

Adaptation to Climate Change starts at the local level: funding local initiatives to address water and Climate Change challenges

SUMMARY

The urgency to meet targets for Climate Change adaptation, especially in Africa, requires the involvement of local actors in designing adaptation measures. Transparent, participatory processes will ensure the alignment of funding priorities with local need; moreover, innovative financing involving the public and private sector is needed to accelerate the readiness of the water sector in Africa to face Climate Change.

Introduction

The Paris Agreement stresses the urgency to reach targets for Climate Change adaptation and to support developing countries with funds, technology and strengthening their capacity. The participation of local actors (e.g. local government, civil society organizations and local communities) is essential to reach implementation targets faster and reduce future costs¹. However, multilateral funds such as the Green Climate Fund (GCF) support readiness and preparatory activities at *national level*² and are not easily accessible to local actors for their own adaptation initiatives³. For its Initial Demand-Driven Research & Innovation Outlook⁴, AfriAlliance consulted representatives of water utilities, national authorities, river basin organisations and local actors (e.g. civil society organizations) to identify on-the-ground needs to support the readiness of the water sector in Africa to face Climate Change. They considered the lack of funding and/or difficulties⁴ securing funding as a common barrier to achieve their respective mandates and to prepare for Climate Change⁴. Complex application processes, fund characteristics, fund administration and lack of organizational capacity (Figure 1) prevent their access to funds for adaptation. This Policy Brief presents the challenges that local actors face in securing funding for Climate Change adaptation and provides suggestions on how to make it easier for them to access available funds.

KEY MESSAGES

- Funding for adaptation must align with local needs and consider ecosystem resilience.
- Supporting local adaptation to climate change requires making funds accessible directly to local actors and strengthening their capacity to access funds.
- Funding for adaptation and technology transfer should consider long-term benefits and sustainability at the local level.
- Local involvement in project design and operation can increase transparency and accountability.



Figure 1. Challenges local actors face to access adaptation funds

Funding to support local adaptation must consider ecosystem resilience

The Paris Agreement recognizes that community livelihoods and ecosystem resilience are interlinked¹. It highlights this linkage as one of the areas of cooperation and facilitation to enhance climate action. This requires an integrated approach to design and fund adaptation interventions that integrate the needs of communities and ecosystems. However, limited funding for research on economic and non-economic valuation of ecosystems services was identified by African River Basin Organizations (consulted by AfriAlliance) as a factor that weakens environmental policy. *Increasing funding opportunities for payment for ecosystem services will promote ecosystem protection and management, greatly benefiting community resilience to Climate Change*⁴. Box 1 illustrates how supporting local projects can contribute to local adaptation to Climate Change and the protection of ecosystems.



Funding for adaptation and technology transfers should consider long-term benefits and impacts at local level

To support local efforts to face Climate Change, the Paris Agreement promotes the integration of science with indigenous and local knowledge. This integration seldom happens. Only 6 out of 97 funds (6%) in the Climate Fund Inventory's database⁵ specifically consider technology transfer, which suggests that more funding is needed to support research, technology transfer and upscaling of local solutions. Difficulties with securing funds for innovation, technology and equipment hinder the efforts of local governments and CSOs to support community adaptation. Additionally, projects are sometimes designed with a top-down or donor-driven approach, which causes a mismatch between funding priorities and local needs⁴. *When implementing technological solutions, it is essential to assess their long-term benefits and impacts to ensure that actions to solve a problem in one region will not cause problems in other regions*, which happened in the case of the Keta Sea Defence project in Ghana (Box 2).

BOX 1

Tackling Climate Change and Enhancing Community Resilience in Rwanda and Burundi

In the Lake Cyohoha catchment (Burundi and Rwanda), access to clean water, sanitation, energy, health services, and education are severely limited, putting a strain on women and children who are mainly responsible for collecting water and firewood.

Climate change poses a growing threat to the region, as droughts and floods are increasingly common. Local communities live with a constant threat of food insecurity because of small farming plots, poor agricultural practices, population growth and land degradation. The deterioration of the lake and its wetlands reduces the supply of ecosystem services.

AfriAlliance partner GWP (Global Water Partnership) supports local adaptation and water management through the Water, Climate and Development Program (WACDEP), which focuses on adaptation measures at community level.



