

# ACTIVITIES OF THE JAPAN SANITATION CONSORTIUM

*- For the improvement of sanitation through knowledge diffusion -*

20 November 2013

WORKSHOP ON ON-SITE DOMESTIC WASTEWATER TREATMENT IN ASIA

Pierre Flamand  
Manager – International Affairs

# Current Sanitation Situation in the Asia-Pacific Region

## MDGs and Sanitation

### WORLD OFF TRACK FOR MDG TARGET

*Progress on Sanitation and Drinking Water, WHO and UNICEF*

The world will miss the MDG target for sanitation coverage by 13 percentage points

2.6 billion people – 72% of whom live in Asia – do not have access to improved sanitation facilities

85% to 89% of wastewater in Asia is estimated untreated

1 billion people practice open defecation



### CURRENT SITUATION IN THE ASIA-PACIFIC

- *500 million people still without access to safe drinking water*
- *About 2 billion without access to improved sanitation*

# Sanitation Issues in the Asia-Pacific Region



**Economic growth**  
**Rapid urbanization**



**Increased needs for clean water**

**2 billion people without access**  
**to improved sanitation facilities**



**Spread of waterborne diseases**  
**and negative economic impacts**

**Lack of wastewater treatment**  
**and reuse**



**Shortage of water resources**  
**mainly due to water pollution**

**New rainfall patterns**  
**with climate change**



**Increase of floods and droughts**

**Undeveloped policy, institutions,**  
**investment and capacity**



**Low progress of sanitation coverage**

**UN Millennium Development Goals:** *“Halve the proportion of people without access to safe drinking water and basic sanitation by 2015”*

# THE ROLE & TASKS OF THE JAPAN SANITATION CONSORTIUM (JSC) FOR INTERNATIONAL COOPERATION



## JSC Establishment - *Background*



March 2006

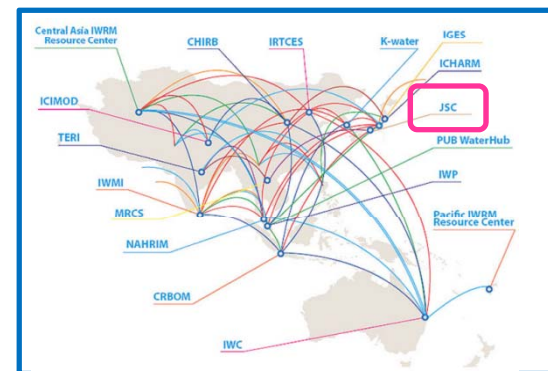
Water Financing  
Water-related Disaster Management  
Water for Development and Ecosystems



