

Issue 95 | April 5, 2013 | Focus on Urban Sanitation

This issue contains information on 2012 and 2013 studies, events, and projects related to urban sanitation and associated health issues. Also included are general overviews about urban sanitation as well as studies and reports on community-led total sanitation (CLTS), fecal sludge management, solid waste, and wastewater reuse in urban areas.

EVENTS

- **March 2013 – Request for Applications: Desk Review Study of Urban WASH Impacts:** Research on the Relationship of Population Density and Neighborhood-Level Sanitation Access to Fecal-Associated Health Impacts. USAID TRAction Project. ([Link](#))
The purpose of this Request for Applications is to fund research involving the secondary analysis of data that will more fully characterize the relative health impact (i.e., diarrheal diseases, soil-transmitted helminth infections, and anthropometric measures in children) of sanitation coverage in areas marked by high population densities compared to those with lower population densities.
- **March 22, 2013 – World Bank Announces Sanitation Hackathon Finalists.** ([Link](#))
The World Bank announced the Top 10 Finalists of the Sanitation Hackathon App Challenge, a competition that is fostering innovative, citizen-designed, and technology-enabled solutions to sanitation challenges in the developing world.

GENERAL/OVERVIEW

- **Getting Communities Engaged in Water and Sanitation Projects: Participatory Design and Consumer Feedback**, 2013. Water and Sanitation for the Urban Poor (WSUP). ([Link](#))
This topic brief looks at community engagement approaches used by WSUP in three cities within the African Cities for the Future program. The specific focus is on ways to encourage community involvement in the design of water supply and sanitation projects, and ways in which service providers can elicit input and feedback from people living in low-income communities.

- **Global Review of Sanitation System Trends and Interactions with Menstrual Management Practices**, 2012. M Kjellén, Stockholm Environment Institute. ([Link](#))

This publication starts with a review of trends in the development of urban sanitation systems and then explores the interaction between menstrual management and sanitation systems, mainly relating to the issue of disposal of used menstrual blood absorption materials. Finally, it proposes a framework of interactions by positioning a range of issues of particular relevance for menstrual management into the different parts of the sanitation system.

- **Pit Latrines and Their Impacts on Groundwater Quality: A Systematic Review**. *Env Health Perspec*, Mar 2013. J Graham, George Washington University. ([Link](#))

This study calculates global pit latrine coverage, reviews empirical studies of the impacts of pit latrines on groundwater quality, evaluates latrine siting standards, and identifies knowledge gaps regarding the potential for and consequences of groundwater contamination by latrines.

- **Sanitation: A Global Estimate of Sewerage Connections without Treatment and the Resulting Impact on MDG Progress**. *Environ Sci Tech*, Jan 2013. R Baum, The Water Institute. ([Abstract](#))

The authors estimate that in 2010, 40 percent of the global population (2.8 billion people) used improved sanitation, as opposed to the estimate of 62 percent (4.3 billion people) from the WHO/UNICEF Joint Monitoring Programme, and that 4.1 billion people lacked access to an improved sanitation facility. Redefining sewerage-without-treatment as “unimproved sanitation” in Millennium Development Goal monitoring would raise the 1990 baseline population using unimproved sanitation from 53 percent to 64 percent and the corresponding 2015 target from 27 percent to 32 percent.

- **Urban Access to Water Supply and Sanitation in Sub-Saharan Africa**, 2012. C Torres, The World Bank. ([Link](#))

The main purpose of this paper is to explain the patterns of access to water supply and sanitation facilities in urban areas in sub-Saharan Africa since the late 1990s and their relation with the performance of service providers in the case of improved water supply. It also seeks to explore the institutional context of the water supply and sanitation sectors.