Women group producing improved cooking stoves (Burundi) (Photo: GWP)

WACDEP aims to increase stakeholder participation to integrate adaptation measures into policy frameworks. At catchment level, pilot project activities to enhance water security and climate resilience included tree planting, promotion of biogas facilities, production of energy-saving cooking stoves, and expansion of water supply services. At government level, policy makers and personnel from ministries received training in water security and climate resilience to facilitate integrated approaches for water management.

The project has improved living conditions and reduced vulnerability to climate change among the 30,000 catchment inhabitants. Women trained in producing the stoves have an additional source of income. The integrated development of local institutional and community capacity is leading to more sustainable catchment management, better enforcement of environmental regulations and interest for replication of solutions.



Tree planting along the shores of Lake Cyohoha in the buffer zone (Photo: GWP)

Increase transparency and accountability

Local actors are directly affected by Climate Change and, in many cases, have identified actions to increase their resilience or reduce their carbon footprint. For example, cities generate 70% of energy-related emissions worldwide and the Talanoa Dialogues, launched in 2017, aim to engage them as key players to implement National Determined Contributions⁶. However, cities in Africa need support to identify and apply for climate-related funds^{3,7}. The Paris Agreement specifies that adaptation efforts require improved transparency and stakeholder participation¹. This is crucial in Africa, where support is needed to improve transparency and management of investments to accelerate socioeconomic development and climate adaptation^{7,8,9}.

Financing solutions that involve the public and private sectors and citizens, such as micro-finance programs and social-funding schemes, can support adaptation, increase accountability, and align funding with local needs. The Dragara wastewater treatment plant in Agadir, Morocco (Box 3) illustrates how innovative financing and direct participation of local actors in project design and operation improved water infrastructure and transparency in budget management, besides other benefits.

Adaptation funds: facilitate access for local actors

Suggestions to facilitate direct access to funding by local actors include facilitating communication between fund managers and local actors through inclusive, multi-stakeholder dialogues; simplifying the accreditation process; using the structure already set for other grants; and seeking commitment to inclusive, gender-responsive complaint systems^{3,6,10}. In addition, *AfriAlliance has compiled the following suggestions that local actors consider will make funding more accessible for local adaptation.*

- Funding institutions and National Designated Authorities (NDAs) need to establish clear mechanisms to make information about funding opportunities and applications accessible to local actors.
 - Funding should target specific areas with water security challenges and not generalize across countries. Local organizations in those places can then be identified and supported to develop concrete proposals.
 - Proposals and projects should be sustainability-focused and include clear evaluation frameworks.
 - Funds should consider long term, cross scale projects (e.g. 10 years instead of 3 to 5) to foster strong collaboration, develop trust, and achieve lasting results for effective Climate Change adaptation.
 - Funds should be allocated to upscale successful innovation and pilot projects.
- NDAs and other funding organizations could meet with local actors prior to releasing calls, to understand local needs, allocate funding accordingly, and discuss possible funding and application requirements and processes.
 - Provide training to local actors to strengthen skills and capacity to apply for funding.
 - Facilitate partnerships between local actors and other stakeholders to apply for funding and implement measures to support community and ecosystem resilience.

The Keta Sea Defence Project: benefits and impacts

Sediment starvation from the Volta River following the construction of the Akosombo hydroelectric dam, combined with sea level rise and lagoon rise after heavy rains, severely increased erosion along the coast of Keta to 8m/year. The destruction of houses and infrastructure led to the displacement of most coastal communities, destroyed commercial activities, hindered coastal tourism and resulted in the siltation of the lagoon basin and the loss of cultural heritage. The Keta Sea Defence wall project, funded by the Exim Bank of the United States of America, was designed to control the release of periodic floodwaters from the areas surrounding the lagoon to the ocean, to protect life and properties from being destroyed and to avert the increasing loss of land to combat erosion. It cost US\$85 million and was built between 1999 and 2004. The wall reduced erosion and the groynes and revetments have been trapping sediment. Land reclamation helped rebuild communities and the economy. The opening of the flood control gates of the sea defence allows saline water into the lagoon area, creating ideal conditions for breeding of brackish species, including shrimps, boosting fishing activities.

