

Shared Water Ecosystems in the context of climate Change; The Current Condition, Challenges, and Policy Options

POLICY BRIEF | KAKAMEGA COUNTY



the County, and equipping decision-makers with the necessary evidence to act. Understanding the challenges hindering sustainable water resource management will spur action and promote sustainable water resource management in Kakamega.

Methodology

This study adopted a mixed methodology comprising of literature reviews of secondary data, and primary data collection through Key Informant Interviews and Focus Group Discussions.

Findings

a. Shared water resources in Kakamega County

Shared water resources in Kakamega include among others, rivers, streams and springs. One of the main rivers is River Yala, which originates from the Nandi Hills, east of Kakamega District. It flows westwards through Kakamega Forest and the southern part of the County. The Nandi Escarpment forms the catchment zone for streams such as the Shitiya, Kabkalet and Nurungo, which flow westward to join the River Nzoia. There is River Isiukhu which is a tributary of Nzoia River and originates from the Nandi Escarpment and flows through Kakamega Forest before reaching Kakamega Town. River Isiukhu is the main source of water supply in Kakamega Town and its environs. The county also relies significantly on both surface and ground water sources such as boreholes, shallow wells, springs, small earth dams, water pans among others.

b. Condition of shared water ecosystems in Kakamega County

i. Pollution

The shared water resources in Kakamega are threatened by direct and indirect pollution emanating from mining, poor and unsustainable agricultural practices, overgrazing, unplanned human settlement, deforestation among other human and commercial activities. For example, unprotected springs from which majority of people in informal settlements in the County collect water are often polluted by pit latrines. A good example is Masingo spring with a pit latrine just 5 meters upstream. There is also unregulated sand harvesting mainly for construction purposes which is undertaken along major rivers including Yala, Isiukhu, Nzoia, Firatsi, Sasala and Lusumu. Besides sand mining, there are other significant mining activities, including gold mining in Ikolomani, which pollute these rivers. It was also established that there is industrial pollution to the rivers. For example, River Yala gets polluted by tea factories upstream and waste water from Kapsabet in Nandi.

Executive Summary

Kakamega County has many shared natural water ecosystems. In the face of the climate crisis, biodiversity loss and pollution, sustainable management and conservation of these resources is critical for human survival. Poor water infrastructure, pollution, and deforestation are some of the challenges hindering sustainable water resource development, utilisation and conservation in Kakamega County. A study conducted by Econews Africa examines the state of management and conservation of shared water ecosystems in the County. The study highlights the gaps and challenges, and proposes possible policy actions for the attainment of sustainable water resource management and conservation in the County.

Introduction

Kakamega County envisions itself as the leading County in the provision of sustainable access to adequate and safe water in a clean and healthy environment. According to the 2019 national census, Kakamega is the 2nd largest populous County in Kenya with the largest rural population of approximately 1.6 million people. These demographics increase the urgency for sustainable water resource management and conservation for the County, especially in the face of climate change.

The findings of this study are crucial in demonstrating the state of water management and conservation in

ii. Neglect of water catchment areas

Whereas the study noted significant investments efforts in the County's water supply and resource management, protection and management of water catchments remains a problem. The study revealed that water catchments in Kakamega are facing significant interference through clearing and cutting of the forest for livelihood.

iii. Fluctuating Water Levels

As already noted elsewhere, the County largely relies on surface and ground water, with major rivers being Rivers Nzoia, Yala, and Isiukhu. The County also has boreholes, shallow wells, springs and streams. However, rainfall in the County used to be distributed evenly throughout the year but with erratic rainfall as a result of climate change, there is fluctuation of water levels in the natural water sources. Human activities such mining at the buffer areas as well within the core zones of the rivers or streams also affect the water levels.

c. Weaknesses in water resources governance

Water resource governance and management is generally complex and fragmented in Kenya. The complexity is exacerbated by the devolved system of governance which devolves elements of water resource management such as sanitation services to the county and retains other elements such as protection of natural resources including water at the national level.

For Kakamega County, the main water service provider is Kakamega County Water and Sewerage Company. In addition, a 2021 Kakamega County Water Services Act introduced two actors to cater for urban and rural water and sanitation needs. It is unclear whether these two companies have begun operations. Whereas the County has made some progress, serious governance and management challenges still persist:

- Dilapidated state of water schemes, including those inherited from the National Government, which are in dire need of massive rehabilitation.
- Multiplicity of water service providers, leading to confusion and overlap of mandates.
- Poor management of community water projects which record high non-revenue water and are not metered, hence unsustainable.
- Political interference has also stalled some projects such as the Sidindi water project.
- Land ownership conflicts have also stalled the Masingo Hills Project.

