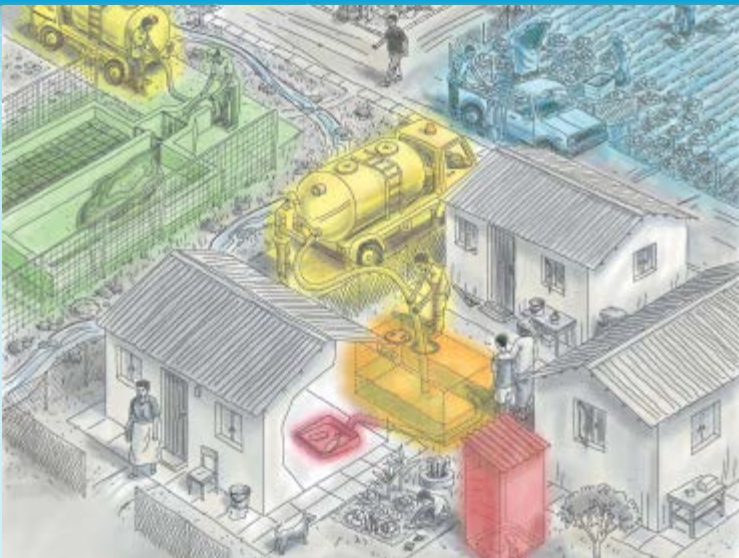


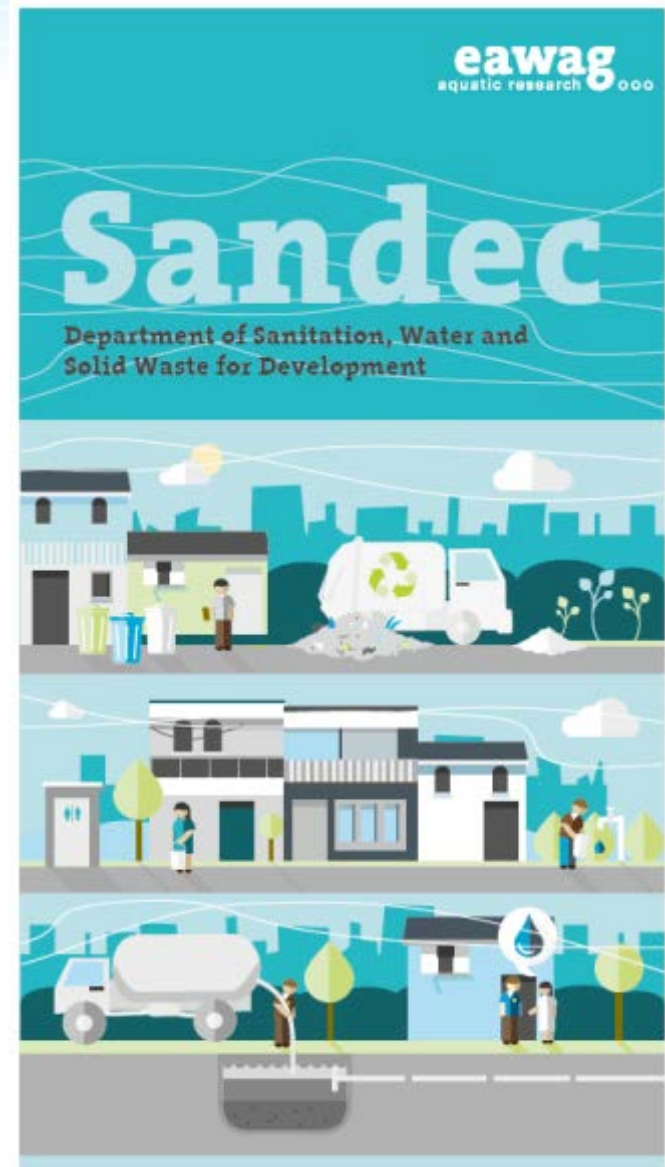
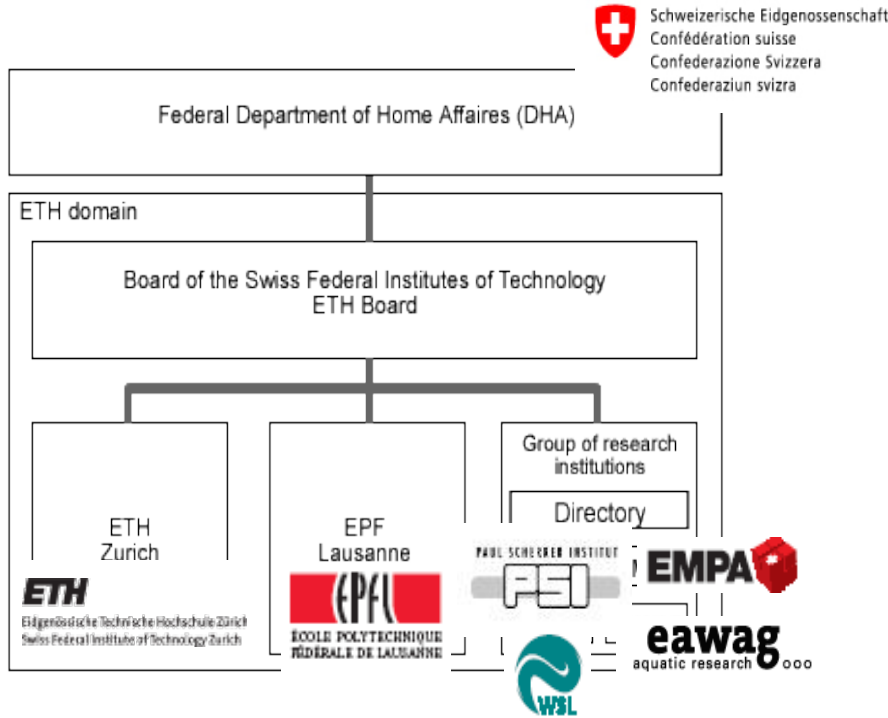
The enabling environment for non-grid sanitation solutions – a brief of Eawag research

