washplus Weekly
Supportive Environments for Healthy Communities

Issue 122 November 8, 2013 | Focus on Self Supply

Self Supply – to develop private family or neighborhood (i.e., small group) water supply systems through personal investment – typically relies on low-cost technologies to extract shallow groundwater, collect rainwater, or treat water with point-of-use water treatment. Self Supply is driven by households' interest in accessing an affordable and convenient water supply, independent of public investment in hardware, often through investing in a series of incremental improvements to services using locally available technologies. Despite being widely reported across various contexts, Self Supply is often not formally recognized as a model for service delivery.

Resources in this issue include an upcoming webinar, links from the Rural Water Supply Network (RWSN), and 2013 WaterAid water technology notes and country reports on rainwater harvesting, rope pumps, and other technologies.

UPCOMING EVENTS

Nov. 14, 2013 – Webinar: Self-Supply as a Water Service. (Link)
This webinar will share IRC work from two African countries: Burkina Faso, where recent monitoring of rural water supplies showed Self Supply made a wider than recognized contribution, and Ethiopia, where IRC is supporting the Ministry of Water and Energy to develop a Self-Supply Acceleration approach, including policy development, capacity development, and piloting activities.

OVERVIEW/REGIONAL STUDIES

RWSN Accelerating Self Supply Group 2012. A Synthesis of the E-Discussions, 2013. A Olschewski, Rural Water Supply Network. (Full text)
This document draws together the very lively discussions on Self Supply held in RWSN's online community on Accelerating Self Supply in November 2012.

WaterAid Technology Briefs, 2013. A series of technical notes on water supply technologies.

- **Hand-Dug Wells** - (Full text)
- **Protection of Spring Sources** – (Full text)
- **Rainwater Harvesting** – (Full text)
- **Rope Pump –** (Full text)

Predictors of Sustainability for Community-Managed Handpumps in Sub-Saharan Africa: Evidence from Liberia, Sierra Leone, and Uganda. *Environ. Sci. Technol., Sept 2013*. T Foster. (Abstract/order info)
Drawing on the largest data set assembled on rural water points in sub-Saharan Africa to date, this paper employs logistic regression analyses to identify operational, technical, institutional, financial, and environmental predictors of functionality for over 25,000 community-managed hand pumps in Liberia, Sierra Leone, and Uganda. Risk factors significantly associated with nonfunctionality across all three countries were system age, distance from district/county capital, and absence of user fee collection.

The Renaissance of an Ancient Technique: Rain Water Harvesting Potentials in the Lower Jordan River Basin, 2013. GLOWA Jordan River Project. (Full text)
This study offers a basin-wide evaluation of the potential of rain water harvesting (RWH) in the Lower Jordan River Basin. Among the findings: urban and rural RWH have the potential to contribute significantly to the decentralization of the water supply in the region, and population growth and increased urbanization of the region open up opportunities for urban RWH.

Self Supply: The Case for Leveraging Greater Household Investment in Water Supply, 2012. S Smits. IRC International Water and Sanitation Center. (Full text)
Self Supply can supplement existing services that are unreliable or inadequate for some uses. And it can upgrade service levels in terms of water quality, quantity, and access. Such improvements may also reduce demand on community services. Public supply systems are often poorly maintained and suffer frequent breakdowns. In contrast, people who invest in their own water supply, choose the technology, and have a vested interest in the service are more likely to develop sustainable systems.

COUNTRY STUDIES

Bangladesh – Self-Supply at Scale: Lessons from Rural Bangladesh. *Rural Water Supply Network Blog, Aug 2013*. J Annis. (Link)
An estimated 70 percent of Bangladesh's 150 million rural inhabitants use groundwater for drinking. Rural Bangladesh has an estimated 10 million shallow and deep tubewells. WaterAid estimates more than 80 percent of these have been installed by households without government subsidy.

Bangladesh – Potential of Rainwater Harvesting in Dhaka City: An Empirical Study. *ASA University Review, Jan–June 2013*. S Yeasmin. (Full text)
The inability of public water facilities to function effectively in Dhaka City has made it impossible for most of the city dwellers to have access to safe water supply. RWH is an economical small-scale technology that has the potential to boost safe water supply with the least disturbance to the environment. Only limited city dwellers have reasonable access to reliable water supply in this megacity. This study explores the potential for harvesting rainwater as an alternative option in Dhaka City and concludes that rainwater can provide a significant supply against its demand.

Bolivia – EMAS Household Water Supply Technologies in Bolivia, 2013. M MacCarthy, Rural Water Supply Network. (Full text)
The purpose of this publication is to provide background on select EMAS (a Bolivian acronym meaning mobile water and sanitation school) household water supply technologies—such as

pumps, manual drilling, and RWH—to a wider sector audience, and to assess and present experiences with these technologies.