September 2006



December 2007



21 Priority Water Topics – 17 KnowledgeHubs



June 2009

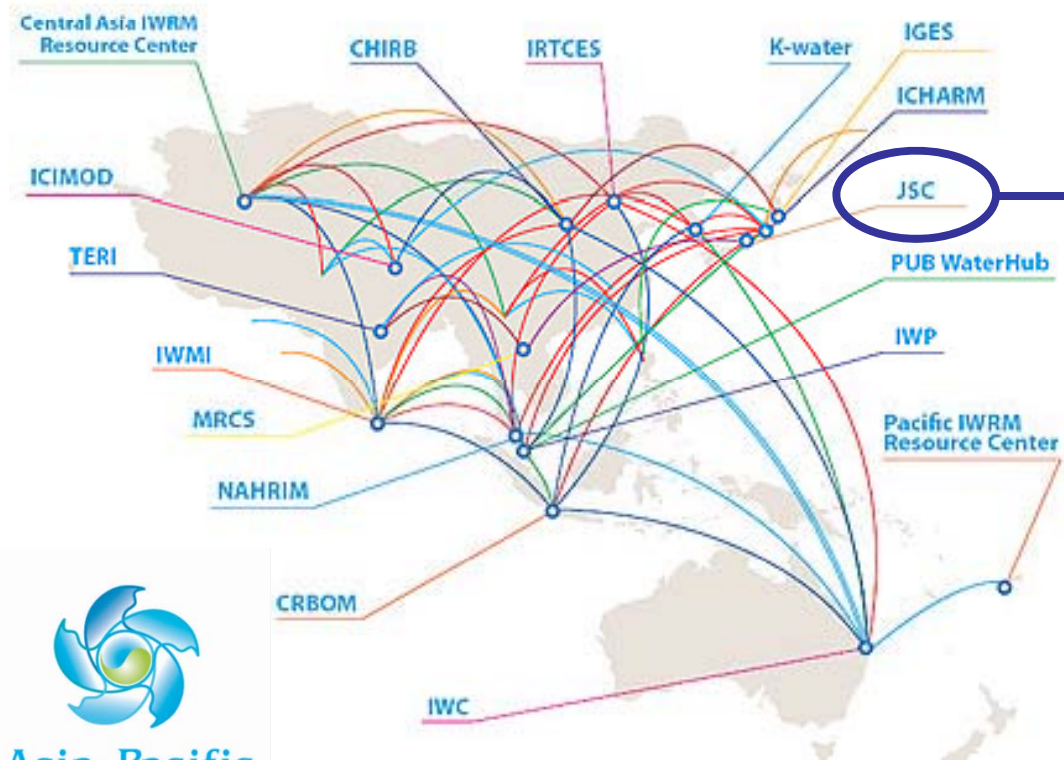


16 October 2009

On 26 June 2009, JSC was internationally recognized as the APWF's KnowledgeHub for sanitation.



- The Japan Sanitation Consortium (JSC) was launched on 16 October 2009
- JSC consists of 5 of the main **expert organizations nationwide** involved in the management and regulation of wastewater, sludge and septage in Japan (**on-site and off-site sanitation**)
- JSC aims to utilize **Japan's expertise in sanitation** as well as **success stories** and **valuable experiences from other countries** to offer a **wide range of solutions** and management strategies for sanitation improvement in the Asia-Pacific region



- JSC collaborates with **ADB**, **international organizations**, **NGOs**, **etc.** for sanitation improvement

#### ● JSC MEMBER ORGANIZATIONS

##### Off-site Sanitation

- Sewerage Business Management Centre
- Japan Sewage Works Association
- Japan Sewage Works Agency



##### On-site Sanitation

- Japan Environmental Sanitation Center
- Japan Education Center of Environmental Sanitation





## JSC Objectives, Tasks & Activities

### **OBJECTIVES:**

Promote sanitation improvement through:

- Policy strengthening
- Increase of technical & managerial knowledge (O&M) through capacity development
- Promote the diffusion of:
  - **basic sanitation (toilets)** with appropriate wastewater treatment systems
  - **on-site sanitation** (decentralized wastewater treatment systems)
  - **off-site sanitation** (sewerage)
- Septage management
- Sludge recycling, energy recovery, wastewater reuse & recycling

## ***JSC Objectives, Tasks & Activities***

### **TASKS**

- **Gather information on sanitation conditions, success stories & good practices**
- **Consolidate, share and spread knowledge through international activities including workshops and collaboration with international organizations**
- **Support, advise clients and partners (Central & Local Governments, International Donor Agencies, NGOs, etc.)**



## *JSC Objectives, Tasks & Activities*

### **ACTIVITIES**

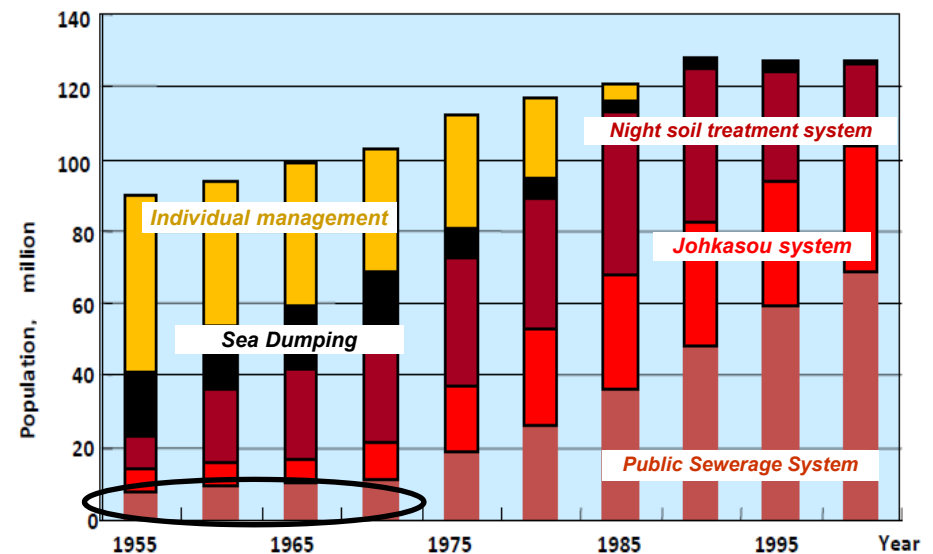
- **Networking:**
  - identify sanitation-related institutions
  - manage information networks
- **Comprehensive country assessments:**
  - understand local conditions and identify needs
  - conduct sanitation mapping and advise for sanitation improvement
- **Creation & management of a database for sanitation in the Asia-Pacific region**
- **Collaboration with International Donor Agencies (ADB, JICA, etc.) and other international organizations (UNICEF, World Toilet Organization, NGOs, etc.)**

