



Tropentag, October 11-13, 2006, Bonn

“Prosperity and Poverty in a Globalised World—
Challenges for Agricultural Research”

Wastewater Management and Ecological Sanitation at Can Tho University, Mekong Delta, Vietnam

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Abstract

With up to 1000 inhabitants per square kilometre (average 226 p.p.km²), the Mekong Delta is one of the most densely populated areas in Vietnam and in the world. Hygienic non-safe reuse of human excreta from latrines directly above fish-ponds is well known in the south of Vietnam, but forbidden by the government. In urban areas wastewater from toilet flushing is collected separately on household level and treated anaerobic in septic tanks, but neither using the biogas nor the nutrients in the effluent. Due to the fact, that about 80 % of the nutrients in domestic wastewater is from human excrements, this project focus on the reuse of urine and faeces. To collect and treat the excrements, different technologies are tested. One existing dormitory (100 male students) and one part of a new dormitory (80 male students) were equipped with source separation for wastewater disposal. The domestic wastewater is drained in four pipes: brown water (diluted faeces) from separation toilets, yellow water (diluted urine) from separation toilets, yellow water from dry urinals and grey water from hand washing, laundry (by hand) and showering. The brown water fraction will be treated by anaerobic reactor to gain biogas and the solids by vermicomposting before using it in agriculture. Experiments with urine will be conducted on drying, precipitation and stripping to ensure hygienic safe use in agriculture later. Greywater will be treated by aerated membrane to gain experiences on this technology for the reuse of water.

First results will be presented on experiences with collection, composition and treatment of separated wastewater sources as well as on acceptance by the users. Based on this, recommendations will be given on implementation and design of systems for ecological sanitation in the Mekong Delta.

Keywords: Construction, ecological sanitation, greywater, urine, vermicomposting