

Proposition for literature used in WCM course: Related to SI and Multi Criteria Analysis

1. Michiel A. Rijsberman, Frans H. M. van de Ven, 2000. *Different approaches to assessment of design and management of sustainable urban water systems*

→ Conceptualisation of sustainable development related to urban water management

- Different approaches of different stakeholders to sustainability of urban water systems
- Requirements of the decision-making or planning process

2. Annelies J. Balkema, Heinz A. Preisig, Ralf Otterpohl and Fred J. D. Lambert, 2002. *Indicators for the sustainability assessment of wastewater treatment systems (8 pages)*

- Reasons to take concept of sustainability as measure for evaluation water chain.
- Explanation of multiple dimensions of sustainability: economical, environmental and social-cultural dimension.
- Technology is interacting with different dimensions of sustainability
- Evaluation of different methods to measure sustainability
- Stepwise work-out of sustainability assessment method that uses indicators (economical, environmental, social-cultural and functional indicators)
 - Proposition for indicators and criteria per aspect

3. Daniel Hellstrom, Ulf Jeppsson and Erik Karrman, 2000. *A framework for systems analysis of sustainable urban water management (6 pages + 3 pages tables)*

- Presentation of a framework for systems analysis of urban water management
- Proposed work procedure to execute systems analysis
 - ‘System structure represents the available systems for drinking water, storm water and wastewater production/transportation/treatment, resources required and products produced in these processes
 - Split up urban water system in modular building blocks
 - Different scenarios of development
- Suggestion of a set of sustainability indicators, criteria and measurable parameters

4. Marcos von Sperling, 1996. *Comparison among the most frequently used systems for wastewater treatment in developing countries*

- Article from existing reading materials WCM course
- Example of ways to compare WW treatment systems and evaluate for developing countries using multiple criteria

5. Lucas Seghezzo, ???. *Sustainability of anaerobic sewage treatment*

Article is not available online but there is a hardcopy in the *Water use in urban and rural areas* reader

6. Claudia Pahl-Wostl, 2005. *Information, public empowerment and the management of urban watersheds*

Serves as introduction to SI assignment

- Involve citizens in decision making processes regarding urban water management
- Control paradigm versus self-organization paradigm
- Stakeholder participation and consequences for urban water management
 - Supply versus demand management
 - Decentralization (at Household level)
 - Case: Urine separation at household level

Optional:

7. J. H. J. M. van der Graaf, H. A. Meester-Broertjes, W. A. Bruggeman and E. J. Vles, 1997. *Sustainable technological development for urban-water cycles (8 pages)*

- Unsustainability factors; Sustainability inducing ideas to reduce unsustainability.
- Ideas often induce only one or two unsustainability factors and different factors may enhance or exclude each other
- Four different development scenarios are evaluated on reduction of unsustainability. Scenarios are good examples of possible improvements for urban-water cycles. Scenarios are compared to ideas that are present
- *Comment:* Article is technically focussed, interaction with rural area is not taken into account

8. P. A. Malmqvist and H. Palmqvist, 2005. *Decision support tools for urban water and wastewater systems – focussing on hazardous flows assessment (9 pages)*

Link with article 2 (Hellström *et al.*, 2000).

- Conceptual work-out of a multi-criteria based concept, serving as decision support in developing urban water systems in a sustainable way
- Case hazardous substances in urban wastewater systems