Ethiopia – Evaluating Household Water Treatment Performance and Scaling Up Safe-Drinking Water Solutions. National Workshop, February 2013, World Health Organization. (Full text)
A national workshop on evaluating household water treatment performance and scaling-up safe water solutions was held in Ethiopia to further discuss and strategize key issues identified in a draft action plan, including the need to strengthen regulation of water treatment products and scale up the adoption of household water treatment and safe storage in the country.

Ethiopia – Rope Pump Standardisation and the Five C's for Marketing, 2013. P Brussee. (Link)
This web article discusses how Ethiopia is establishing guidelines and standards to guarantee the quality and sustainability of different rope pump models.

Ethiopia – Self-Supply as a Complementary Water Services Delivery Model in Ethiopia. *Water Alternatives, 6(3) 2013*. J Butterworth. (Full text)
The Self Supply approach is widespread in Ethiopia with family wells bringing additional benefits that are in line with wider government objectives, such as supporting small-scale irrigation. However, two recent studies show the current performance of traditional or family wells to be far below potential with most sources providing unsafe water in the absence of adequate protection. Wider formal recognition of Self Supply in policy-making and the development of the government-led Self-Supply Acceleration Program aim to extend access and improve aspects of performance, including water quality.

Ghana – Application of Contingent Valuation Method (CVM) in Determining Demand for Improved Rainwater in Coastal Savanna Region of Ghana, West Africa. *Jnl Econ Sustain Dev, 4(3) 2013*. A Amoah. (Full text)
This study used the CVM as a valuation technique for nonmarketed goods to estimate demand for clean rainwater for domestic use. In addition, the study determined the various factors that can influence respondents' willingness to pay for clean rainwater. The study found that about 93.2 percent of respondents are willing to pay .025 Ghanaian cedi or $US.01 daily for a 34cm container of clean rainwater, and this amount was observed to be influenced by some socio-economic factors.

Madagascar – Unsubsidised Self Supply in Eastern Madagascar. *Water Alternatives, 6(3) 2013*. M. MacCarthy. (Full text)
This study assesses mature and unsubsidized Self-Supply markets in an urban context in Madagascar. Locally manufactured drilling and pumping technologies are widely provided by the local private sector, enabling households to access shallow groundwater. In a context where urban piped water supplies are unlikely to be accessible to all anytime soon, recommendations are made for further research and potential technology developments to improve the performance of Self Supply.

Nigeria – Assessment of Rainwater Harvesting Potential in Ibadan, Nigeria. *Environ. Eng. Res. June 2013*. O Lade. (Full text)

Results of the research performed in Ibadan City indicate that an average roof of 80 m^2 will collect 82,835 liters/year (45 liters/person/day) for a family of five people, which is near the water demand for drinking and cooking purposes. This study clearly shows that Ibadan City

has a good rainwater harvesting potential.

Nigeria – Complementing Water Supply through Rainwater Harvesting in Some Selected Villages of Sahel Savannah Ecological Zone in Borno State Northeastern Nigeria. *Journal of Water Resource and Protection, Feb 2013*. H Tsenbeya Ishaku. (Full text)
One of the greatest environmental challenges that confronts rural communities in Nigeria, especially in Borno state is scarcity of water supply. Rainwater harvesting can reduce overdependence on centralized piped water supply and checkmate climate change. This study in two rural communities determined the water per capita use, examined water sources, and then estimated the amount of rainwater that can be harvested by households in these villages.

Vietnam – Supplementary First Flush Device: Rainwater Harvesting System, 2013. Engineers Without Borders. (Full text)
Drinking water is collected from wells (which contain heavy metals such as arsenic), surface water (often contaminated with chemicals), and rainwater harvested from rooftops, but impurity build up in the storage jars is a problem. A solution has been designed to tackle the issue of impurities that accumulate during RWH. The "first flush" or "foul flush" is the water collected during the first few minutes of a rain event. The initial rainfall cleans the roof of contaminants and debris such as dust, leaves, animal excrement, dead insects, and other particulate matter. A first flush device diverts this first flush, preventing it from entering water storage vessels thereby increasing the quality of the stored water. The proposed solution is an appropriately designed first flush device that takes into consideration the needs and context of the community.

WEBSITES

Rural Water Supply Network – Accelerating Self Supply Theme – (Link)
The objective of this theme is to accelerate Self Supply so that it becomes a mainstream and accepted service delivery model within the government, donor, and implementing agency community as well as among water users in rural areas.

Technology Applicability Framework (TAF) – (Link)
TAF provides a neutral approach for investigation of WASH technological innovation through an objective examination of following criteria: technology performance; market potential and scalability; institutional support; innovation and planning; sustainability of service provision; and potential and process uptake of new technologies.

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acute respiratory infections, the two top killers of children under five years of age globally. For information, visit www.washplus.org or email: contact@washplus.org.