

The State of Shared Water Resources in Tana River County in the Context of Climate Change: *Some Policy Options?*



POLICY BRIEF | TANA RIVER COUNTY



makers with the necessary evidence to act. Understanding the challenges and gaps hindering sustainable water resource management will spur action and promote sustainable water resource management in Tana River and increase the County's capacity to respond to the climate crisis.

Methodology

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

Findings

a. Water Resources in the county

Tana River County enjoys natural water resources such as the Tana River and Athi River basins. Its water ecosystem is also made up of seasonal rivers and lakes. The lakes are L. Mnuji, L. Sahe, L. Nyota, Lake Shakabao and Lake Mwanapokomo. The rivers are Tana, Buna, Tiva, Hirimani and Tula. There is also water supply from Hola, Garsen, Ngao, Mnazini and Kone water supplies.

b. Condition of shared water ecosystems in Tana River County

i. Reducing Water levels

The County highly depends on water from River Tana. Water levels in natural sources significantly fluctuate depending on the season, with turbidity and flooding in rainy seasons, and some rivers drying in dry seasons.

Water quality and levels in the county are affected by various challenges including:

- Pollution from human activities such as river water diversion.
- Siltation from soil erosion.
- Deforestation which accelerates erosion.

ii. Pollution of water resources

Water resources in the County are faced with significant pollution mainly resulting from human activities that are detrimental to the environment. Some of the activities include discharging pollution agents into water resources such as organic waste, pathogens, fertilizers, pesticides, heavy metals among others; induced soil erosion; deforestation, and diverting the flow of the river. For example in some place along Tulu and Hola, pastoralists dug canals to divert river's water to their preferred drinking point for animals. This changes the course of the river and reduces the water entering the lake.

Executive Summary

Water is essential to human survival, and part of the solution to combating climate change. It is also the primary medium through which communities feel the impacts of climate change. Tana River County is susceptible to impacts of climate change such as intense droughts and floods. This, coupled with pollution and biodiversity loss, makes sustainable utilisation and conservation of shared water ecosystems critical for survival. However, pollution, human encroachment, and soil erosion threaten the sustainable management and conservation of shared water ecosystems in the County. A study conducted by Eonews Africa examines the state of management and conservation of shared water ecosystems in the county. It highlights the gaps and challenges, and proposes possible policy actions for the attainment of sustainable water resource management and conservation in the County.

Introduction

Tana River County is highly susceptible to the impacts of climate change. The County's name is conspicuously derived from the river's name 'Tana River' signifying importance of the river to the County. County's access to the Tana and Athi River basins is an advantage it must leverage on in enhancing its climate adaptation and resilience capacity. The findings of this study are crucial in demonstrating the state of water management and conservation in the County, and equipping decision-

iii. Threats to Water infrastructure

There are many threats to water infrastructure in the County due to climate change as well as human activity. The County experiences intense drought and frequent floods thus increasing the risks of damage to water treatment and supply infrastructure, which can lead to service disruptions. Furthermore, wastewater treatment plants have to deal with increasing incidents of pollution surges caused by floods.

iv. Shared Water Resource Conflicts

There are different manifestations of conflicts arising from exploitation of water resources in the County. Some of these conflicts include intercommunal conflict which mainly occur among farmers when farmers upstream of the river significantly disrupts water flow and quality to farmers downstream. Farmers and pastoralists have also had clashes over the access to water resources leading to destruction and tension. There is also a class conflict where those perceived as wealthy enjoy uninterrupted access and supply of water unlike the poor counterparts whose taps are always dry. Water scarcity and inequality in supply causes human-human conflicts. Primary data also established the occurrence of human-wildlife conflicts over water resources, with extreme cases leading to crop damage, severe injuries and even loss of life.

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

- Using the water for irrigation. The County hosts some of the country's largest irrigation schemes such as Bura and Hola.
- Use of tanks and water pans for water storage.
- Digging of wells and boreholes to supplement existing

sources.

- There are efforts to put in place designated livestock watering points.
- Afforestation, including planting of mangroves along muddy shorelines to control erosion of soil into the rivers.
- Mulching to promote soil moisture conservation.
- Using water conservation methods during irrigation, such as using lined/covered canals to reduce water seepage, early morning and late evening irrigation to reduce evaporation, and practising sprinkle and drip irrigation.

d. Policy and institutional framework

The County's water resources subsector's institutional and regulatory structure is as shown in *Figure 1* below.

The Board and Corporation are to take over the functions of the former Tana River Water and Sanitation Company (TAWASCO). However, TAWASCO seems to still be in operation. More so, some of the functions of the Board, the Corporation and the Directorate overlap especially on water infrastructure development and management. The Act is silent on how these three should harmonise their mandates. There is also the Coast Water Works Development Agency, established under the National Water Act of 2016, in charge of water resource development and conservation in the region.

e. Financing water resource conservation, management and services

The county mainly depends on the funding from national government for this sector. The study analysed the Tana River County Budget Review and Outlook Paper to establish the sector's budgetary allocation between the FYs 2016/17 and 2020/21.