Although the Sea Defence wall facilitated effective management of erosion in Keta (especially the Keta-Kedzi stretch), it has had a negative impact on the down-drift coast provoking a significant increase in mean erosion in the down-drift coast particularly in the Kedzi-Havedzi stretch towards the Ghana-Togo border, from 3.2 m/year prior to construction to about 17 m/year after construction. Therefore the project has shown that in dealing with coastal erosion and addressing climate-smart coastal and agricultural management in the West African region, long term and holistic strategies and plans are needed that are informed by scientific and empirical evidence, coupled with impact assessment and cost-benefit analyses.



Groynes at the Keta Sea Defence Project on Ghana's coast. Kwasi Addo Appeaning Photo used with Creative Commons License.

BOX 3

Dragara (Morocco) urban wastewater reuse for financial sustainability and replication

The sewage treatment and wastewater reuse and nutrient recovery from the Dragara plant in Agadir is an excellent example of how internally financed operations can remain economically sustainable. The treatment plant applies low cost technologies that have been designed in close collaboration and engagement with local stakeholders. The treatment technology involves screening, anaerobic basins, denitrification, a water recirculating sand filter system and reed beds. The treated wastewater meets the World Health Organization's standards for unrestricted water reuse in irrigation.

To pay for the operation of the plant, the main revenue streams consist of the water and wastewater treatment tariff that was set up specifically for this plant and implemented through a new computer software billing programme as well as a one-off charge of \$150 (USD) for new sewage connections.

The plant has achieved operational cost recovery while eliminating soil and aquifer pollution from the raw sewage. Additionally, the farmers using the treated water have significantly saved on pumping and fertilizer costs while gaining higher crop yields and better returns. The most innovative aspect of financing their own water treatment operations to increase transparency, is that the income from the various revenue streams is deposited into an exclusive account solely for the use of the wastewater treatment plant, not into the account of Agadir municipality. The account is further divided into two sub-accounts: (1) an operations account for daily plant expenses and operations and (b) a savings account that is dedicated to major maintenance expenses and future plant expansion and upgrades. As a result of this innovative financial and economic engineering, there is no need for external financial assistance. This example shows that water and wastewater treatment plants can be economically self-sufficient and be managed with more financial transparency.



Agadir urban wastewater treatment – M'zar station – Secondary treatment (lagoon basin). February 2013. Photo taken by Lydia Herrmann. Creative Commons 2.0

REFERENCES

1. United Nations. 2015. Paris Agreement. Conference of the Parties, 21st session, 2015-12-12, Paris, France.
2. Adaptation Committee. 2017. Information paper on experiences of countries in accessing the readiness programme of the Green Climate Fund to finance adaptation activities. Twelfth meeting of the Adaptation Committee. Bonn, Germany, 19-22 September 2017.
3. United Nations Capital Development Fund. 2017. Financing local Adaptation to Climate Change. Experiences with performance-based climate resilience grants. New York, NY. USA.
4. AfriAlliance. 2018. Initial Demand-Driven Research & Innovation Outlook (Deliverable D2.2), 31 January. Afrialliance.org/media/report-demand-drivenresearch.
5. OECD. 2018. Climate Fund Inventory: report and database. Available at <http://www.oecd.org/env/cc/database-climate-fund-inventory.htm>.
6. ICLEI & Global Task force of Local and Regional Government. N.D. Cities and Regions Talanoa Dialogues. <http://www.cities-and-regions.org>.
7. IIED. 2014. Fine tuning international adaptation funding for the most vulnerable. <http://pubs.iied.org/pdfs/17223IIED.pdf>.
8. Africa Progress Panel. 2017. Making progress towards attaining the sustainable development goals in Africa. Dec. 15. www.africaprogresspanel.org/
9. Denton, F., Okereke, C., Brew, D. 2015. Africa's Responses to Climate Change: Policies to Manage Threat and Create Opportunity. 23 Sep 2015. Chatham House, London. <https://www.chathamhouse.org/event/africas-responses-climate-change-policies-manage-threat-and-create-opportunity>.
10. Bosma, M., de Hon, M., Douma, A., Robben, D. 2018. Local actors ready to act: Six proposals to improve their access to the Green Climate Fund. Both ENDS (the Netherlands), Heinrich Böll Stiftung North America, Aksi! for gender, social and ecological justice (Indonesia) and Prakriti Resources Centre (Nepal).

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