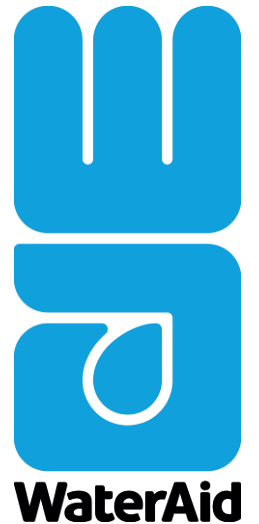


Data management: using mobile data management technology to improve revenue collection, operations, and maintenance in small towns

Puneet Srivastava & Ellen Greggio
Programme Support Unit, WaterAid

26/02/2020



WaterAid - Why focusing on small utilities and small towns



- In between Rural – Urban Continuum , often lack visibility and political prioritisation for investments
- Often population between 5,000 to 100,000
- A mix of rural poverty and urban slums
- Weak capacity of municipality / utility to either raise finances or provided effective WASH services to all
- Lack of manpower to provide effective services or expand services as the cities grows.
- Holistic approach – multi sectoral approach
- Improvements to data access and use as key entry point for improvements
- Exploring possibility of using mobile based data management using free software such as mWater and Solstice

Key challenges...requiring data use



- High non revenue water



- Lack of proactive maintenance and replacement planning



- Slow maintenance response leading to low services



- Ineffective billing collection
- Areas left behind – no access to water and sanitation services to % of populations



Data needs...



- Key Performance Indicators:
 - Example: service levels – water quality, quantity, reliability continuity of supply etc
- Asset management – type, status, age
- Real time - Operation & Management
- Billing system – fees
- Users / customers' reporting

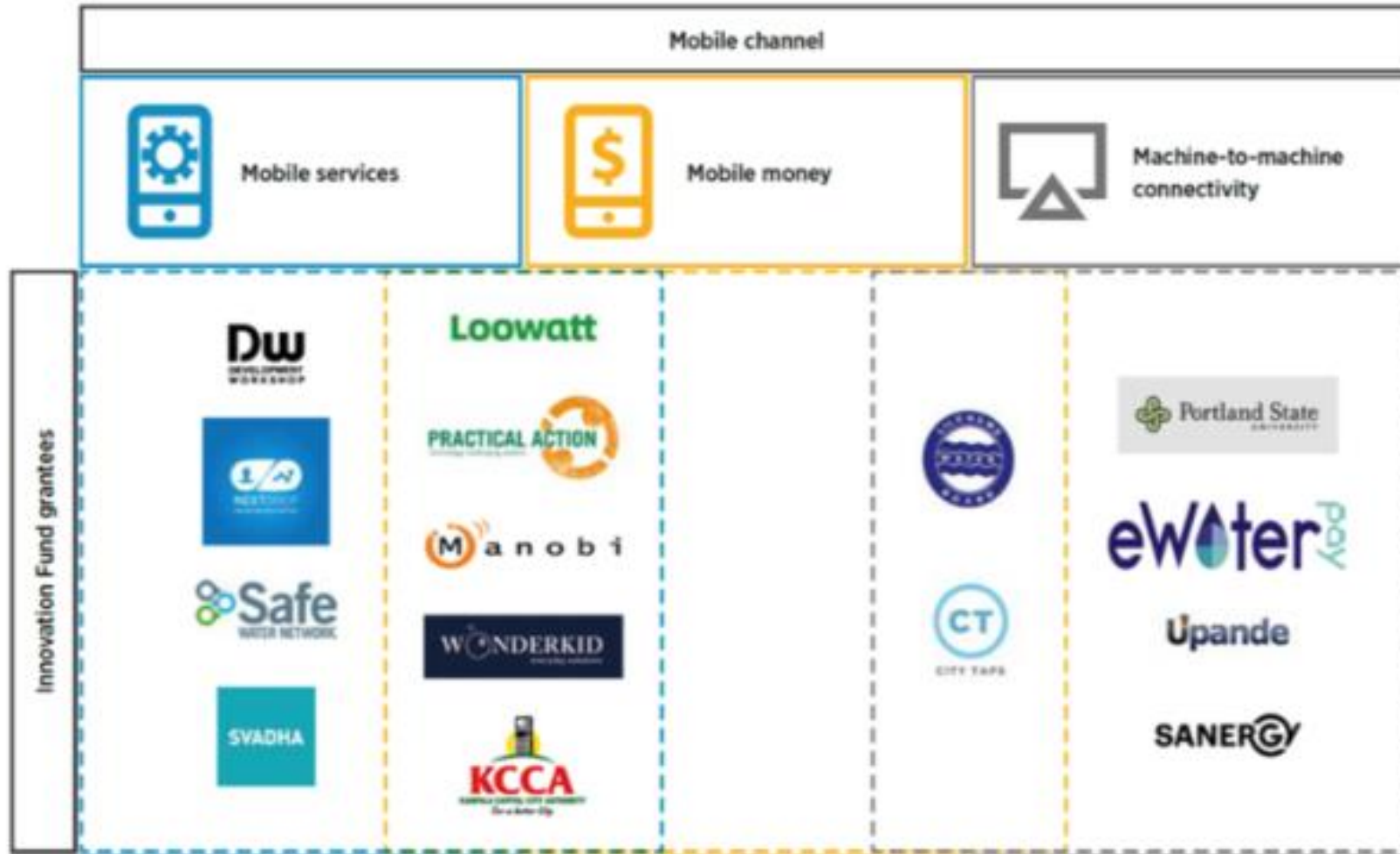
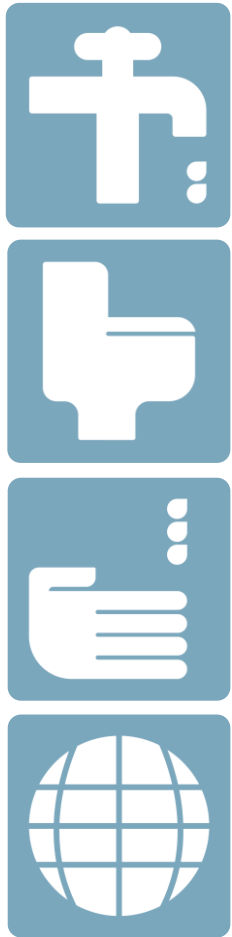


Accurate

Reliable

Real-time

A number of solutions being implemented by different utilities and partners



The right solution for the right context?