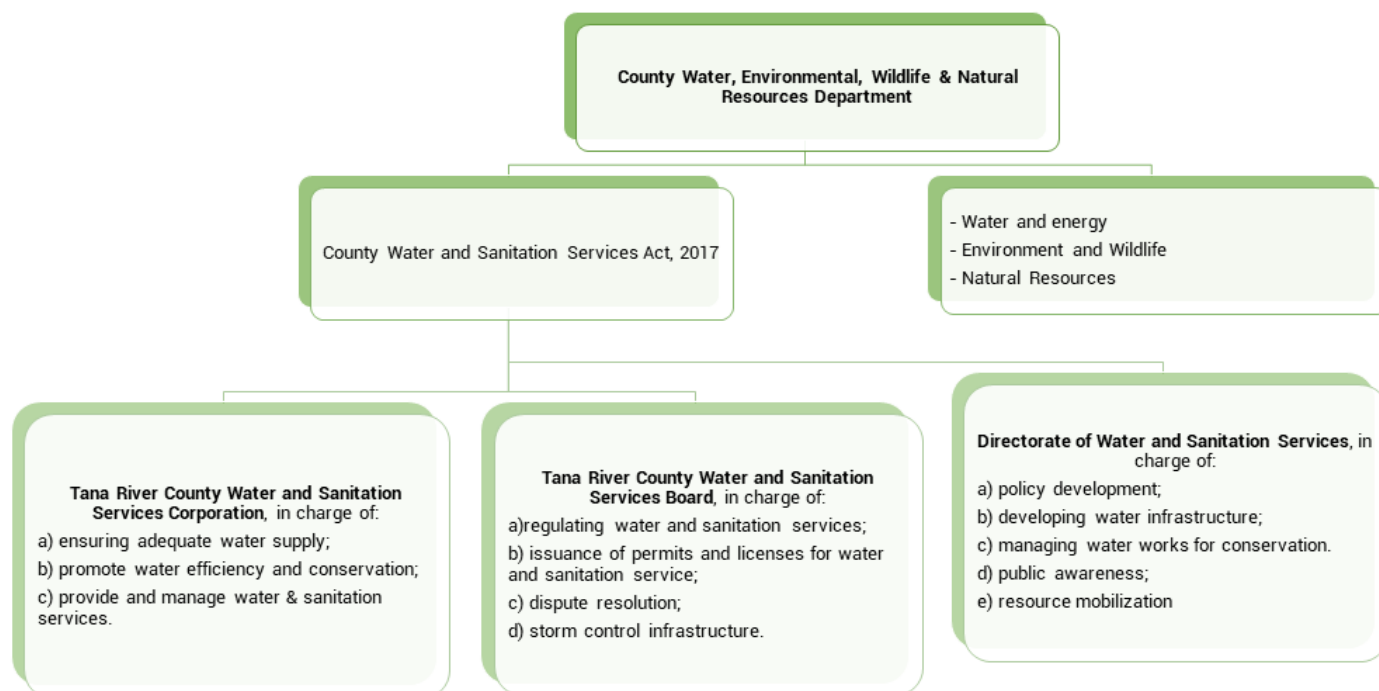


Figure 1: Tana River County Water Resource Policy and Institutional Framework

The analysis established poor performance in water development expenditure, despite funds being allocated. For instance, in the FYs 2017/2018 and 2019/20, the absorption rate on development expenditure was zero, meaning none of the moneys allocated for water resource development were utilised. However, this period recorded a relatively high recurring expenditure rate as shown in figure 2 below:

Policy Options and Recommendations for the County Government

a. Focus on Sustainable water resource management

Climate change adaptation and mitigation through water management is therefore critical and necessary to achieve the 2030 Agenda for Sustainable Development. Some of