## Brief history of wastewater management – *Background*

- **Night soil: historically considered as a valuable resource** → night soil collection and recycling spread throughout Japan in the 12<sup>th</sup> century (estimate) as a resource for agriculture
- **Economic growth (from the mid-1950s to early 1970s) accompanied by severe water pollution**
- **At the time, low sewerage coverage (less than 10% of population), rapid population growth in cities, night soil is no longer recycled as a fertilizer: problem with excess of night soil**
  - mechanization of desludging operations, development & diffusion of night soil treatment plants
  - Conversion to (tandoku-shori) johkasou when installing a flush toilet outside sewerage areas
    - rapid spread of johkasou
  - **Fundamental revision of the ‘Sewerage Service Act’ and enactment of the ‘Water Pollution Control Act’ during the “Pollution Sessions” Focused Diet” in 1970** = massive investment in sewerage construction
- **Introduction of new johkasou enabling gray/black water treatment in the 1980s**



Development of wastewater and night soil management in Japan (1955-2000)

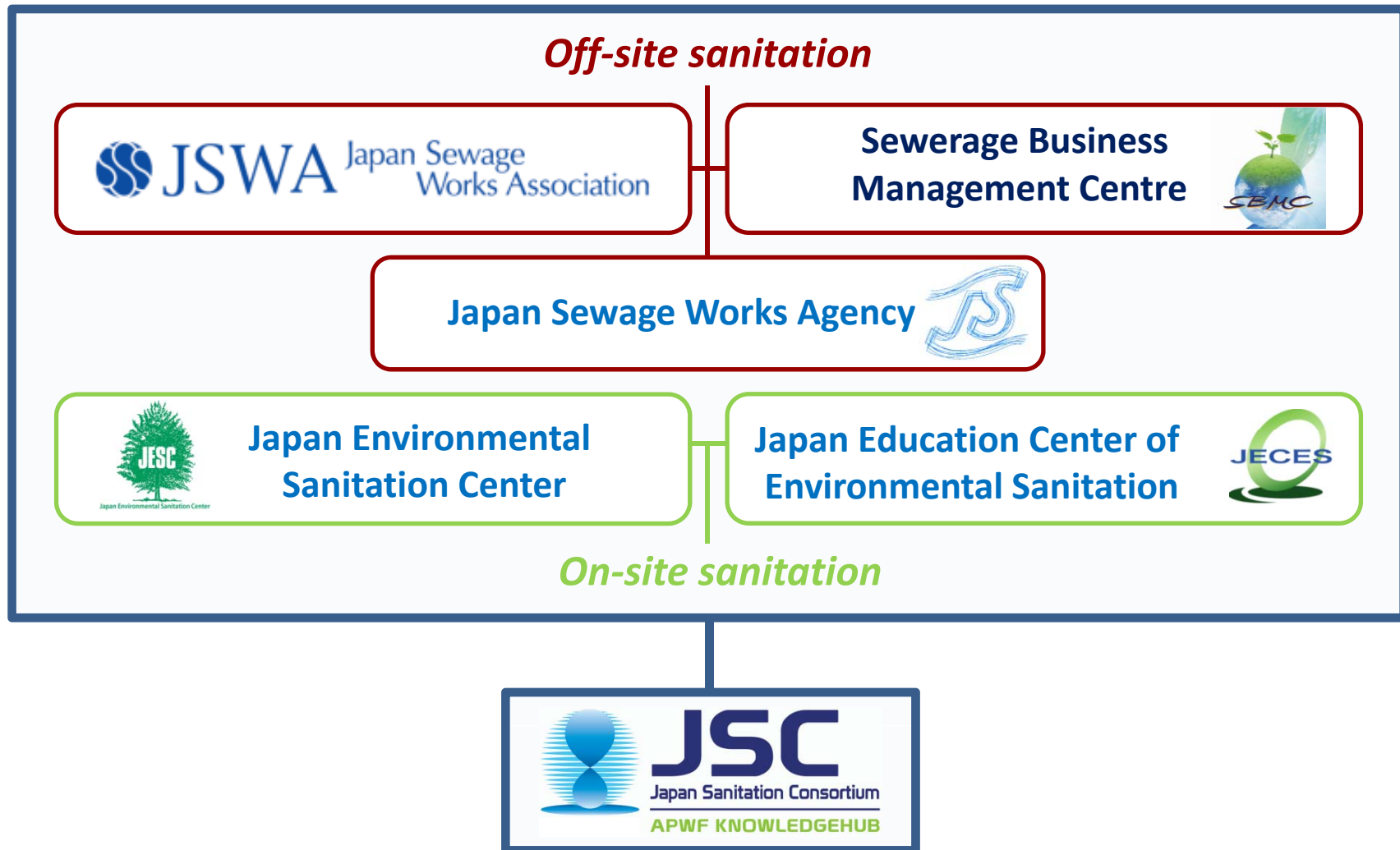


## JSC covers on-site & off-site sanitation

### 5 member organizations

Among the main professional agencies managing sanitation in Japan

More than 1300 staffs



## SEWERAGE BUSINESS MANAGEMENT CENTRE



Created in 1991 to contribute to the preservation of the water quality and environment

