by helping communities enhance their adaptive capacities within broad project timelines established to achieve such goals.

The need for sustainable water solutions can immediately emerge as a priority, during such initial conversations. Year-round and nearby access to water to meet multiple needs (domestic, livestock, irrigation, and other uses) is typically limited, especially in the dry season. The ACTION initiative explicitly takes an integrated climate-related approach that considers every interconnected surface and groundwater resource and all intersecting livelihood-enhancing uses. This differs from conventional sectoral approaches, where one sector may focus on Water, Sanitation and Hygiene, and others may exclusively look at crop irrigation, etc.

In line with the rural water supply development guidelines endorsed by the local authority, the community members

commit to nominate a transparent and inclusive water committee to guarantee the community benefits, including that of marginalized groups, and any water related infrastructure will be maintained. The water committee will comprise of an equal number of men and women (Ministry of local government, 2010).

Step 2: Diagnosis

Group discussions and a participatory resource mapping process enable communities to recount how they currently access and tap into surface and groundwater sources as well as the construction and operation of any available infrastructure (both collectively and individually; both self-financed and externally supported) to meet their multiple domestic and productive needs. They also document challenges, including those of increasing climate variability, such as conflict during drought. The shared insights on communities' water tenure highlights how they already mobilize their social, natural, technical, financial and institutional capital to ensure that the existing water resources contribute to health, nutrition, food security, income generation, and cultural and spiritual views on water and climate but can also bring about risk of flooding and damage (Mweemba et al. 2022).

Step 3: Envisioning Solutions

Potential solutions are identified to resolve existing challenges, based on holistic diagnosis through community conversations. Emerging solutions are ranked and prioritized. In Zambia, this is akin to the formal procedure for rural water supply development implemented by the local authority. Communities are required to apply for water supply projects with a provisional plan that underscores the types of access to be enhanced through water infrastructure.

In Hanzila, the priority is for a multi-purpose water infrastructure that promotes water-resilient climate risk management for safe domestic water uses, to especially reduce the burden on women and girls, encourage climate-smart agriculture, and crop and nutritional diversification to enhance adaptive capacities. For the prioritized solution, the community defines a broad action plan to sustainably adapt to climate variability and change. The plan includes commitments to obligations for post-construction maintenance, in cash and/or kind.

Boreholes that are powered by solar energy reduce the need for fossil fuel-based pumping systems. This reduces greenhouse gas emissions and helps communities adapt to the impacts of climate change. However, capital costs are high and fund mobilization depends on the next step.

Step 4: Fitting the Financial Framework

In the Hanzila community, the ACTION Grant Program collaborates with local authorities and pursues funding opportunities to respond to the community-identified plan. Broad bills of quantities and other requisites required to construct the water infrastructure required are ascertained and budgeted. In addition, water network requirements and volumes to meet all competing needs are assessed to ensure adequate support for all users. Finally, all determined and budgeted requirements are presented to ACTION for financial support. Contractors commit to collaborating with communities and key local experts to design water infrastructure to sustain domestic and productive uses and needs at the community level.

Step 5: Implementation

Implementation starts with detailed design. Communities collectively agree on preferred sites to implement the water infrastructure identified. These sites should be accessible, particularly for those marginalized members. Most importantly, clarity is provided on all entitled users who have access rights to the water infrastructure. Infrastructure, therefore, should be accessible through land open for all people. Public-owned land should preferably be used for public water infrastructural projects. However, where no public land is available for this purpose, private individuals willing to part ways with pieces of land for public use, should sign over their personal claims to the land where the water infrastructure and related network

systems are implemented. The winning contractors further advise communities on water resource availability at the preferred site and other technical features and choices of planned infrastructure and its reticulation. This results in a detailed technical design.

The subsequent stage involves procuring materials for the construction and implementation of the type of infrastructure, wherever possible locally, to strengthen connections between the local community and vendors such as hardware shops. The construction is implemented by community members where possible, either voluntarily or at a modest remuneration. Participation improves technical understanding and capacities and helps instill further local ownership.

