



What's Working, Where, and for How Long: A 2016 Water Point Update



BACKGROUND

In 2010, the Rural Water Supply Network (RWSN) Executive Steering Committee published "Myths of the Rural Water Supply Sector" (RWSN, 2010). Among the seven myths, No. 2 "Building water supply systems is more important than keeping them working" highlighted estimates from 2007 and 2009 of handpump functionality in selected Sub-Saharan countries (RWSN, 2009, Baumann, 2009). The summary statistic that around 36% of handpumps are not working at any one time in Sub-Saharan is perhaps the most widely quoted RWSN output.

WHY A 2016 UPDATE?

This update to the 2009 handpump functionality statistics builds upon that foundation in several important ways:

Beyond estimates to real data: Water point mapping is a whole new area of endeavour that has opened up due to improvements in Information Communications Technologies (ICTs), which were not in widespread use in 2009.

Not just handpumps: Water point data provides insights into a range of water point types. An analysis on the functionality of different types of water points has been included.

New insights: This update includes an analysis of functionality of water points constructed within two years of the survey date.

Transparency: All findings are based on data that is publicly available through the Water Point Data Exchange at www.WaterPointData.org.

Data Availability: Countries have only been included in this benchmarking analysis if they meet criteria for having significant data availability.

Regular updates: This summary can be updated on an annual basis, integrating any new data available.

Conclusions and Next Steps

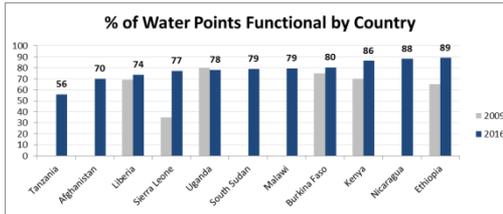
- Water point mapping data has experienced explosive growth in Africa and Asia and bodes well for an Asset Management approach that is common in urban water supply but is less common in rural.
- An average of 78% of water points are functional across the 11 countries analyzed.
- The high failure rates early after installation are troubling; almost 15% after one year and 25% of water points are non-functional by their fourth year after installation. This indicates widespread problems with poor quality water point installation, due to a range of problems that may include professionalism and skills around contracts, construction and supervision; borehole siting; lack of quality control of hardware; or lack of post-construction monitoring and problem resolution.
- Handpumps are often singled out as technology that fails, but analysis of other water point types show similar functionality levels, and that tens of thousands of handpumps are providing a service.
- Additional data will help to provide a more robust analysis, and updated data will allow for analysis of change over time and perhaps on different metrics that are better indicators of service level quality.

METHODOLOGY: FUNCTIONALITY BY COUNTRY

Countries were included in the benchmark if they had significant data available through the Water Point Data Exchange. This includes countries where:

- More than two sources had contributed more than 100 records each; or
- The number of water point records analysed exceeded 50% of the number of water points expected (based on JMP rural population data divided by 250 people).

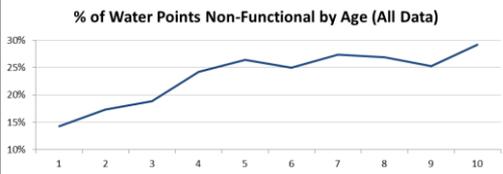
Functionality figures are based on the "#status_id" field. Cases where it was unknown whether water was flowing at the time of the visit were only added to the denominator of the functionality estimate.



METHODOLOGY: FUNCTIONALITY BY AGE

Data was downloaded from the Water Point Data Exchange. All water points with an installation year (#install_year) at least one year greater than the date of the inventory (#report_date) were included. Water points with a functionality of "unknown" were removed from the sample. The percentage of water points of a given age that were functional ("yes" for #status_id) was captured for each age. This information has been plotted below.

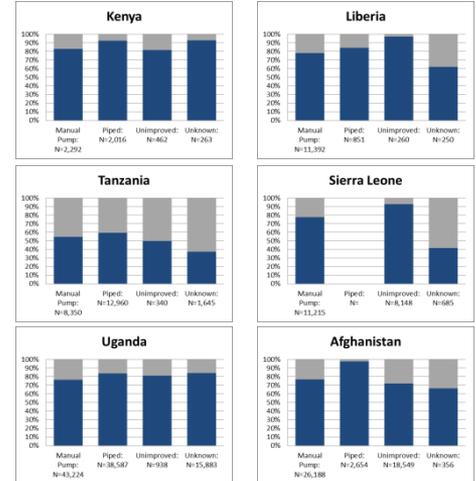
Country*	# of Water Points (2 years old)	% Non-Functional
Sierra Leone	2,778	10
Afghanistan	4,134	17
Liberia	1,160	18
Uganda	8,660	22
Tanzania	1,246	27



*Data for the five countries with the most data on two-year-old water points is included in this table. All applicable data is included in the graph.

METHODOLOGY: FUNCTIONALITY BY TYPE

All water points were hand-coded as one of the water point types below based on the value provided for the "#water_tech" field. The functionality for each type of water point was based on the "#status_id" field. Records with a value of "unknown" for this field were omitted. The six countries with the largest amount of data available were included for this analysis.



Sources

- Baumann, E. (2009). May Day! May Day! Our Handpumps are not working! RWSN Perspective No. 1, RWSN, St Gallen, Switzerland.
- Carver, B. C. and Ross, J. (2016) Beyond 'functionality' of handpump supplied rural water services in developing countries. *Waterlines* DOI: 10.1016/j.watlines.2016.03.008.
- Fisher, M. B., K. F. Shields, T. U. Chan, E. Christenson, R. D. Cronk, H. Leber, D. Samani, P. Aoye, A. Lutz, and J. Bartram (2015). Understanding handpump sustainability: Determinants of rural water source functionality in the Greater Aksum Plains region of Ghana. *Water Resour. Res.*, 51, 8433–8449. doi:10.1002/2014WR016770.
- Foster, J. (2013). Predictors of Sustainability for Community Managed Handpumps in Sub-Saharan Africa: Evidence from Liberia, Sierra Leone, and Uganda. *Environ. Sci. Technol.*, 2013, 47 (21), pp.12037–12046.
- Pearce, J., Greggio E., and Stephane E. (2013a). A Decade of WFPA: RWSN Mapping and Monitoring. RWSN.
- Pearce, J., Greggio E., and Stephane E. (2013b). Failure and the Future: Water Point Mapping and Monitoring Series. RWSN.
- Pearce, J., Greggio E., and Stephane E. (2013c). District Monitoring: Water Point Mapping and Monitoring Series. RWSN.
- Pearce, J., Greggio E., and Stephane E. (2013d). National Monitoring: Water Point Mapping and Monitoring Series. RWSN.
- RWSN (2009). Handpump Data 2009. Selected Countries in Sub-Saharan Africa. RWSN, St Gallen, Switzerland.
- RWSN (2013). Investment in rural water supply delivers results. Briefing notes on key findings from the Joint Monitoring Programme 2013 report relating to rural water supply. RWSN, St Gallen, Switzerland.
- RWSN Exec. Com. (2010). Myths of the Rural Water Supply Sector. RWSN Perspective No. 4, RWSN, St Gallen, Switzerland.
- UN (2015). <https://sustainabledevelopment.un.org/topics>. (accessed 13.04.2016).

