

## Kajiado County builds a water data and asset registry to increase access to safe water and sanitation for residents

County:	Kenya		
Sector/s:	Water, Environment and Natural Resources	Sub-sector/Theme:	Water Services
Keywords: (for search on the online platform)	Kajiado County – Ministry for Water, Environment and Natural Resources, data/asset registry, safe water and sanitation access, water sources		
Target Audience:	County Governments and their Water Departments, Government utilities and service providers and organizations that use data to increase access to safe water and sanitation around the world.		
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Resource Persons (include their designations)	Kasaine ole Meikoki Director, Monitoring & Evaluation, County Government of Kajiado		

### Introduction (**Context and Challenge**):

Kajiado County is a County in the former Rift Valley Province of Kenya. As of 2019, Kajiado County spanned an area of 21,292.7 km<sup>2</sup>, with a recorded population of 1,117,840. The County has a total population of 1,117,840 people, representing 316,179 households with an average size of 3.5 persons per household and a population density of 51 people per square kilometre (KNBS 2019 Census).

Kajiado County is divided into 5 sub-counties (Kajiado Central, Kajiado East, Kajiado West, Kajiado North & Kajiado South) and 25 Wards with Kajiado West being the largest and Kajiado North Sub-county being the smallest in terms of area in square kilometres.

Kajiado County is predominantly semi-arid, thus plagued by frequent droughts, yet livestock rearing and crop farming are the main economic activities in the County. Tourism is also a major attraction. The County has inadequate unimproved water resources (ponds/pans, dams, streams/ rivers, springs) and thus relies on improved water sources such as boreholes, protected springs and piped water. Water shortage, mainly due to borehole failures is therefore a perennial challenge affecting both urban and rural communities.

It also affected the County Government since it could not give timely and adequate water services to its residents due to a lack of information for specific assets, i.e. pump/motors and gensets resulting in delayed response to repair boreholes. Budgeting and costing for water services maintenance and repairs was also not informed by the status on the ground. Thus, while seeking to improve water services, the County Government of Kajiado had challenges with water monitoring in low-resource settings, making it difficult to know which areas had boreholes and which ones needed new boreholes, for example.

The other challenge was knowing the functionality status of the water systems, making it difficult to service the boreholes that needed repair and maintenance. This translated into water shortages due to delayed response to calls for repair since the technicians would have to first find out the location of the boreholes for them to go and assess and determine what parts needed to be repaired. They would sometimes discover that the parts that needed replacement were obsolete, i.e. spares were no longer available, causing further delay in restoring the boreholes.

The County Government was aware of privately-owned boreholes, but the drilling was not evidence-informed, and thus boreholes were being sunk everywhere, sometimes close to one another, while some areas completely lacked boreholes.

Were data available, the County Government would have stopped licensing the drilling of boreholes in areas with enough boreholes and would have pointed applicants to the nearest boreholes to make sharing arrangements.

The above challenges arose because the County had no data/asset registry, which would show, among other things, the location and details of the community water systems; the number of households covered by the water system; the type of the water systems; the components of the system; and the age of the physical state of the components.

#### Implementation of the practice (**Solution Path**):

1. Technical officers from the Water, Irrigation, Environment and Natural Resources Department pinned the inefficiencies and ineffectiveness of water services down to the lack of a real-time water sources location and water equipment registry, which would enhance decision-making by management and service delivery by technicians. Through the County Governor's office, the Water Department sought support from Welthungerhilfe (WHH) to establish the registry and WHH came on board through an MoU. WHH is Germany's biggest private organization for development and humanitarian aid with a goal of Zero Hunger by 2030.
2. Technical teams from WHH and the County's Water Department embarked on an audit of the water systems (sources and assets), both privately-owned and public.
3. Data enumerators were hired to do data collection of the County's private and public water boreholes and the data was fed into a database that was established. The activity was carried out in 6 months from January 2022 to June 2022 in the 5 sub-counties of Kajiado County.
4. The County's Water engineers also got input from sub-county officers and *wananchi* (community members) on other water sources and systems.
5. Data cleaning was done and gaps were identified.
6. Procurement of a portal developer was done and *Fundi Fix* consultants came on board.