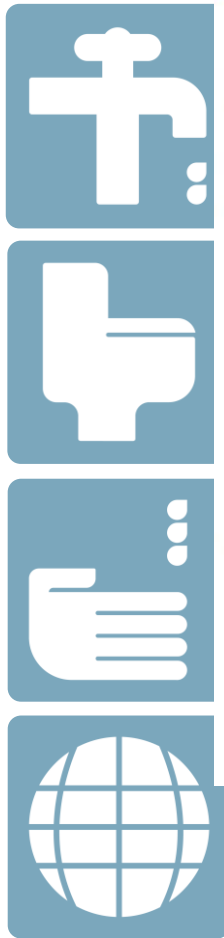


Need to identify and implement solution that is

- Simple
- Affordable
- Customisable
- Interactable (APIs)
- Accessible to medium and small utilities



Customizable solution



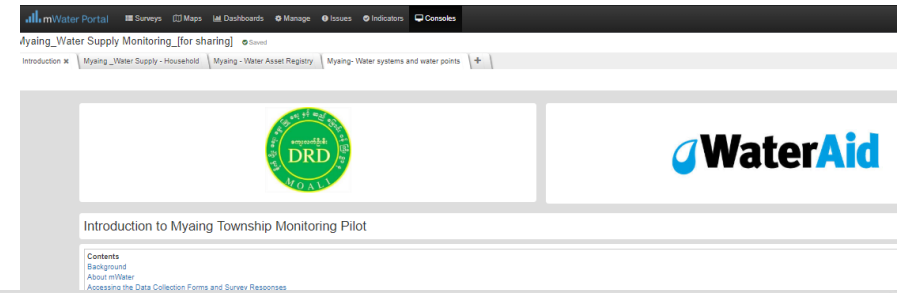
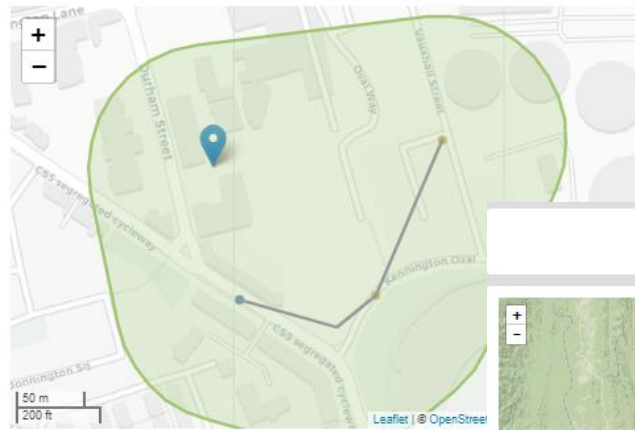
← Water Systems

Water system managed by WaterAid (protected)

Name: WA office
 Management type: Utility
 Location
 Location: Westminster, England, United Kingdom
 Unique ID: 9970775

WA office

Download System ▾ Edit Water System...

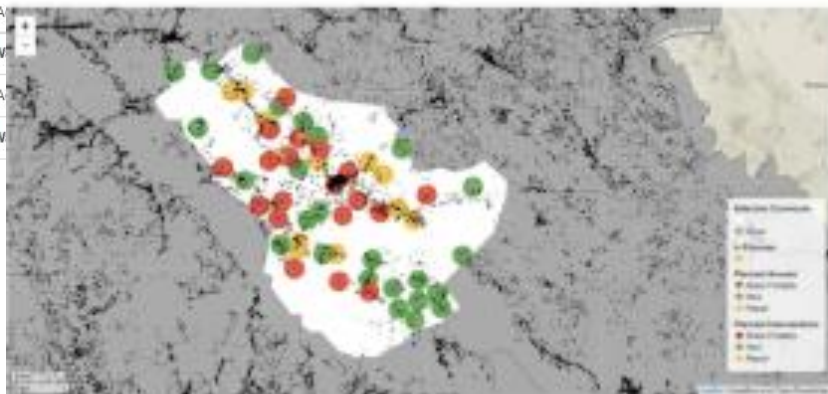


DRD & WaterAid - Monitoring Rural Water Supply Household survey
 July 2018 [DRAFT]

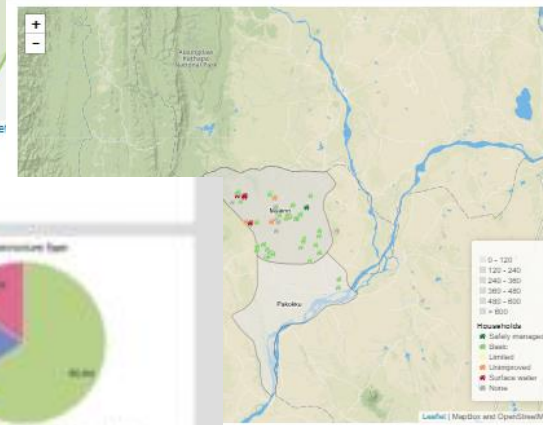
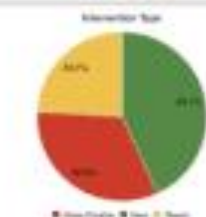
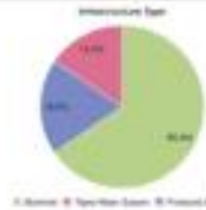
Asset Inventory

- 1 W
- + A
- 2 W
- + A
- 2 W

FOR MORE DETAILS PLEASE USE THE QUICK-FILTERS ABOVE
 OR CLICK AND ZOOM ON THE MAP



Make Potable: 10 Repair: 14 New: 25



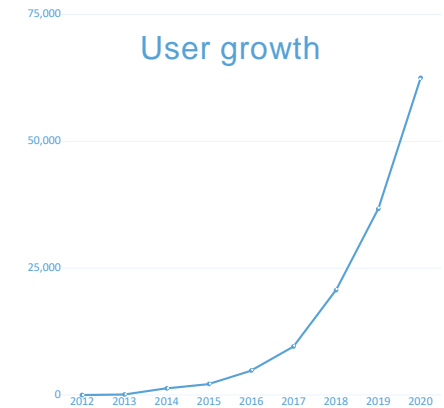
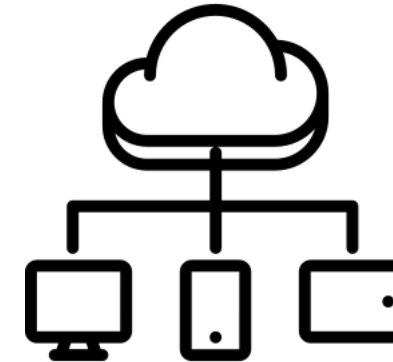
Water points used by the Household