Experts from the local authority supervise infrastructure development to ensure that, technically, the structure meets the needs for drinking, domestic and productive uses and aligns with what is agreed upon and identified in the contract.

Step 6. Using infrastructure

As community members use water for various needs, local government carries out routine monitoring of the usage of water infrastructure to ensure that the agreed-upon plans and milestones align with implementation plans. Where variances are noted, strategies are adjusted as needed to meet project goals.

Water that is used for drinking (3 L per person per day) may be contaminated. Boreholes often provide a more reliable source of clean water for communities, reducing the need to rely on surface water sources that may be contaminated or unreliable due to climate-related changes in precipitation patterns. Where surface water sources dry up due to droughts or cannot be accessed due to excessive flooding, local conflict resolution arrangements can help.

2. KENYA: INTEGRITY IN CLIMATE ADAPTATION

In Kenya, the ACTION initiative is implemented in collaboration with the Water Integrity Network and focuses on an ongoing climate adaptation intervention – the Namanga Dam Water Supply Project in Kajiado County – as implemented by the Government of Kenya. In this region, the rapidly expanding Maasai communities suffer from persistent droughts, leading to massive illness and death of livestock. In vertical polycentric governance (see Figure 2), the national government has started the construction of a large water supply dam, as Step 5 of the generic planning framework (Figure 1). However, as found in the ClimBeR assessment of community-scale water tenure in Kajiado during 2022, rural communities fear that the local lines will be disrupted or destroyed because of the construction of the dam. They are worried that they cannot afford the fees and will have no say in the management of the water.