WHO Geneva, 15. Nov. 2016 Dr. C. Zurbrügg



Introducing Eawag-Sandec

www.sandec.ch



Introducing Eawag-Sandec

5 Sandec Research Groups

www.sandec.ch



Strategic Environmental Sanitation Planning



Excreta and Wastewater Management



Municipal Solid Waste Management



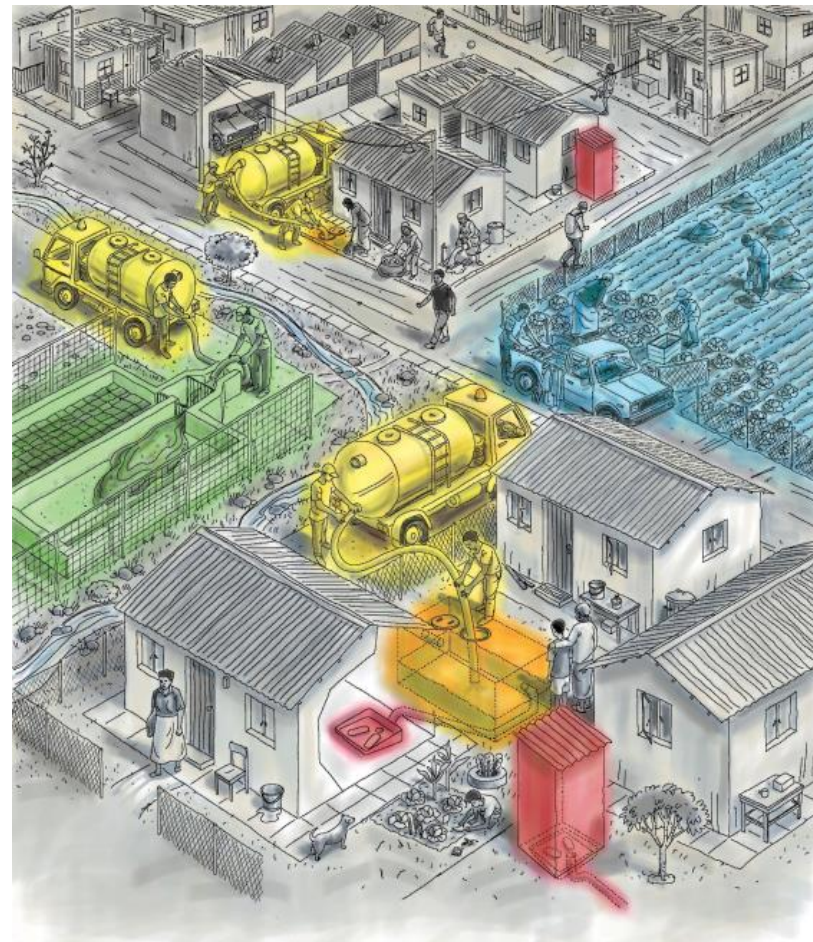
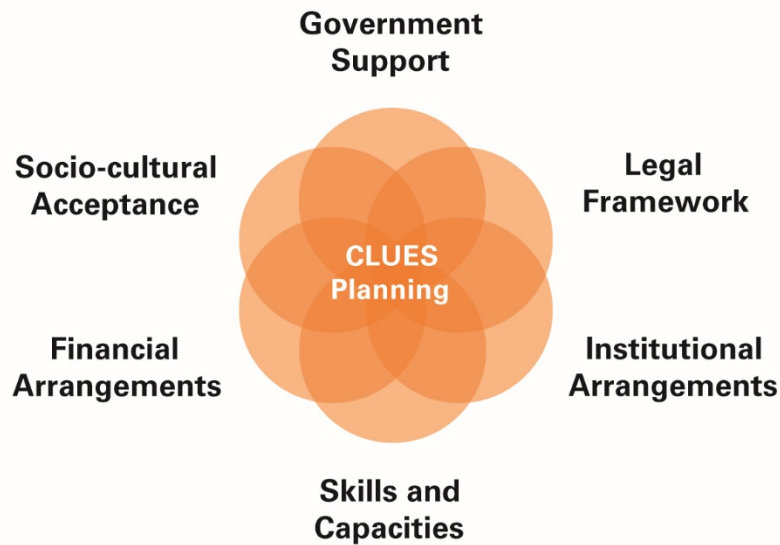
Water Supply and Treatment



