Monitoring & Data for Rural Water Supplies:

Different Perspectives. Common Goals.

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AGUASAN 2018: Leveraging the data revolution

In association with: RWSN · UPGro Unlocking the Potential of Groundwater for the poor upgro.org · REACH Improving water security for the poor

Monitoring and data is not new to rural water supply. The emergence of water point mapping in the early 2000's attracted some interest, but it was breakout of ICT tools used for localised mapping in Malawi and for country-wide mapping in Sierra Leone, Liberia and Tanzania around 2010-12 that really grabbed attention.

Since then, the potential of real-time monitoring of rural handpumps, kiosks and piped systems has become a reality and the discussion across RWSN have moved from "oh shiny!" excitement to mature discussions on how and why these new tools can revolutionise decisio-making, service delivery, citizen voice and government accountability.

This poster is intended to provoke discussion about where we are in 2018 and what are the opportunities and challenges ahead?

Rural Water Services

Data Users

- Citizens & Civil Society
- Water Users/ Customers (incl. industry & agriculture)
- Service Providers (e.g. Fundifix)
- Law-makers & Regulators
- Investors/Funders
- Researchers/ Consultants
- Advocacy & Media
- Humanitarian Agencies

Data Uses, Decisions & Benefits

- **Global, national, sub-national policy**
- **Human Rights and Accountability**
- **Environmental and water resource protection**
- **Strategic: Asset management**
- **Operational:** tracking activities & performance to improve service quality and increase life-cycle cost efficiency
- **Research:** Developing deeper insights into social, economic and physical science issues
- **Life-cycle financing, tariffs transparency and corruption control**
- **Conflict Resolution and Enforcement**
- **Ensuring no-one gets left behind**

Data Collection

- "Traditional" Data Collection
  - Hydrometry: Rain & river gauges borehole dippers
  - Household Surveys/Census
  - Local Government paper-based reporting
- Mobile Phones
  - Fault reporting
  - Mobile payments
- WaterPoint Mapping
  - Open Data Kit
  - Akvo FLOW
  - mWater
- Realtime Monitoring
  - U. Oxford - 'Smart' Handpump
  - U. Portland - Sweetsense
  - charity: water AFD2 sensor
  - Well Done MoMo sensor
  - Remote hydrometry: e.g. borehole loggers with GSM
- Remote Sensing
  - GRACE Satellite Monitoring
  - Remote/Satellite Photography

Resources needed & to be measured

- Infrastructure/Hardware location, ownership, condition
- Human, Political & Legal Resources
- Natural resources and fluxes
- Financial flows and assets

Data Management & Publishing

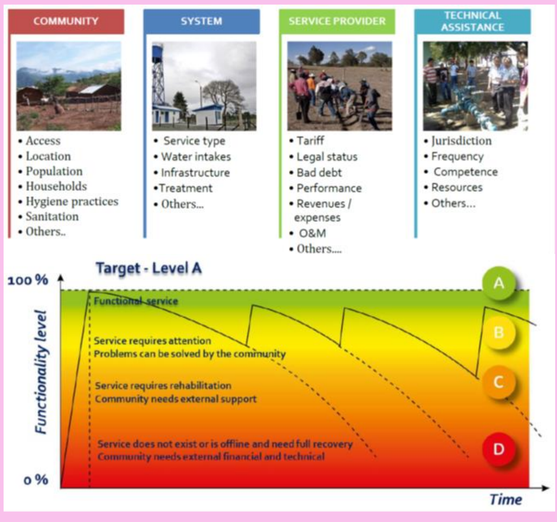
- National /Local Government Systems
  - WHO-UNICEF Joint Monitoring Programme
  - SIASAR
  - Sector Performance Reports (SPRs)
- Private & NGO databases
  - Water Point Data Exchange (WPDx)
- Maps & Reports
  - Africa Groundwater Atlas
- Published research findings

Are all of these elements getting connected as they should?

Case Study: SIASAR Rural Water and Sanitation Information System, Latin America

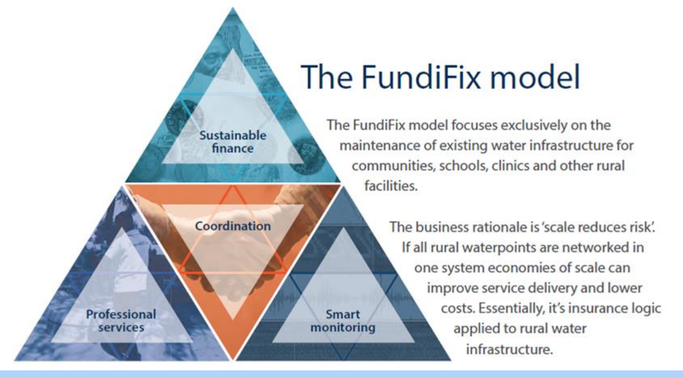
In 2011, the governments of Nicaragua, Honduras and Panama, with support from the World Bank, started developing the "Rural Water Supply and Sanitation Information System" (SIASAR), an ICT-based monitoring and decision-making system aimed to strengthen the knowledge base of the rural water supply & sanitation (WSS) sector and make this critical information accessible for policy makers, national and local planners, and sector practitioners.

Data from 23,000 rural communities in 8 Latin American countries has shown that in 2015, just 22% of rural water supply systems are "A – Fully Functional". 59% are "B – some problems" and the remaining 18% are "C" or "D". Spatial maps of the monitored schemes enable hot spots to be identified. SIASAR is used to monitor important indicators like participation of women and WSS access among indigenous communities.
Governments and Development Partners are using SIASAR to prioritise activities and resources.



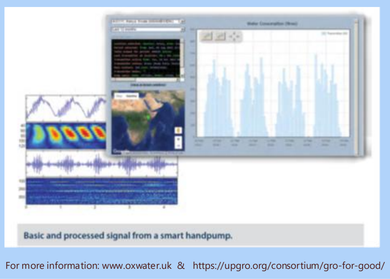
For more info: www.siasar.org
Reference: Rodriguez,A, & L. Pena P. Weiss (2016) The "Rural Water Supply and Sanitation Information System (SIASAR) – Addressing sustainability gaps through visual data in Latin America" Proceedings of the 7th RWSN Forum, Abidjan Cote D'Ivoire

Case Study: Fundifix, Kenya



The FundiFix model is one response to Africa's rural water challenge. It focuses exclusively on the maintenance of existing water infrastructure for communities, schools, clinics and other rural facilities.

Led by local entrepreneurs and powered by Africa's mobile network, the FundiFix model offers a performance based approach working with government, communities and investors to keep water flowing. Use of 'Smart' handpumps and machine learning are helping reduce down-times dramatically.


Basic and processed signal from a smart handpump.

For more information: www.oxwater.uk & https://upgro.org/consortium/gro-for-good/