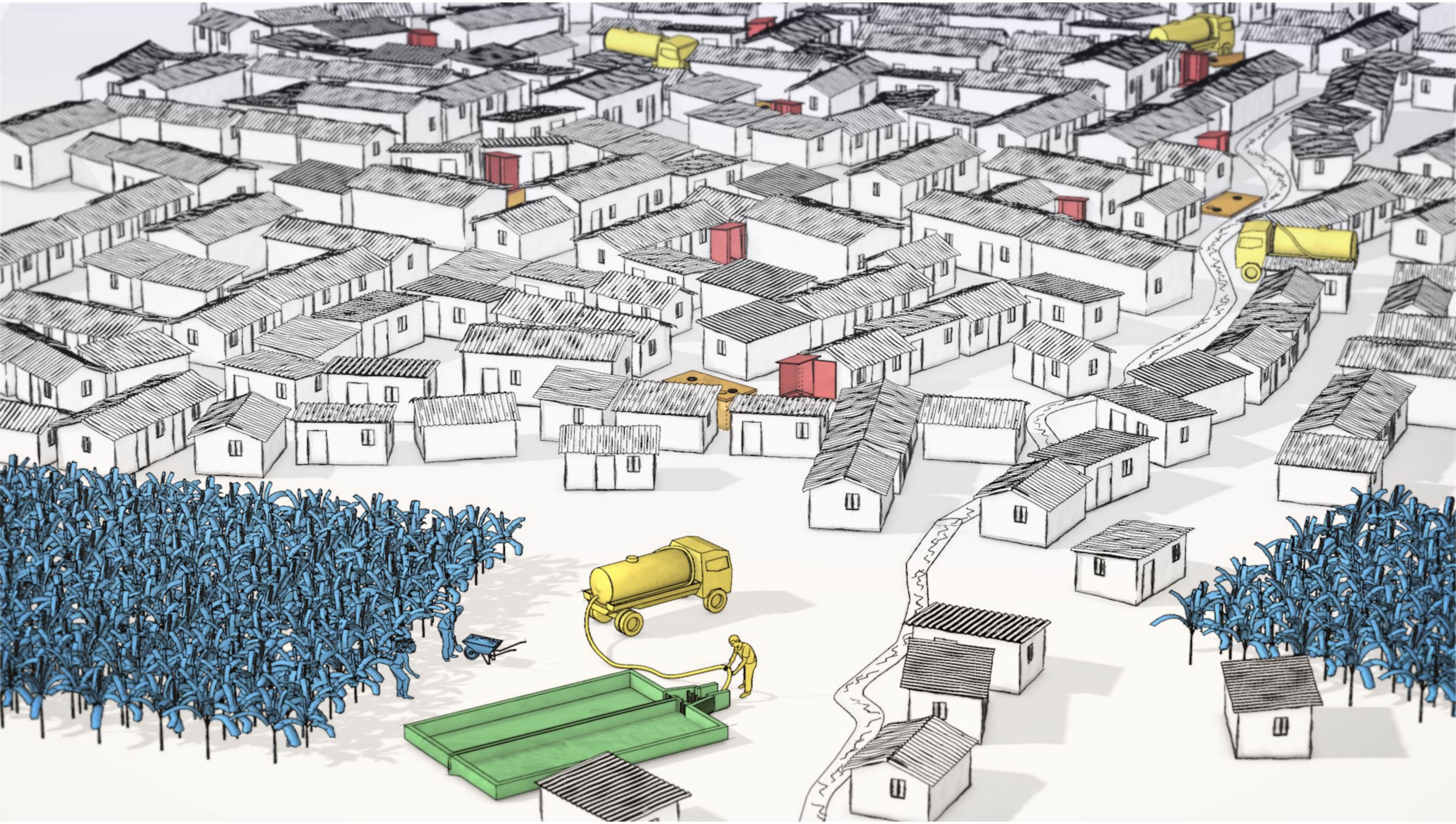
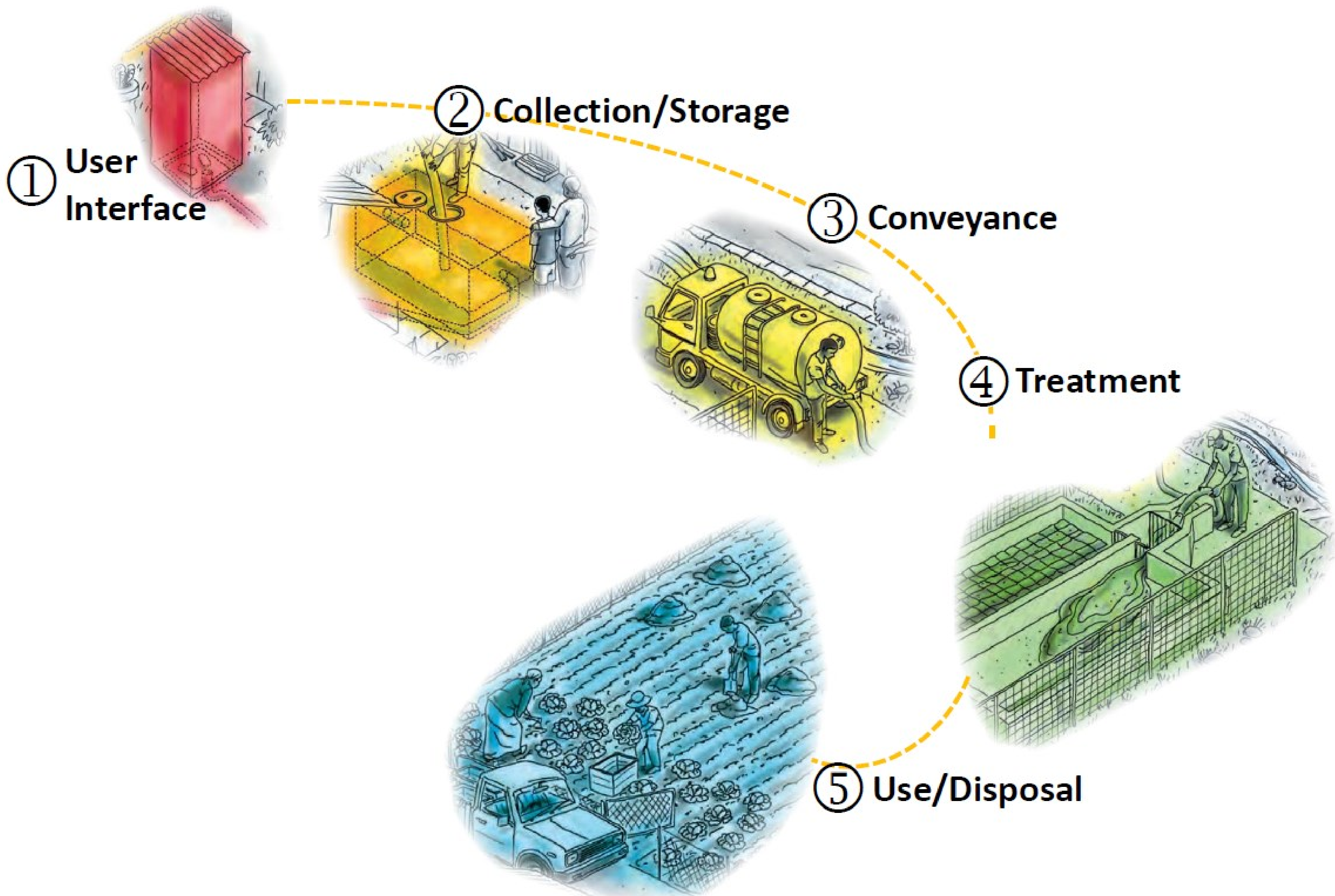
Introduction to the Compendium of Sanitation Systems and Technologies

