

Accelerating Faecal Sludge Management

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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

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

Makassar,
Indonesia

Includes:

- Design standards
- Mandatory desludging
- Proper treatment and disposal
- Financing mechanisms
- Monitoring
- Penalties

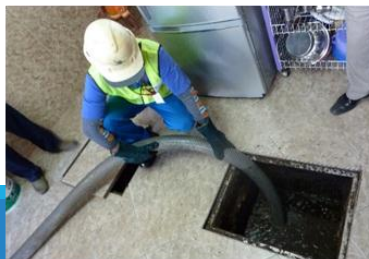
Sanitation Safety Plan



...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



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