Operating systems for WASH

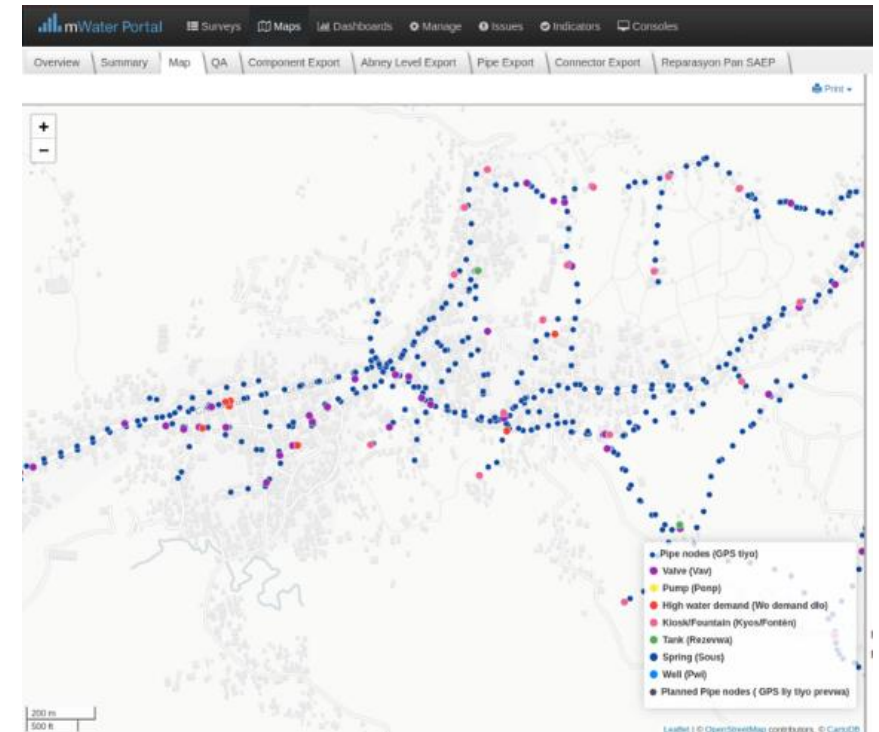
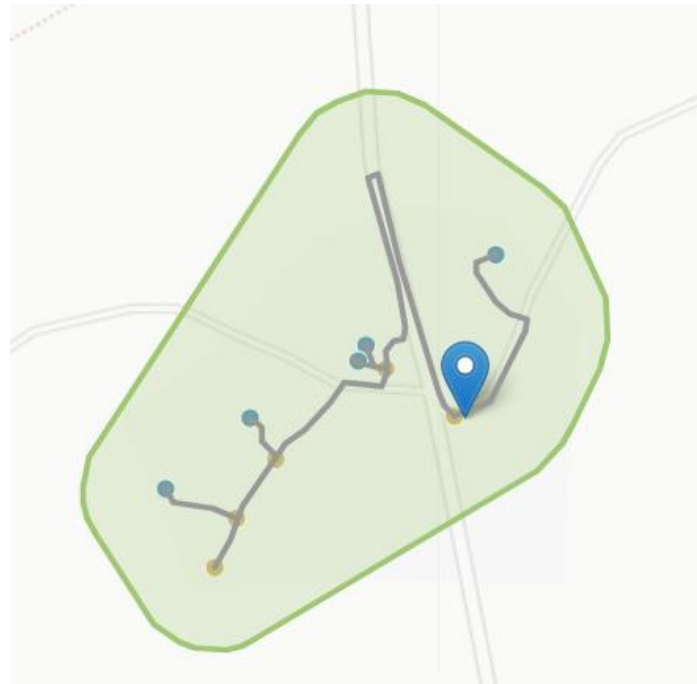
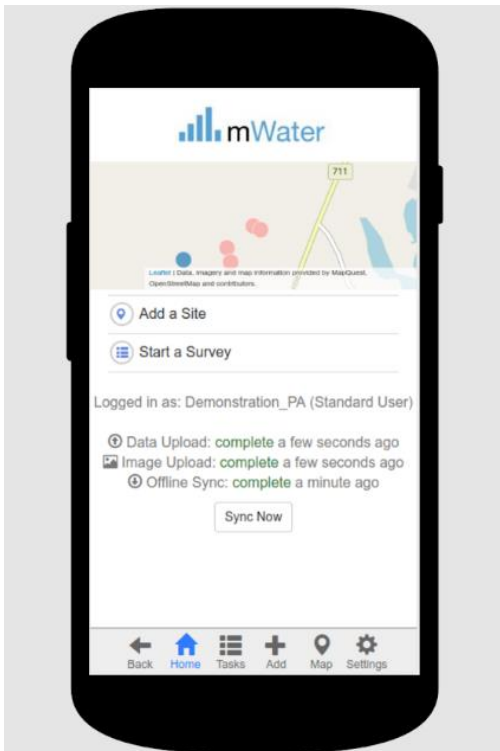
- Easy mobile data collection (online / offline)
- Real-time analytics, charts, maps
- Water systems asset management
- Data owned by you
- From individual systems to entire countries
- Business model: Free for all users
- New features are shared with everyone
- Small scale utility focus: KPIs, water quality monitoring, tickets, meter reading and billing, customer database, accounting



