Decentralized Sanitation in Nepal: Initiatives and Directions

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Outline

• Sanitation Context
• Policy and Regulatory Environment
• Institutional Framework
• Projects and Investments
• Training
• The Road Ahead
Nepal Overview

- Area: 147,181 km
- Population: 29 m (2018)
- GDP/person: USD 1003 (2018)
- Poverty: 21%

  WSS concurrent functions at three governance levels

- Water coverage
  - National: 85% basic services
  - Urban Water: 58% urban pop have piped services (2011)

- Basic sanitation
  - 97% ODF (Nepal overall, 2017 est)
Where Does Human Waste Go.....

Basic Sanitation Coverage

Year
2067-68 2068-69 2069-70 2070-71 2071-72 2072-73
No. of ODF VDCs
0
20
40
60
80
100
120

No. of ODF Municipalities

VDCs
Municipality

Ordinary Toilet
Unknown
No toilet
Flush toilet connected to sewer
Flush toilet connected to Septic Tank

12%
1%
9%
30%
48%


Direct Discharge
Wastewater Generation in Nepal

Domestic WW generation = 867 MLD

Sewer Network (Wastewater) = 288 MLD

On-site Sanitation (Faecal Sludge) = 579 MLD

Treated Wastewater = 20.1 MLD

DEWATS = 2.8 MLD

Unsafe Disposal without treatment = 267.9 MLD

Centralized WWTP = 17.3 MLD
Unprecedented Urbanization

- More people ...more water....more wastewater,
  - increased public health risk if unattended to
- Ineffective WASH Governance
  - Struggling institutions unable to cope up with rapid urbanization
  - Under developed institutional & technical capacity
- Lack of regulation
  - FSM until 2015 was “invisible” & “unregulated”
  - Non-compliance of environmental standards

Est Pop (2017)
- Urban: 66%
- Rural: 34%

Pop (2011)
- Urban: 17%
- Rural: 83%

- Political decision
- Many don’t possess urban characteristics
## SWOT Analysis

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weakness</th>
</tr>
</thead>
</table>
| • Highly successful ODF campaign to stand on  
• An era of high environmental awareness  
• Technological options to choose from | • Lack of political will, vision and drive  
• Lack of knowhow, skills, standards and SOPs  
• No meaningful dedicated programs and investments |

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
</table>
| • State restructuring demands local solutions and accountability  
• Good private sector interest – needs catalytic support  
• Local co-financing and regulation possible | • Low central priority and investment  
• Institutional and human capacity gaps  
• Weak regulatory enforcement – free riders…….. |
Institutional Framework for WASH

Policy, Planning, Execution and Regulation of WaSH sector

Planning, Execution of WaSH infrastructures

Planning, Implementation, Major Repairs of infrastructures

Planning and Implementation of Small WaSH Systems, Service provision, O&M and minor repair

NPC

MoF

DPs

Federal WASH Ministry
(NWASH SC)
(NWASH CC)

D W S S

WASH Sector Regulatory Authority

Provincial Government
Ministry Looking after WASH Sector
(Provincial DWSS / WASH CC)

District Assembly Coordination Committee
(WSSDO / DWASH CC)

Municipality / Gaunpalika
(M/V WASH CC)

Transitional Continuation
Legislative and Policy Environment

New Constitution (2015)
• Every citizen shall have the right of access to safe WSS services
• Right to live in a healthy and clean environment
• The victim of environmental pollution shall have the right to be compensated by the pollutant

Sector Specific
• New Policy on WASH and Act (in prep)
• WW and FSM Policy Position Paper
• FSM Institutional and Regulatory Framework (2017)
• Total Sanitation Guidelines (2017)

Cross Sectoral
• Local Governance Operation Act (2017)
  - Septic Tank Construction made Mandatory,
  - Policy, act, standards, planning, implementation, monitoring and evaluation, and regulation on basic health and sanitation
# Projects and Investment

## 5 year estimation

<table>
<thead>
<tr>
<th>Service areas/municipalities</th>
<th>No. of towns/munis</th>
<th>Agency</th>
<th>Source of funding</th>
<th>Investment (USD M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kathmandu Valley</td>
<td>20</td>
<td>KUKL/PID</td>
<td>GON &amp; ADB through Kathmandu Valley WW Mgt. Project</td>
<td>20</td>
</tr>
<tr>
<td>Small Towns</td>
<td>4</td>
<td>DWSS</td>
<td>GON &amp; ADB through Small Town Project</td>
<td>4</td>
</tr>
<tr>
<td>Munis outside KV</td>
<td>12</td>
<td>ENPHO, MuAN &amp; Munis</td>
<td>Munis, PS and DPs</td>
<td>12</td>
</tr>
<tr>
<td>Far-western</td>
<td>3</td>
<td>DUDBC</td>
<td>GON, Munis &amp; ADB through RUDP Project</td>
<td>3</td>
</tr>
<tr>
<td>Mid-Western</td>
<td>2</td>
<td>ENPHO &amp; Lumanti</td>
<td>Munis, PS and Simavi through WASH improvement project</td>
<td>2</td>
</tr>
<tr>
<td>Dhulikhel, Banepa, Panauti</td>
<td>2</td>
<td>ENPHO, MuAN &amp; Munis</td>
<td>Munis, PS and DPs</td>
<td>2</td>
</tr>
<tr>
<td>Mt. Everest (OP)</td>
<td>1</td>
<td>GON</td>
<td>GON, Nepal Tourism Board and PS Sector</td>
<td>1</td>
</tr>
</tbody>
</table>