- **When is Shared Sanitation Improved Sanitation? The Correlation Between Number of Users and Toilet Hygiene**, 2012. I Günther. EAWAG. ([Link](#))

The analysis of 1,500 randomly selected toilets in the urban slums of Kampala, Uganda showed that only 22 percent of households have access to private sanitation facilities; the remaining 78 percent share their toilet with an average of six households. There is a clear and strong correlation between number of users and the condition and

cleanliness of a toilet stance. This policy brief asserts that toilet facilities shared by not more than four households can be considered “acceptable” or improved, with “only” about 25 percent classified as dirty by an objective evaluation.

HEALTH ASPECTS

- **Epidemiologists Working Together with Anthropologists: Lessons from a Study to Evaluate the Epidemiological Impact of a City-Wide Sanitation Program.** *Cad. Saúde Pública, Mar 2013.* C Larrea-Killinger. ([Link](#))

This paper discusses the role of qualitative approaches in epidemiological studies, beginning with a general discussion of epidemiological and anthropological methods. It focuses on a case study of the health impact of an environmental intervention carried out in Salvador, Bahia State, Brazil.

- **How Much International Variation in Child Height Can Sanitation Explain?** 2013. D Spears, The World Bank. ([Link](#))

This paper provides the first documentation of a quantitatively important gradient between child height and sanitation that can statistically explain a large fraction of international height differences. This association between sanitation and human capital is robustly stable, even after accounting for other heterogeneity, such as in GDP.

- **Slum Upgrading Strategies to Improve the Physical Environment and Infrastructure: What Do We Know About the Effects on Health and Socioeconomic Outcomes?** *Cochrane Database of Systematic Reviews Issue 1, 2013.* R Turley. ([Link](#))

The studies conducted up until April 2012 suggest that slum upgrading can reduce diarrhea and water expenses. Other important outcomes have either not been measured, or evaluations of whether these investments make a difference at all have not been conducted rigorously enough to allow firm conclusions to be reached.

COMMUNITY-LED TOTAL SANITATION

- **Community Led Total Sanitation in Small Towns,** 2012. S Ntow. ([Link](#))

The original CLTS process was complemented by innovative social mobilization approaches. They included the use of Health Hygiene Education Through Play and Sports and a special emphasis on gender equality and social inclusion to increase the participation of women, children, and otherwise marginalized segments of the populations.

- **Designing New Tools for Mapping Open Defecation,** 2013. IDEO.org. ([Blog post](#))

In a USAID-funded project, IDEO.org and Water and Sanitation for the Urban Poor are adapting the CLTS approach that has worked effectively in rural environments to an urban setting in Ghana by combining a digital mobile platform with offline community-driven activities.

FECAL SLUDGE MANAGEMENT

- **Business Analysis of Fecal Sludge Management: Emptying and**

Transportation Services in Africa and Asia, 2012. S Chowdhry. [\(Link\)](#)

This study was initiated and funded by the Bill & Melinda Gates Foundation to map the urban sanitation situation and assess business and operating models for fecal sludge management in 30 cities across 10 countries in Africa and Asia, specifically focusing on the extraction and transportation market segments.

- **Faecal Sludge Management in Sub-Saharan Africa: Enhancing the Value Chain**, 2013. SANDEC. [\(Video\)](#)

Research at the Department of Water and Sanitation in Developing Countries at the Swiss Federal Institute of Aquatic Science and Technology is focused on developing solutions for fecal sludge management that provide a financial driver to enhance service at every step in the value chain.

- **Integrated Faecal Sludge Management Scheme for the Cities of Burkina Faso**. *Journal of Water, Sanitation and Hygiene for Development*, 3(2) 2013. M Bassan. [\(Link\)](#)

The project's participatory process has allowed for the design of a treatment plant adapted to local conditions, and the elaboration of the first institutional framework for fecal sludge management including several new official documents. Several technical studies filled knowledge gaps of fecal sludge characterization and the feasibility of implementing planted drying beds. Lessons learned are transferable nationally and internationally.

- **Living Without Sanitary Sewers in Latin America: The Business of Collecting Fecal Sludge in Four Latin American Cities**, 2012. Water and Sanitation Program. [\(Link\)](#)

The present report spotlights the major challenges and the opportunities that lie ahead in fecal sludge management and summarizes the findings from four case studies that describe the current and potential market for sludge removal, collection, and disposal in peri-urban areas.