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7. Participatory designing of the water systems registry portal was done and two dashboards were created for the Department and identification of dashboard Admins was done.
8. The portal was validated by a multi-sectoral team involving all departments, and customization of the M-water portal to fit Kajiado County needs was done in July/August 2022.
9. The 2-part portal comprising the [mWATER Asset Management Dashboard](#) (location registry for water sources) and the [mWATER O&M Dashboard](#) (water equipment registry) was then integrated into the County's website to enable knowledge-sharing with the public.
10. Training of 16 water officers on the M-water portal/surveyor was done.
11. The portal was launched by the County Executive Committee Member (CECM) for Water & Environment.

#### *Key implementers and collaborators and their roles*

1. WHH (Welthungerhilfe)/(German Agro Action) provided technical and financial support towards data collection, portal development, training and borehole repairs.
2. Fundi Fix was the Consultant App developer of the mWATER portal.
3. Kajiado County water officers assisted by hired enumerators conducted field data collection and worked with Fundi Fix to develop the portal.
4. Other technical officers from other departments validated the portal.

#### *Resource implications*

1. WHH engaged the software developer directly and facilitated the data collection exercise. The County is not privy to the cost.
2. The County used its Water Department staff to work hand in hand with WHH and the App developer.

#### *Sustainability*

1. The County has full control of the portal and its IT staff have been trained on maintenance of the portal. Other staff will be trained on the use of the portal,



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to be able to guide members of the public who may approach them for help in using the portal.

2. Continuous data collection using the app to continue improving water services.
3. Continuous use and updating of the dashboard to provide up-to-date information to the public.
4. Evidence-informed budget allocation to the Water Department to sustain data collection, analysis, timely decision-making and implementation of services, and sensitization of the community on where the water sources are, how to share and take care of them, and how to report incidences to the County Government.
5. Continuous sensitization of residents on water systems management.

#### **Results of the practice (*outputs and outcomes*)**

- The portal is working and is accessible to the public. There are 766 boreholes (75.9%), 138 (13.7%) dam/earth dam/water pans 55 (5.5%) shallow/sump wells, 33 (3.3%) springs, 8 (0.8%) sand dams/sub-surface dams, 5 (0.5%) rivers/streams, and 3 (0.3%) rock catchments.
- Through the data on the portal, water technicians identified obsolete borehole equipment whose spares are no longer in the market and replaced them with newly available parts.
- Resource allocation is now evidence-based since the numbers and locations of the water systems are known.
- During the drought season, water technicians relied on information given by the public and their own assessment to repair 87 boreholes.
- County residents are better informed about the water services available and can contact the Water Department for inquiries and to report incidences using the contacts/form provided on the mWATER O&M dashboard.
- There is improved efficiency and effectiveness in water provision services. The turnaround time for technicians' response to repair requests by members of the public improved from 1 month to 5–7 days.

*Key activities undertaken that ultimately led to positive results*

- Buy-in from the County's top management, which agreed to approach, and enter into an MoU with WHH.
- Technical and financial support from WHH to collect data, develop the registry and repair borehole failures.
- Data collection resulting in real-time dashboards.

### **Lessons learnt:**

#### *What worked really well*

- Collection of data on public water systems was easier in terms of accessibility and accurate data provision compared to the private systems which were not easily accessible.

#### *What did not work well*

- Collection of data on private water systems due to lack of information and accessibility of the private facilities.
- Data collection on the number and location of boreholes during the drought season was a challenge because some boreholes had dried up.

#### *What to do differently*

- Sensitise owners of private water systems from the beginning of the project to ensure smooth data collection for a credible database that can be relied on for decision-making.
- Sensitise staff on the importance of the dashboards project and the need for the enumerators to collect correct data.

### **Recommendations**

#### *Other sectors seeking to replicate the model should ensure:*

1. Proper and continuous data collection to improve decision-making and response. Endeavour to verify data collected.
2. Structured stakeholder engagement at the start of the project for buy-in and cooperation — the County did not have a structured way of engaging private





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owners and so encountered problems in accessing some of the privately-owned facilities.