Eawag: Swiss Federal Institute of Aquatic Science and Technology

Planning & programming for the entire sanitation chain

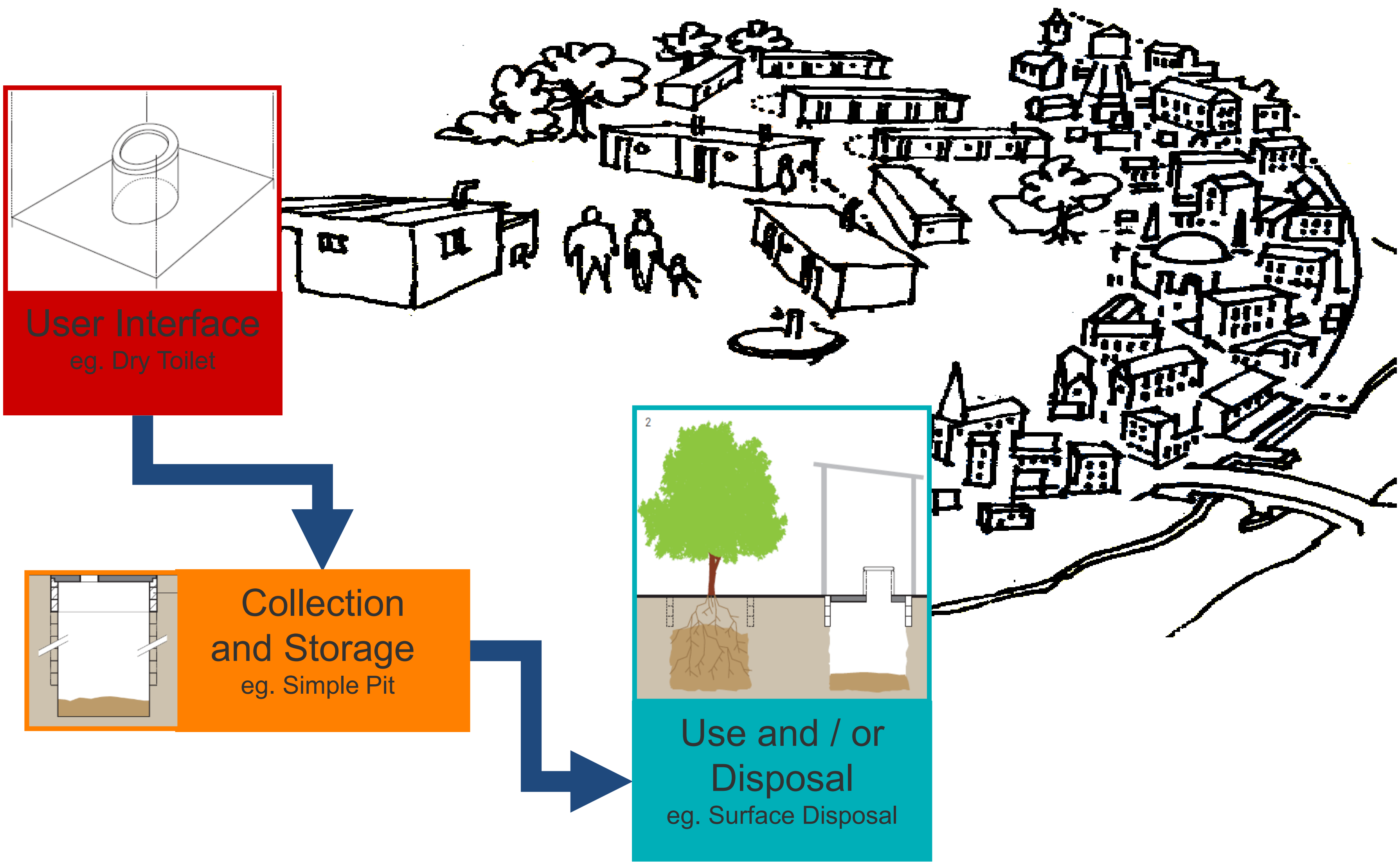


The functional groups



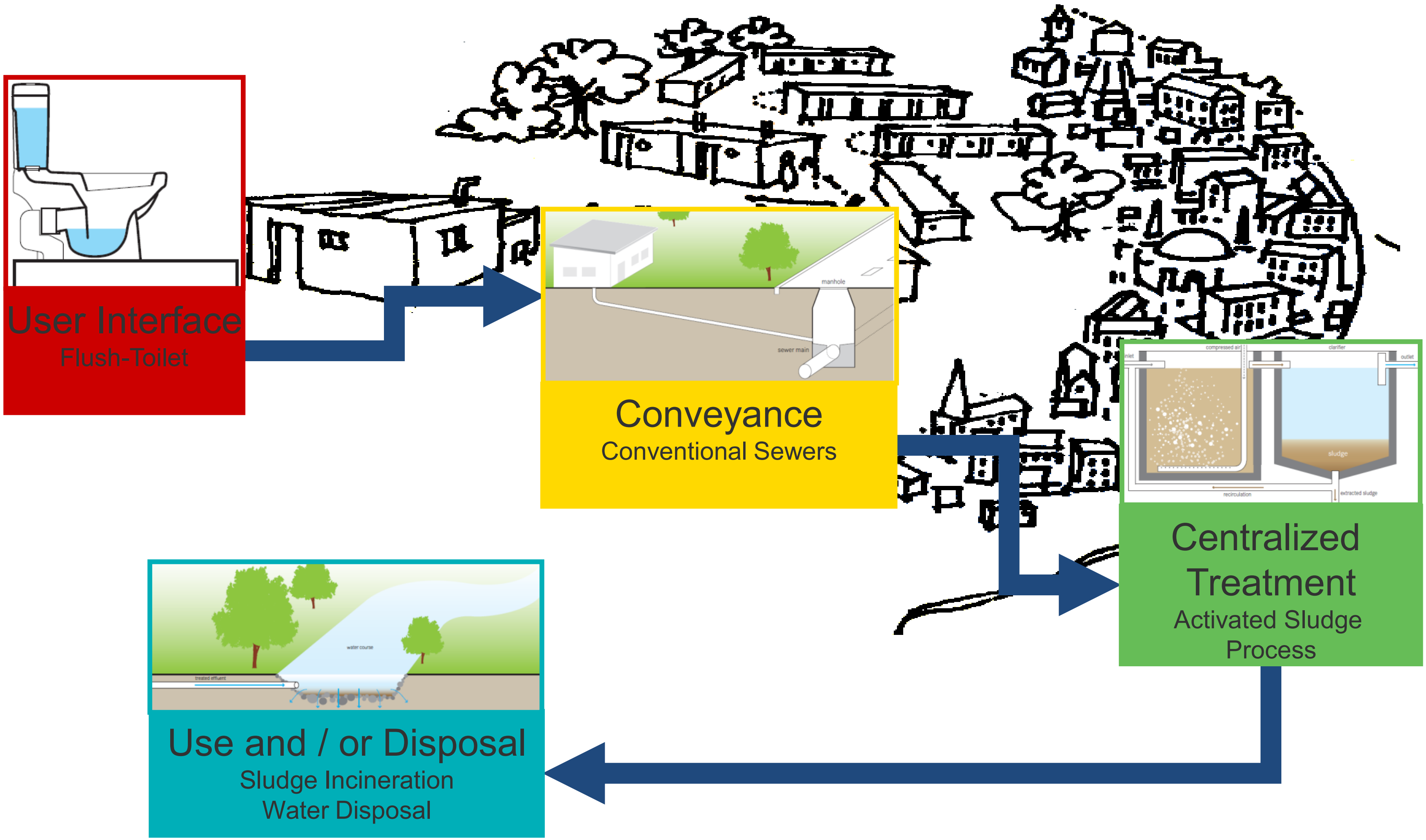
What is a Sanitation System?

