PART I. Policy and Institutional Frameworks

CONTENTS
A. Policies, laws, regulations, standards facilitating decentralized eco-efficient sanitation solutions
B. Government planning processes for DEWATS
C. Building / strengthening capacities of DEWATS interveners
D. How can we increase demand for DEWATS?
A. Policies, laws, regulations, standards facilitating decentralized eco-efficient sanitation solutions (Enabling Framework)

• Toward a national agenda to drive wide-scale sanitation improvement: from institutional development to a programmatic framework:

• **Case study:** The National Sewerage and Septage Management Program in the Philippines

• **Case study:** The Unified Sanitation Sector Strategy and Action Plan in Viet Nam
A. Enabling Framework (contd.)

- Developing a transparent and accountable framework of enabling laws, regulations (incl. by-laws and permits) and standards (building code, appliance standards...)

- **Case study: Transformation of Phnom Penh Water Supply Authority into a Benchmark Water Utility**

- **Case study: DEWATS compliance monitoring and efficient enforcement in San Fernando City**
B. Government planning processes for DEWATS

• Linking DEWATS to national and sub-national development processes and strategic planning

• **Case study:** Indonesia’s City Sanitation Strategies Lessons Learned:

  Ownership, Comprehensive, Coordinated, Top-down meets bottom-up, Evidence-based
<table>
<thead>
<tr>
<th>Approach</th>
<th>Community Based</th>
<th>Institutional Based</th>
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<tbody>
<tr>
<td><strong>Level</strong></td>
<td><strong>Neighborhood</strong></td>
<td><strong>City Wide</strong></td>
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<tr>
<td>Adequate Sanitation:</td>
<td>On-site Sanitation:</td>
<td>Wastewater infrastructure services based on demand responsive approach</td>
</tr>
<tr>
<td>1. Rural</td>
<td>Small Scale Community Sewerage System (SANIMAS)</td>
<td><strong>Regional/National</strong></td>
</tr>
<tr>
<td>2. Slum Area</td>
<td></td>
<td>Wastewater infrastructures development support inter cities/region coordination to protect watershed from human waste pollution</td>
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</tbody>
</table>

- **Metropolitan & Large Cities**
  - Off-site/sewerage system

- **Medium & Small Cities**
  - Integrated system of existing on-site and new off-site sanitation
  - Improved Setage Treatment Plant (IPLT) and sludge services
  - Shallow/small bore sewer or small scale sewerage integrated to municipal sewage system to support revitalization program for old cities

- **New Town**
  - Develop a small sewage system for Low Cost Housing Area
  - Encourage sewerage development for new town

- **Clean River Program** (PROKASIH) or other similar program
B. Government planning processes for DEWATS

• Using sanitation mapping as a tool for DEWATS planning in urban, peri-urban areas, secondary towns

• Adapting DEWATS for public institutions and low income areas: schools, hospitals and other communal facilities; informal settlements

• Case study: Major lessons learnt from some DEWATS projects in peri-urban areas in Viet Nam (ADB-East-Borda ), in Cambodia and Laos (BORDA-GRET)
C. Building / strengthening capacities of DEWATS interveners

• Experience of WSP, ADB, BORDA, GRET and others in the SEA region

Case study: Capacity building at scale: one-stop shops, Indonesia
D. How can we increase demand for DEWATS

- Hygiene and sanitation behavior change: identifying the key motivators and social incentives for DEWATS adoption by consumers; assessing DEWATS health impacts

- Capacity and willingness to pay for DEWATS

**Case study:** Affordability assessment for DEWATS in Khe Tre town, Viet Nam
D. How can we increase demand for DEWATS (ctd.)

