PROMOTING INNOVATIONS IN WASTEWATER MANAGEMENT IN ASIA AND THE PACIFIC

Regional Policy Workshop of Stakeholders on Decentralized Wastewater Treatment Systems (DEWATS) in Southeast Asia
Bangkok Day 3 – 21 March 2014
Background

- ADB’s Strategy 2020:
  - water as a crosscutting core business area of ADB’s operations for infrastructure and the environment

- Seven-point water agenda (2008):
  - comprehensive sanitation approach “from toilet to river” to address household and environmental sanitation in both urban and rural areas

- ADB’s Water Operational Plan, 2011–2020
  - expanded wastewater management and reuse, including sanitation and hygiene
  - expanded knowledge and capacity development using technology and innovation more directly
  - enhanced partnerships with the private sector
Background

- Wastewater Management Revolution

  - Discussed in numerous international events, planting the seeds for a revolution:
    - UNEP Global Conference on Oceans and Lands (Jan 2012)
    - World Water Week (Stockholm, August 2011)
    - 2nd ADB – DMC and Partners Sanitation Dialogue (May 2011)
    - UNEP-KOICA-WSP-CAPS Regional Meeting on Demonstration of Ecological Sanitation and Other Decentralized Sanitation in the Southeast Asian Countries (Manila, May 2011)
    - IWA World Water Congress (Montreal, Sept 2010)
    - UNESCAP Regional Dialogue on Wastewater Management in Asia (Malaysia, June 2010)
Wastewater Management

Why innovations?

- To change mindsets about wastewater:
  - Increasing access to toilets not enough, need behavior change for sustainable improvements to health and the environment
  - Wastewater should be given a much higher priority
    - About 90% of wastewater in Asia is discharged without proper treatment – impacts on health, ecosystems, water security, economy
  - Wastewater can be a viable business
    - Not purely a cost burden, but an investment - with financial and economic returns given right conditions

Innovation: key to changing mindsets and structures.
Wastewater Management

Compelling arguments

- necessary for the welfare of several billion people, whose health, dignity, livelihood and amenities are compromised
- ill-managed wastewater has a high economic cost, and can act as a brake on poverty reduction and further investment and development
- pollution affects water supplies, health and ecosystems
- increasing scarcity of water, so recycling important
- benefits from recycling essential resources from wastewater, e.g., water, nutrients, methane
Potential Opportunities for Wastewater Management in Asia

- There is growing demand for alternative sources of water and energy.

- Potential area for green growth: Addressing the Water-Energy-Food Nexus simultaneously

- Green technologies in water and sanitation: opportunities for cross-sector applications
  - reuse of wastewater and stormwater
  - energy/power
  - agriculture (irrigation, organic fertilizer)

Sanitation is seen as an investment dead end; however, it can be a potential business opportunity.
Key Partners

- **International Water Association**
  - Case studies, technology datasheets, workshops

- **UNESCO-IHE**
  - MoU on operational research; use of experts for peer review of complex projects, and project preparation and implementation; knowledge sharing and capacity development
  - Wastewater Management Expert System (WaMEX)

- **PUB Singapore / IE Singapore**: Knowledge sharing

- **World Bank/WSP**: Econ of Sanitation; Urban Septage Mgt Study

- **Japan Sanitation Consortium**: case studies

- **BORDA**: Different DEWATS approaches, case studies, training

- **IWA and UNSGAB** on the Omega Action – Wastewater Management Revolution
RETA 8060: Promoting Innovations in Wastewater Management in Asia-Pacific
Status

- RETA approval: March 2012
- GOJ (JFPR fund): USD 2 million
- Duration: 4 years

Coverage

- Region-wide: knowledge, technology, financing and awareness drives

- **8 Priority countries:**
  - Bangladesh, India, Indonesia, Mongolia, Philippines, Sri Lanka, Uzbekistan, and Viet Nam
  - knowledge sharing events
  - pre-feasibility studies, business opportunity briefs, investment roundtables
Component drives

- **Pillar 1 - Knowledge drive**: compilation of successful and sustainable sanitation, wastewater, and sludge management case studies to share experiences and lessons learned