The typical rural context



What is a Sanitation System?

The typical urban European context



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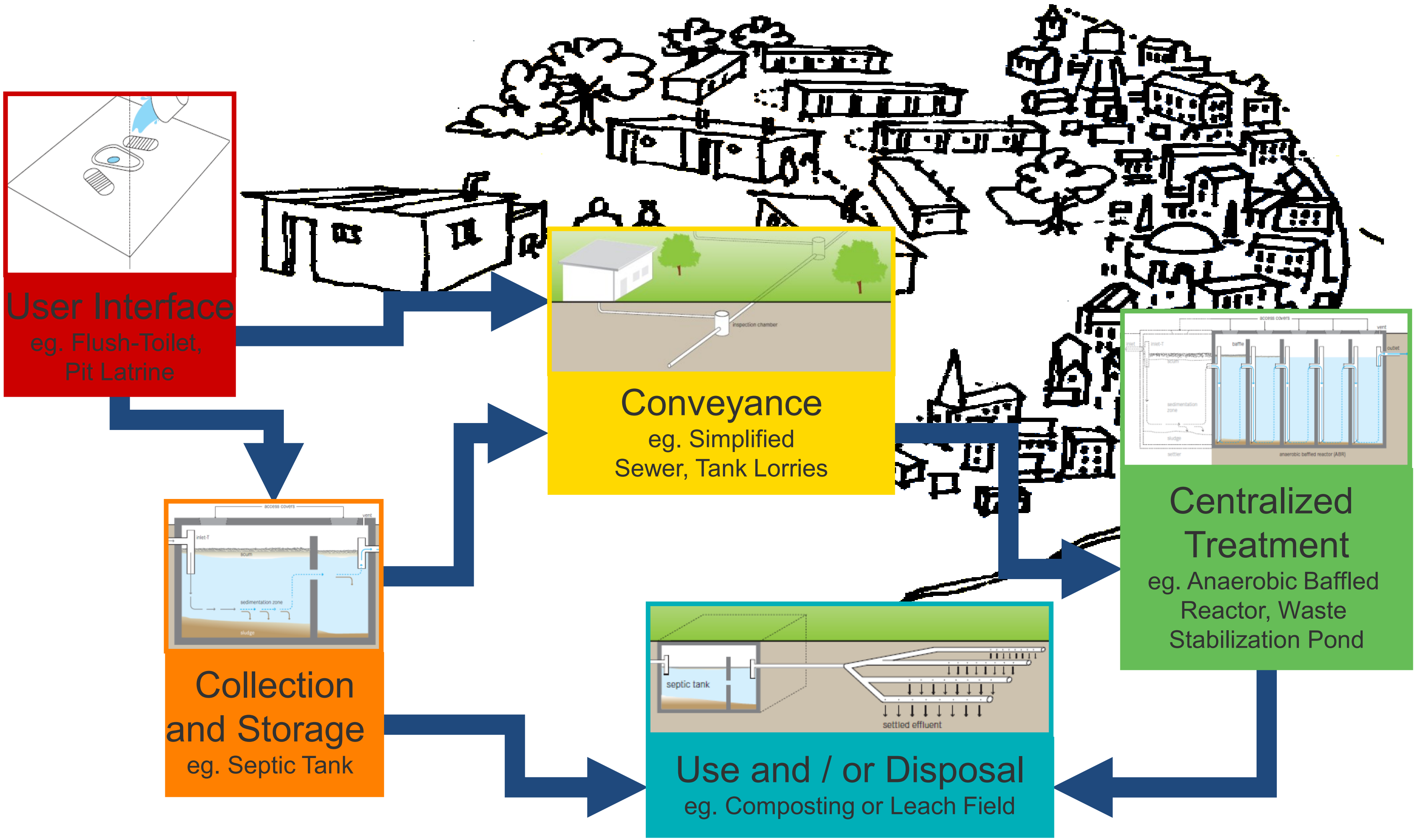
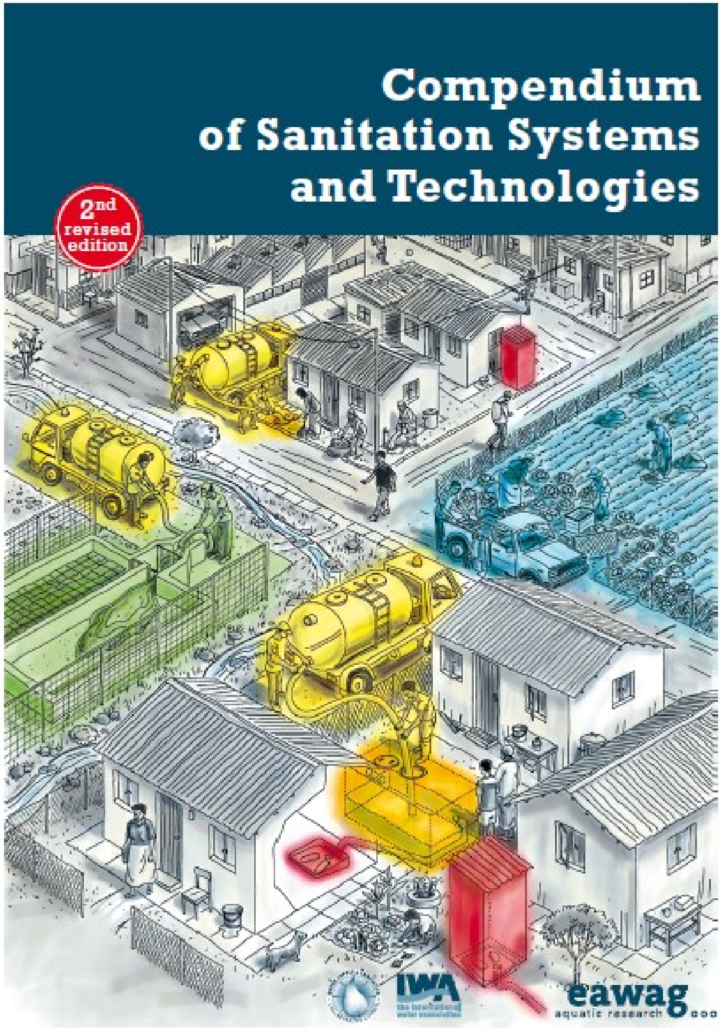
What is a Sanitation System?

