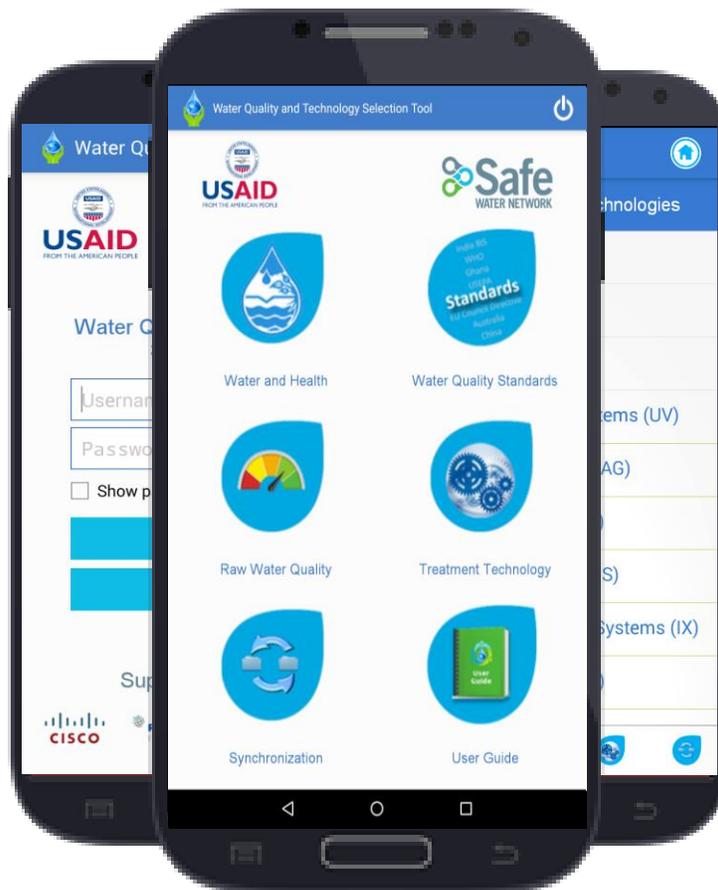


DEPLOYING DIGITAL TECHNOLOGIES TO IMPROVE POTABLE WATER DELIVERY TO THE URBAN POOR



STAKEHOLDER CONSULTATION ON DIGITAL TOOLS February 4, 2016

SUPPORTING PARTNERS

Deploying Digital Technologies to Improve Potable Water Delivery to the Urban Poor

“The profound demographic and economic transformation brought by urbanization are reshaping the world and how it works, demanding a paradigm shift where research, policies, and practice reflect a new urban reality.”¹

In this digital age, city leaders and other officials have more data at their disposal than ever before delivered by “smart” technologies. These offer an unprecedented opportunity to inform urban decision-making and improve city management. Data collection and analytical tools are much needed in rapidly growing cities, particularly low-cost and nimble innovations tailored to local needs and conditions.

The United States Agency for International Development (USAID), as part of its multi-faceted Urban WASH Alliance, partnered with Safe Water Network to (i) examine and describe the potential of urban small water enterprises (USWEs) to provide safe drinking water complementary to piped water to unserved urban populations and (ii) build digital tools for improved application and management of USWEs.²

With urbanization rapidly increasing in India, Prime Minister Mr. Narendra Modi announced in June 2014 his vision to build 100 “smart cities” by 2022. India Smart Cities tap a range of approaches – digital and information technologies, urban planning best practices, public-private partnerships, and policy change – to address their most pressing needs and act on their greatest opportunities.³

City Vizag / Visakhapatnam is one of the 20 smart cities announced on Jan 28th where rapid assessment study was conducted under the USAID-Safe Water Network India WASH Alliance partnership.

The February 2016 Stakeholder Consultation Workshop marks the launch of two of these digital tools: One, Technology Selection Tool, which allows decision makers to recommend treatment technologies based on the quality of the water source. Two, Plant Assessment Tool, which enables authorities to self-assess, monitor and evaluate the performance of USWEs.

Digital Tools Help Optimize Drinking Water Services to the Urban Poor

Digital technologies are quickly introducing new accuracies and efficiencies into the water, sanitation and hygiene (WASH) sector increasing expediency, enabling standardization, and lowering costs. Distances, lack of data and data transmission challenges have historically been an obstacle to sustainability of drinking water supplies, but with digital innovations this obstacle is quickly diminishing. Measurement and monitoring of drinking water services are becoming more reliable. Data-driven decision-making is nearing real time. And, resources are being better targeted as a result of rapid data collection, analysis, and action.

¹ Allison M. Garland, ed. (2014). Innovation in Urban Development: incremental housing, big data, and gender. USAID and the Woodrow Wilson International Center for Scholars, Comparative Urban Studies Project.

² USAID and Safe Water Network (2015). Rapid Assessment Report: city Visakhapatnam.