SOLID WASTE

- **Environmental Audit of a Refuse Dump Site in the Niger Delta Region of Nigeria**. *Journal of Public Health and Epidemiology*, Feb 2013. O Gani, Niger Delta University. [\(Link\)](#)

The overall objective of this study is to perform an external compliance environmental audit of open refuse dumping at the Ugbor dump site by describing the physical and economic characteristics of the study area using a descriptive, cross-sectional comparative study design.

- **Networks of Recyclable Material Waste-Picker's Cooperatives: An Alternative for the Solid Waste Management in the City of Rio de Janeiro**. *Waste*

Management, April 2013. M Tirado-Soto. ([Abstract](#))

The objective of this study is to discuss the role of networks formed of waste-picker cooperatives in ameliorating problems of final disposal of solid waste in the city of Rio de Janeiro, since the city's main landfill will soon have to close because of exhausted capacity. It is estimated that in the city of Rio de Janeiro close to 5,000 waste-pickers work in poor conditions with lack of physical infrastructure and training but contribute significantly by diverting solid waste from landfills.

- **Solid Waste Management in the Slums and Squatter Settlements in the City of Bangalore.** *International Journal of Scientific and Research Publications, Feb 2013.* K Gowda. ([Link](#))

The urban poor are often left to contend with waste disposal on their own. Support given to the urban poor in slums and squatter settlements is seriously deficient, adversely affecting their health and generally the urban environment itself. Thus, the management of solid waste is an issue of vital importance to urban sustainability.

WASTEWATER

- **Guidelines for Water Reuse,** 2012. USAID; EPA. ([Link](#))

This document updates and builds on the EPA's 2004 Guidelines for Water Reuse by incorporating information on water reuse that has been developed since the 2004 document was issued. This document includes updated discussion of regional variations of water reuse in the United States, advances in wastewater treatment technologies relevant to reuse, best practices for involving communities in planning projects, international water reuse practices, and factors that will allow expansion of safe and sustainable water reuse throughout the world.

- **Cities as Sources of Irrigation Water: An Indian Scenario,** 2012. P Amerasinghe, International Water Management Institute. ([Link](#))

Growing Indian cities have the potential to support their peri-urban futures by providing irrigation water for food production.

- **Turning Brown Water into Green Produce: Wastewater Reuse in 22 Nicaraguan Cities,** 2012. B Jiménez, Water and Sanitation Program. ([Link](#))

The objectives of this report are to identify the characteristics of agricultural reuse practices in Nicaragua and begin to understand the perception of reuse among different groups of stakeholders in low-income regions.

WEBSITES

- **Sanergy** – ([Website](#))

The long-term objective of this organization is to build and scale viable sanitation infrastructure in the slums of Nairobi. Sanergy's model involves four parts: building a network of low-cost sanitation centers in slums, distributing them through franchising to local entrepreneurs, collecting the waste produced, and processing it into electricity

and fertilizer.

- **SuSan** - ([Website](#))

The goal of this project is to design and test a low-cost system to rapidly turn human excreta into pathogen-free compost for use as fertilizer for farmers. SuSan Design upgrades human excreta from pathogenic material to safe agricultural fertilizers and soil improvers in 45 days.

Each WASHplus Weekly highlights topics such as Urban WASH, Indoor Air Pollution, Innovation, Household Water Treatment and Storage, Hand Washing, Integration, and more. If you would like to feature your organization's materials in upcoming issues, please send them to Dan Campbell, WASHplus knowledge resources specialist, at dacampbell@fhi360.org.



About WASHplus - WASHplus, a five-year project funded through USAID's Bureau for Global Health, creates supportive environments for healthy households and communities by delivering high-impact interventions in water, sanitation, hygiene (WASH) and indoor air pollution (IAP). WASHplus uses proven, at-scale interventions to reduce diarrheal diseases and 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.

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