### Activities in Japan:

- Assessment, planning & management of sewerage construction and aging facilities
- Publications (design guidelines, manuals for construction supervision)

### International activities:

- SBMC organizes every year since 1999 the **JICA Sewage Works Engineering and Stormwater Technology** in collaboration with MLIT
- Has been attended by more than 500 trainees from about 70 countries

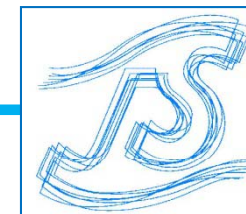


Country	year	Total ('73-'00)	01	02	03	04	05	06	07	08	09	10	Total ('01-'10)	Total ('73-'10)
1 Brazil ブラジル		25	1					1		1	1		4	29
2 Cambodia カンボジア		4								1	2		3	7
3 Colombia コロンビア		5		1		1						1	3	8
4 Dominican Republic ドミニカ共和国		0							1	1	1		3	3
5 Jamaica ジャマイカ		0						1				2	3	3
6 Kenya ケニア		6	1			1	2	1	1	1	1		8	14
7 Liberia リベリア		0										2	2	2
8 Malaysia マレーシア		12	1		2					2	1	1	7	19
9 Morocco モロッコ		2	1			1	1			1			5	7
10 Myanmar(Burma) ミャンマー(ビルマ)		6							1	1	1	1	4	10
11 Palau パラオ		1									1		1	2
12 Papua New Guinea パプアニューギニア		3					1	1				2	4	7
13 Sri Lanka スリランカ		1	1	2	2	1	2		2	2	2		14	15
14 Sudan スーダン		4										1	1	5
15 Swaziland スワジランド		0										1	1	1
16 Syria シリア		6			2	1	1			2	2		8	14
17 Turkey トルコ		6									1		1	7
18 Viet Nam ベトナム		3									1	1	2	5
19 Zimbabwe ジンバブエ		1										1	1	2

Table.1 Trainees in the past 10 years (Excerpt)

**Approach: - Theoretical and practical learning**

**- Close work with a tutor, development of case studies with countermeasures based on actual problems in the trainees' country**



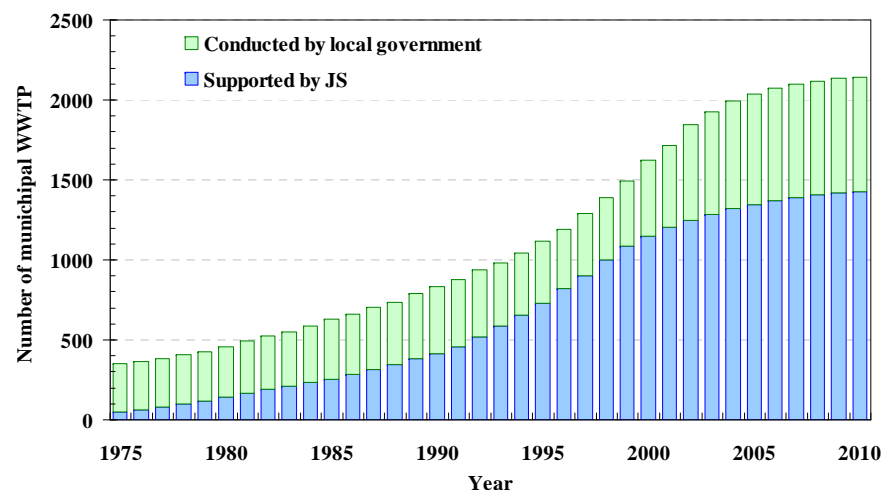
## JAPAN SEWAGE WORKS AGENCY (JS)