³ India Smart Cities Challenge (2015). www.smartcitieschallenge.in

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In the WASH sector, digital tools have been adopted on a limited scale to track the performance of projects, crowd-source information from the public, and report operational data from small dispersed water providers. These applications, however, only address marginal concerns of the sector. Large concerns that can be digitally improved include maximizing limited resources, efficiently responding to consumer needs, evaluating and documenting sustainability, and establishing foundational data for implementation, reporting, monitoring, and learning in real time at scale.

The use of digital tools to meet management objectives in low resource settings is a recent development, driven in part by the current emphasis on sustainability monitoring and by the need to collect, process, and present more transparent information for the benefit of the public, funding organizations, and regulatory agencies. Safe Water Network is applying its practice and experience to work with USAID and India's Ministry of Urban Development (MoUD) developing multi-user tools to aid in technology selection and monitoring and evaluation of off-grid small water enterprises across geographies.

There is Market Demand for Small Water Enterprises among the Urban Poor

USWEs are decentralized drinking water delivery operations that make potable water available at the community or neighborhood level. USWEs operate beyond the reach of piped water systems, selling water directly to households and other small-scale users. The ubiquity of USWEs and their frequent use by vulnerable populations suggests that these small-scale operations are valuable contributors to improving availability of reliable, affordable, and safe drinking water working complementary to piped water.

Benefits of USWEs include: no upfront connection fees; demand-driven flexibility to local conditions; and service to large populations without the high costs of centralized infrastructure. They most often complement piped water systems where these are unavailable or inaccessible to vulnerable populations. Disadvantages of USWEs include: higher charges for water per unit of volume compared with often subsidized centralized infrastructure-based water delivery; difficulty in oversight and compliance assurance; operation often outside legal structures due to the absence of legal and regulatory policies for their operation; limited guidance on efficient treatment technologies; and potential for conflict with local water providers.

The inadequate availability of potable drinking water has become an urgent threat to India's physical and economic health. The government has allocated significant resources to address this challenge; however, currently sustainable delivery remains elusive and where everybody uses tap water. The enormity of the crisis requires innovation and collaboration on a massive scale—not only from the government, but also from not-for-profits and the private sector as well. Currently, there are tens of thousands of USWEs across India operated by NGOs, entrepreneurs, and community organizations. Many of these operations have achieved significant success at the local level, exhibiting promise for them to play a role in increasing availability of safe water.⁴ Market penetration is low overall compared with demand, indicating that the market is in an initial stage and there is

⁴ Safe Water Network (2014). Community Safe Water Solutions: India sector review. Available at www.safewaternetwork.org/Insights-engagements

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significant potential for growth. This presents a unique opportunity for the introduction of optimizing tools to help standardize and support their implementation, and facilitate their selection, operations, governance, and assessment.

Digital Tools Can Reduce Costs, Improve Efficiencies, and Promote Sustainability

To operate a financially sustainable USWE, owners work in a significantly constrained, unsubsidized business environment. Water prices are often dictated by government authorities or must be kept low to ensure availability to the poorest and most vulnerable populations. Methods to efficiently engage and keep a customer base are vital. On the other side, provision of reliable, affordable, and safe water has many costs including operator salaries, operation and maintenance, water quality measurement, repairs and savings for long-term capital reinvestment. As a result, USWE's typically operate with very thin margins. The importance of highly efficient treatment technologies and operations is clearly apparent.

Digital tools generate a real-time ability to optimize record keeping, accounting, and operations while reducing costs without compromising quality of data or service. The Technology Selection Tool, to be launched at the Stakeholder Consultation workshop will help users select the right technology and make wise capital investments based on raw water source quality. The Plant Assessment Tool will facilitate documentation and analysis of actual performance against established sustainability indicators and provide guidance to improve operational efficiency by scoring performance. Both tools are intended to bring online digitized information in support of e-Governance.

India's e-Governance Efforts Work Toward Digital India and Urban Transformation

As part of Safe Water Network's collaboration and partnership with USAID's Urban WASH Alliance and the e-Governance initiative, we led efforts to assess the need and use for digital tools for governance, monitoring, and evaluation.⁵ Owing to the varying resources of the municipalities studied and the context specific demands of their citizens, our analyses concluded that it was critical to take cognizance of the different digital tools introduced and used by various municipal bodies. Several positive examples were identified including:

1. *Municipality service websites*: Here citizens can download various kinds of forms, register complaints, and track applications. In certain locations, bill payment has been initiated with links to banks to ensure timely bill payment.
2. *Digitized Document Management*: Efforts are underway to digitize all governmental documents and generate a user-friendly document management system from which citizens can transparently access cloud-based information.
3. *Geographic Information Systems (GIS)*: Digitized mapping is being employed to record details of water management including water supply networks, storm water drains, health care units, and road networks in support of effective planning, development, and maintenance services.
4. *Biometric Access Control*: These digitized systems are used to monitor the millions of human resources involved in water management. Data are used to improve

⁵ Document under preparation.

