

# Accelerating Faecal Sludge Management

---

HUBERT JENNY

ASIAN DEVELOPMENT BANK

The views expressed in this paper/presentation are the views of the author and do not necessarily reflect the views or policies of the Asian Development Bank (ADB), or its Board of Governors, or the governments they represent. ADB does not guarantee the accuracy of the data included in this paper/presentation and accepts no responsibility for any consequence of their use. Terminology used may not necessarily be consistent with ADB official terms.

# 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



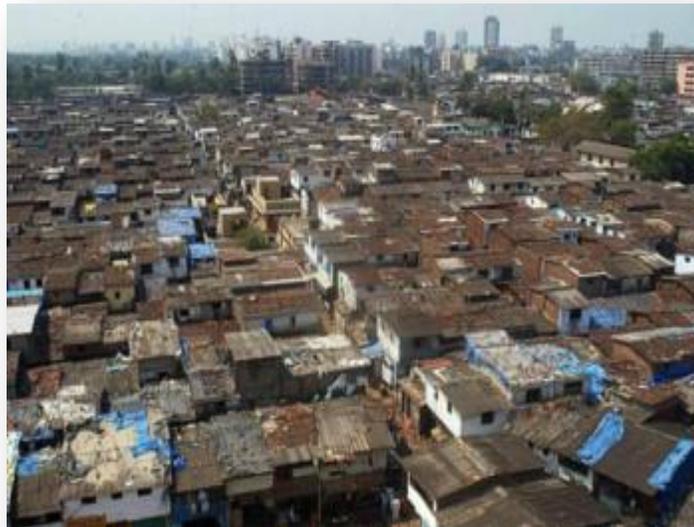
Onsite  
sanitation  
systems with  
no treatment



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

safe & valuable output 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

## Water Financing Program

- **Sanitation Trust Fund:** Financial contribution from Bill and Melinda Gates Foundation
- Non-sewer sanitation solutions

## Pilot and Demonstration Activity

- Innovative technologies
- Policy reforms
- Capacity development
- Knowledge products

## Water Operators Partnerships

- Twins weak and strong utilities
- Objective: Adopt mentor's best practices

## Promoting Innovations in Wastewater Management

- Website
- Case studies
- Project development
- Technology datasheets
- Videos
- Toolkits

# 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

```
graph TD; A[Sanitation Code] --- B[Manila, Philippines]; A --- C[Makassar, Indonesia];
```

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



# Promoting Innovations



**Knowledge Drive**



**Technology Drive**



**Financing and Incentives Drive**



**Awareness and Advocacy Drive**

[www.wastewaterinfo.asia](http://www.wastewaterinfo.asia)



# 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](http://www.adb.org/water)

[www.wasterwaterinfo.asia](http://www.wasterwaterinfo.asia)