



Supportive Environments for Healthy Communities

## Issue 24 September 9, 2011 | Focus on Reuse in Sanitation

This *WASHplus Weekly* contains 2010 and 2011 resources on the productive reuse of human waste, which is emerging as a key challenge in the WASH sector. Resource recovery can contribute to cost recovery in the sanitation service chain while addressing water shortages and increasing fertilizer prices. But reuse also has the potential to be detrimental to natural and human environments: soil structure can become degraded, aquifers may be polluted, and human health may be threatened. Please note, there will be no issue next week, as *WASHplus Weekly* will be on vacation.

### REPORTS/PRESENTATIONS

- **Improving Wastewater Use in Agriculture: An Emerging Priority**, 2010. S. Scheierling, World Bank. ([Full-text](#))

This paper aims to highlight the growing importance of improving wastewater use in agriculture across the spectrum from lower to high-income countries. It presents an innovative approach linking key issues to different aspects of wastewater irrigation to a country's level of economic development. It differentiates between four country income levels to create a typology for analyzing current issues, trends, and priorities for improving agricultural wastewater use with a focus on reducing the risks to public health.

- **The Potential of Small-Scale Biogas Digesters to Alleviate Poverty and Improve Long Term Sustainability of Ecosystem Services in Sub-Saharan Africa (SSA)**, 2011. DFID. ([Full-text](#))

This report states that the possible benefits and risks associated with implementation of biogas digesters require further analysis if their full potential to alleviate poverty in SSA is to be realized. The work in this project has reviewed the potential sources of information and developed an analysis of potential costs and benefits of biogas digesters using information from the literature. Reviews of different factors influencing successful implementation of biogas digesters in SSA were presented at a four-day workshop held at Makerere University, Kampala, Uganda.

- **Recovering Nutrients, Water and Energy from Waste: A Business**

**Perspective.** D. Molden, International Water Management Institute, a presentation at World Water Week 2011. ([Full-text](#))

This presentation calls for a paradigm shift in waste management from treatment for disposal to treatment for reuse based on research on reuse business models at different scales. Cultural concerns have to be addressed through research on context specific health risk, which could undermine efforts to move reuse from its informality to formal recognition.

- **Reduce, Reuse and Recycle (the 3Rs) and Resource Efficiency as the basis for Sustainable Waste Management**, 2011. A presentation by C. Mohanty, UN Centre for Regional Development (UNCRD). ([Full-text](#))

The 3Rs offer environmentally friendly alternatives to deal with the growing generation of wastes and its related impact on human health, economy and natural ecosystem.

- **Wastewater Irrigation and Health: Assessing and Mitigating Risk in Low-Income Countries**, 2010. International Water Management Institute (IWMI). ([Full-text](#))

This book is written for practitioners, researchers and graduate students in environmental and public health, sanitary and agricultural engineering, and wastewater irrigation management in developing countries. The book adds new data on the cost-effectiveness of treatment and post treatment measures for health-risk reduction, discusses ways to facilitate behavior change towards safer practices and adds new dimensions to reuse-oriented governance of wastewater.

## JOURNAL ARTICLES

- **Agro-Economic Studies on Wastewater Reuse in Developing Marginal Areas in West Delta, Egypt**, *International Journal of Water Resources and Arid Environments*, 1(2) 2011. M. Ezzat, ([Full-text](#))

The objective of the study was to find alternative and additional water resources to develop marginal desert lands of the West Delta of Egypt and to allow safe and economically responsible reuse of treated wastewater from the city of Alexandria through agriculture. In conclusion, the study showed that treated wastewater re-use can significantly contribute to national development schemes.

- **Reuse of Wastewater in Urban Farming and Urban Planning: Implications in Katsina Metropolis, Nigeria**, *African Journal of Environmental Science and Technology*, January 2010. M. Ruma, Umaru Musa Yar'adua University. ([Full-text](#))

The purpose of this paper is to examine the status of wastewater reuse in urban farming in Katsina, an important urban area in the semi-arid region of Nigeria. It was found that the reuse of wastewater in urban farming is a common practice and an important source of income for many households. Despite its practice and importance, no urban planning process has officially recognized and given attention to this important activity in the town. Appropriate recommendation on how to promote the

activity and get it integrated into planning processes in the area are given.

- **Sustainable and Innovative Solutions for Sewage Sludge Management**, *Water* 2011. L. Spinosa. ([Full-text](#))

Sludge produced by municipal wastewater treatment plants amounts to only a few percent by volume of the processed wastewater, but its handling accounts for up to 50% of total operating costs. Moreover, the need to achieve a sustainable sludge management strategy has become of great concern. It follows that as conventional and more traditional options, such as land spreading for agricultural purposes, are progressively restricted, and often legally banned, the development of innovative systems to maximize the recovery of useful materials and/or energy is required.

## WEBSITES

- **Imagine H2O – Discover the Wastewater Opportunity**, ([Link to website](#))  
The 2011 Wastewater Prize is open to innovations related to reuse, treatment, resource recovery, energy production, smart management, and other methods to generate revenue from wastewater opportunities. The prize will feature a purse consisting of \$200,000 in cash and in-kind services to be distributed amongst the top companies. The prize is open to entries from September 1 to November 15, 2011.
- **SANDEC – Nutrient Valorization from Urine in Nepal**, ([Link to website](#))  
The STUN project, in cooperation with UN-HABITAT Nepal, examines various possibilities to recover nutrients from source-separated urine. By producing fertilizer from urine, the project hopes to promote improved sanitation, local food security, and nutrient independence, as Nepal must import all of its fertilizer at prices that are not always affordable for subsistence farmers.
- **WHO - Safe Use of Wastewater, Excreta and Greywater**, ([Link to website](#))  
This website contains WHO guidelines, policy reports and information kits on wastewater reuse.

Each *WASHplus Weekly* highlights topics such as Urban WASH, Indoor Air Quality, Innovation, Household Water Treatment and Storage, Handwashing, 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).



**About WASHplus** - WASHplus, a five-year project funded through USAID's Bureau for Global Health, creates supportive environments for healthy households and communities by

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delivering high-impact interventions in water, sanitation, hygiene (WASH) and indoor air quality (IAQ). 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](http://www.washplus.org) or send an email to: [contact@washplus.org](mailto:contact@washplus.org).

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