



Supportive Environments for Healthy Communities

Issue 43 February 17, 2012 | **A Focus on Ecological Sanitation**

This *WASHplus Weekly* contains recent studies, guidelines, and videos on ecological sanitation. Ecological sanitation, or Ecosan, is not a specific technology but an approach to sanitation that regards sanitized human excreta and grey water as a resource. Some of the resources in this issue include a handbook on latrine construction from WaterAid, case studies from Bangladesh, Haiti, Rwanda, and Uganda, and a presentation on ecological sanitation as a business in Malawi.

REPORTS/ARTICLES

- **Alternative Solutions for Challenging Environments: A Look at UNICEF-assisted Ecosan Projects Worldwide**, 2011. B Abraham, UNICEF. ([Full-text](#))
This paper summarizes information from 20 UNICEF-assisted ecological sanitation projects in 12 countries. The projects varied widely in size from 95 users for a project with household urine diversion dehydration toilets in Bangladesh up to 23,000 users under emergency conditions in Zimbabwe.
- **Can We Sell EcoSan Compost in Haiti? A Market Analysis Report**, 2011. Sustainable Organic Integrated Livelihoods (SOIL). ([Full-text](#))
With the support of Oxfam Great Britain, SOIL conducted a market assessment of compost and fertilizer sales in Haiti with a specific focus on identifying possible markets for the sale of compost generated by Ecosan projects.
- **Construction of Ecological Sanitation Latrine: Technical Handbook**, 2011. WaterAid Nepal. ([Full-text](#))
This handbook is the outcome of ecological sanitation latrine promotion projects carried out by WaterAid's partners in Nepal. This document sets out the principles for adopting an ecological sanitation approach and provides guidance on the construction and operation of ecological sanitation latrines.
- **Ecological Sanitation in Uganda: Inspirational Success Stories from the Field**, 2011. Network for Water and Sanitation-Uganda. ([Full-text](#))

WASH stakeholders share their stories of Ecosan systems use. Some of the themes discussed in these stories include: the use of Ecosan toilets and adoptability in both urban and rural areas; operation and maintenance of Ecosan systems; and the history of the Ecosan concept in Uganda.

- **Eco-san Toilet for Sustainable Sanitation Practice in Bangladesh**, *International Journal of Civil & Environmental Engineering*, Oct 2011. P Biplob, University of Engineering and Technology, Rajshahi, Bangladesh. ([Full-text](#))

Ecosan toilets can safely transform human urine and feces into highly potent organic fertilizers for eco-friendly agriculture that produces nutrient-rich food crops. The existing conventional latrine options do not have systems to treat and reuse waste productively, instead waste is deposited in water bodies and open places, causing severe environmental pollution and contamination of water resources.
- **Effectiveness of Eco-Toilets' Management in Public Places, Case of Kigali City**, *East Africa Practitioners Workshop on Pro Poor Urban Sanitation and Hygiene*, 2011. E Dusingizumuremyi, Ministry of Infrastructure, Rwanda. ([Full-text](#))

This paper discusses eco-toilets, which provide a source of fertilizers for agriculture and gardens in Kigali and surrounding areas. An eco-toilet initiative, started as a pilot project, has been implemented in collaboration with the Kigali City council.
- **Experiences in Ecological Sanitation as a Business in Malawi**, presentation at AFRICASAN Conference, Rwanda, July 2011. K Harawa. ([Full-text](#))

Results from this project demonstrated that: communities are able to access sanitation services from the private sector without external support; households hygienically use their sanitation facilities and maintain them; and Ecosan was accepted into the national sanitation policy.
- **Improving the Robustness of Financial and Economic Analysis of Sanitation Systems**, 2011. J Parkinson, International Water Association. ([Full-text](#))

This paper discusses current approaches toward the assessment of costs and benefits associated with sanitation improvements. Excreta reuse is identified as a specific area in need of further development. Using results from a study that compares urine diversion dehydration toilets with conventional sanitation technologies in sub-Saharan Africa, the authors highlight challenges related to financial and economic modeling of sanitation systems.
- **Microbial Exposure and Health Assessments in Sanitation Technologies and Systems**, 2011. T Stenström, Stockholm Environment Institute. ([Full-text](#))

This book focuses on the health factors related to pathogenic organisms. It attempts to assess and review evidence in relation to health impact and to discuss the findings based on epidemiological evidence, risk assessment, and behavioral aspects and practices.