3. Use of water experts during data collection to realise reliable data.

#### What to avoid

1. Use of non-water experts as enumerators in the collection of data who did not know the full implications of wrong data.

#### Further reading:

1. mWater O&M dashboard of the County Government of Kajiado  
<https://www.kajiado.go.ke/ministries/water-irrigation-environment-natural-resources/mwater-om-dashboard/>
2. mWater Asset Management dashboard of the County Government of Kajiado  
<https://www.kajiado.go.ke/ministries/water-irrigation-environment-natural-resources/mwater/>

#### Gallery



*Kajiado County staff undergoing training on the water registry dashboards*

# MWATER- ASSET MANAGEMENT DASHBOARD

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1. Summary - Water Asset Inventory 2. Maps of Water Systems 3. Maps of Water Installations 4. Table of Water Installations 5. Maps of WaterPoints  
6. Table of Waterpoints Data Qa/Qc - Progress Charts Data Qa/Qc - WS with Blank Asset Inventory Form Data Qa/Qc - WS with Blank O&M Report  
Data Qa/Qc - WS with Blank Functionality Report Data Qa/Qc - Installations with Blank Asset Inventory Form Data Qa/Qc - WPs with Blank Asset Inventory New Tab

Powered by  mWater

Kajiado County mWater Asset Management Dashboard\_a

## COUNTY GOVERNMENT OF KAJIADO

Ministry for Water, Environment and Natural Resources

Report Date: May 29, 2023



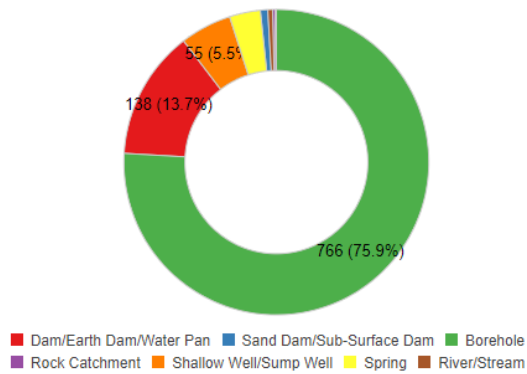
### Kajiado County Water Systems Dashboard - Table of Contents

1. Water Systems Overview
2. Water Systems Construction Details
3. Water Sources (n = )
  - 3.1. Borehole Water Sources ( )
  - 3.2. Shallow/Sump Well Water Sources (n = )
  - 3.3. Sand/Sub-surface dams, Rock catchments, Water pans, and Earth dam Water Sources (n=)
4. Springs/Diver Water Sources (n = )

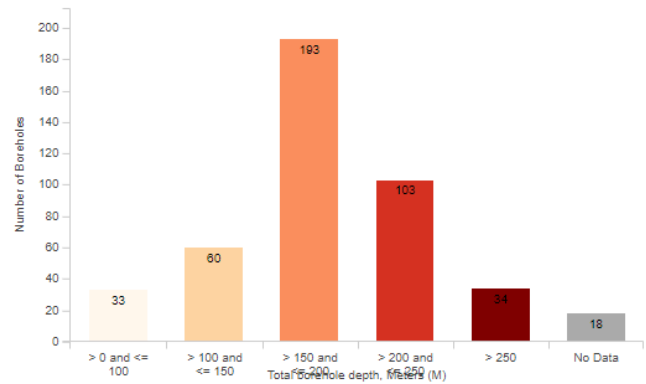
Kajiado County mWater Asset Management Dashboard\_b