This study however noted that the County is adopting the concept of Water Action Groups, and exploring partnerships with water agencies to strengthen water resource user associations, and improve community efforts in managing community water projects.

d. Conflicts emanating from shared water resources

Exploitation of water resources in Kakamega also comes with some conflicts. For example, there are conflicts between individuals when accessing springs and streams. These often occurs in cases where some individuals are denied access to the resource by those who own land in the buffer areas of these water sources or where such springs are in private land. The discussion with KACWASCO also revealed existing trans-county conflict

between Kakamega and Nandi County which is the source of River Yala. The conflict has forced Kakamega County to stretch its annual budget in order to find ways of circumventing the issue. As a result, KACWASCO created a scheme in Nandi Tindinyo.

Further, KACWASCO reported rampant conflict with community resulting from vandalism of the water infrastructure manifesting in illegal water connection and destruction of water infrastructure.

e. Best practices in water usage and conservation in the County

The study identified some best practices used by the County to sustainably manage and conserve water which include:

- Water rationing by KACWASCO.
- Expanding metered connections by KACWASCO.
- Tree planting by KACWASCO targeting riparian areas and water sources.
- Community consumer sensitisation by KACWASCO on the importance of taking collective responsibility to protect water resources.
- Mulching to conserve soil moisture
- Setting up designated livestock watering points.
- Collaboration with water user associations to promote community sensitisation at the local level.
- Setting up water action groups and exploring partnerships with water agencies to strengthen water resource user associations, and improve community efforts in managing community water projects.
- Building of gabions to prevent soil erosion.

f. Policy and institutional frameworks

The following are some of the key policy and institutional frameworks:

The Water Act 2016

As the principal law for the water sector in Kenya, it requires county governments to appoint Water Service Providers to serve as licensed water operators.

Kakamega County Water and Sanitation Services Act, 2021

In March 2021, the Governor signed into law the Kakamega County Water and Sanitation Services Act. The law domesticates the national legal frameworks for smooth implementation of national projects and establishes the rural and urban water and sanitation services companies.

The Kakamega County Rural Water and Sanitation Corporation Act, 2020

This is a County legislation that provides for the establishment of the Kakamega County Rural Water and Sanitation Corporation (KCRWSC) and sets out its roles and related matters in furtherance of the Fourth Schedule of the Constitution.

County Water Supply and Urban Sewerage Strategic Plan (2015-2019)

The strategy was developed to foster provision of quality, adequate and affordable water and sanitation services in an environmentally sound manner and in a way the

improves socio-economic status of the citizens of the county. The county CIDP aligned to the strategy.

Kakamega County Integrated Development Plan 2017-2022

The CIDP envisioned a competitive and prosperous County and outlined its objective for the water sector to increase coverage through water and sewerage infrastructure development; enhance operational efficiency and customer service; improve financial sustainability; strengthen institutional capacity and have an effective corporate governance.

Kakamega County Water and Sanitation Company (KACWASCO)

This is one of the key water institutions and is the agency of the County Government of Kakamega mandated with water service provision. It extracts, produces, transmits and distributes water to the residents of Kakamega County and its environs. It also collects, conveys and treats wastewater generated in the County.

g. Budgetary allocations

The County largely relies on funding from the National Government. Although the KACWASCO 2017-2022 strategic plan estimates a budget of Ksh 2.944 billion to actualise it, less than 1 billion was allocated to the sector in the four financial years analysed in this study.

An analysis of Kakamega County Fiscal Strategy Paper for the FYs 2016/17 to 2020/21 established that a considerable budget has been getting allocated to the sector development activities. See *figure 1* below:

Key Policy Recommendations to the County

a. Sustainable water resource management

- Embrace ecosystem-based adaptation to help protect and maintain healthy ecosystems providing resilience against the impacts of climate change. This approach helps reconcile socio-economic development with the conservation and restoration of compromised ecosystems.
- Deal with political interference with water resource management and projects.
- Encourage organic farming in the county to reduce chemical pollution of water sources.
- Collaborate with Nandi County and other relevant institutions to curb upstream pollution of River Yala.
- Rehabilitate water infrastructure and distribution systems.
- Expand bulk water storage facilities.
- Curb water infrastructure vandalism.
- Promote and encourage afforestation and reforestation, especially within water catchment areas as well buffer areas along rivers and streams.
- Assist communities to develop water resources management plans for their rivers and streams
- Integrate business and human rights approach in the water sector given the heavy presence of private sector/corporations running the affairs.

