First Research

In an occasional feature, Waterlines *presents the findings of new researchers in the form of brief abstracts.*

Practical approaches to minimize drinking water contamination risks: a case study from Faridpur, Bangladesh

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Drinking feacally contaminated water is of significant public health concern in many developing countries, where drinking water is manually collected, transported and stored. This paper sets out to explore risk factors affecting recontamination of household drinking water in urban slums in a town of Faridpur, Bangladesh. Comparative study, between infrastructure intervention by Practical Action Bangladesh and non-intervention settlements, was conducted through water quality testing, household survey, focus group discussion, and sanitary inspection. Except for a few samples, considerable water quality deterioration occurred when source water was poured into a transport vessel, followed by a cup. In addition, 13/16 (81%) households were found to have increased faecal coliform levels after 12 hours of water storage. No major differences were found between the study groups. Nevertheless, the observational study points out that individual good hygiene practice and water management greatly contribute to maintaining safe drinking water at home.

The value chain analysis of informal sector recycling in Delhi, India

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The informal sector of waste recycling is an active component of solid waste management in developing countries. Recycling rates of 20-40% are often achieved by informal recyclers and micro-enterprises, who are working outside of the formal municipal system, and without any contribution from the local authorities and government. When cities try to develop 'modern' SWM systems similar to that in developed countries with a Western recycling model, the informal sector tends to be squeezed out. The objective of this thesis is to analyze the value chains in the informal recycling sector in Delhi, India with the aim of developing a more systematic and analytical approach to recycling and waste management, whilst protecting

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and building the livelihoods of poor waste pickers. This research is unique in the sense that unlike many applications of the value chain in the rural sector and agriculture, the analysis of this project is urban and on the waste sector.

Is there a role for technical support in the Community-Led Total Sanitation approach?

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Community-Led Total Sanitation is an approach innovated nearly ten years ago, moving away from top-down subsidy provision and aiming for awareness creation, behaviour change and therefore demand for toilets that will be used by communities. Do these communities need technical support in order to build hygienic, sustainable latrines? The study showed that latrines innovated and built by communities do not always satisfy the criteria of improved sanitation. Technical support is essential after demand creation. People must be made aware of the principles of a hygienic latrine and must be helped to build them. Especially in areas with extreme climatic phenomena and technical challenges, long-term support is desirable. Encouragement of local entrepreneurs, latrine components, supply-chain development and training of masons is important.

A decision-making framework for sludge management in developing countries

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On-site facilities such as pit latrines and septic tanks are the most common forms of sanitation in slums and unplanned settlements. Often, little consideration is given to how to deal with pits or tanks once they fill up. The Vacutug, MAPET and Gulper are some of the technologies designed to overcome the constraints of pit emptying, but each has limitations which restrict their applicability in certain circumstances. Cost and maintenance requirements add to the challenge of finding a low-cost, sustainable solution in developing countries.

Based on the research, a decision-making framework was designed to assist sanitation managers/practitioners in low-income countries in selecting appropriate pit emptying methods based on the local situation. This process highlighted the need for further research into pit emptying practices. In particular, sustainable solutions that will effectively empty pits in slums and unplanned settlements and understanding the characteristics of pit sludge are suggested priorities for further research.