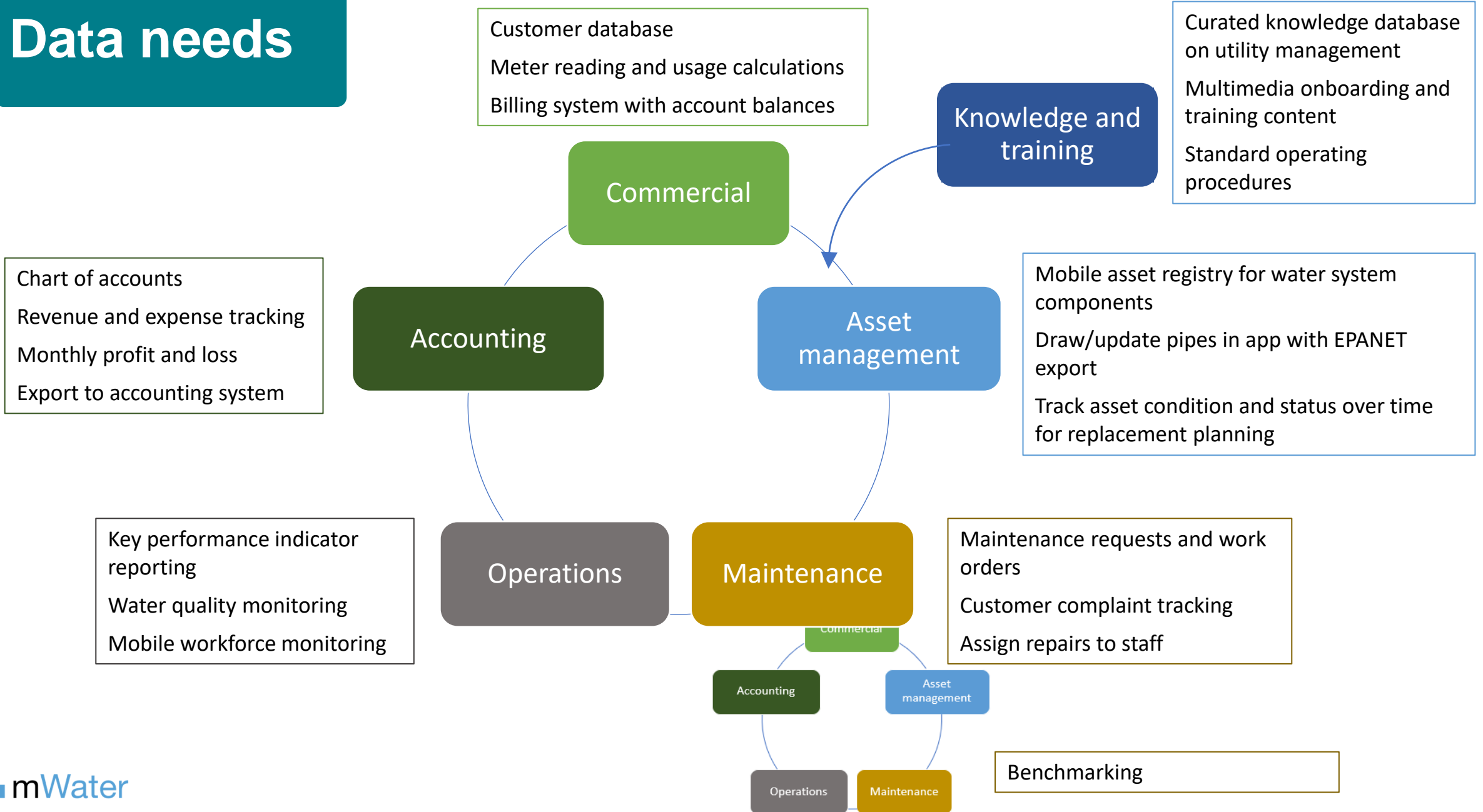
Users by country

Track your system assets

Pipes, water points, other components - Record in app, import and export



Data needs



CASE STUDY - HAITI

- Long engagement, national adoption
- Three levels of governance:
 - National, regional, district
- Needs assessment, harmonizing KPIs
- Asset management, monitoring, planning

-> Pipe mapping for all users

Water systems tracked in Haiti



Single system view in MIS

A screenshot of a web-based Management Information System (MIS) interface. The top navigation bar includes links for 'CTE Haïti', 'Page d'accueil', 'Rapport mensuel', 'Gestion technique', 'Documentation', 'Designer', and 'Download'. Below this, a secondary navigation bar shows 'Fiche Technique', 'Approbation', 'Interventions', 'Gestion branchements', 'Carte', and 'Leak detection in Les Cayes'. The main content area displays the 'SAEP: CTE Leogane (ID: 8729648)'. It includes a search bar with 'CTE Leogane' entered, a table of contents on the left, and a detailed view of the system's management information: 'Type de gestion: Opérateur public', 'ID DINEPA: CO-LEOG-01', 'Commune: Leogane', 'Date d'installation: ---', and 'Date d'rehabilitation: ---'. A button labeled 'Klike la pou enfomasyon detaye' is visible. On the right, there is a map showing the location of the system with a legend for 'Tuyaux', 'Point d'eau', 'Ouvrage d'eau', 'Junction', 'Source', 'Pump', 'Storage', 'Treatment', 'Meter', and 'Valve'. The map also includes a scale bar (500 m / 2000 ft) and a 'Ti Parad' logo.

CASE STUDY - HAITI



Leak detection

CTE Haiti | Page d'accueil | Rapport mensuel | **Gestion technique** | Documentation | Designer | Download

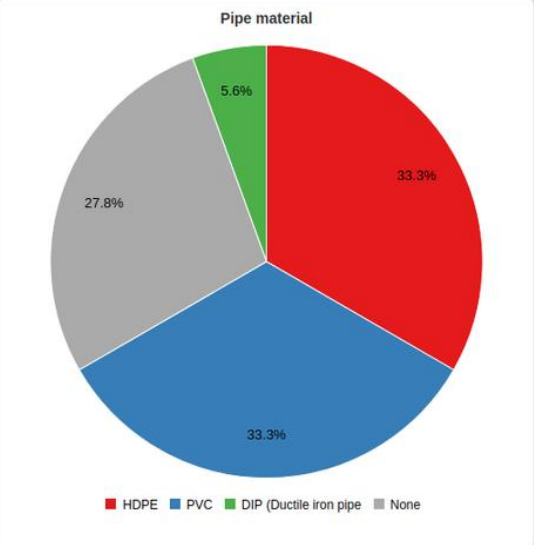
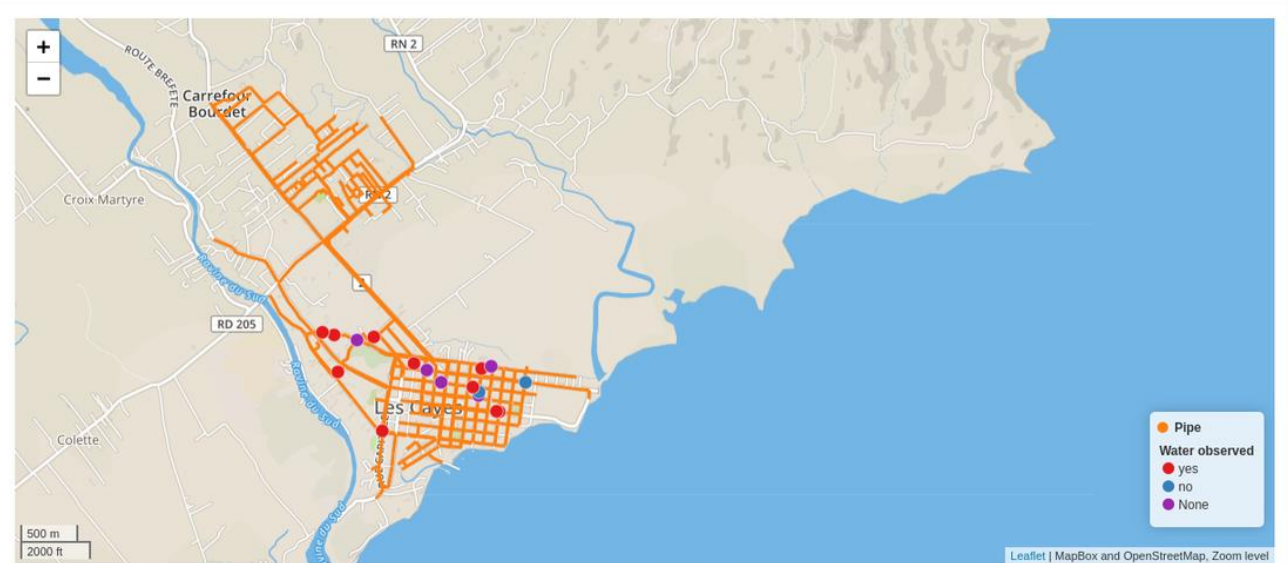
Français | Petri