- **The Potential of a Low Cost Technology for The Greywater Treatment**, *The Open Environmental Engineering Journal*, (4) 2011. F Kariuki, Kenyatta University. ([Full-text](#))

This study investigated the potential of a low-cost grey water treatment (GWT) system for safe grey water reuse by households. The study concludes that the GWT system can be a sustainable and promising low-cost, low-technology treatment system that can be run and maintained by unskilled operators.

- **Promoting Ecological Sanitation in Ethiopia through the ArborLoo Latrine**, 2012. Catholic Relief Services. ([Full-text](#))

The ArborLoo is successful in Ethiopia because: its design addresses past obstacles to sanitation; its construction is simplified, reducing financial outlay and construction costs; it emphasizes marketing and participatory efforts; and it increases the output of additional organic fertilizers.

- **Sanitation Solutions for Flooded Zones – The WAND Foundation Experience**, 2011. E Sayre, Water, Agroforestry, Nutrition and Development Foundation (WAND) Inc. ([Full-text](#))

This publication discusses WAND's experience in promoting ecological sanitation in flooded zones where pour-flush toilets are no longer effective and where people defecate in the open. In this project, promoting a decentralized sanitation system that is cheap, robust, appropriate, and scalable is possible.

- **Simple Urine-diverting Dry Toilets (UDDTs) Built with Recycled or Readily Available Materials**, 2011. C Canaday, Omaere Ethnobotanical Park. ([Full-text](#))

The goal of this paper is to show that conversion to using UDDTs can be more a matter of shifting paradigms than capital investment. People can learn the concept and apply it on their own, with materials that they already have access to.

- **SOIL Guide to EcoSan**, 2011. Sustainable Organic Integrated Livelihoods. ([Full-text](#))

This document describes SOIL's five years of ecological sanitation experience in Haiti. It covers topics such as toilet designs, management strategies, composting techniques, and lessons learned. The SOIL Guide is available in English and Haitian Creole with the Spanish language version coming soon.

- **Urine as Liquid Fertilizer in Agricultural Production in the Philippines: A Practical Field Guide**, 2011. R Gensch, Xavier University. ([Full-text](#))

The guidebook shows that urine, if harnessed properly and adequately, can equal the productive benefits derived from inorganic fertilizer.

- **Worldwide List of 324 Documented Ecosan Projects by Various Organisations**, 2012. Gesellschaft für internationale Zusammenarbeit (GIZ) GmbH,

Eschborn, Germany. ([Full-text](#))

The GIZ team regularly updates this list of Ecosan projects worldwide. The purpose of having this project list is simply to have a rough overview of what is going on with Ecosan projects around the world.

VIDEOS

- **Ecosan Animation**, 2010. WaterAid. ([Video](#)) 50 sec
A short animation, explaining how the Ecosan toilet works.
- **Ecosan Perspectives**, 2010. India Water Portal. ([Video](#)) 12 min
Shot at the University of Agricultural Sciences (Gandhi Krishi Vignana Kendra) Bangalore, this film captures the opinions of diverse people on the concept of Ecosan and the use of urine as fertilizer.
- **Ecological Sanitation – Sri Lanka**, 2011. Practical Action. ([Video](#)) 37 min
This video presents details of the eco-friendly toilet—where it is most suited, its cost, design, etc. It also provides technical advice on how to construct an Ecosan toilet.
- **Floating Ecosan Toilet, Tonle Sap Lake, Cambodia**, 2011. Engineers Without Borders. ([Video](#)) 4 min
A video diary from Robert Hughes who is currently working with the floating communities of Cambodia as a field water and sanitation engineer for Engineers Without Borders Australia and Live & Learn Environmental Education Cambodia.
- **Human Excreta Index: An Ecosan Project in Bangalore, India**, 2011. WASTE. ([Video](#)) 4 min
A video of a public Ecosan toilet in a slum community.
- **The Human Excreta Index: Ecosan Project in the North of Lima, Peru**, 2011. WASTE. ([Video](#)) 8 min
In a Lima resettlement area urine diversion toilets have been installed and grey water and urine are being used to grow alfalfa as fodder for rabbits.

Please let WASHplus know if you have resources to share or if you have suggestions for future Weekly topics.

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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