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convenience of operation, timely and accurate information flow, and use of resources while reducing absenteeism.

Our field investigators found that further systems are planned to cover a variety of municipal services. There is clearly a commitment to developing and expanding the application of digital tools in municipalities across India. Safe Water Network's efforts under the Urban WASH Alliance align with these broader initiatives.

But Challenges Still Exist in the Adoption and Application of Digital Tools for Drinking Water for the Urban Poor

Within India's e-Governance improvements, challenges exist. Issues identified during Safe Water Network's research with authorities, operators, and USWE managers include acceptability of the system, funding requirements, and institutional prioritization of their regular use. It was clear that the process of digitalization cannot be successful without a focused process of sensitization to the importance of e-governance being continually reinforced at both the state and municipality level.

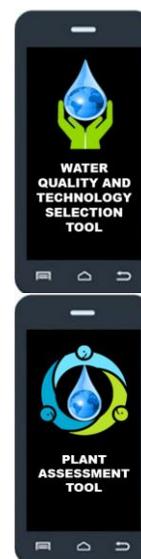
None of the "smart" examples identified in the targeted municipalities specifically addresses the drinking water needs of the poor and marginalized urban slum dwellers, who live *beyond the pipe*. Here is where USAID, the MoUD, and Safe Water Network have stepped with an effort to promote adoption of smart infrastructure and IT-based citizen services with an emphasis on the urban poor.

The 2016 Stakeholder Consultation Workshop Launches Two Digital Tools

The Digital Tools to be launched at Safe Water Network's 2016 Stakeholder Consultation Workshop on February 4th in New Delhi are products of the collaboration between the MoUD and USAID.

The first tool, the Technology Selection Tool for water quality documentation and treatment technology selection, is intended to help direct and optimize investments in treatment technologies used to provide potable drinking water to the urban poor. This tool is designed to be used by entrepreneurs and municipal authorities with responsibility for choosing the most cost-effective treatment technology for measured, local water quality conditions. Currently, reverse osmosis is the most commonly selected treatment technology, but it is often not necessary. Less expensive options may be available to treat source water. Use of this tool will present investors with detailed information on the most locally appropriate treatment technology available and proven effective.

The second tool, the Plant Assessment Tool, for assessing, monitoring and evaluating the performance of USWEs, will assist authorities with fulfilling their roles as regulators of operations and ensuring their operation is equitable and serving the public good. It has pre-defined assessment criteria and guidelines that are open to discussion and revision to help set service-level benchmarks.



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Use of this tool will reduce data errors, eliminate paper records, enhance analytics, streamline data storage and enable new ways of monitoring drinking water service delivery.

Role of Stakeholder Consultation Workshop Participants

Along with this pre-read document, we are sharing the proposed draft *Handbook on Service-level Benchmarks for Small Water Enterprises* and invite your comments on refining and defining this document. Please email your comments to psewak@safewaternetwork.org and schauhan@safewaternetwork.org by February 29th.

We also will be sharing the apk of the Technology Selection Tool and the Plant Assessment Tool after the workshop seeking your comments and suggestions.

About USAID and the Urban WASH Alliance

USAID is the lead U.S. Government agency that works to end extreme global poverty and enable resilient, democratic societies to realize their potential.

Through the Urban WASH Alliance, USAID partners with India's public and private sectors to demonstrate and scale innovative water and sanitation initiatives in India's largest urban centers. USAID also supports an alliance of companies and other key institutions committed to improving health outcomes by catalyzing behavior changes such as hand washing, providing appropriate treatment for children with diarrhea, and/or reducing open defecation. Currently, the Urban WASH Alliance supports five public-private partnerships that are improving water and sanitation services in Bangalore, Ahmedabad, Delhi, Chennai, Kolkata, and Hyderabad.

About Safe Water Network

Safe Water Network develops market-based, community-level solutions that deliver safe, affordable and reliable water to populations in need. We engage the diverse capabilities of our public- and private-sector partners to advance our model for broad replication, and document and share our insights through forums, workshops, and reports. Our operating footprint of over 120 safe water systems, providing safe water access to over 400,000 people in Ghana and India, forms the basis for research and innovation to systematically address the challenges of local sustainability. Safe Water Network was co-founded in 2006 by actor and philanthropist Paul Newman, along with prominent civic and business leaders.

In December 2014, USAID awarded Safe Water Network a two-year fixed obligation grant under IPP to conduct a review of USWEs in four Indian cities, create relevant digital tools and disseminate lessons to the sector. A key goal is to enable Urban Local Bodies, state governments, and development agencies to assess the viability of USWEs so that optimal resources can be applied to the greatest effect in reducing water-borne diseases. Besides, the project holds key leverage support from our donors, PepsiCo Foundation, Cisco, Newman's Own Foundation and Pentair Foundation. In addition, the Underwriters Laboratories has extended its support in international Water Quality Standards compliance in the Technology Selection Tool.