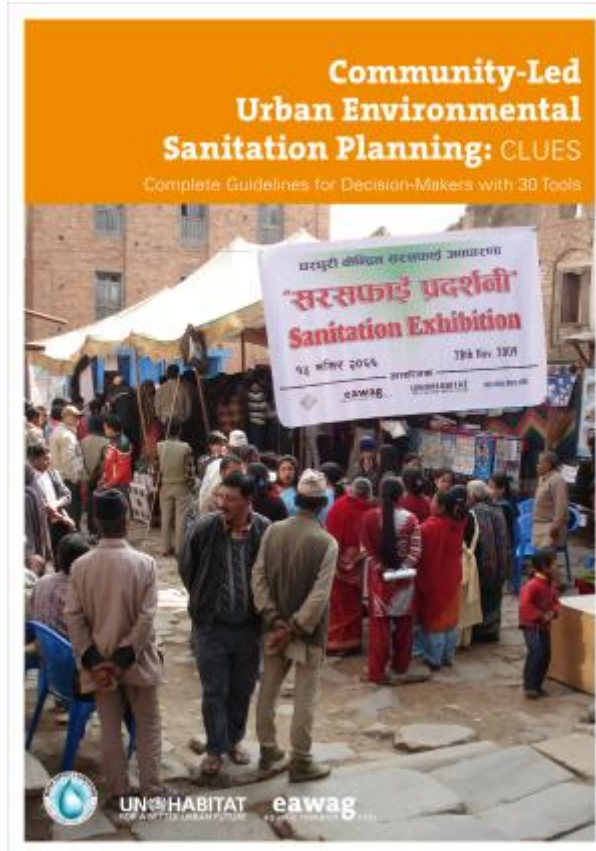
Safe Water Promotion

Contents

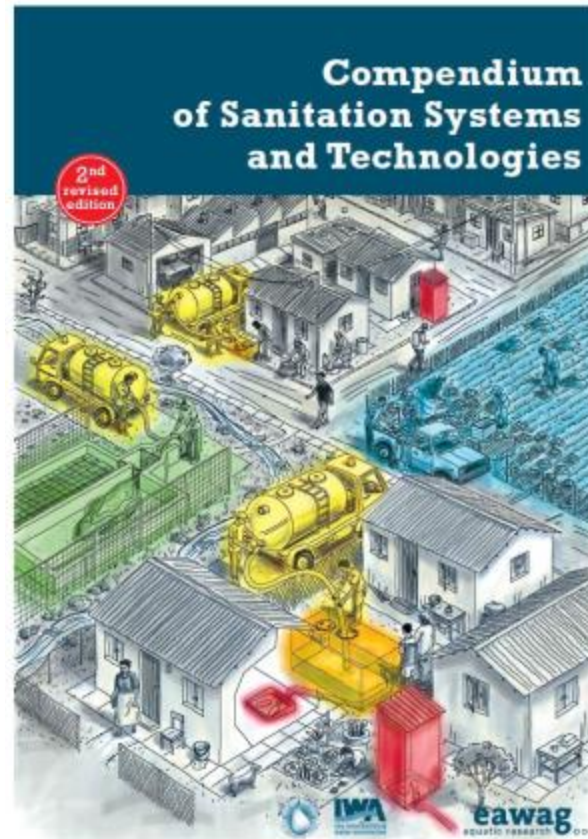
- Creating enabling environments
- Processes of sanitation planning
- Examples



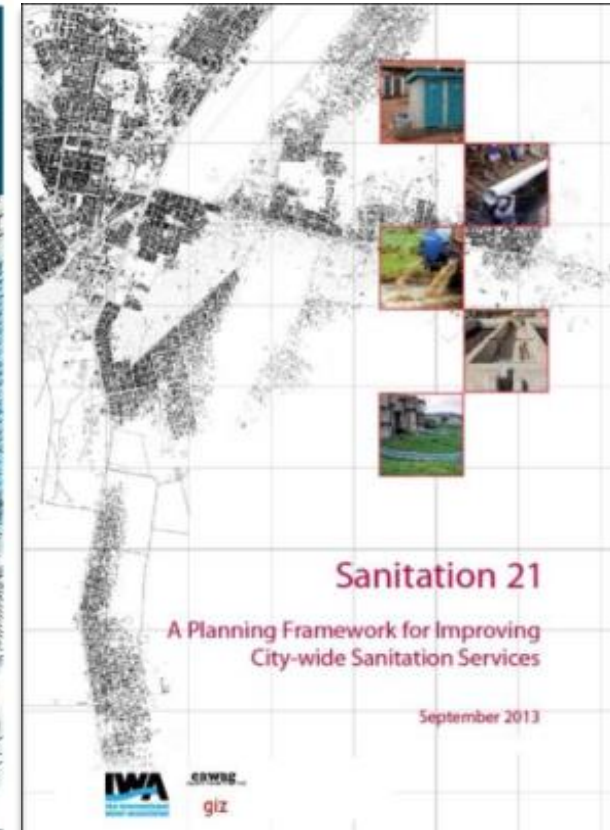
Eawag-Sandec guidelines for planning non-grid solutions