Fiche Technique | Approbation | Interventions | Gestion branchements | Carte | **Leak detection in Les Cayes**

Print Refresh Export as PDF

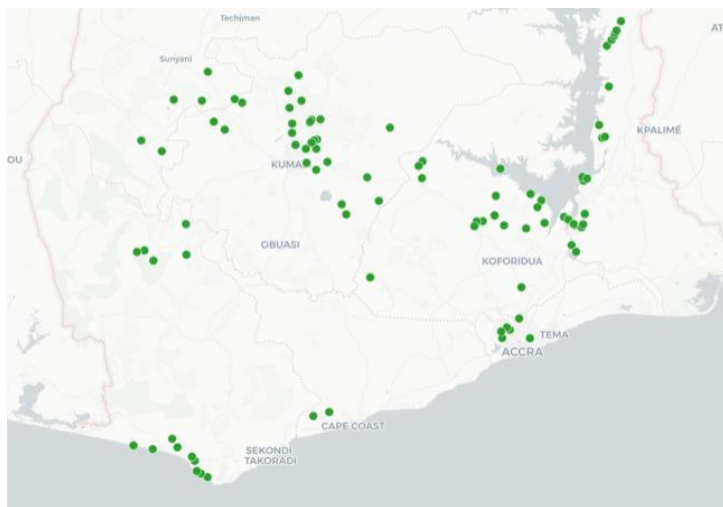


Leak Detection System web-based application allows to monitor the underground water pipelines. It tests a series of interventions to assist the Les Cayes and Jeremie CTEs in situation where there may be a permanent loss of water such as leakage. Leaks in pipes are caused by several factors in Jeremie and Les Cayes, such as the pipe age, improper installation, soil compaction and placing of road concrete formwork during the campaign of "karavann" of the president Jovenel Moise.



CASE STUDY - GHANA

- Collaboration for 4 years with Safe Water Network
- Similar to a water service authority aiming to develop utilities
- Handing over to local governments to operate
- Strong need to use data to validate their model
- Regular and consistent entry of M&E and accounting data
- Understand performance and profitability of each system



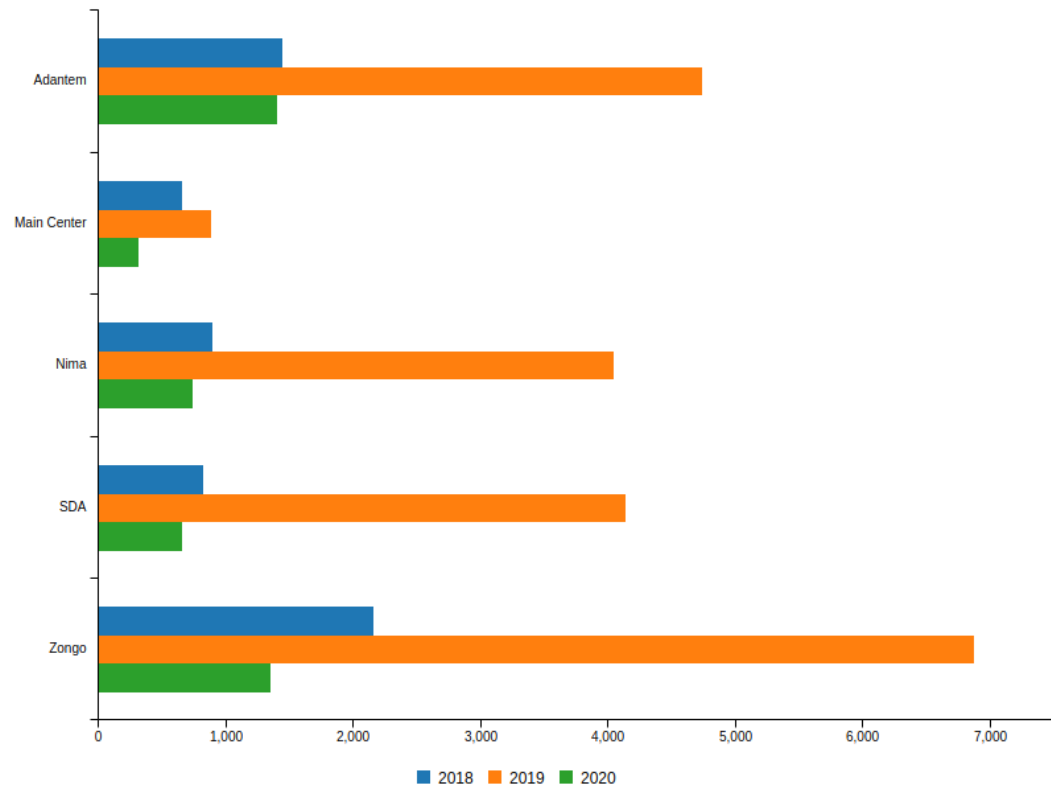
A screenshot of the Safe Water Network mobile application interface. At the top, the logo for "Safe WATER NETWORK" is displayed. Below the logo is a map showing a cluster of blue dots representing data points. Underneath the map, there are two menu items: "+ Officers Weekly Form" and "+ Daily Operator Form". Below these, it says "Logged in as: John Feighery (Safe Water Network FSE Officers)". There are three status indicators: "Data Upload: complete a few seconds ago", "Image Upload: complete a few seconds ago", and "Offline Sync: complete a few seconds ago". A "Sync Now" button is located below these indicators. At the bottom, there is a navigation bar with icons for Back, Home, Tasks (with a red notification badge showing '8'), Add, Map, and Settings.