A logical combination of technologies from 5 different <u>functional groups</u>



The Compendium of Sanitation Systems and Technologies



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

☞ www.sandec.ch/compendium

2nd edition also in French, Arabic and Spanish.

1st edition also available in Vietnamese, Nepali and Korean

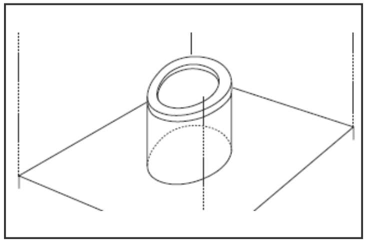
Compendium

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

☞ www.ecompendium.sswm.info

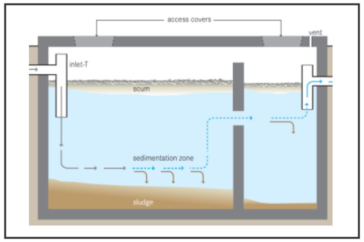
Overview of Functional Groups and Sanitation Technologies

User Interface



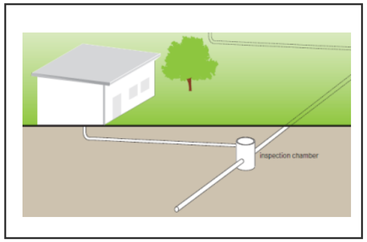
- Dry Toilet
- Urine Diverting Dry Toilet (UDDT)
- Urinal
- Pour Flush Toilet
- Cistern Flush Toilet
- Urine Diverting Flush Toilet

Collection and Storage / Treatment



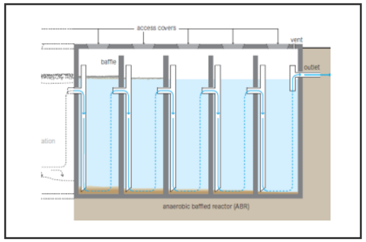
- Urine Storage Tank / Container
- Single Pit
- Single Ventilated Improved Pit (VIP)
- Double Ventilated Improved Pit (VIP)
- Fossa Alterna
- Twin Pits for Pour Flush
- Dehydr. Vaults
- Composting Chamber
- Septic Tank
- Etc.

Conveyance



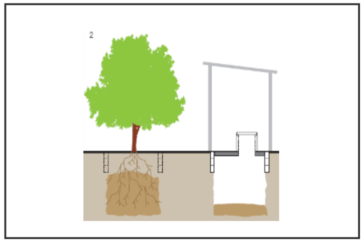
- Jerry can / Tank
- Human-Powered Emptying and Transport
- Motorized Emptying and Transport
- Simplified Sewer
- Solids-Free Sewer
- Conventional Gravity Sewer
- Transfer Station (Holding Tank)

(Semi-) Centralised Treatment



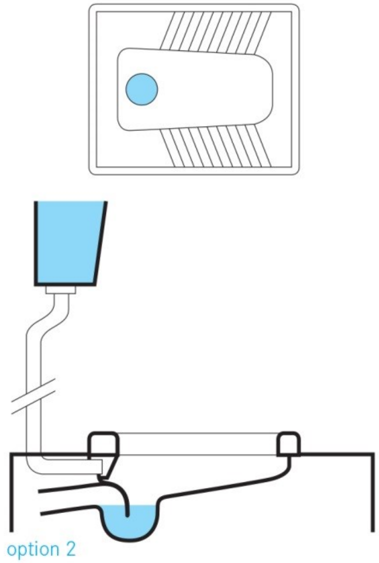
- Anaerobic Baffled Reactor (ABR)
- Anaerobic Filter
- Waste Stabilization Ponds
- Aerated Pond
- Constructed Wetland
- Trickling Filter
- Activated Sludge
- Drying Beds
- Co-composting
- Biogas Reactor
- Etc.