CLUES



Compendium



Sanitation 21

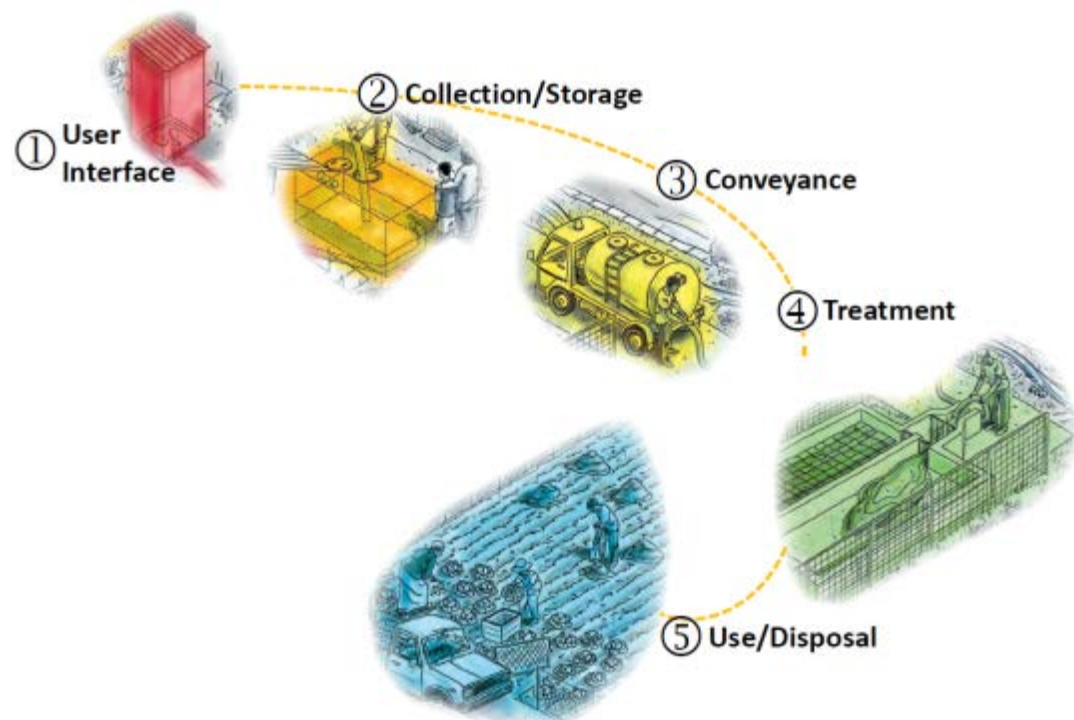
Where has CLUES been validated?