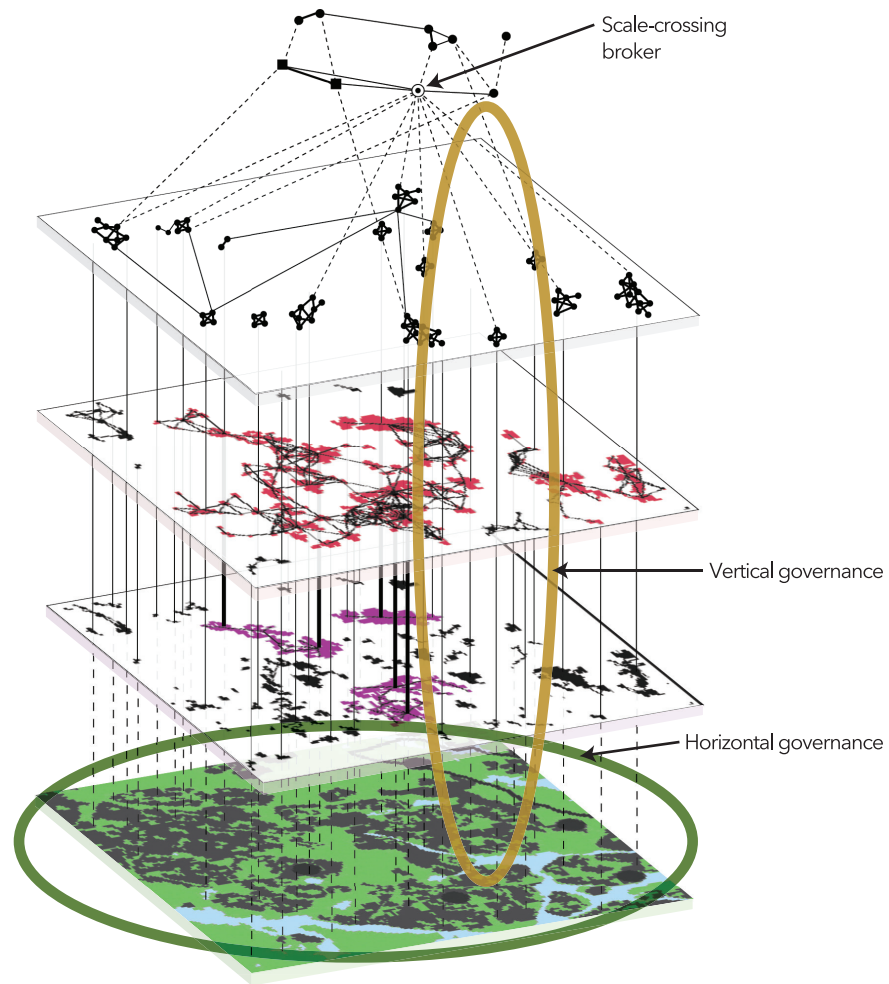


Figure 2. Community participation in vertical polycentric governance.

The 2023 study traces the involvement of the communities in establishing contacts and communication points with inhabitants of Kajiado (Step 1), the degree of participation, transparency or accountability in the diagnosis (Step 2), the envisioning of solutions and potential alternatives to a dam (Step 3), and fund allocation and the tender process of consultants and contractors (Step 4). The implications of this type of polycentric governance for year-round access to water

for rural Maasai communities, their livestock and some farmers' irrigation and wildlife in upstream forests, are then assessed.

This study aligns with the collaborative WIN - COST Infrastructure Transparency Initiative. The Initiative is one of the first of global action that seeks to disentangle polycentric decision-making during the crucial early planning, design and fund allocation steps in climate adaptation interventions.



Photo: Carol Mweemba

3. SRI LANKA: REDUCING CLIMATE AND DISASTER RISK USING NATURE-BASED FLOOD MITIGATION SOLUTIONS

In Sri Lanka, frequent floods induced by extreme weather conditions have resulted in considerable economic and social losses in recent years. In collaboration with the Disaster Management Centre, World Vision, Mayfield Tea Estate, local government as well as disaster management committees to provide flood protection and prevention to local communities as well as infrastructure from floods and landslide events, the ACTION grant supports flood prone communities in the town of Hatton which lies in the Nuwara Eliya District of Sri Lanka's Central Province, with the development of a local Disaster Risk Reduction (DRR) plan to improve drainage, river

restoration, and green infrastructure for flood prevention and protection. This is an essential step in building resilience to climate-related hazards within the community.

The nature-based flood mitigation solutions to be implemented by local communities and other stakeholders not only provide effective flood control but also multiple co-benefits, such as improved water quality, enhanced biodiversity, reduced tea plantation production losses, livelihood resilience and climate change adaptation. By integrating these approaches into flood management strategies, communities can enhance their resilience to climate-related hazards while promoting sustainable and ecologically friendly practices, that also protect local biodiversity and protect and enhance ecosystem services.



Recommendations

It is evident from current global climate finance dissemination practices that only a small proportion of resources are channeled to the local level, with an even smaller share provisioned to locally designed and locally led initiatives. There is a clear disconnect between the spaces where climate risk is greatest and where climate adaptation funding is allocated. The CGIAR Climate Resilience Initiative's efforts aim to foster an unprecedented scaling-up of locally led climate adaptation actions to prevent and reduce climate-related disaster impacts and build

community-level climate resilience. The ACTION-led solutions in three countries summarizes 10 key recommendations for locally led adaptation in a holistic and participatory approach that gives communities agency and access.

- 1. Community Engagement:** Engage with local communities to understand their specific needs, vulnerabilities, and priorities. Involve them in the decision-making process and ensure that their voices are heard in the development of adaptation strategies.

2. Climate Information and Early Warning Systems:

Improve access to climate information and early warning systems at the local level. Provide timely and accurate weather forecasts and practice drills to help communities prepare for extreme events.

3. Knowledge Sharing:

Promote knowledge sharing and learning between communities. Encourage the exchange of best practices, success stories, and lessons learned from other regions and communities.

