



Assessing the effectiveness of locally-led public good climate investments in water infrastructure in Garissa County

Findings from a 2023 functionality and governance longitudinal study

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Key Messages

- At present there is no dedicated budget allocation for the operations and maintenance of existing public good climate investments in water infrastructure in Garissa County. Allocating an adequate budget for operations and maintenance is key to ensuring the investments are sustainable.
- There is a capacity gap in managing the investments, including in basic maintenance skills. All the visited investments had functioning site committees but only a few members were trained in aspects of operations and maintenance.
- It is essential to involve key relevant water institutions in the full lifecycle of the investments because they play a part in handling major repairs. In Garissa there was limited engagement with these institutions at the design stage. Engaging them early helps to give clarity to the roles for each actor, from the design stage to the planning, implementation and management of the investments.
- Establishing commitment and local ownership is recognised as central to ensuring accountability and the long-term functionality and sustainability of investments in Garissa. This could include strengthening the capacity of local communities to provide repair and maintenance services, and enhancing the project management skills of the site committees before an investment is handed over.
- Adaptive management approaches are needed to cope with ongoing environmental changes in the county. Putting in place ongoing monitoring and evaluation of the functionality of investments, and continual adjustments, would help to ensure they remain effective and climate resilient.

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Summary

Climate change poses significant challenges to water security in arid and semi-arid regions, necessitating innovative and sustainable approaches to water resource management. This technical brief outlines the key findings and recommendations derived from a comprehensive functionality and governance study that assessed five public good climate investments in water infrastructure implemented through the County Climate Change Fund (CCCF) mechanism between 2015 and 2016 in Garissa County. The study was conducted in 2023, eight years after the investments were implemented, by the Adaptation Consortium (ADA), Womankind Kenya (WOKIKE), and the County Government of Garissa, supported by the Climate and Development Knowledge Network (CDKN) programme.

The brief provides valuable insights into the technical and governance factors influencing the success of locally-led adaptation (LLA) investments implemented through the CCCF mechanism in Garissa County, and offers recommendations to support the successful and sustainable implementation of locally-led projects to enhance their long-term impact.

Study Background

Garissa County is located in the north-eastern region of Kenya and is characterised by arid and semi-arid conditions. The backbone of the county's economy is livestock production, with over 90% of the inhabitants directly or indirectly deriving their livelihood from livestock. Nomadic pastoralism is prominent in the county and defines the lifestyle of most of the county's inhabitants. There is an influx of pastoralists seeking water for their herds and for domestic use, especially during the dry season, and this can sometimes cause conflict. WOKIKE offered training to the water user associations in how to resolve local conflicts that may occur due to the shared use of water facilities through mediation with the concerned parties. Garissa is also a member of the Frontier Counties Development Council, which promotes cooperation, coordination and information sharing between counties to strengthen devolution, enhance socioeconomic development and promote peaceful coexistence among its members.

Given the arid nature of the county, temperatures are generally high throughout the year and the average temperature is 36°C. The county experiences water scarcity as changing climatic conditions have led to variations in rainfall and temperature. It has become prone to drought and flood emergencies that threaten livelihoods. Climate projections suggest these conditions will continue into the future.

In the 2015/2016 financial year, the County Government of Garissa partnered with ADA and WOKIKE to implement five public good climate investments in water infrastructure in three wards as pilot investments for community adaptation initiatives through the CCCF mechanism. The mechanism facilitates flows of climate finance to invest in public good climate investments, prioritised by communities through participatory climate risk and vulnerability assessments, led by the Ward Climate Change Planning Committees (WCCPCs) and aligned with relevant county policies. The Garissa County Climate Change legislation currently mandates that 2% of the total county government development funds be allocated towards public good climate investments.

In 2019, ADA conducted a comprehensive functionality and governance study assessing the five investments with the aim of evaluating the technical sustainability and governance of the investment, and a specific focus on quality assurance, usability and sustainability. In October 2023, the County Government of Garissa, WOKIKE and ADA, supported by the CDKN programme, carried out a repeat longitudinal study assessing the same investments as the 2019 functionality and governance study.

The lessons from the longitudinal study are intended to provide insights and guide the local, national, and regional conversations on the facilitation of climate finance flows to the local levels, gender and social inclusion in decision-making, and the suitability, efficacy, sustainability and impact of locally-led public good climate investments.

Methodology

The primary objective of the longitudinal study was to identify and assess the factors (challenges and successes) that affect the functionality and governance of the investments. Specific objectives included investigating technical issues, assessing community engagement, examining governance challenges, and analysing environmental factors that impact project sustainability. To achieve this, a mixed-methods approach was employed, combining focus group discussions and key informant interviews with videography, photography and observation checklists for technical assessments. Field data was gathered capturing the perspectives of communities, site committees and relevant stakeholders. These findings were collated and synthesised into a series of reports and videos to derive meaningful insights.⁵ The study took place in October 2023, during the dry season in Garissa.

