

## Digital technologies improve water access efficiencies in Kenya

Led by Millennium Water Alliance, the Kenya Resilient Arid Lands Partnership for Integrated Development (RAPID) is a five-year USAID program that increases communities' access to water services in northern Kenya. In response to significant challenges and limitations with community management of water infrastructure, the project has leveraged multiple uses of digital technology to improve efficiency, reliability, and access at scale. Private sector partners play essential roles in this Global Development Alliance activity, bringing digital products as well as technical expertise to support their adoption.

SweetSense **sensors** have been installed on motorized boreholes to monitor pump run-time and functionality as indicators of water utilization and mechanical efficiency. Sensor data is transmitted via satellite to an IBM cloud-based dashboard where water service providers can monitor functionality and water abstraction volume, and county government and private sector technicians can monitor pump performance and provide timely repair services. As a result, water users have more reliable access. Sensor data also feed into the Drought Resilience Impact Platform (DRIP), which also includes remote sensing data from the Famine Early Warning System Network (FEWS NET) to identify areas of water stress. Diverse actors access DRIP to plan targeted action to prevent drought emergencies and mitigate famine in the region.

At the local level, water committee management of water points suffered from poor financial record keeping, while the need to have a committee member present during collection meant that water points had limited hours of operation and funds were depleted. Now, **prepaid water meters** allow people to collect their water at any time. In areas with mobile network coverage and mobile money agents, people use M-PESA **mobile money** to top up funds in their water account. Less water is wasted as users are careful to capture the full volume of their payment. Meanwhile, water revenues have increased threefold, making more funds available for operations and maintenance. One county has decided to add prepaid meters to all of the water kiosks and bulk water points. An online platform consolidates water volume and revenue data to support usage monitoring, revenue management, and decision making.

The RAPID team now has its eyes on realizing predictive solutions through the digital tools. Integration of the prepaid meter platform with IBM's cloud-based sensor platform is planned. With more synthesized data, RAPID and its partners can build models that predict infrastructure repair needs and groundwater supply. These will enable service providers to make their operations even more efficient, while further strengthening the reliability of water to communities.