- **Pillar 2 - Technology drive**: datasheets for appropriate and specific technologies and their applications for different treatment standards needed for various end-uses

- **Pillar 3 - Financing and incentives drive**: business opportunity briefs and pre-feasibility studies with financing mechanisms to fast-track wastewater investment projects, and encourage extraction of resources from wastewater

- **Pillar 4 - Awareness and advocacy drive**: capacity development workshops; roundtables for taking up identified business opportunities; advocacy and knowledge products
Knowledge Drive

- Compile sustainable models/case studies
- Choices in the sanitation ladder; benefits and impacts
Technology Drive

**User Interface**
- Dry toilet
- Pour-Flush toilet
- Urine diverting toilet
- etc.

**Collection and Storage/Treatment**
- VIP
- Septic tank
- Composting chamber
- Anaerobic baffled reactor (ABR)
- etc.

**Conveyance**
- Condominial
- Small-bore sewer
- Conventional gravity sewer
- Motorized emptying and transport
- etc.

**Centralized Treatment**
- Activated sludge
- Stabilization ponds
- Membrane bioreactor
- Constructed wetland
- etc.

**Reuse and/or Disposal**
- Compost fertilizer
- Biogas energy
- Water for industrial use & power cooling
- Irrigation
- etc.
Financing and Incentives Drive

- Fast-track wastewater investment projects based on Knowledge and Technology Drives
  - Pre-feasibility studies with innovative technologies and financing mechanisms
  - Business opportunity briefs (based on pre-FS)
  - Innovative delivery and financing mechanisms
  - Encourage extraction of resources from wastewater
    - Show potential revenues from biogas, power, fertilizer, reclaimed water
  - Promote partnership with the private sector
    - Develop bankable projects with cost-effective technologies and cost recovery mechanism
Awareness and Advocacy Drive

**Awareness and capacity development**
- Sub-regional knowledge sharing conferences and capacity development workshops
- In-country Roundtables with “willing” stakeholders for taking up identified business opportunities
- Increase public awareness and involve stakeholders
  - to stimulate demand and willingness to pay

**Advocacy and knowledge products for dissemination**
- Policy briefs, discussion notes, articles
- Multi-media
- Toolkits

- Go beyond advocacy
- Develop sustainable business opportunities
- Have stakeholder buy-in
Progress to date
Technology Drive and Knowledge Sharing (Pillars 1 and 2)

- Development of virtual knowledge hub
  - [www.wastewaterinfo.asia](http://www.wastewaterinfo.asia)
    - Available now, formal launching in May 2014
    - Four videos available in the website

- Wastewater Management Expert (WAMEX): for wastewater decision tool.

- Development of knowledge products ongoing
  - 86 project briefs
  - 86 technology datasheets
  - 4 case studies
  - 1 policy brief from JSC (Japanese Sanitation Consortium)
Awareness campaign (Pillar 3)

- Actively engaged 7 out of 8 target countries with positive feedback
  - Conducted successful sub-regional conference (1) in Jan 2013, and in-country workshops (6) in 2013
  - Identified areas of opportunities, twinning programs, policy requirements all linked to ADB investments
  - Strengthened coordination between RDs and donors
  - Demand from other DMCs to be included as priority country
City Development Initiatives in Asia (CDIA) approaches have been introduced to several cities and the TOR for CDIA study has been completed for Colombo, Sri Lanka.

Global Environment Fund (GEF) is also considered.

Strong tie up with the Sanitation Trust Fund (Bill & Melinda Gates Foundation, BMGF, $15M)
What’s Next
Progress of the Sector

- 1. 3rd Asian Sanitation Dialogue (27-29 May, Manila)
  - 3 themes - sanitation, green cities, development and SWM
- 2. More knowledge work together with partners
- 3. Complete the in-country workshops in Mongolia
- 4. Sanitation Pilots and Demonstration projects supported by BMGF
Thank you

For more information contact:
ADB Project Officer – Ms. Jingmin Huang (jhuang@adb.org)