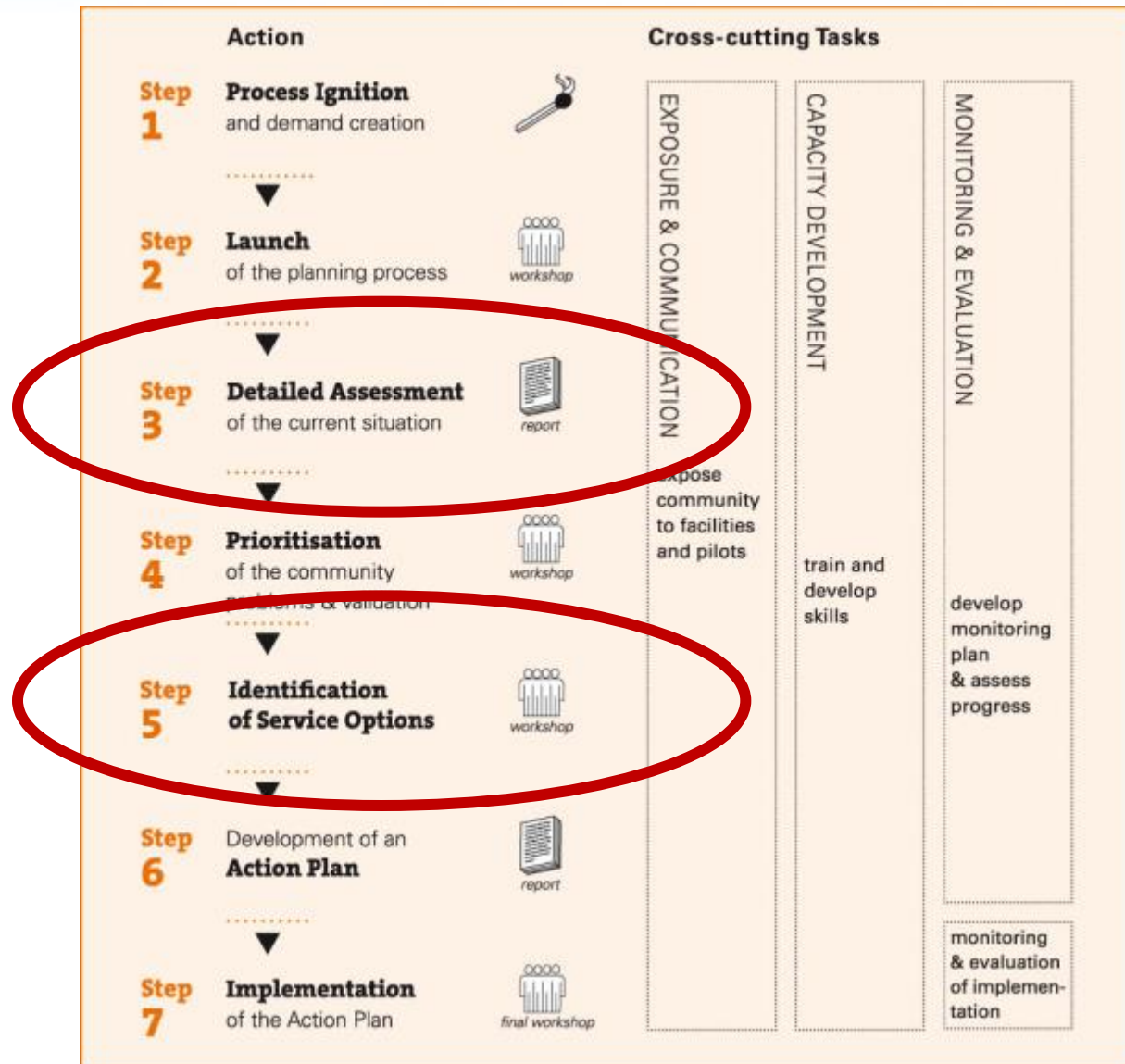
CLUES planning guidelines

CLUES guidelines provide

- Flexible but detailed planning guidance
- Tools & templates for methods & logistics
- How to organize and structure community involvement
- Assistance for technology choice processes



7 planning steps of CLUES



The Compendium of Sanitation Systems and Technologies




Tilley E. *et al.* (2014): Compendium of Sanitation Systems and Technologies. 2nd Revised Edition

How to get it?

- Download a free softcopy

 www.sandec.ch/compendium

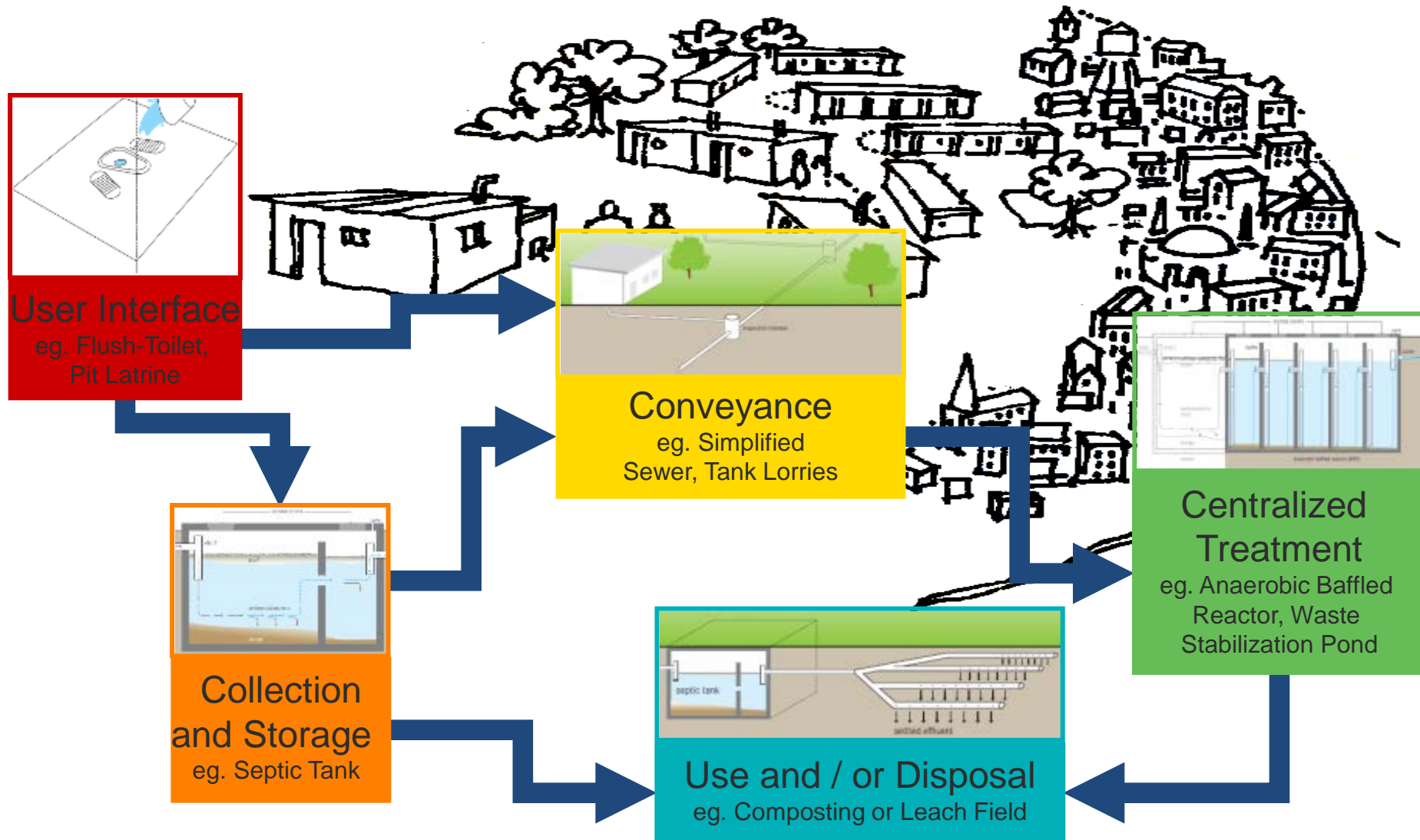
 Also as an interactive online version based on the content of the 2nd edition!