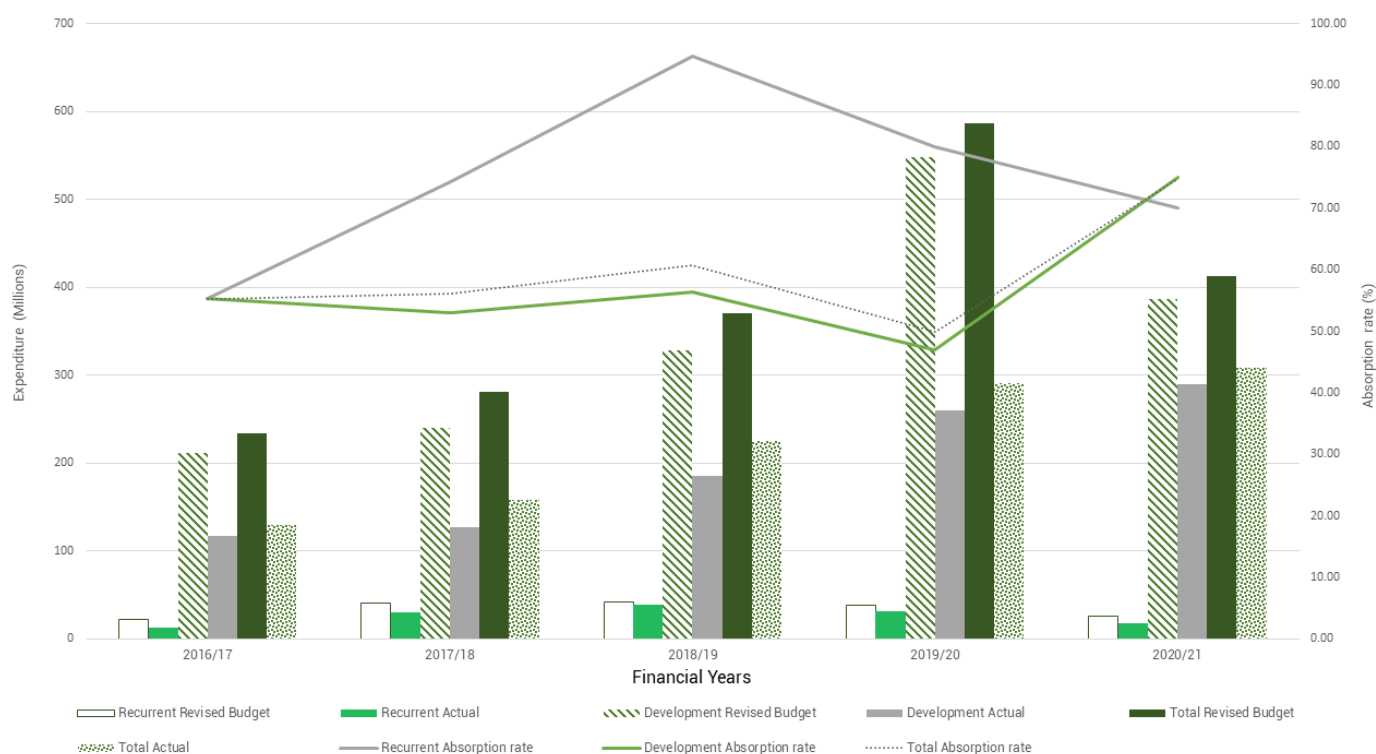


Figure 1: An Analysis of Expenditure on Water, Environment and Natural Resource (KES Millions) | Data Source: Kakamega County Fiscal Strategy Papers, 2016-2021

b. Policy and institutional frameworks

- Develop and enforce regulation for sand mining in and along rivers and streams.
- Improve rural water management and conservation by promoting community participation and involvement in its conservation efforts.
- Leverage on water user associations to promote community-based water management and conservation.
- Address the coordination challenge among the institutions such as KACWASCO, the urban, and the rural water and sanitation service companies for greater clarity on their functions, mandates and areas of synergy.
- Consider harmonising the three companies to reduce the financial stress of concurrently running three companies with almost similar mandates.
- Collaborate with Nandi County to foster cooperation in the sustainable management and conservation of River Yala.
- In collaboration with the Senate fast-track the enactment of the County Resource Development Bill of 2021.

c. Budget allocations

- Improve on the performance in development expenditure of budget allocated to the sector.
- Develop sector commercial planning with toolkits like the World Bank County Government's Manual for Commercial Financing of the Water and Sanitation Sector of Kenya, for better financial and investment planning for the sector.
- Leverage on Public Private Partnerships to diversify its costs and encourage private-sector investment in the sector.
- Provide support in access to financing for private actors willing to invest in the sector.