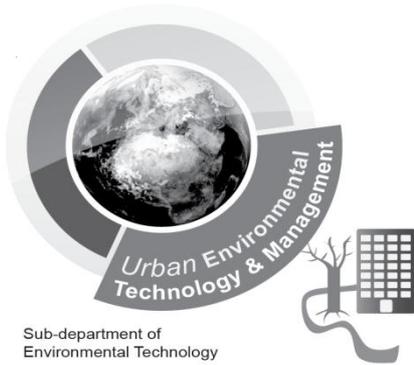


Planning and Managing Transitions to New Sanitation Systems



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Motivation

Traditionally sewerage service provision relies on large scale centralized treatment technologies. Recently new sanitation, or decentralized approaches, to sewerage services emerged as a solution to the problems inherited from the past (Figure 1). New sanitation has a many advantages related to:

- **Economics** (reduced pumping costs and cost reduction through resource recovery)
- Sustainable resource use (recovery of N, P and energy from wastewater)
- System resilience (decentralized systems are less vulnerable to disturbance and can grow incrementally)

Despite the benefits of new sanitation systems progress towards the adoption and implementation of these systems is slow. The 'lock in' of wastewater service providers into existing investment has been identified as one of the key barriers to adoption of innovative wastewater solution. Other key barriers include the uncertain and prohibitive regulatory frameworks for decentralized systems and the organizational challenges for utilities managing multiple dispersed assets.

In addition to these barriers, it is also questionable whether a transition to new sanitation is indeed desirable and cost effective in all circumstances and what technologies are best suited in different circumstance.

Aims and Objectives

As it appears unlikely that new sanitation approaches will become a major feature of the wastewater system in the short term, a strategy to manage and plan for a goal oriented transition is necessary.

This research aims to develop guiding framework for planning and managing transitions to new sanitation systems. Furthermore, the study has the ambition to make best use existing urban infrastructure and to identify windows of opportunity for transitions with minimal disruption. The research questions are:

- *How can existing infrastructure be used for New Sanitation?*
- *What are the variables (e.g. infrastructure, urban form) that affect implementation of new sanitation?*
- *Which combination of variables is necessary to enable a transition?*

It is anticipated that MSc students will only investigate one of these question (or a part there of).

Methods

In these projects students may use the following methods and theories:

- Transition theory
- Review of new sanitation options
- Analysis of urban form in relation to new sanitation options
- Good skills in conceptual design of sanitation and urban systems
- Expert interviewing and interview analysis
- Conceptual and quantitative models

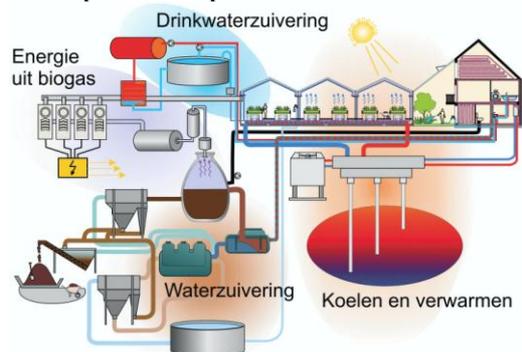


Figure 1: Zonneterp concept



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