Accelerating Faecal Sludge Management

HUBERT JENNY
ASIAN DEVELOPMENT BANK
Sanitation issues

- Urbanization driving the problem
- Poor water quality aggravates water scarcity
- Health: High infant and child mortality due to waterborne diseases
- Social: One third of all women risk shame, disease, and harassment
- Economic loss: 2%-7% of GDP p.a.
  - $9B for SE Asia; $64B for South Asia
Sanitation – still the neglected service

- MDG sanitation targets not met
- Onsite sanitation systems with no treatment
- Health and environment not improved
Sanitation challenge of the urban poor

- Beyond the reach of conventional systems
- Toilet perceived as nice superstructure than safe excreta management
- Inadequate planning and infrastructure provision
- Absence of pro-poor financing
Faecal sludge – ignored component

- Manual emptying
- Unregulated and informal service provision
- Limited performance of existing technology
Rethinking sanitation

- Change in mindset:
  - Increasing access to toilets is not enough
  - From centralized sewer approach to non-sewer sanitation chain

Non-sewer solution options

- On-site sanitation facilities with treatment: ‘toilets of the future’
- Fecal sludge or septage management
- With resource recovery
Rethinking waste

**Green agriculture**
- Wastewater for irrigation
- Treated sludge as fertilizer

**Green transportation**
Biofuel for buses
- Japan and Europe
- Delhi, India

**Green energy**
Biogas as fuel for cooking and lighting
What is required? -- A functional system

Input products

User Interface
- Toilet
- Latrines
- etc.

Collection, Storage/Treatment
- Septic tank
- Composting chamber
- etc.

Collection and Transport
- Vacuum trucks
- Mobile dewatering unit
- etc.

Treatment
- Activated sludge
- Lagoons, wetlands
- SBR
- etc.

Treatment
- Sludge dewatering
- Solar dryers
- Thermal hydrolysis
- etc.

Re-Use and/or Disposal
- Fertilizer
- Irrigation
- Aquaculture
- Biogas
- etc.
Septage management program

ENABLING CONDITIONS

- Policy and regulations
- Public awareness and social marketing
- Financing
- Full cost recovery
- Record-keeping and reporting
- Monitoring compliance

FACILITIES AND SERVICES

- Proper septic tank design and construction
- Septic tank desludging and septage transportation
- Infrastructure for septage treatment and disposal
- Reuse applications
Rethinking public finance

- Not a technical problem, but governance failure

**Central government**
- Policy and programs: sanitation given priority
- Institutional and budgetary coherence
- Targeted subsidies; conditional grants

**Local government**
- Political incentives
- Access to technical knowledge and fiscal tools
- Taxes and tariffs: earmarking for sanitation
What is required? -- Business plan

**Cost Centers**

**Capital Expenses**
- Loans
- Equity

**Operating Expenses**
- Direct O&M
- Support services
- Taxes
- Financing charges
- Depreciation
- write-offs

**Revenue Centers**

**Income:**
- Tariffs; user fees
- Taxes
- Transfers; Subsidies
- Sales (reclaimed water, energy, fertilizer)
- Carbon credits

**Savings from:**
- Cost reduction
- Performance efficiency savings

**Business Plan and cost recovery mechanism for sustainable services**
What is required? -- Engage stakeholders

- City-wide planning with stakeholders
- Understand diverse consumer needs and aspirations
- Trigger demand
- Community-based solutions
  - Simplify the product/process
  - Address affordability issues
  - Involve women
- Hygiene and environmental education
### ADB’s support to sanitation

<table>
<thead>
<tr>
<th>Water Financing Program</th>
<th>Pilot and Demonstration Activity</th>
<th>Water Operators Partnerships</th>
<th>Promoting Innovations in Wastewater Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Sanitation Trust Fund: Financial contribution from Bill and Melinda Gates Foundation</td>
<td>• Innovative technologies</td>
<td>• Twins weak and strong utilities</td>
<td>• Website</td>
</tr>
<tr>
<td>• Non-sewer sanitation solutions</td>
<td>• Policy reforms</td>
<td>• Objective: Adopt mentor’s best practices</td>
<td>• Case studies</td>
</tr>
<tr>
<td></td>
<td>• Capacity development</td>
<td></td>
<td>• Project development</td>
</tr>
<tr>
<td></td>
<td>• Knowledge products</td>
<td></td>
<td>• Technology datasheets</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Videos</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Toolkits</td>
</tr>
</tbody>
</table>
City Sanitation Strategies

- 10 cities in Viet Nam
- City-wide planning with stakeholders
- Includes septage management and decentralized treatment
Enabling policy and laws

Sanitation Code

- Manila, Philippines
- Makassar, Indonesia

Includes:
- Design standards
- Mandatory desludging
- Proper treatment and disposal
- Financing mechanisms
- Monitoring
- Penalties
Sanitation Safety Plan

...to reduce health and environmental risks that may arise during waste collection, transportation/conveyance, treatment, disposal and reuse.

- **Pilot sites/utilities:**
  - Maynilad: wastewater and septage management in Quezon City
  - Baliwag Water District: septage management
Solutions are available; Actions are needed

Toilets with treatment

Septage management

Sludge treatment for reuse

Decentralized treatment

Innovative technologies

Constructed wetlands
Thank you.

www.adb.org/water
www.wasterwaterinfo.asia