



## Issue 153 | July 11, 2014 | Focus on Fecal Sludge Management

This issue focuses on studies, reports, and other materials that have been published so far in 2014 on fecal sludge management (FSM). Included is a just-published and comprehensive guide on planning and organizing the entire fecal sludge management service chain. A WASTE report evaluates FSM methods in emergency situations, and a Water and Sanitation Program report examines FSM in 12 cities.

### EVENTS

**3<sup>rd</sup> International Faecal Sludge Management Conference, Jan 18-22, 2015, Hanoi, Vietnam.** ([3rd Conference Link](#)) | ([2<sup>nd</sup> Conference Presentations](#))

Building on the success of the two previous International FSM Conferences in Durban (2011 and 2012), FSM3 will bring together world-class research and science and donors, cities, utilities, investors, consultants, governments, service providers, and industries with the aim of fostering an effective dialogue on solving the problem of dealing with human waste.

### GUIDES

**Faecal Sludge Management (FSM): Systems Approach for Implementation and Operation**, 2014. L Strande, ed., EAWAG. ([Link](#))

This guide compiles the current state of knowledge of this rapidly evolving field and presents an integrated approach that includes technology, management, and planning. It addresses the planning and organization of the entire FSM service chain, from the collection and transport of sludge and treatment options, to the final end use or disposal of treated sludge.

**Emergency Sanitation: Faecal Sludge Treatment**, 2014. J Spit, WASTE. ([Link](#))

This research aims to expand the knowledge of possible simple fecal sludge treatment technologies that could be rapidly deployed in the event of an emergency and are effective under challenging physical conditions such as unstable soils, high water tables, and flood-prone areas. Three fecal sludge sanitization methods—lactic acid fermentation, urea treatment, and hydrated lime treatment—were investigated by undertaking small scale field trials with pit latrine sludge in Blantyre, Malawi.

**Facilitation Manual: Sanitation Entrepreneur Training**, 2014. Water and Sanitation Program (WSP). ([Link](#))

A WSP team felt there was a growing need for a standard reference for implementing

sanitation entrepreneur training and developed a training program and guide that could be replicated and carried out independently by interested stakeholders.

## WEBINARS

### **Webinars with Sanitation Grantees of the Gates Foundation, 2014.** [\(Link\)](#)

The videos in this playlist show recordings of webinars hosted by the Stockholm Environment Institute and the Sustainable Sanitation Alliance (SuSanA). The aim is to increase exposure to the Bill & Melinda Gates Foundation research grants on topics such as vapor-permeable membranes, the use of black soldier flies to reduce fecal sludge, and converting feces to biochar, among other ideas.

## REPORTS

### **Report on the Financial Viability of Faecal Sludge End-use in Dakar, Kampala and Accra, 2014.** M Bäuerl. [\(Link\)](#)

This report gathers findings from studies conducted in Dakar, Kampala and Accra to examine the technical feasibility of producing dried fecal sludge (FS) with high calorific value and to evaluate demand from end users for alternative sources of energy. Trémolet Consulting contributed to the design of the financial model to assess how much value could be extracted from reselling dried treated FS for industrial use and as an alternative to fertilizers.

### **Financing Sanitation: Resource Recovery from Faecal Sludge in Kampala, 2014.** M Bäuerl. [\(Link\)](#)

The FaME project investigated the financial viability of using dried fecal sludge as an industrial fuel or soil conditioner in agriculture. Objectives included estimating fecal sludge volumes, the market value of fecal sludge treatment products, financial flows in the service chain, and how these need to be distributed to provide financial incentives for stakeholders to improve sanitation services.

### **The Missing Link in Sanitation Service Delivery: A Review of Faecal Sludge Management in 12 Cities, 2014.** WSP. [\(Link\)](#)

A desk study of 12 cities was undertaken as a first step toward analyzing FSM in a variety of cities representing various regions, sizes, types, and levels of service delivery.

### **Peri-Urban Sanitation and Water Service Provision: Challenges and Opportunities for Developing Countries, 2014.** J McConville, SEI. [\(Link\)](#)

There is no standard classification of peri-urban, and the term is applied to a diverse mix of informal and formal settlements, which can contain a wide variety of housing types and range from densely built slums to spacious suburban estates. In general, however, the term refers to the geographical edge of the city, more specifically the urban fringe outside the formal city limits.

## JOURNAL ARTICLES

### **Faecal Sludge Management (FSM): Analytical Tools for Assessing FSM in Cities.** *Jnl Wat San Hyg for Dev*, May 2014. A Peal. [\(Abstract\)](#)

This paper describes the results of a research study that aims in part to develop a method for rapidly assessing FSM in low- and middle-income cities. The method uses innovative tools to assess both the institutional context and the outcome in terms of the amount of fecal sludge

safely managed. This paper considers previous work done on FSM, suggests reasons why it is often neglected in favor of sewerage, and highlights the importance of supporting the increasing focus on solving the FSM challenge.

**Shear Rheological Properties of Fresh Human Faeces with Different Moisture Content.** *Water SA*, Apr 2014. S Woolley. ([Link](#))

Dry sanitation requires the handling of feces, which vary in age and degree of transformation. Rheological data are necessary to support the design of equipment to handle faeces. The rheological properties of fresh human feces were measured using a variable-speed rotational rheometer.

**Emptying, Transportation and Disposal of Faecal Sludge in Informal Settlements of Kampala Uganda: The Economics of Sanitation.** *Habitat Intl*, May 2014. C Murung. ([Abstract](#))

Emptying, transportation, and disposal of fecal sludge in informal settlements of Kampala, Uganda, are still a big challenge. With the use of semi-structured interviews, observation, and review of secondary data, this study identifies actors and factors determining emptying costs and the constraints limiting improved service provision.

**A Value Proposition: Resource Recovery from Faecal Sludge: Can It Be the Driver for Improved Sanitation?** *Resources, Conservation and Recycling*, July 2014. S Dienera. ([Abstract](#))

Evidence is presented regarding financial incentives for resource recovery from fecal sludge. Possibilities include fuel, protein, building materials, and soil conditioner. Soil amendments potentially do not generate as much revenue as energy production. Local solutions need to be determined, as demand varies significantly among locations.

**Measurement of Faecal Sludge In-Situ Shear Strength and Density.** *Water SA*, Jan 2014. J Radford. ([Link](#))

This study developed the portable penetrometer, a device to physically characterize pit latrine sludge through in-situ measurement of its shear strength. The machine produces continuous profiles of shear strength with depth and is capable of testing to approximately 2.5 m below the slab. The portable penetrometer was manufactured and tested in the UK, before profiling approximately 30 pits in Kampala, Uganda.

**Potential of Locally Available Products for Use as Binders in Producing Faecal Compost Pellets in Ghana.** *Environmental Progress & Sustainable Energy*, July 2014. J Nikiema. ([Abstract](#))

Market studies in Ghana have revealed a potential for composted or co-composted fecal matter as nutrient source inputs for agricultural production. To increase the marketability of such products, high nutrient value and easier handling/transport options are considered significant factors that can drive demand. Pelletization is also seen as a potentially interesting option.

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WASHplus Weeklies will highlight 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](mailto:dacampbell@fhi360.org).



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**About WASHplus** - WASHplus, a five-year project funded through USAID's Bureau for Global Health, supports healthy households and communities by creating and delivering interventions that lead to improvements in access, practice and health outcomes related to water, sanitation, hygiene (WASH) and indoor air pollution (IAP). WASHplus uses at-scale, targeted as well as integrated approaches 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](http://www.washplus.org) or email: [contact@washplus.org](mailto:contact@washplus.org).