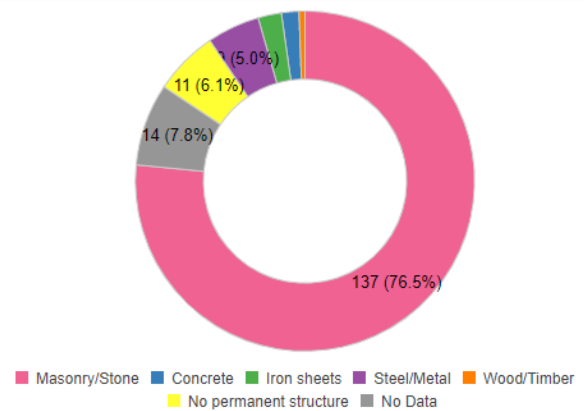
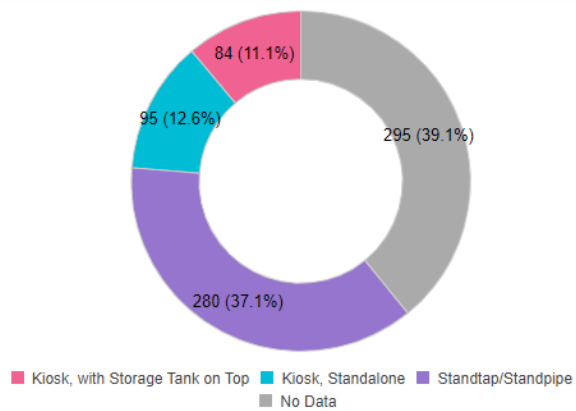
**Kajiado Water Source Types (n = 1,320)**



**Boreholes Depth, Meters (n = 421)**



*Kajiado water source types & borehole depths as seen on the dashboard*



*Water kiosks & stand-taps statistics as seen on the dashboard*



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Home Administration Departments Municipalities Jobs Tenders Extras Contacts

ENVIRONMENT AND NATURAL RESOURCES

## MWATER O&M DASHBOARD

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Table - O&M Performance Governance Functionality Water Quality Service Reliability Staff(ing) Productivity Volumes & Metering Revenues & Expenditures  
Population Coverage Community Contact Information Table for Kasaine/Director

Download

Scheme Name:	All	Sub-County:	All	Ward:	All
System Type:	All	Capex Funded By:	All		
Management:	All	WQ-Treatment:	All		

Screenshot of the Kajiado County mWater O&M dashboard

1	Aboseli borehole	CG/34/KS/BH/503	352775094	Kimana, Kajiado South, Kajiado, Kenya	-2.730841, 37.383869	
2	Abraham kimani borehole	CG34/03/KN/BH/119	346104718	Olkeri, Kajiado North, Kajiado, Kenya	-1.410423, 36.718457	Borehole Water Sys
3	Abslom nduati	Ildamat	341180007	Dalalekutuk, Kajiado Central, Kajiado, Kenya	-1.834364, 36.785060	
4	Absolom nduati	Within kajiado township	340581322	Dalalekutuk, Kajiado Central, Kajiado, Kenya	-1.834255, 36.784898	Borehole (Capped/L
5	Ace farm borehole	CG34 KE 1 /85/BH	353387834	Kaputiei North, Kajiado East, Kajiado, Kenya	-1.745348, 36.870438	Borehole Water Sys
6	ACK borehole Isinya	CG34/ke/1/15	332711616	Kaputiei North, Kajiado East, Kajiado, Kenya	-1.678774, 36.849191	Borehole Water Sys
7	Ack Diocese off Kajiado	CG034/KW/16/BH/245	353576849	Kaputiei North, Kajiado East, Kajiado, Kenya	-1.753275, 36.968762	
8	ACK Kajiado Town	CG034/KC/03/BH/XX	340581401	Dalalekutuk, Kajiado Central, Kajiado, Kenya	-1.850578, 36.787519	Borehole Water Sys
9	Acqua platinum Isinya borehole	CG34 ke 1/37	338887957	Kaputiei North, Kajiado East, Kajiado, Kenya	-1.697807, 36.843783	Borehole Water Sys
10	Advent Hill east African devision	CG034/KN/05/BH/33	332495538	Olkeri, Kajiado North, Kajiado, Kenya	-1.405833, 36.729055	Borehole Water Sys
11	Agnes koin turere borehole	CG34 ke 3 56/Bh	343982706	Oloosirkon/Sholinke, Kajiado East, Kajiado, Kenya	-1.535660, 36.786062	Borehole Water Sys

Entries in the Kajiado County mWater O&M dashboard