Use and / or Disposal

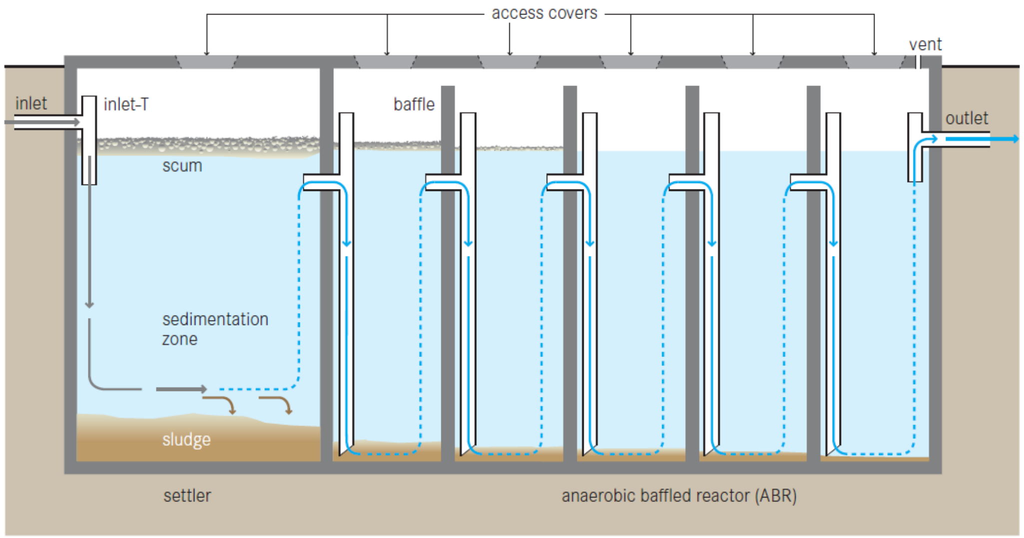


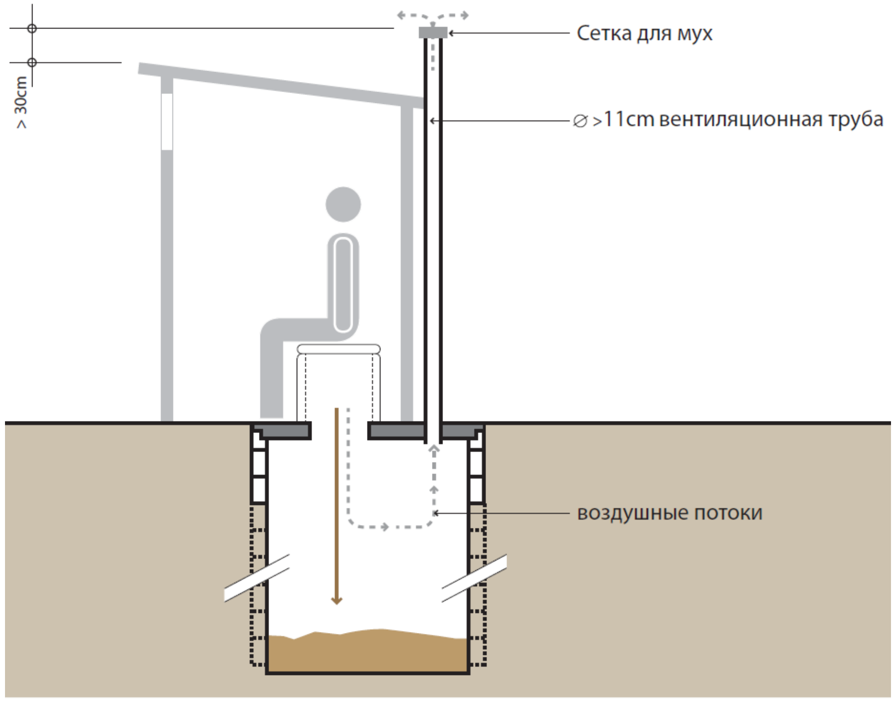
- Fill and Cover / Arborloo
- Applic. of Urine
- Application of Dehydr. Faeces / Compost/Sludge
- Irrigation
- Soak Pit
- Leach Field
- Fish Pond
- Floating Plant Pond
- Water Disposal / Groundwater Recharge
- Surface Disposal
- Biogas Combust.

User Interface



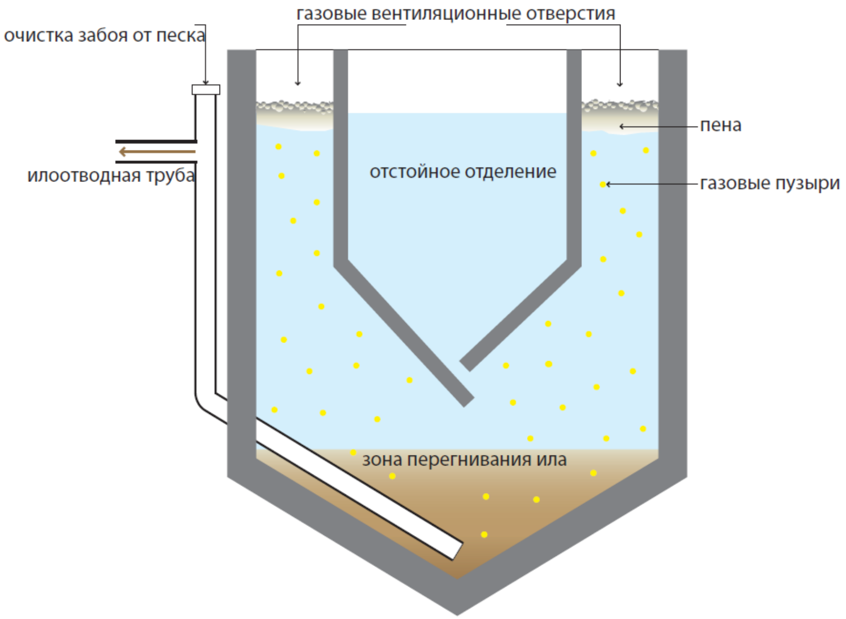
Collection and Storage / Treatment



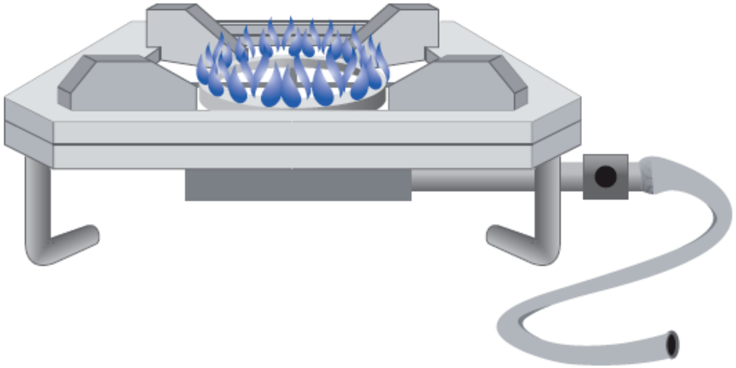


Conveyance

(Semi-) Centralised Treatment



Use and / or Disposal



Designing a Sanitation System

Considerations

To design a robust system you need to consider:

- What goes in
- What comes out
- What needs to be collected, stored, transported, processed, disposed of
- What technologies can perform the required tasks
- How the required technologies can be linked together (compatibility)

Further considerations:

- Existing infrastructure & services
- Operation & maintenance (O&M) requirements
- Lifecycle cost

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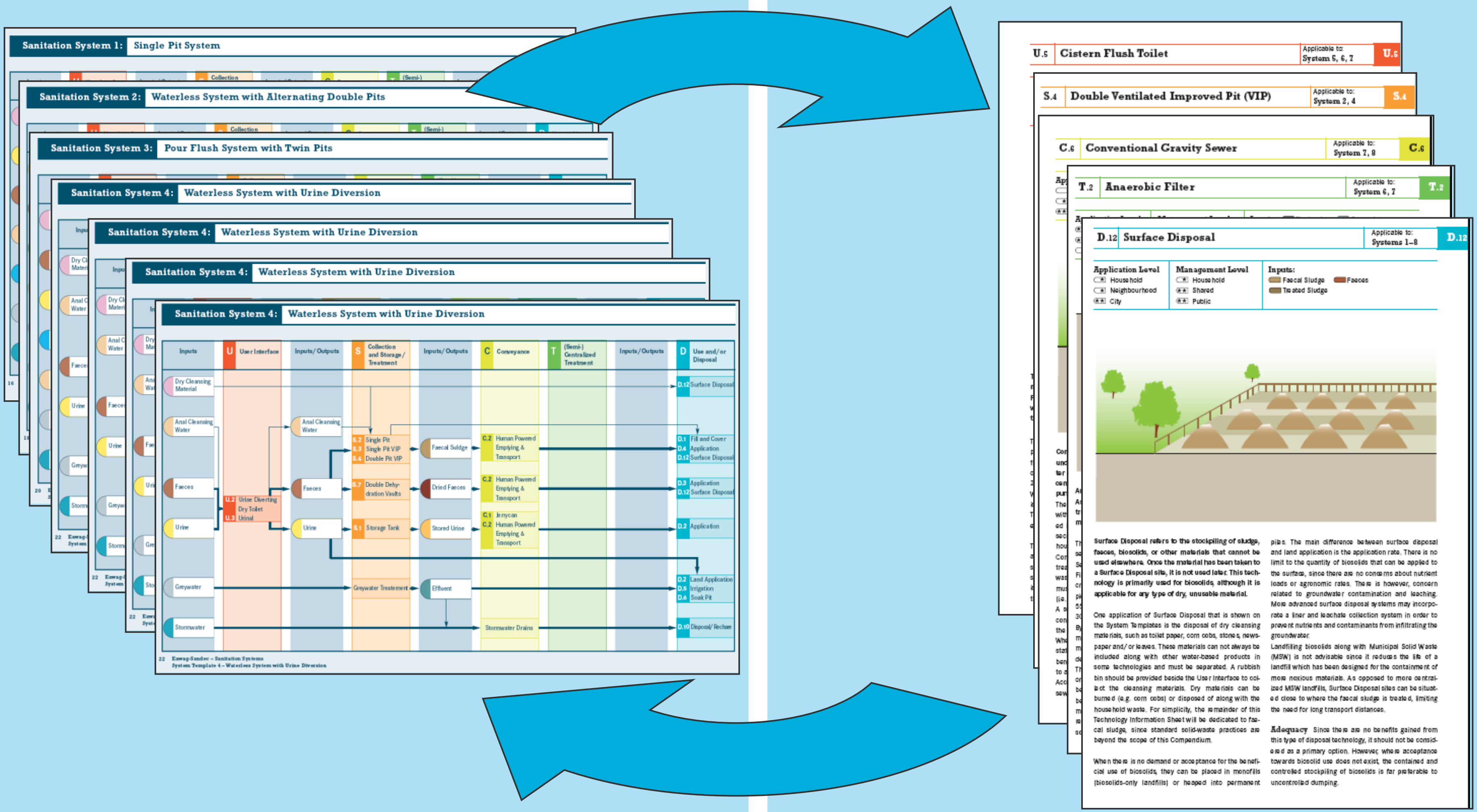
The Compendium of Sanitation Systems and Technologies