• **Economic incentives:** consumers’ upfront contributions; tariff-based measures, cross-subsidies, cash transfers and other mechanisms for poorest HH

**Case study:** Five-Point Strategy for Promoting Pro-Poor Household Connections in Viet Nam
D. How can we increase demand for DEWATS

• Advocacy and promotion for DEWATS:
  ➢ Finding DEWATS champions;
  ➢ Sanitation Alliance and other multi-sectoral networks and coalitions;
  ➢ Advocacy, communication, education and promotion campaigns,
  ➢ School based Sanitation
Group Discussion Part I: Policy & Institutional Frameworks to Enable DEWATS in Cambodia, Lao PDR and Viet Nam

Objective 1: What works and what needs more attention as enabling policies, regulations, and standards for wastewater management services and DEWATS in urban and peri-urban areas?

Objective 2: List the measures to enhance the current capacity of the governance and institutional framework on wastewater management services and DEWATS in urban and peri-urban areas

Objective 3: List successful measures to increase demand and supply of DEWATS
Group discussion Part I: Policy and Institutional Frameworks to Enable DEWATS

Objective 1: Identify what works and what needs improvement in existing policies, regulations, and standards to enable wastewater management services and DEWATS in urban and peri-urban areas.

Objective 2: List the measures to enhance the current capacity of the governance and institutional framework on wastewater management services and DEWATS in urban, peri-urban areas and secondary towns.
OBJECTIVE 1: Identify what works and what needs improvement in existing policies, regulations, and standards to enable wastewater management services and DEWATS in urban and peri-urban areas:

a. Vision, roadmap, strategies
b. Policies and programs
c. Laws, regulations, standards, norms
Day 1, Session 4
Group Discussion Part I:
Policy and Institutional Frameworks to Enable DEWATS in Cambodia, Laos and Viet Nam

OBJECTIVE 2: List the measures to enhance the current capacity of the governance and institutional framework on wastewater management services and DEWATS in urban, peri-urban areas and secondary towns

a. Wastewater master plans, city wide sanitation plans...
b. How to better integrate centralized with decentralized systems at municipal level?
c. List the major lessons learnt from DEWATS pilots re. stakeholder engagement, planning, implementing, managing, Operation and Maintenance (O&M)
d. How to scale up DEWATS at commune/municipal level?
e. Ways to sustain multi-sectoral cooperation and coordination among national and local institutions and with external support agencies
f. Identify effective DEWATS partnerships: public-private sector-social entrepreneurs-NGOs and CBOs to ensure pro-poor and socially inclusive approaches in sanitation services?
Thank you

PART II. Technical and Financial frameworks

Day 2, Session 5

A. How can we design and implement sustainable DEWATS?
   1. Technology and system choice
   2. DEWATS supply chain
   3. Design of DEWATS

B. Sustainable financing & financial viability of DEWATS
A. How can we design and implement sustainable DEWATS?

1. System choice

1. Technology and system choice:
   Comparing and deciding on eco-efficient technology options

*Policy Guidelines: DEWATS Municipal Sludge Treatment Facility-BORDA*
- Low investment and operation costs
- High load capacity and efficient design
- On-site waste to be disposed of properly/on-time
- Compost packaging and biogas generation
A. How can we design and implement sustainable DEWATS?

1. System choice

- Collecting date for source and site characterization
- Assessing DEWATS costs and benefits of options and setting cost curves
- Optimizing treatment performance by using prefabricated modular DEWATS components, water reuse, sludge resource recovery and methane mitigation and recovery
A. How can we design and implement sustainable DEWATS?

1. System choice

• Optimizing treatment performance:

Policy guidelines: Advantages of Prefabricated Modular DEWATS Components

Policy Guidelines: Wastewater Methane Mitigation and Recovery Approaches

Case study: Wastewater Treatment and Reuse through Constructed Wetlands in Vientiane

• Optimizing DEWATS performance

Policy Guidelines: DEWATS Quality Management systems
A. How can we design and implement sustainable DEWATS?