CASE STUDY - GHANA

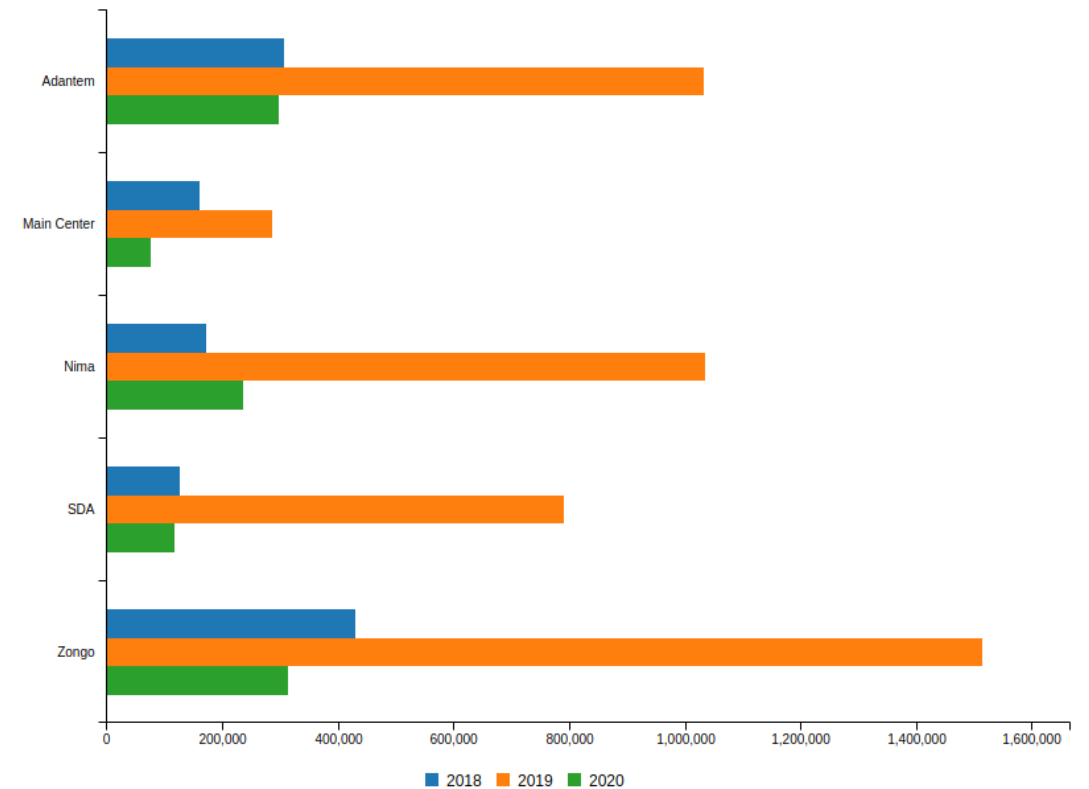


Revenue and volume

Total Revenue By Access Point

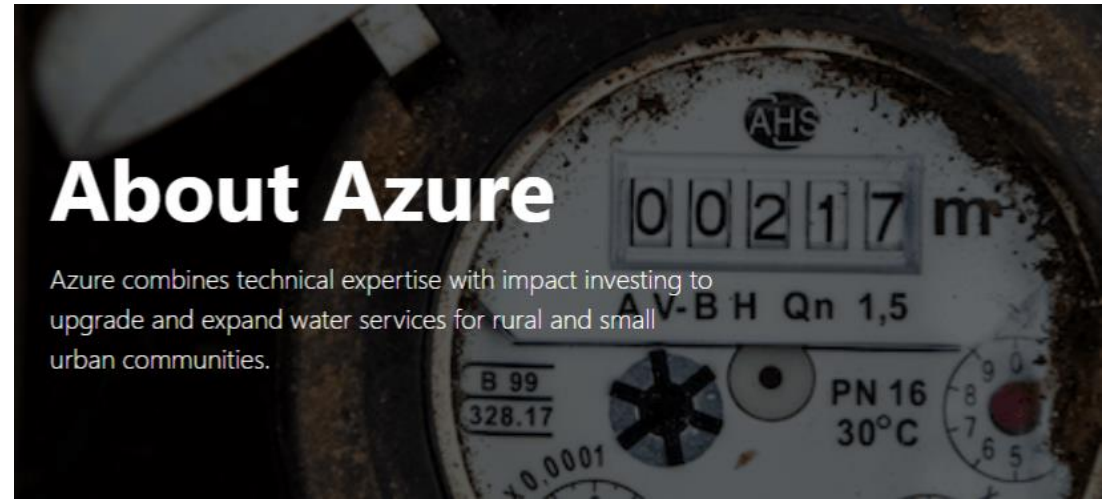


Volume Sold by Access Point



CASE STUDY EL SALVADOR

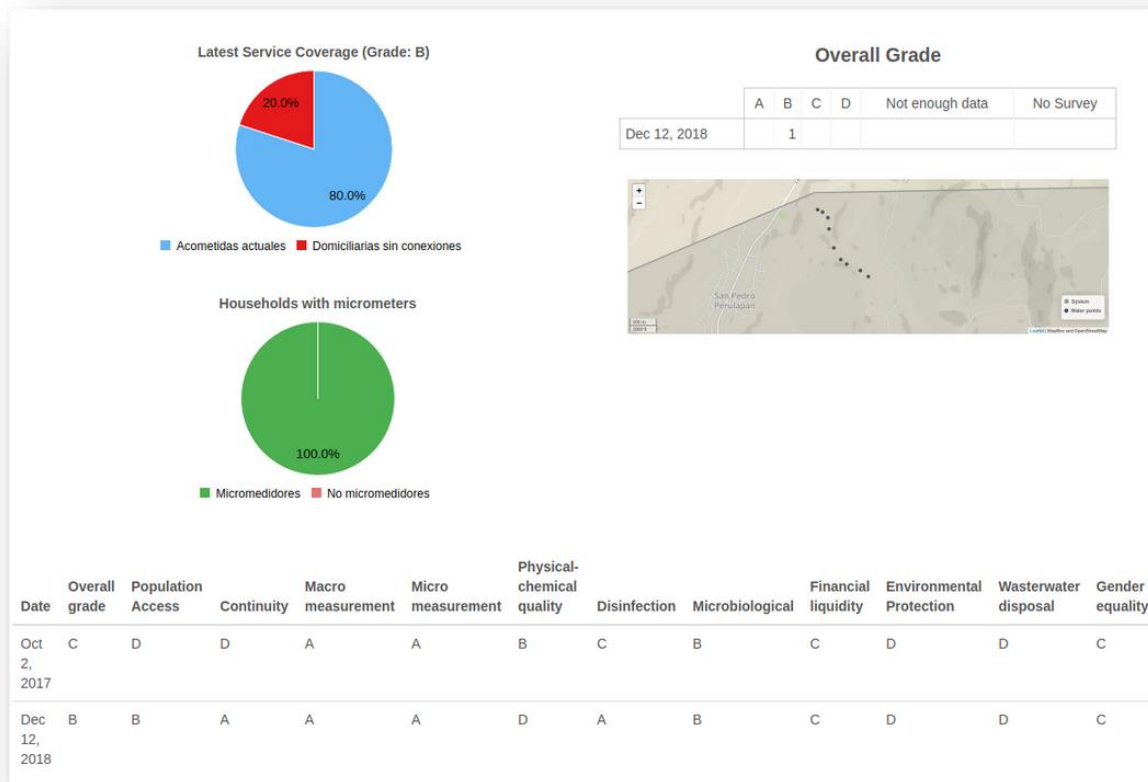
- CRS, Inter-American Development Bank, Azure
 - WSP KPIs and overall grading A-D
 - Capacity building support
 - Unlocking financing through performance improvement and more transparency
- > General small utility accounting system