Study Findings

Definition of terms

Functional: A functional water point is one that is operating as expected and serving the community well on the day of the visit and within the last month.

Partially functional: A partially functional water point is one where some of the components are absent, broken or damaged, but there is still some water available to the community.

Non-functional: A non-functional water point is one where some or all of the components are absent, broken or collapsed, with the result that water is not accessible or available to the community.

Not-in-use: This term applies to those waters points that may not be in use due to seasonality and low rainfall, but they are intact and functional during the wet season.

The longitudinal study considered the functionality status of the investments and found that three out of five investments in Garissa County were partially functional and two out of five investments were non-functional.

The main findings from the study include:

- Garissa County Climate Change legislation is currently focused on new investments, with no budget allocated for operations and maintenance (O&M) of existing investments. This significantly impacts the sustainability of water security for the communities who are dependent on existing water infrastructure.
- In addition, there is a lack of asset management planning, integration of life cycle costs of infrastructure, and monitoring and evaluation after initial implementation.
- There is also a capacity gap in managing the investments, including in basic maintenance skills. While all visited investments had functioning site committees, only a few investment site committee members were trained in O&M and other aspects of facility management.
- Two out of five investments were fully functional in 2019 but were found to be non-functional in 2023. The primary cause of non-functionality in several of the sites assessed was the lack of

⁵ For more information, see CDKN's project page: [Building water resilience in Kenya's arid and semi-arid lands](#).

budget for O&M, including replacement of ageing parts or repairs (e.g. addressing pump and genset failures; rehabilitating water infrastructure; replacing galvanised iron pipes with unplasticised polyvinyl chloride pipes to reduce corrosion in highly saline borehole areas, such as Nuno, and to facilitate cost-effective replacements).

- There are instances of community abandonment of non-functional investments, leading to further deterioration of the systems and subsequent vandalism of the investments' components.
- There was limited engagement with the relevant water institutions at the design stage. This restrained their support of the investments, which are deemed to be community owned and managed.

Recommendations

The recommendations are based on the study findings to enhance the efficacy and sustainability of the investments:

- **Ensure a gender and social balance in the site committee.** In some of the visited sites, it was observed that women and youth were underrepresented. In other sites, such as the Nanigi project, women are successfully managing the investments.
- **Strengthen and enhance the capacity of the local communities to provide repair and maintenance services for the investments.** It is imperative to train site committees in project management, including financial management and bookkeeping, before an investment is handed over. In addition, there needs to be a plan on how to ensure continuity and knowledge transfer to new committee members when existing members leave.
- **Develop a sustainable financing mechanism for the management of investments throughout their lifespan.** This is especially necessary for O&M costs that are more than the levies collected from the investment users. Suggestions include: allocating a ring fenced budget for maintenance of existing investments; user fees take into consideration the users' capacity to pay the water service fees and the ability of the fees to address the investments' regular and emerging O&M issues; involve key water institutions in the planning, implementation and management of the water investments as they play a role in handling major repairs and ensuring the sustainability of the investments; ensure that the existing asset management planning system of the Garissa County Water Department (e.g. geographic information systems mapping and logging of infrastructure) is updated and maintained to enable O&M needs to be adequately tracked and addressed.
- **Make the most commonly-needed spare parts readily available at each water supply site.** This would minimise response time in case of breakdowns.
- **Repair and restore existing water infrastructure instead of implementing new projects.** Examples include repairing existing water kiosks and installing metal gates and windows. In cases where there is insufficient capacity, additional water infrastructure (e.g. water kiosks and distribution lines) should be constructed to adequately serve the community throughout all seasons (e.g. in Abagdera and Shanta-Abaq).
- **Lower operational costs.** The integration of off-grid renewable energy in arid areas, such as solar-powered water pumps and desalination systems, could provide sustainable energy solutions for water supply, reducing reliance on fossil fuels and lowering operational costs. It is also advisable to construct steel elevated tanks for Abagdera and Shanta-Abaq to lower the cost of distribution, and to provide shade for plastic tanks at the water kiosks that would limit frequent repairs and replacement costs due to wear and tear that is associated with overexposure to sunlight.

- **Educate and raise awareness of the role of water in climate resilience.** Educating the community on the importance of water conservation and sustainable water usage is crucial. By raising awareness of the value of water and the impact of their actions on the local water supply, community members can be empowered to be more proactive in conserving water and addressing climate resilient water accessibility.

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