Adoption of ISO 30500 and demonstration of RT products: GON and Munis, GON, Munis, PS and BMGF
# Decentralized Sanitation System

Wastewater management through DEWATS

<table>
<thead>
<tr>
<th>Plant</th>
<th>Location</th>
<th>Capacity (m³/day)</th>
<th>Treating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community based</td>
<td>Sunga Community</td>
<td>50</td>
<td>Municipal wastewater</td>
</tr>
<tr>
<td></td>
<td>Shrikhandapur Community</td>
<td>103</td>
<td>Municipal wastewater</td>
</tr>
<tr>
<td></td>
<td>Sano Khokhana Community</td>
<td>15</td>
<td>Municipal wastewater</td>
</tr>
<tr>
<td>Institutional Based</td>
<td>Dhulikhel Hospital</td>
<td>90</td>
<td>Hospital and staff quarter wastewater</td>
</tr>
<tr>
<td></td>
<td>Sushma Koirala Hospital</td>
<td>15-20</td>
<td>Hospital wastewater</td>
</tr>
<tr>
<td></td>
<td>ICIMOD</td>
<td>6</td>
<td>Main building wastewater</td>
</tr>
<tr>
<td></td>
<td>ENPHO</td>
<td>0.7</td>
<td>Combined laboratory and domestic wastewater</td>
</tr>
<tr>
<td>Individual Based</td>
<td>AMAghar</td>
<td>8</td>
<td>Domestic wastewater</td>
</tr>
<tr>
<td></td>
<td>Home-1</td>
<td>0.25</td>
<td>Grey water from bathroom and laundry</td>
</tr>
</tbody>
</table>
Overview of Training

- **FSM Institutional & Regulatory Framework Dissemination**
  - Sensitization to 700 stakeholders including 203 Mayors in 7 provinces
- **Capacity Building**
  - 105 Municipal Engineers on Technical, Operation and Policy
  - 45 professionals on FSM Diagnostic Tools
- **Knowledge Sharing through Twinning**
  - 20 professionals
- **Program Mapping, identifying gaps and actions**
  - 25 professionals
Key Stakeholders Performance Gaps

Key stakeholders were identified as having critical gaps in the knowledge, skills or abilities required to achieve FSM goals.

- **Mayors**
  - Awareness of FSM problem and potential solutions

- **Engineers/Municipalities**
  - Design
  - Construction
  - Monitoring

- **Emptier/Municipalities**
  - Occupational health and safety standards
  - Environmental protection standards

- **Masons/Municipalities**
  - Construction guidelines
  - Building codes
  - Quality control mechanisms

- **Entrepreneurs**
  - Opportunities
  - Tools and techniques
  - Financing options
  - Business models
Goals

6 months
• FSM policy in place and implemented
• Pilot municipalities identified
• Partnerships established

1 year
• National and regional training centres established
• At least 2 FSM training packages developed
• Municipalities will allocate land and budget for FSM (at least 7 in Kathmandhu)

3 years
• National and regional training centres established
• At least 2 training packages developed
• Municipalities to allocate land and budget

5 years
• Municipal engineers and operators performing optimally
• Inspectors are effective in monitoring and enforcing regulations
• FSM as a business model is well-established

10 years
• Recycled sewage system in place in each municipality
• All structures remain functional and sustained
Public-Private Partnership (pilot)

Public responsibility – both have roles to ensuring safe, available, acceptable and affordable services

### Public sector
- Provider and enabler of citizens’ right to safe WSS
  - Land for Treatment Plant
  - Policy, Guidelines, Standards
  - Capital cost
  - Service level agreement
- Protector of environment
  - Regulation and enforcement
  - Health and safety

### Private sector
- “Developer” – BOT (PPP Policy)
- O&M of treatment plant
- Reinventing waste business

### Support Agency
- CB and support in plan implementation
- Measuring performance
- Disseminating knowledge
The Road Ahead

- **Defining an institutional framework and legal basis with clarity on the roles and responsibilities**
  - Government, regulator, operators without duplication
  - Empowering the institutional driver through legislation, human and financial capital

- **Elaborating clear targets and strategies in the national periodic plans aligning with SDG 6.3 Goals by**
  - Adopting progressive realization principles to set practical, affordable and appropriate targets and pace

- **Integrating on-site sanitation in City-wide Sanitation Plans**
  - Preparing “model” plans

- **Preparing investment programmes**
  - Ensuring sufficient budgets in federal, provincial and municipal plans and budgets
  - Reinventing the waste business through “reduce, reuse and recycle”
The Road Ahead (cont’d)

- **Setting/updating wastewater and faecal sludge treatment standards**
  - Adopting incremental stringency - simple robust systems to begin with
  - With developed capacity and demonstrated value, subsequent steps

- **Preparing and applying user-friendly guidelines**
  - Operational and maintenance
  - Certification protocols and enforcement mechanisms including penalty for non-compliance

- **Developing monitoring and accountability mechanisms**
  - Quality and results, and
  - Instituting improvements
Knowledge Hub

Strengthening institutional, technical and operation capacity of Municipality and operators

Influencing federal and local policy and regulation

Knowledge Products, Innovation and Linkages
Clean Waters, Green City……
where people live, work and play

Without **commitment** you will never **start**
Without **consistency** you will never **finish**