Compendium

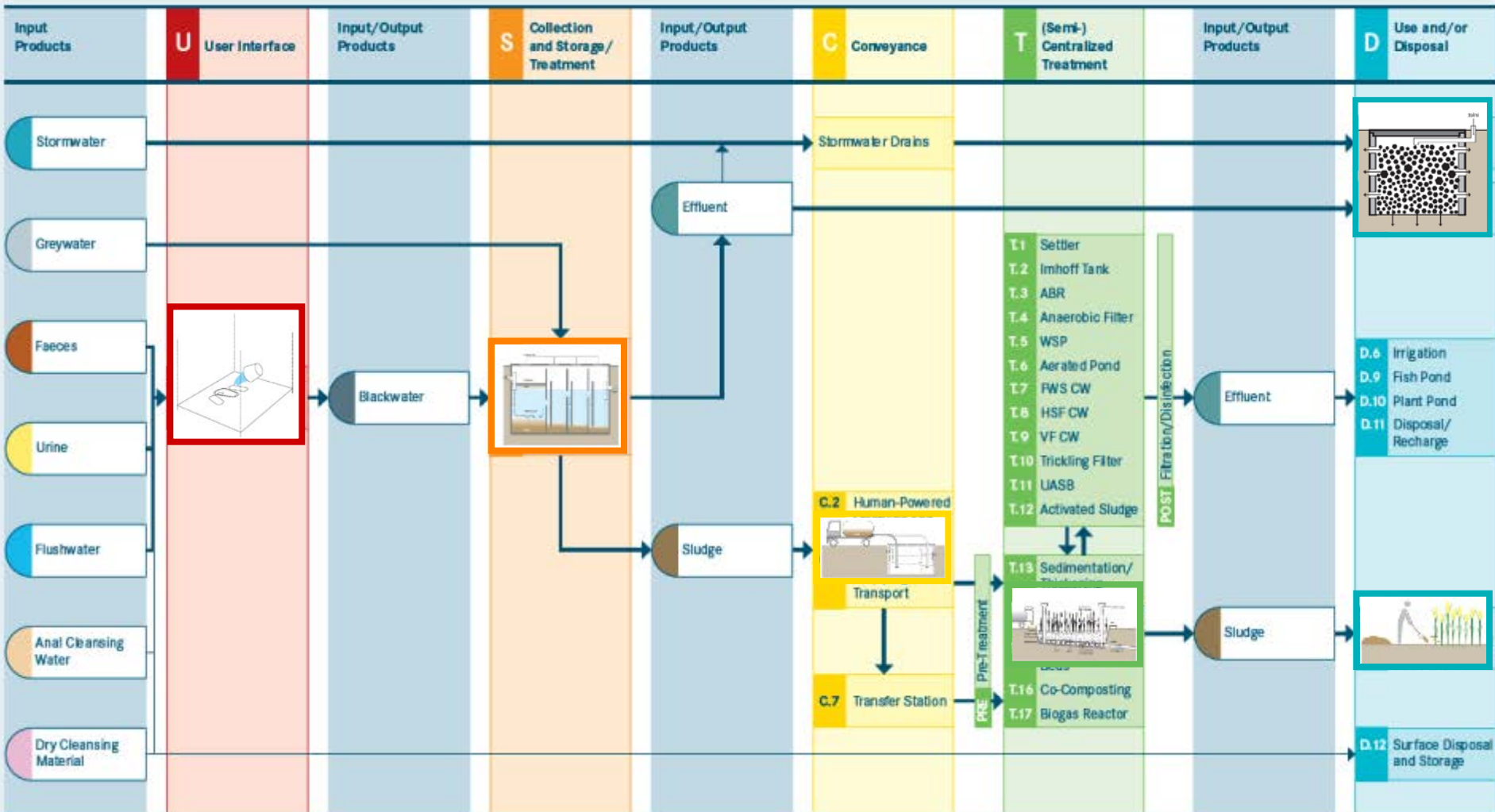
 www.ecompendium.sswm.info

What is a Sanitation System?

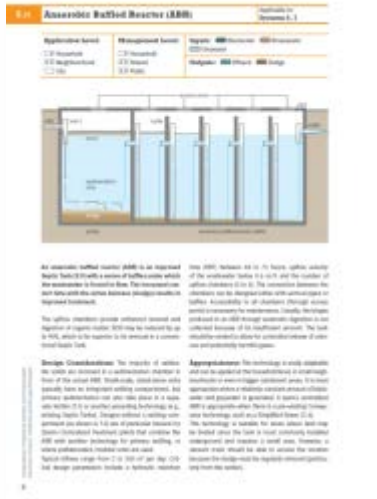
A logical combination of technologies from 5 different functional groups