Part 1:
Sanitation System Templates

Part 2:
Technology Information Sheets



Part I: Sanitation System Templates

System 1:	Single Pit System
System 2:	Waterless Pit System without Sludge Production
System 3:	Pour Flush Pit System without Sludge Production
System 4:	Waterless System with Urine Diversion
System 5:	Biogas System
System 6:	Blackwater Treatment System with Infiltration
System 7:	Blackwater Treatment System with Effluent Transport
System 8:	Blackwater Transport to (Semi-) Centralized Treatment System
System 9:	Sewerage System with Urine Diversion

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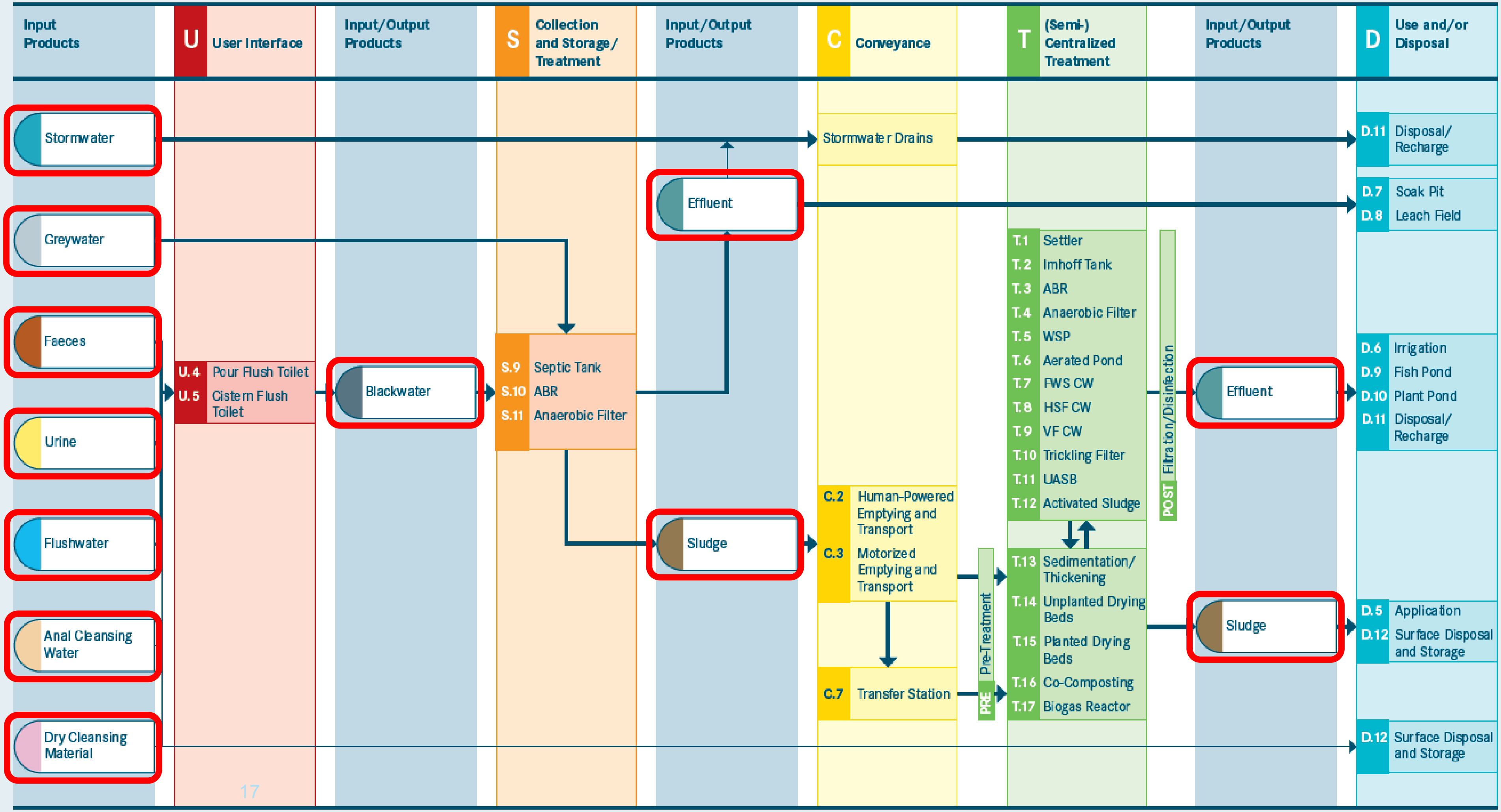
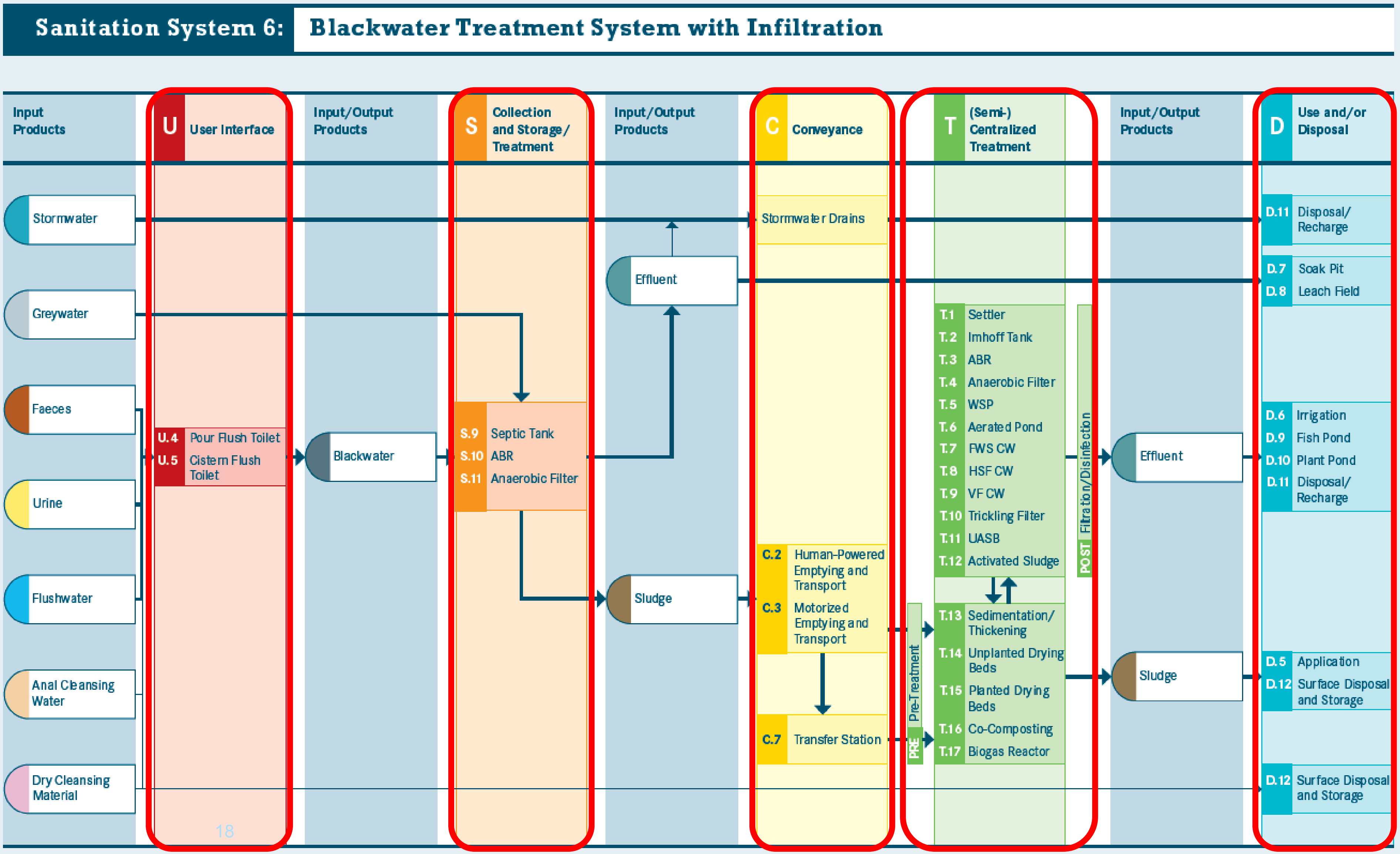
Products