4. Capacity Building:

Build the capacity of local communities, including training and education on climate change impacts, adaptation options, and sustainable practices. Strengthen local institutions and organizations to support adaptation efforts.

5. Inclusivity and Equity:

Ensure that locally led adaptation is inclusive and equitable, considering the needs and perspectives of vulnerable groups such as women, children, the elderly, people with disabilities, and indigenous communities.

6. Integration with Local Development Plans:

Integrate climate adaptation into local development plans and policies. Ensure that adaptation measures align with broader development goals and contribute to sustainable development.

7. Collaboration and Partnerships:

Foster collaboration and partnerships between local governments, NGOs, academia, private sector, and other stakeholders. Strengthen the multi-stakeholder approach to address complex climate challenges.

8. Policy Advocacy:

Advocate for supportive national and regional policies that enable and strengthen locally led adaptation efforts. Raise awareness about the significance of community-driven solutions in climate resilience.

9. Financing and Resources:

Secure funding and resources for locally led adaptation initiatives. Explore innovative financing mechanisms and partnerships with public and private sectors to support community-driven projects.

10. Monitoring and Evaluation:

Establish mechanisms to monitor the effectiveness and impact of adaptation actions. Regularly assess the success of projects and adjust as needed based on feedback and changing climate conditions.

By prioritizing local knowledge, community involvement, and context-specific approaches, locally led adaptation can foster sustainable, equitable, and effective solutions to climate change impacts. Empowering communities to become proactive agents of change will not only enhance their resilience but also contribute to broader global efforts in addressing climate change.



Photo: Carol Mweemba

References

Mweemba, C.E.; van Koppen, B.; Amarnath, G. 2022. *Polycentrism: A case study on water access and management in community-based water tenure in Makopa and Simukale villages*. CGIAR Climate Resilience Report.

van Koppen, B.; Molose, V.; Phasha, K.; Bophela, T.; Modiba, I.; White, M.; Magombeyi, M.S.; Jacobs-Mata, I. 2020. *Guidelines for community-led multiple use water services: Evidence from rural South Africa*. Colombo, Sri Lanka: International Water Management Institute (IWMI). 36p. (IWMI Working Paper 194). <https://doi.org/10.5337/2020.213>

Citation

Amarnath, G.; Mweemba, C.; Manishimwe, E.; van Koppen, B. 2023. *Locally led climate action for sustainable community resilience*. Colombo, Sri Lanka: International Water Management Institute (IWMI). CGIAR Initiative on Climate Resilience. 8p.

Disclaimer

This publication has been prepared as an output of the CGIAR Initiative on Climate Resilience and has not been independently peer reviewed. Responsibility for editing, proofreading, and layout, opinions expressed and any possible errors lies with the authors and not the institutions involved.



INITIATIVE ON
Climate Resilience



Photo: Carol Mweemba

Ana Maria Loboguerrero Rodriguez, Initiative Lead, a.m.loboguerrero@cgiar.org

Jonathan Hellin, Initiative Co-Leader, j.hellin@irri.org

Giriraj Amarnath, ClimBeR country lead, Zambia, a.giriraj@cgiar.org

CGIAR is a global research partnership for a food-secure future. CGIAR science is dedicated to transforming food, land, and water systems in a climate crisis. Its research is carried out by 13 CGIAR Centers/Alliances in close collaboration with hundreds of partners, including national and regional research institutes, civil society organizations, academia, development organizations and the private sector. www.cgiar.org

We would like to thank all funders who support this research through their contributions to the CGIAR Trust Fund: www.cgiar.org/funders.

To learn more about this Initiative, please visit [this webpage](#).

To learn more about this and other Initiatives in the CGIAR Research Portfolio, please visit www.cgiar.org/cgiar-portfolio

© 2023 International Water Management Institute (IWMI).

Some rights reserved.

This work is licensed under a Creative Commons Attribution-Noncommercial 4.0 International Licence (CC BY-NC 4.0).

