Introduction of WEPA and Workshop Objectives

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Today’s Presentation

• **Introduction** of WEPA

• **Past Activities** on Domestic Wastewater Treatment in Asia

• **Focus points** for Today’s Workshop
WEPA (Water Environment Partnership in Asia)

Knowledge Sharing for Solution Finding

- Water Environmental Management Review
- Domestic Wastewater Treatment
- Climate Change and Water Environment
WEPA Partner Countries

WEPA consists of partners in 13 Asian countries

1. Democratic Socialist Republic of Sri Lanka (Sri Lanka)
2. Federal Democratic Republic of Nepal (Nepal)
3. Japan (Japan)
4. Kingdom of Cambodia (Cambodia)
5. Kingdom of Thailand (Thailand)
6. Lao People’s Democratic Republic (Lao PDR)
7. Malaysia (Malaysia)
8. People’s Republic of China (China)
9. Republic of Indonesia (Indonesia)
10. Republic of Korea (Republic of Korea)
11. Republic of the Philippines (Philippines)
12. Socialist Republic of Viet Nam (Viet Nam)
13. Union of Myanmar (Myanmar)
Past Activities in Domestic Wastewater Treatment

**FY2009**
Workshop in Hanoi
- Current situation and issues on domestic wastewater treatment in capital city were shared

**FY2010**
Questionnaire Survey
- Review of national policy for domestic wastewater treatment
- Hot spot identification
- Collection of good practices on domestic wastewater management (mainly project-level)

**FY2011**
Workshop in Manila
- Good practices (Strategic/programmatic level of experience) on domestic wastewater treatment were shared at Workshop in Manila

**FY2012**
Workshop in Siem Reap
- Good practices of Decentralized Domestic Wastewater Treatment in Asia were shared at Workshop in Siem Reap.
**Methodology for Domestic Wastewater Treatment**

**Centralized Treatment**
- Wastewater collection and treatment system for more than two communities (sewerage treatment plant)

**Cluster Treatment**
- Wastewater collection and treatment system for two or more households but less than an entire community (such as community based treatment plant)

**On-site Treatment**
- Treatment system to collect, treat and discharge domestic wastewater from individual households without the use of community-wide sewers (such as septic tank, Johkasou)
Centralized Treatment Facility in WEPA Countries

Beijing
(1 million m$^3$/day: Activated Sludge)

Kathmandu
(16 thousands m$^3$/day: Oxidation Ditch)

Urumqi
(10 thousands m$^3$/day: Oxidation Ditch)

Jakarta
(45 thousands m$^3$/day: Oxidation Pond)

Suphan Buri
(11 thousands m$^3$/day: Stabilization pond)

HCMC
(30 thousands m$^3$/day: Oxidation Pond)
Centralized Treatment Coverage in WEPA Countries

Service coverage ratio of sewerage treatment in WEPA countries

Country(Year)

Sewerage Treatment Coverage (%)

Korea(2009) 80%
Japan(2010) 70%
China(2010)* 60%
Malaysia(2010)** 40%
Thailand(2008) 20%
Vietnam(2010) 10%
Philippine(2010) 5%
Myanmar(2010) 5%
Nepal(2010) 5%
Indonesia(2010) 5%
Cambodia(2010) 5%
Laos(2010) 5%
Sri Lanka(2010) 5%

*Chinese data is only for urban area
**Except in Sabah and Sawawak province

Less than 5%

Sewerage Treatment Coverage
(Black Water and Grey Water)
**Possibility of Decentralized Domestic Wastewater Treatment in Asia**

**Centralized Treatment**
Wastewater collection and treatment system for more than two communities (sewerage treatment plant)

**Cluster Treatment**
Wastewater collection and treatment system for two or more households but less than an entire community (such as community based treatment plant)

**On-site Treatment**
Treatment system to collect, treat and discharge domestic wastewater from individual households without the use of community-wide sewers (such as septic tank, Johkasou)
### Diversity in Methodology of Decentralized Domestic Wastewater Treatment in Asia

**Common Facility (There is no toilet and kitchen in individual households)**

- **Examples:**
  - MCK++ (Indonesia)

**Cluster (Common type)**

- **Example:**
  - Decentralized domestic wastewater treatment (China)

**Cluster (sewerage type)**

- **Example:**
  - Johkasou (Japan)

**On-site (Black Water)**

- **Example:**
  - Septic Tank (Thailand)

**On-site (Black Water) and Grey**

- **Example:**
  - Septic Tank (Thailand)
### Diversity in Responsible Entity for Construction and Operation

| Local Government | [Example]  
| --- | --- |
|  | • Construction and operation of decentralized domestic wastewater treatment in China  
|  | • Construction and operation of cluster domestic wastewater treatment in Thailand |

| Private company/developer | [Examples]  
| --- | --- |
|  | • Construction and operation of small scale domestic wastewater treatment facility in Malaysia (Developer/IWK)  
|  | • Construction and operation of small scale domestic wastewater treatment facility in Manila (Manila Water and Manilad) |

| Community | [Examples]  
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<td>• Construction and operation community based domestic wastewater treatment plant in Indonesia (SANIMAS)</td>
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| Individual person (house owner) | [Examples]  
| --- | --- |
|  | • Installation and operation of on-site domestic wastewater treatment (Johkasou) in Japan  
|  | • Installation and operation of septic tank in Thailand and Manila |
Objective of Workshop

To share experiences on promotion and management of Decentralized Wastewater Treatment System (Technology/Management) among WEPA member counties as well as discuss the future possibility of decentralized domestic wastewater treatment in Asia.

Day 1
(13 November)
- Kubota Workshop: *Johkasou* (Japanese on-site domestic wastewater treatment system)

Day 2
(14 November)
- WEPA Workshop: *SANIMAS* (Community based domestic wastewater treatment system in Indonesia) + Cases in *Thailand and Vietnam*
Uniqueness of the Workshop

• **Jointly hosted** by Kubota Cooperation and WEPA under different MOEJ’s project

• **Workshop + Site Visit**
  (Johkasou and SANIMAS)

• **Selected Countries**
  (Indonesia, Thailand, Vietnam +Japan)
## Day 2: Agenda in the morning session

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<td>Introduction of cluster domestic wastewater treatment system in Nakhon Ratcahsima municipality <em>(Nakhon Ratcahsima municipality)</em></td>
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<td>Technology applied in decentralized domestic wastewater treatment in Vietnam <em>(National University of Civil Engineering)</em></td>
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Day 2: Site visit in the afternoon session

We are now here

SANIMAS site
Focus Points

• To understand the difference (performance, cost, required legal framework) in different system/country.

• Possible system in your country considering natural and socio-economic conditions.
Thank you for your participation