2. DEWATS supply chain

• Training and certifying tradesmen and service providers in the best installation practices; working with local manufacturers to develop a full line of wastewater collection, treatment, and reuse products through a program of prototyping, testing, and commercialization

**Case study:** Schematic supply chain for latrines in Cambodia

**Policy Guidelines: Enabling the Supply Chain (WB, 2014. Tapping the Markets...)**
A. How can we design and implement sustainable DEWATS?

3. Design

- DEWATS layout and design principles
- Critical inputs and outputs for the design of DEWATS
- Clarifying the permit approval process including reviewing and approving engineered designs
B. Sustainable financing & financial viability of DEWATS

1. Financing DEWATS value chain

2. Assessing cost effectiveness, cost recovery and resource recovery of DEWATS facilities: optimization of DEWATS usage; maximizing asset management and fee collection

*Case Study: Assessment of DEWATS cost effectiveness in Indonesia (WSP, 2013)*
B. Sustainable financing & financial viability of DEWATS

3. Diversified and innovative financing: public, private, international partnerships: ADB Sanitation and Viability Gap Funds, bilaterals, international networks (Borda, GRET, Sanitation Alliance, WSSCC Global Sanitation Fund), Foundations (Bill & Melinda Gates)

Case study: The Sanitation Revolving Fund in Viet Nam

Case study: Community Hygiene Output-Based Aid, Viet Nam
B. Sustainable financing & financial viability of DEWATS

4. Marketing the waste as a resource

*Policy Guidance: Resources in human waste and markets for safe disposal and reuse*

<table>
<thead>
<tr>
<th>Waste medium</th>
<th>Productive use</th>
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<tbody>
<tr>
<td>Urine</td>
<td>Fertilizer</td>
</tr>
<tr>
<td>Raw faecal sludge</td>
<td>• Fertilizer and soil conditioner&lt;br&gt;• Household biogas&lt;br&gt;• Community biogas&lt;br&gt;• Feedstock for biodiesel</td>
</tr>
<tr>
<td>Dewatered faecal sludge</td>
<td>• Growth medium for black soldier fly larvae&lt;br&gt;• Soil conditioner&lt;br&gt;• Solid fuel</td>
</tr>
<tr>
<td>Co-composted faecal sludge</td>
<td>Soil conditioner</td>
</tr>
<tr>
<td>Untreated wastewater</td>
<td>Irrigation</td>
</tr>
<tr>
<td>Wastewater partially treated</td>
<td>Aquaculture</td>
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</tbody>
</table>

*CDM:*
capturing and recycling of biogas from sewage treatment, treatment of wastewater in combination with solid waste, by co-composting or in an anaerobic digester
Group Discussion Part 2: Technical & Financial Frameworks and Solutions to Enable DEWATS in urban and peri-urban areas of Cambodia, Lao PDR, Viet Nam

Objective 1: Identify enabling technical and economic decision making processes to plan investments, design, implement, operate and monitor DEWATS facilities

Objective 2: List successful measures to increase demand and supply of DEWATS
Objective 1: Identify enabling technical and economic decision making processes to plan investments, design, implementation, operation and monitoring of DEWATS facilities:

a. List technical service delivery packages for DEWATS: modular, replicability and scaling up

a. Experiences with effective financing for DEWATS: national and local investment strategies and plans, OBA, loans and grants, specific funds (ADB, Global Sanitation Fund, other foundations), private sector, household cost contributions

b. Cost recovery options for Operation Expenditures (OPEX) and Capital Expenditures (CAPEX)

c. Measures to reach the poorest in sanitation service delivery
Objective 2. List successful measures to increase demand and supply of DEWATS:

a. Measures to assess and increase willingness and capacity of households to pay: Information-Education-Communication (IEC), Community Led Total Sanitation (CLTS), community and women’s involvement, affordability and household (HH) preference assessment

b. Measures to improve and better coordinate the supply chain for enhanced DEWATS goods and services delivery from importers, wholesalers to retailers and local vendors, builders
Thank you