Decentralised Wastewater Management

JACS SEA

IP3

Antoine Morel (EAWAG/SANDEC), Thammarat Koottatep (AIT/SERD)

Decentralised wastewater management systems have enormous potential in contributing to the development of sustainable environmental sanitation solutions which are in line with the Bellagio Principles. As engineers, we are called upon to provide sanitation options that are socially and culturally acceptable, reliable, easy to operate and affordable.

Why choose a decentralised approach?

Apart from its proven benefits in the past, the conventional approach to collect and treat wastewater in a centralised way must be seriously questioned. Using precious drinking water as transport medium, these systems are wasteful not only of water but also of valuable nutrients present in human waste. On the other hand, the decentralised wastewater management concept is best suited to translate the Bellagio Principles into practice.

The decentralised approach:

- ***does not require large and capital intensive sewer trunks***
- ***broadens the variation of technological options***
- ***reduces the water requirements for waste transportation***
- ***is adaptable to different discharge requirements***
- ***reduces the risks associated with system failure***
- ***increases wastewater reuse opportunities***
- ***allows incremental development and investment of the system***

Lack of information

Despite the obvious advantages of the decentralised approach, there is still a lack of reliable information on design standards, costs, performance and operating procedures. Many regulations and policies hinder innovative new approaches. Some constraints might be overcome by implementing the HCES approach, but the knowledge gap on technologies can only be filled by extensive research.

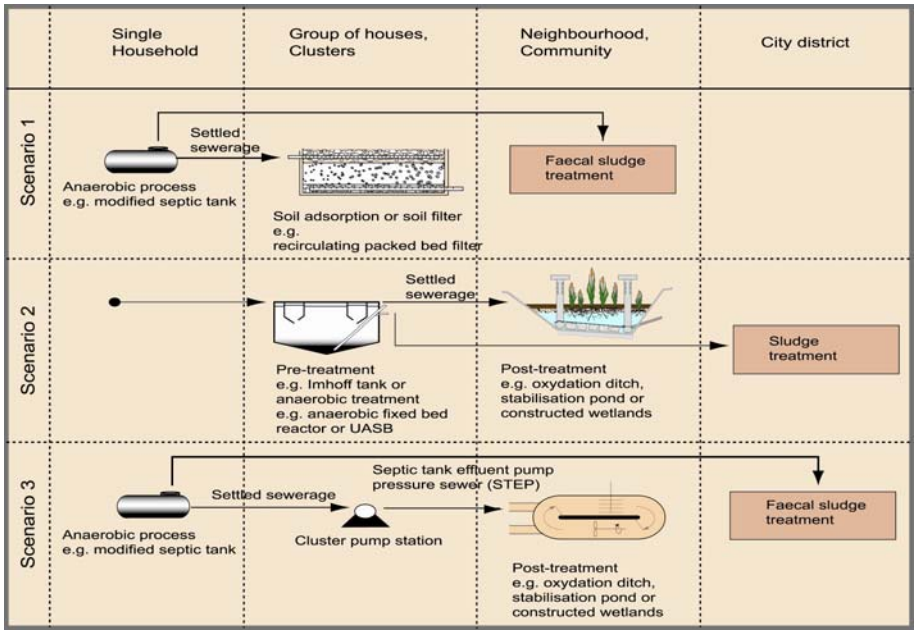
Identify adequate technologies

IP3, mainly within JACS SEA, is engaged in identifying suitable decentralised technologies and adapting them to the local conditions in developing countries. Main goal is to determine the potential and limitations of these technologies and their applicability in different financial, institutional and socio-cultural contexts.

Improve existing systems

In many cities of the World, some forms of wastewater management already exist. In these cases it is often more appropriate to rehabilitate and improve existing systems than to shift to completely new decentralised systems.

Improve existing systems: Anaerobic Baffled Reactor (ABR) as an alternative to conventional septic tanks (Hanoi, Vietnam, 2003)



Decentralised wastewater management at different levels; 3 possible scenarios for urban and peri-urban areas