Sanitation System 6: Blackwater Treatment System with Infiltration



Part II: Technology Information Sheets



Technology Code

Technology Label

Link to System Templates

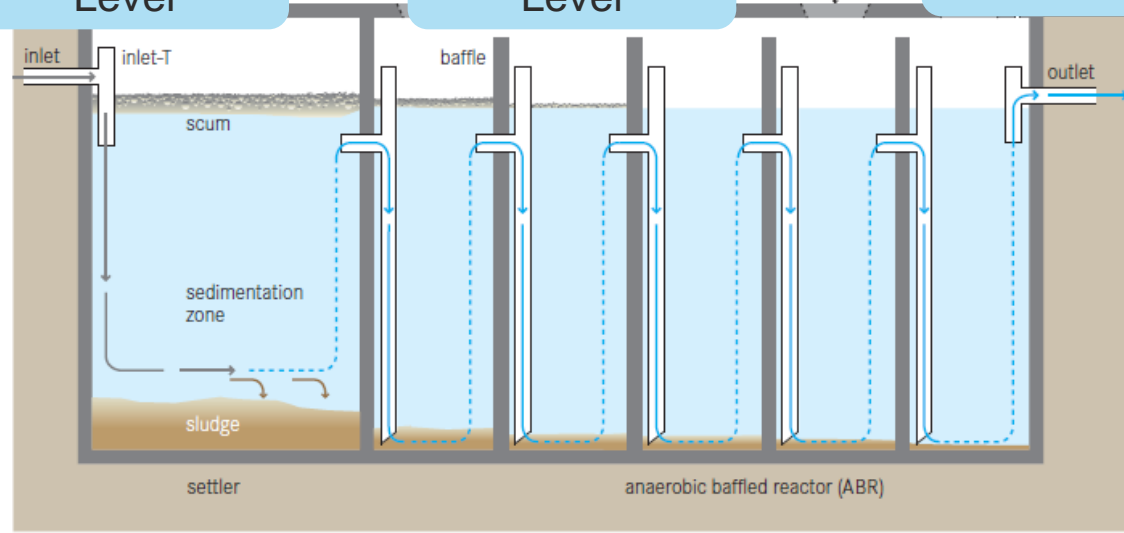
S.10 **Anaerobic Baffled Reactor (ABR)** Applicable to: Systems 6, 7

Application Level: <input type="checkbox"/> Household <input checked="" type="checkbox"/> Neighbourhood <input type="checkbox"/> City	Management Level: <input type="checkbox"/> Household <input checked="" type="checkbox"/> Shared <input checked="" type="checkbox"/> Public	Inputs: <input checked="" type="checkbox"/> Blackwater <input checked="" type="checkbox"/> Brownwater <input type="checkbox"/> Greywater Outputs: <input checked="" type="checkbox"/> Effluent <input checked="" type="checkbox"/> Sludge
---	--	--