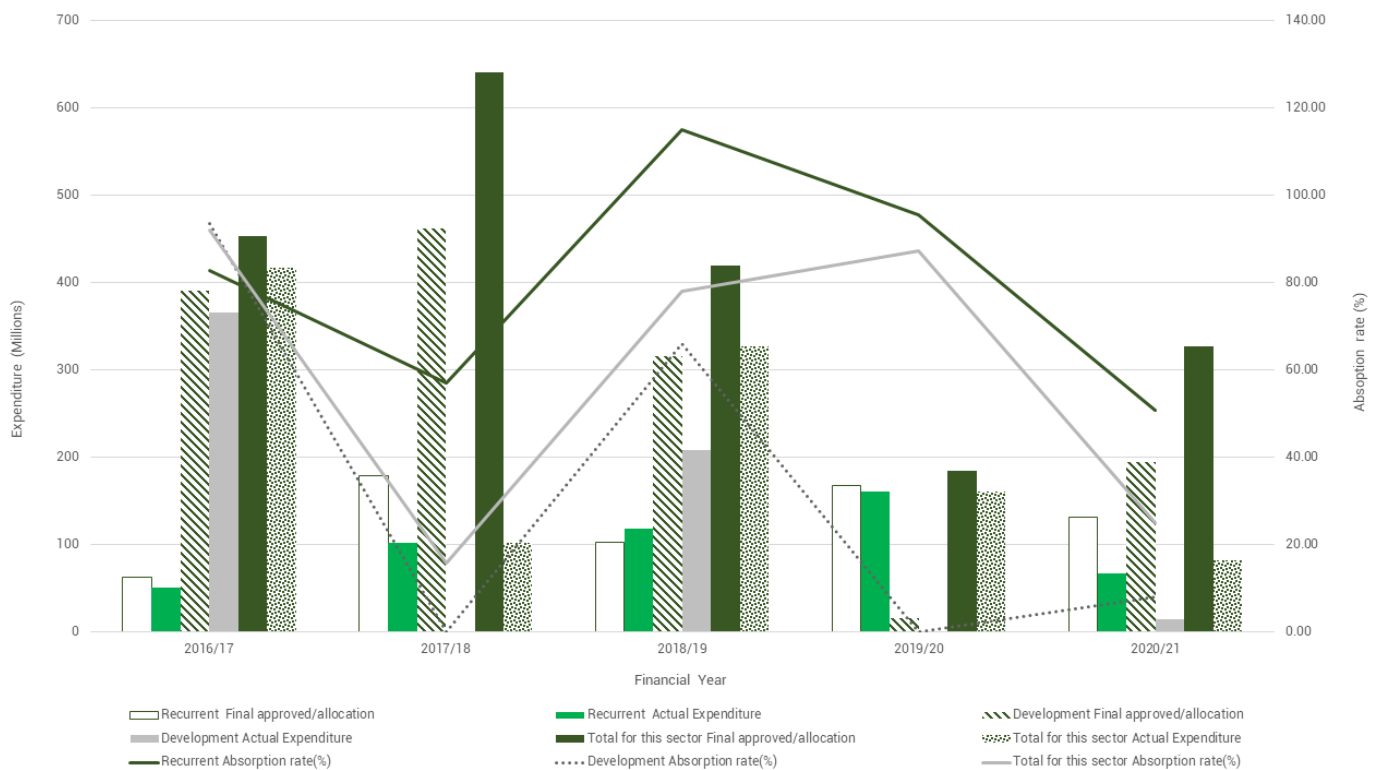


Figure 2: An Analysis of Expenditure on Water, Environment and Natural Resource (KES Millions) | Data Source: Tana River County Fiscal Strategy Papers, 2016-2021

f. The disjuncture between indigenous and modern practices in water resource management and conservation

The study examined indigenous mechanisms and practices that were used in conservation of water and water resources and generated some key knowledge and lessons that can be used today to influence effective conservation and management of water resource :

- Elders were responsible for ensuring careful and proper access and use of forest areas as most were considered to have additional spiritual and cultural value.
- Cultural attachment to natural resources such as rivers and streams strengthened the individual's consciousness and therefore care of such resources.
- Communities had a sense of water resource ownership and respected management and conservation norms and rules.
- Water courses were rarely diverted and rivers followed their natural courses.
- The communities dug underground storage tanks called *jabia*, to tap water from coconut trees for future use.
- Any conflicts were resolved by elders.

the strategies to achieve this include the following.

- Minimise water run-offs.
- Construction of contours and terraces to control erosion, and siltation
- Encourage and promote water re-use and recycling.
- Consider the use of chemical wetting agents to retain moisture.
- Minimize diversion of water courses.
- Consider adopting gravity fed irrigation.
- Encourage and promote Reforestation.
- Encourage and promote organic farming.
- Put in place measures to ensure water supply by TAWASCO is equitable and non-discriminatory.

b. Strengthen Community agency and capability to embrace and promote responsible coexistence with shared water resources

- Strengthen community consciousness on the importance of shared water resources
- Assist community to develop model management plans on specific streams
- Identify, publicise, create awareness and monitor the implementation of Tana River Management Plan.

c. Policy and institutional frameworks

- Firmly integrate water resources management and protection in climate change policy and response
- Harmonise the county water institutions and their mandates to maximize efficiency, and eliminate overlaps.
- Clearly define the points on convergence of mandates between the Directorate, the Board, and Coast Water Works Services Development Agency with regards to water development, management, and conservation.
- Establish the Sanitation and Pollution Control Master Plan provided for in the Act

d. Diversify sources of finance and improve budgetary allocation

- Improve performance in water development expenditure by establishing clear short, medium, and long-term water resource development plans.
- Leverage on public-private partnerships to encourage private sector investment in water management and conservation.

e. Foster relevant indigenous mechanisms and practices

- Utilize local and traditional water management practices and systems to expand coverage into rural areas.
- Enhance community consultation and participation in water resource management and conservation.
- Leverage on Water User Associations to promote community-based water resource management.
- Integrate indigenous knowledge on water conservation and management in its sector policies, strategies and programmes.