Sanitation System 6: Blackwater Treatment System with Infiltration



Functional Groups



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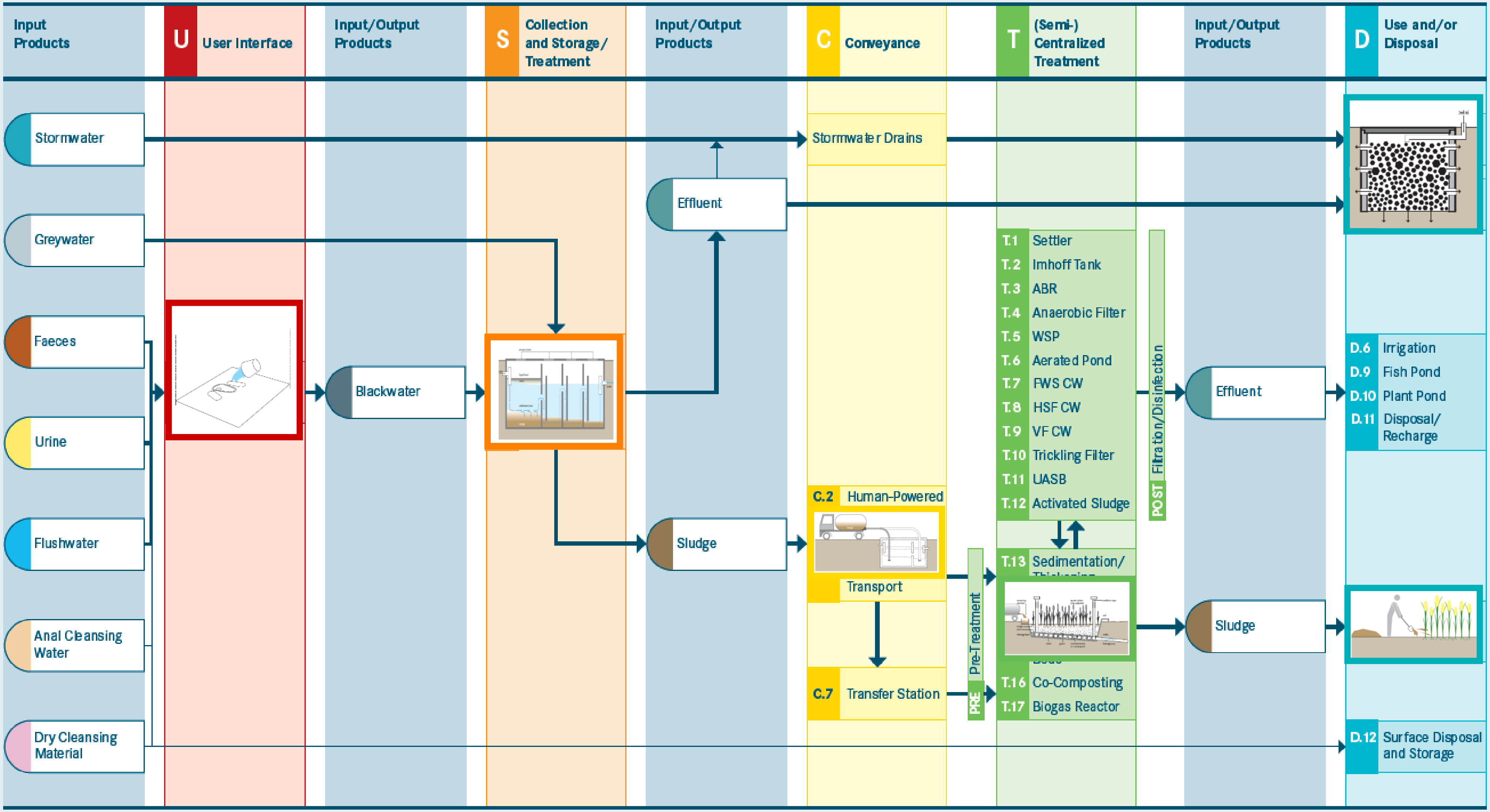
Sanitation System 6: Blackwater Treatment System with Infiltration



