

Empowering Rural Communities Through Science

Dr. Robinah Kulabako

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Doctorate Studies: 200... – 2010, Royal Institute of Technology & Makerere University,

Title of Doctorate research: ‘Environmental Sanitation Situation and Solute Transport in Variably Saturated soil in Peri-urban Kampala’

Dr. Kulabako is a Lecturer in Civil and Environmental Engineering, CEDAT Makerere University. Her PhD studies looked at shallow groundwater in the peri-urban areas (slums) in relation to how pollutants move from the surface into the unsaturated and saturated zones with varying levels of saturation. The major finding of her work is that excreta-disposal systems, solid waste and greywater are major contributors to the widespread shallow groundwater contamination in the low lying peri-urban settlements. The water table in these areas responds rapidly to rains due to the pervious and shallow unsaturated zone which consists of foreign material. The anthropogenically influenced unsaturated zone has a limited contaminant attenuation capacity resulting in water quality deterioration following rains. The key recommendation from her study is that intervention measures to improve the environmental sanitation and protect the shallow groundwater in the peri-urban settlements are of a multidisciplinary nature necessitating action research with community participation.

From her PhD studies, Dr. Kulabako scooped a spin-off project looking



at sanitation in Bwaise III Parish. This project, code named integrated approaches and strategies to address the Sanitation Crisis in Unsewered Slum Areas in African mega-cities (SCUSA), looks at identification and implementation of low cost integrated sanitation solutions to provide excreta and greywater management in a typical slum area, effect of slums and of environmentally sustainable sanitation in slums on groundwater and surface water quality and quantity and boundary conditions for successful implementation of sustainable sanitation solutions in the study slum and to use the lessons learned in other slum areas in Kampala. The identified greywater management technology from the SCUSA project is currently being piloted in Kasubi, another slum in Kampala under a spin off project from the SCUSA project specifically looking at greywater management in slums in sub-saharan Africa (SCUSA-Grey).



Dr. Kulabako has also trained communities in the districts of Wakiso (Kakiri), Kampala (Kasubi) and Kitgum on solid waste and greywater management and re-use. As a result of this training, these communities under CSOs have since adopted some of the waste re-use practices such as charcoal briquette, tiles from plastic waste, bags and mats from straws, tower gardening using greywater.



Back at the College, she was instrumental in initiating a new academic Graduate course 'Introduction to Environmental Modeling' in 2011/12. "Under SIDA SAREC, we procured a lot of equipment which largely made it possible for me to lobby for a new Environmental Engineering laboratory, which was granted. Most of this equipment is housed in this laboratory and is resourceful to graduate students from the college and other institutions and, also staff," she



says.

Supervision

- Five PhD students whose research is in the area of sanitation, bio-gas production, decomposition of faecal material and hydrological research.
- Six MSc students in the area of industrial effluent management, re-use of faecal sludge and low cost water treatment, Hazard Management.

Membership to Professional Organisations

- Corporate Member (in process): Uganda Institute of Professional Engineers
- Member: International Association of Hydrogeologists

Outreach services

Dr. Kulabako through consultancy services for various clients among which is NWSC, UBL, PLAN International, UNICEF/UFCU, ILRI has undertaken projects involving water quality assessments with a view of identifying treatment options, identification of incentives and disincentives affecting adoption of new technologies and innovations for effluents management in Uganda and sanitation improvement for fishing villages among others.

