Contributions of SuSanA and the SFD-approach to more sustainable Sanitation

Dr. Arne Panesar,
Director Sector Programme Sustainable Sanitation, GIZ
… together, we achieved a lot in the last 15 years!


e.g. : “Wild ideas” how to support UNSGAB – discussed @ GIZ HQ in 2004
… to bring sanitation up on the political agenda

We should have a network to speak with one voice on sustainable sanitation!
We should have an International Year of Sanitation!
We should have a global conference focusing on non-sewered sustainable sanitation!
A Bollywood Movie on Toilets would be very cool!
SuSanA 2007-2019

- 10,000 Members from 172 countries
- 350 Partners
- 7,850 Facebook followers
- 4,360 Twitter followers
Comparison of linear- and reuse-oriented approaches to sanitation

Combining sanitation system components along a sanitation chain

### Sanitation System 1: Single Pit System

<table>
<thead>
<tr>
<th>Input Products</th>
<th>User Interface</th>
<th>Input/Output Products</th>
<th>Collection and Storage/Treatment</th>
<th>Conveyance</th>
<th>(Semi-) Centralized Treatment</th>
<th>Input/Output Products</th>
<th>Use and/or Disposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry Cleansing Material</td>
<td>U1</td>
<td>Dry Toilet</td>
<td>Excreta</td>
<td>C.8</td>
<td>Sewer Discharge Station</td>
<td>T.3</td>
<td>WSP, Aerated Pond</td>
</tr>
<tr>
<td>Urine</td>
<td>U4</td>
<td>Pour Flush Toilet</td>
<td>Blackwater</td>
<td>C.2</td>
<td>Human Powered Emptying &amp; Transport</td>
<td>T.4</td>
<td>FWS CW</td>
</tr>
<tr>
<td>Feces</td>
<td></td>
<td></td>
<td></td>
<td>C.3</td>
<td>Motorized Emptying &amp; Transport</td>
<td>T.5</td>
<td>HSF CW</td>
</tr>
<tr>
<td>Anal Cleansing Water</td>
<td></td>
<td></td>
<td></td>
<td>C.7</td>
<td>Transfer Station</td>
<td>T.6</td>
<td>VF CW</td>
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<tr>
<td>Flushwater</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>T.7</td>
<td>Trickling Filter</td>
</tr>
<tr>
<td>Greywater</td>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td>Stormwater</td>
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</tr>
</tbody>
</table>

The SDGs are catching up with SuSanA…

… to go from ODF to ODF++ in India is a similar move…
The Shit Flow Diagram (SFD) helps to ...
… gain support for more sustainable sanitation…
... around the globe!
SFDs worldwide:
Fig 4: Essential technological components used in reuse-oriented sanitation systems

Collection
- Solid biowaste
- Faeces
  - Vacuum sewerage
  - Gravity sewerage (conventional or small-bore, centralised or decentralised)
  - Solid–liquid separation
- Urine
  - Urine diversion
- Greywater
  - Separation
  - Collection
- Rainwater
  - Harvesting

Treatment
- Composting toilets
- (Prolonged) storage
- Dehydration toilets
- Composting, vermi-composting
- Anaerobic treatment
- Sludge dehydration, humification
- Urine processing
- Wastewater treatment (centralised or decentralised)

Utilisation
- Soil conditioning with treated excreta and solid biowaste
- Biogas used for lighting, cooking, electric power
- Fertilising with urine of derivatives
- Greywater gardens, mulch trench systems
- Reuse of (treated) wastewater from agriculture, aquaculture, evaporation, etc.
- (Re)-use as service water or in agriculture, aquaculture, groundwater recharge, etc.


In 2004, Florian Klingel, as advisor in the GTZ Ecosan Programme, developed an iconography to describe matter fluxes and technologies relevant to closing the loop sanitation approaches. The system’s borders are broad and include many sectors. The SFD however, restrict its focus to the area outlined in red above.
Process orientation of the Indian National Urban Sanitation Policy

(Source: National Urban Sanitation Policy MoUD 2008)
The city sanitation plan recommends an action plan in two time horizons: Planning Horizon spanning 30 years (2012-2041) and action horizon spanning 10 years (2012-2021).

Planning Horizon (30 years: 2012-2041)

The Planning Horizon considers a period of 30 years from 2012 to 2041, and involves planning for an Intermediate Stage (2021 or 10 years) and an Ultimate Stage (2041 or 30 years). This Time Horizon is consistent with typical timeframes for planning infrastructure asset creation, and preparation of detailed project reports.

Action Horizon (10 years 2012-2021)

The Action Horizon considers a period of 10 years from 2012 to 2021 and is the time frame for the actions recommended. This Action Time Horizon is further divided into actions along Short Term – (3 years) Medium Term - (5 years) and Long Term - (10 years).

This document indicates time frame for action plans in the following sectors, which will collectively help Kochi in becoming a fully sanitised city.

- Governance and Institutional Framework
- Financial Sustainability
- Access to Toilets
- WasteWater Management
- Drainage network and natural drainage
- Water Supply
- Solid Waste Management

City Sanitation Plan for Kochi – Strategies and Action Plan
• Put SFDs and FSM into the broader picture...

• … to understand the sanitation ecosystem in the context of the 2030 Agenda

• Create and define the set of tasks and jobs along the mosaic of sanitation chains…and … provide capacity building and funding-mechanisms for workers, planners, consultings, banks and policy makers for the whole picture