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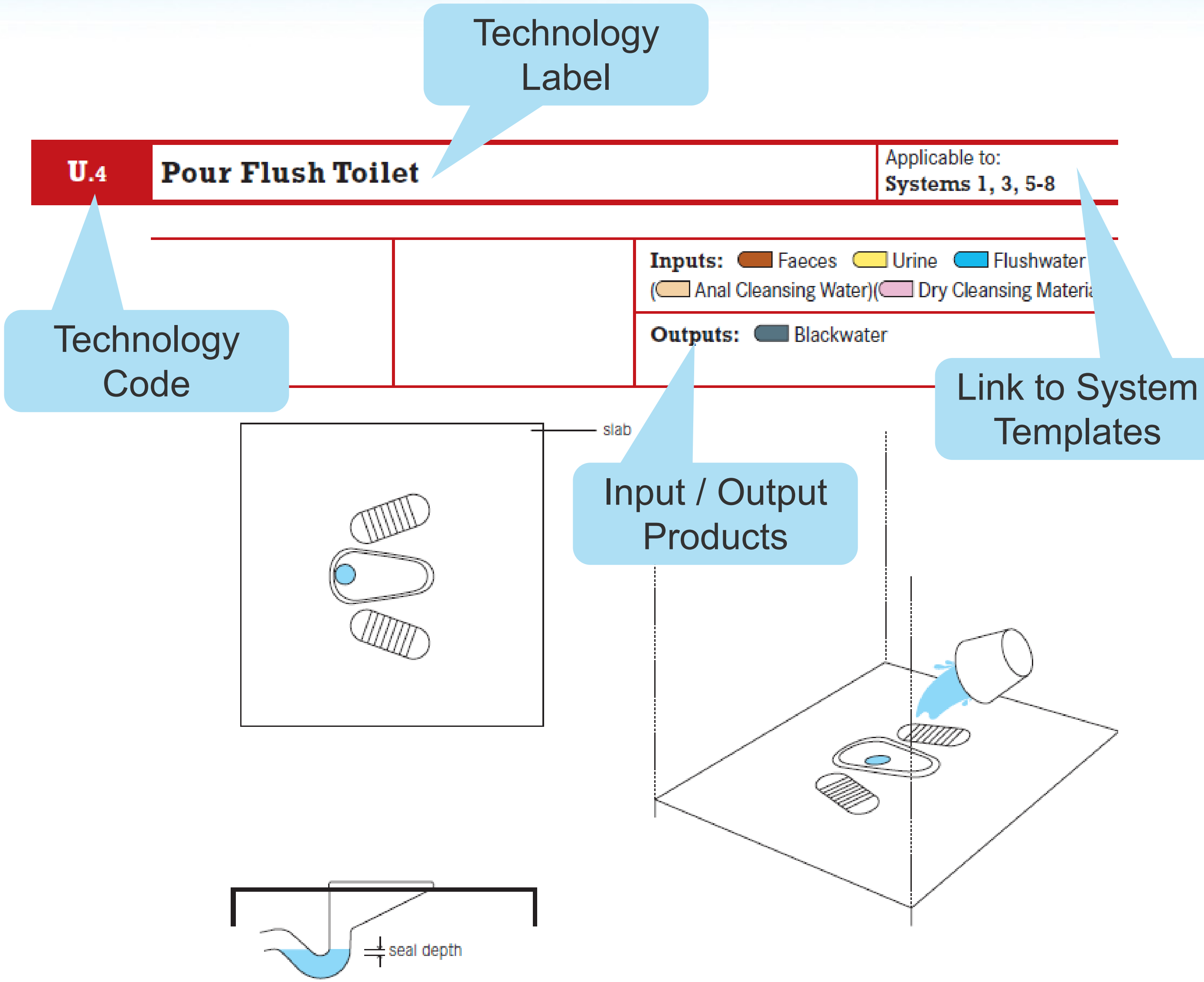
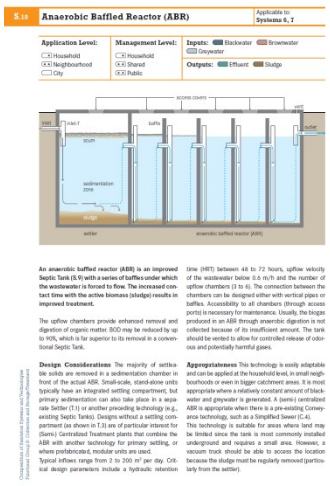
Part II: Technology Information Sheets

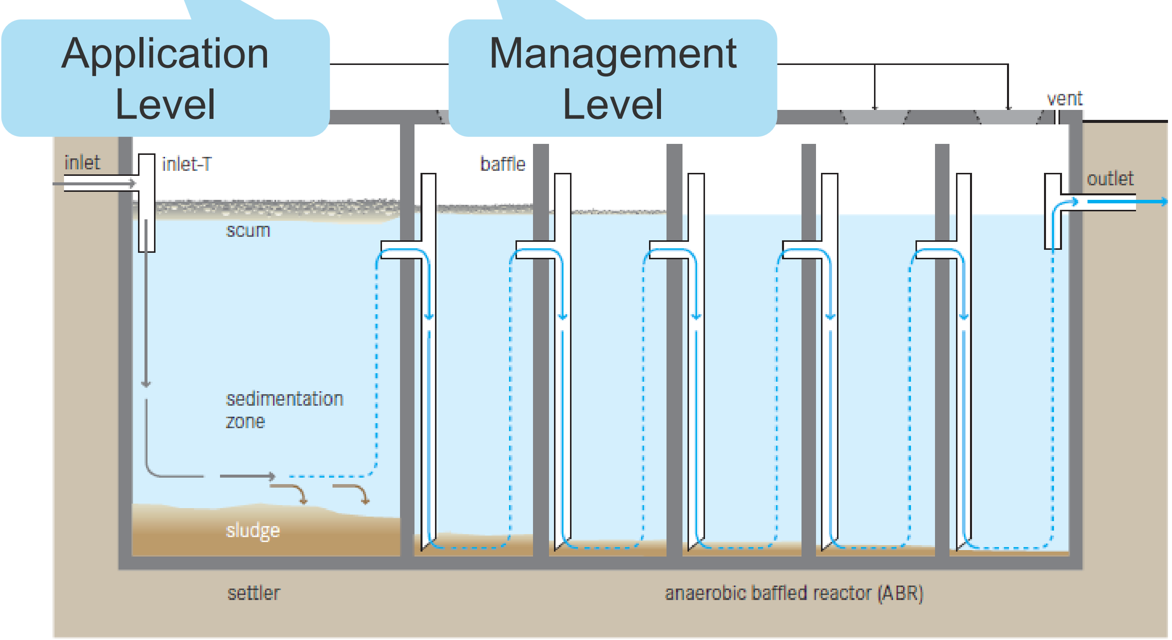


Part II: Technology Information Sheets



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

Application Level:	Management Level:	Inputs / Outputs
★ Household	★ Household	**Inputs:** Blackwater, Brownwater, Greywater
★★ Neighbourhood	★★ Shared	**Outputs:** Effluent, Sludge
City	★★ Public	



How to use the Compendium

- Decision-making
- Sharing
- Capacity-building

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Questions ?

Reactions ?

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