Application Level

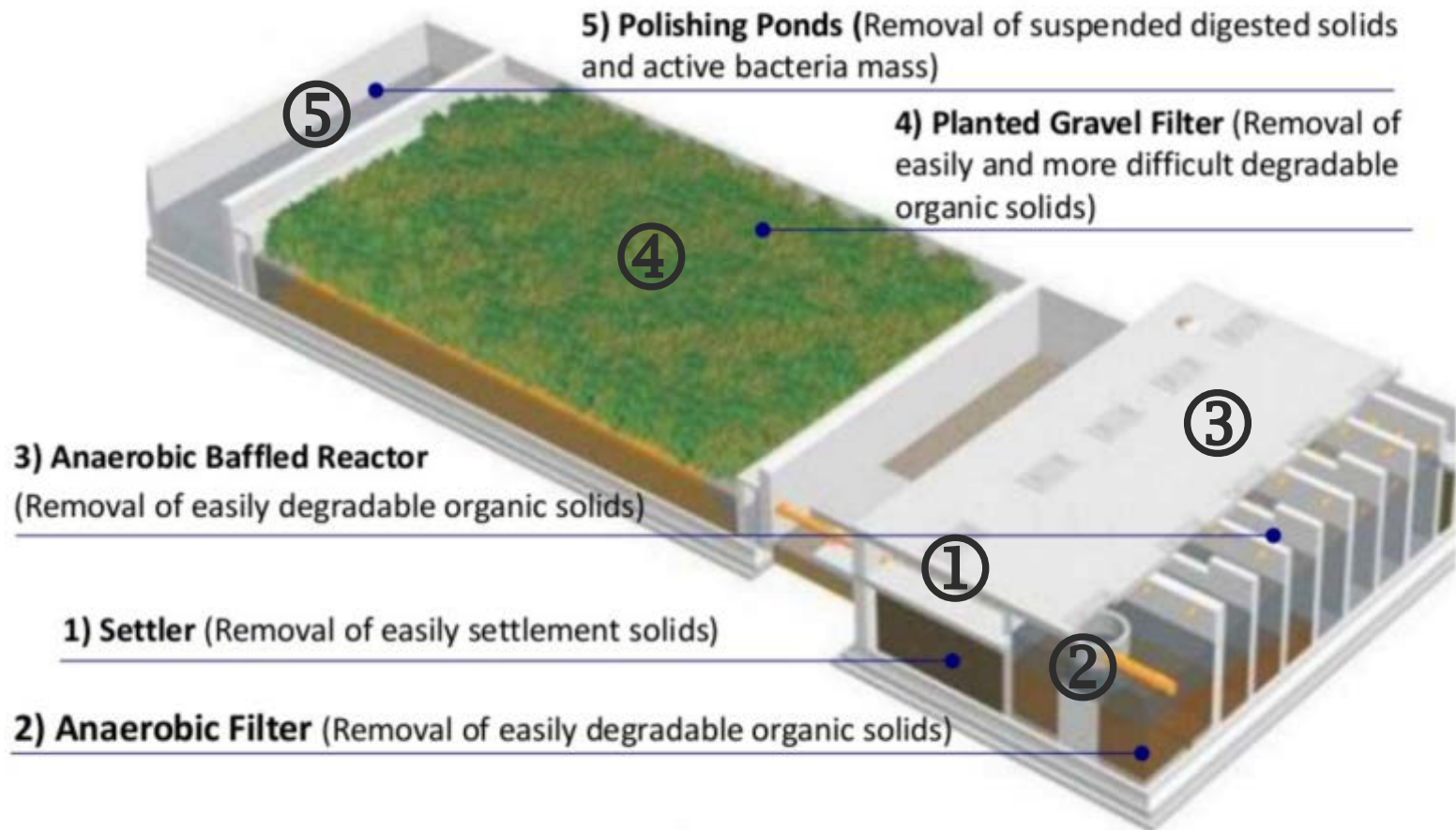
Management Level

Input / Output Products

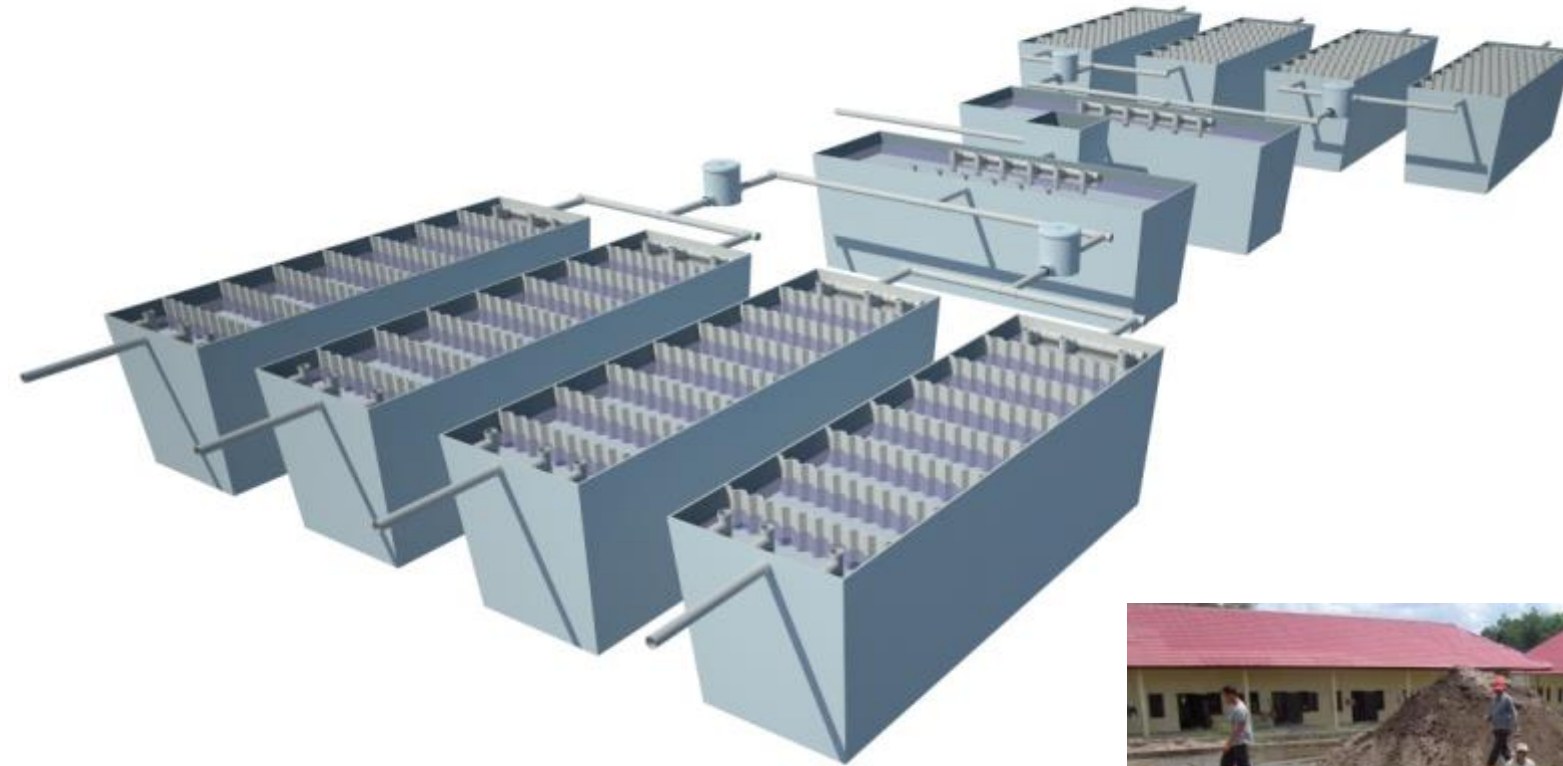


Some small-scale non-grid examples: DEWATS

DEWATS Modules



Off-grid DEWATS (BORDA system)



*Modular prefabricated treatment plant, with 2 settlers and 8 ABRs, treating about 80 m³/day
(source: BORDA Prefab brochure)*



Some examples of DEWATS



Bangalore

Some examples of DEWATS

- Cost-effective infrastructure
- No energy or chemical requirements
 - robust
 - little maintenance required
 - ideal for water-based sanitation
- Structure below ground level = multiple use



DEWATS in Bangalore

Conclusion

- Non-grid solutions are key to innovative improvements
- Carefull assessment of alternatives
- Build capacity to know about these systems



- ONLINE COURSE -
Planning & Design of
Sanitation Systems and Technologies

English: www.coursera.org/learn/sanitation
 French: www.coursera.org/learn/sanitation-fr

Start:	17.10.2016	Languages: English, French
Costs:	free	Subtitles: Spanish, Hindi



Click here
to sign up!

2nd round
with new
modules!