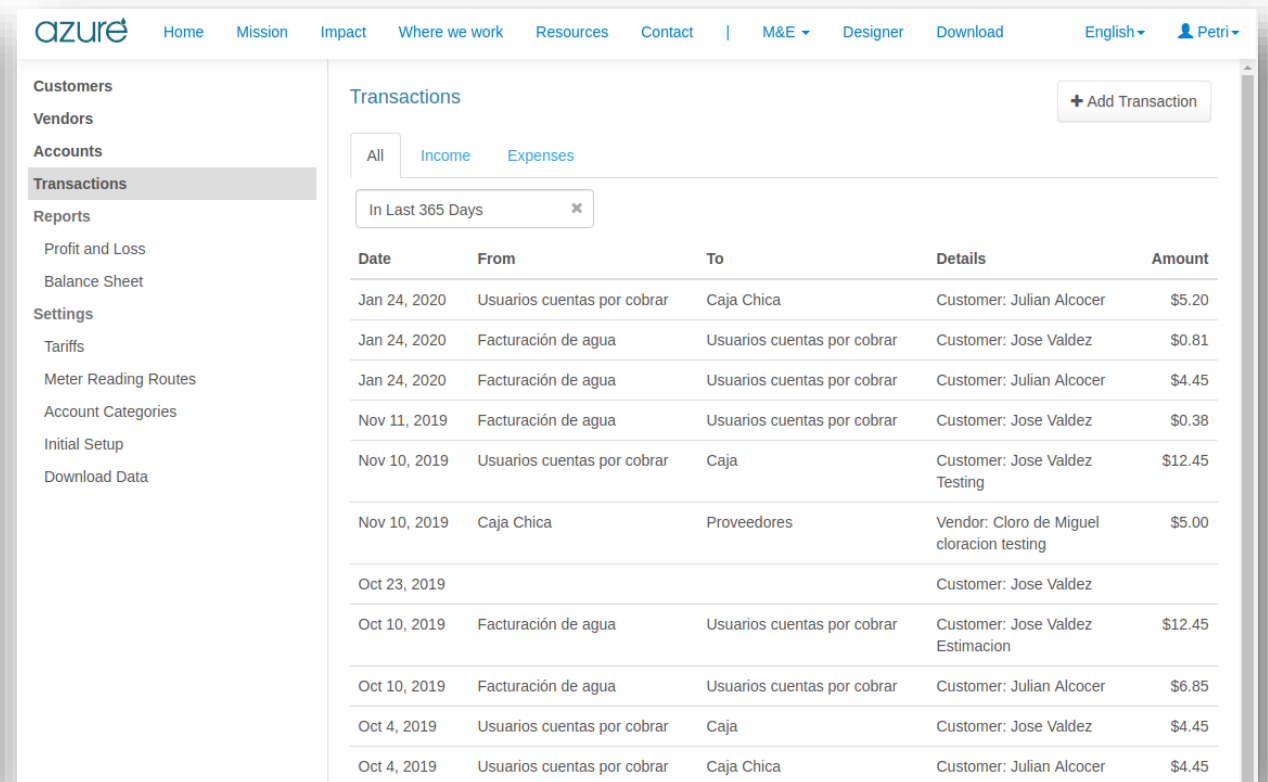
CASE STUDY-EL SALVADOR



Monitoring

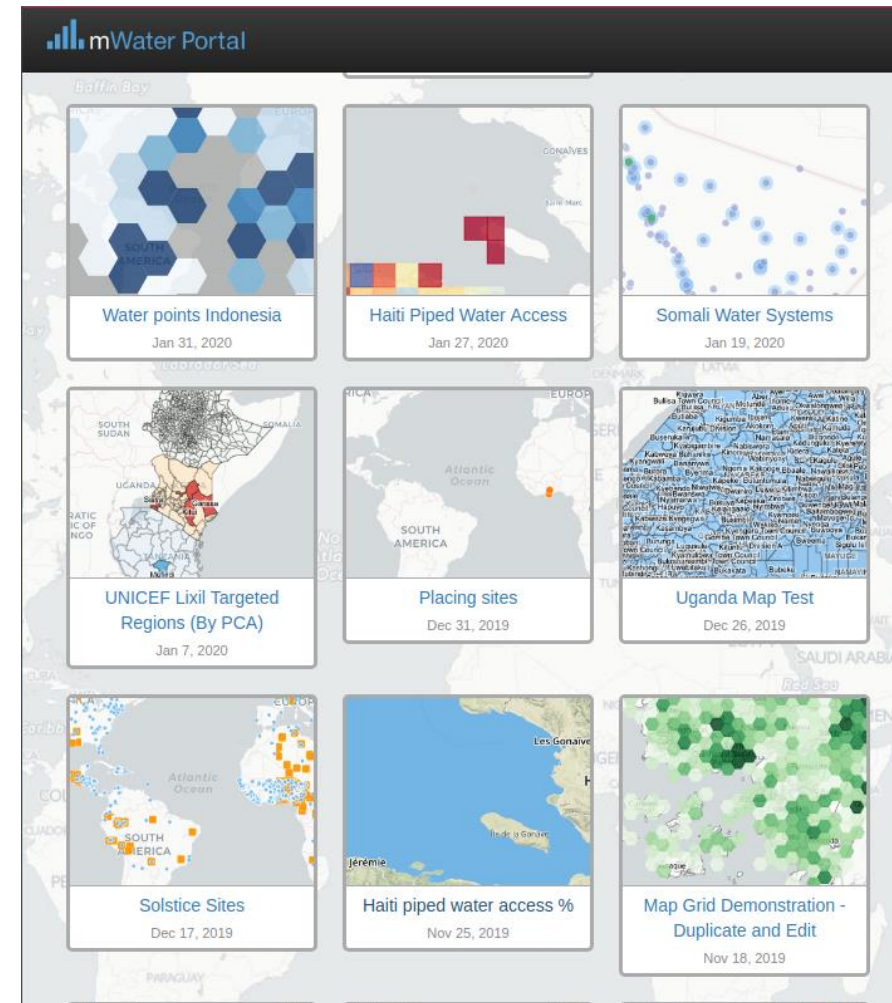
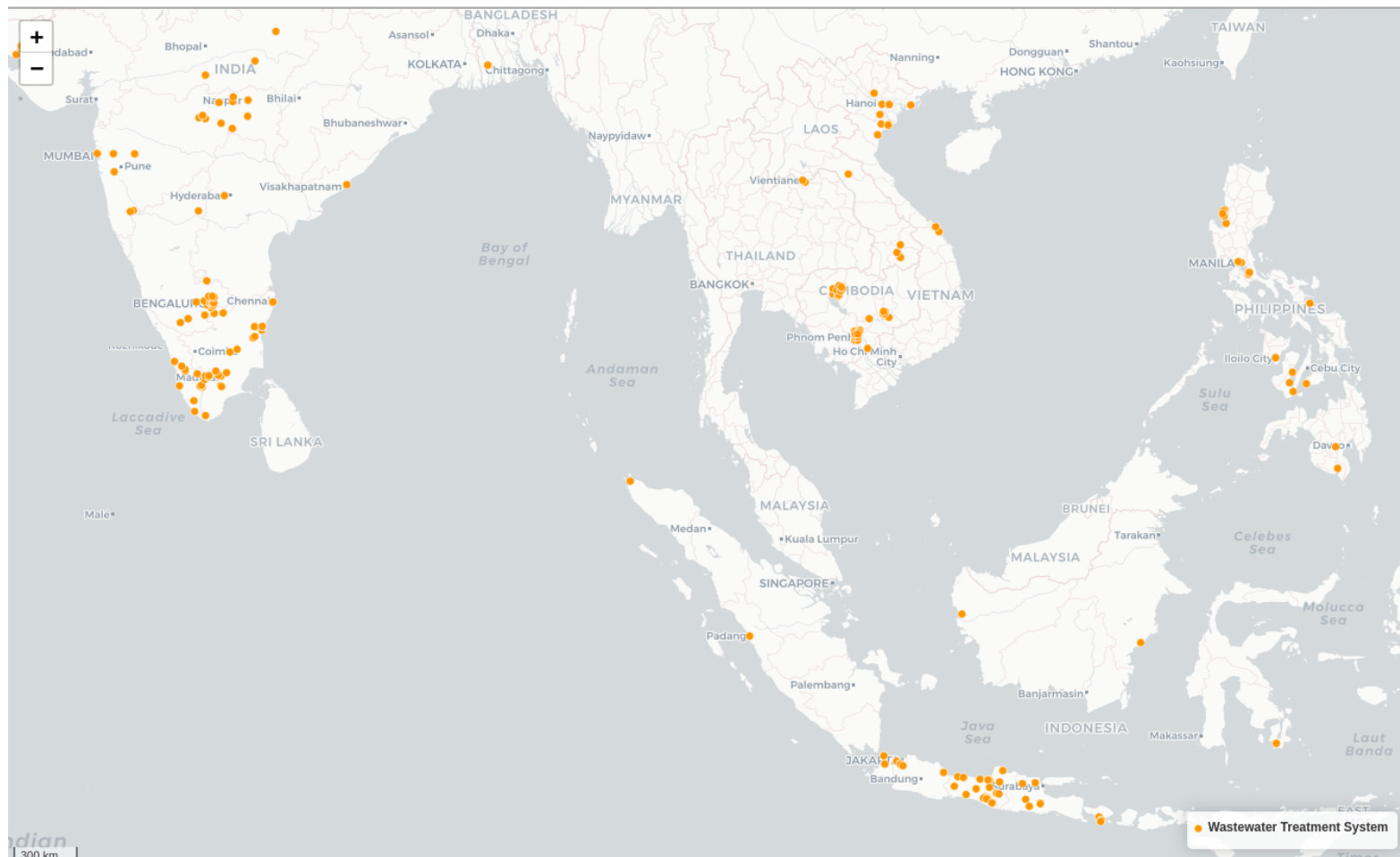


Accounting



Also faecal waste and wastewater, and much more

BORDA's wastewater treatment systems (DEWATS)



Survey time

Please take your phone or laptop and go to:

tinyurl.com/afwa2020

Contact the speakers

Puneet Srivastava - PuneetSrivastava@wateraid.org

Ellen Greggio - EllenGreggio@wateraid.org

Petri Autio - petri@mwater.co

In which area do you have key data needs challenges?

- Accounting
- Asset Management
- Benchmarking
- Commercial
- Maintenance
- Operations
- Other (please specify)

What are your key data needs?

- Billing management - payments etc
- Energy consumption
- Meter reading
- NRW, leaks
- Real-time data: asset functionality
- Real-time data: operations of assets
- Real-time data: water quality
- Other (please specify)

What are the key barriers for better use of data within your organisation?

- Low capacity for data analysis and visualisation
- Lack of trust in data / Politically driven decisions
- Lack of unique platform for data management
- Lacking management buy-in
- No harmonization of indicators and data
- No specialist dedicated human resources
- Too much data
- Other (please specify)