### BACKGROUND

- Lack of capacity in local government in the 1970s to build sewerage systems
- 1972: SEWAGE WORKS CENTER established under the SEWAGE WORKS CENTER ACT  
*Goal: create a pool of engineers + provide technical support to local governments*  
*sewerage service coverage at the time = 17%*
- 1975: Act revised and JAPAN SEWAGE WORKS AGENCY established

### Role:

1. **Planning, Design and Construction** of municipal WWTPs, pumping stations & main sewers
2. **Technical Support** for the O&M of WWTPs, and management of sewerage projects
3. **Research, Development, Evaluation of new technology** for standardization  
→ R&D basic plan for 2011-2016:  
energy-saving technology
4. **Training** for capacity development of staff from local governments



**JS has constructed 70% of municipal WWTPs in Japan**



# JSC member organizations

*Off-site sanitation*



- One of the main organizations promoting Sewage Works in Japan
- Founded in 1964
- Gathers members from local governments, public organizations and private companies involved in sewage works in Japan (*3,441 members, as of 2009*)

## Role:

- **Establish sewerage standards** for municipalities
- Advise Japanese central government for its **sewerage policy**
- Issue **journals and manuals**
- Organize the **Sewage Works Exhibition** in Japan
- Certify **Japanese Industrial Standards (JIS)** for sewer pipe material
- Conduct **short-term training courses, conferences and seminars since 1964** throughout the country for local governments and the private sector
- Course topics include:
  - **sewerage technologies**
  - **administrative management**
  - **advanced treatment processes**
  - **O&M**
  - **sewerage construction**
  - **sludge reuse/recycling**
  - **global environment preservation**



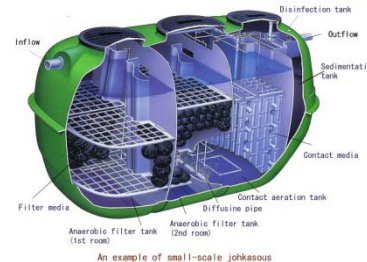
*About 3,000 trainees every year*

 **GCUS** *training courses on request*

- ➔ JECES is the only professional education and research institution for johkasou systems (on-site sanitation treatment system covering 15% of Japan's population)
- ➔ Since 1966, JECES has trained and qualified more than 100,000 johkasou technicians, and developed the core technologies of johkasou systems
- ➔ JECES regulates about 40,000 johkasou maintenance vendors from the private sector

### Role:

- Training and issuance of national certifications to qualify johkasou technicians (legal requirement)
- Technical advice to municipalities
- Information to overseas institutions



## Technology Transfer of On-site Treatment Systems

- Committee on Johkasou Technology Transfer to Developing Countries (1994-2002, Ministry of the Environment - Japan)
- Johkasou Technology Transfer to China (2007, Ministry of the Environment - Japan)
- Project on Technology Transfer of Night Soil and Wastewater Treatment Systems to Developing Countries (2009, Ministry of the Environment - Japan)
- Project on Appropriate Technologies for Night Soil and Wastewater Treatment in Rural Areas in China (2010, JICA)

## Capacity Building

- Waste Management Training Course (1996-1999, JICA)
- Water Environment Recovery Training Course (2002-2004, JICA)
- 2<sup>nd</sup> Japan Training Course for Senior Executives of the Chinese Government (2010, The Tokyo Foundation)
- Capacity Building of Government Authorities on Decentralized Wastewater Treatment in Mekong Region (2011, JICA)





## JSC member organizations

### JAPAN ENVIRONMENTAL SANITATION CENTER



- ➔ Regulatory institution for solid waste and night soil/sludge management in Japan (more than 1,000 night soil & sludge treatment plants in service)
- ➔ Provides since 1966 training and the national certifications for night soil & sludge treatment and transport in Japan (mainly for local governments)
- ➔ Has qualified more than 120,000 trainees

#### Role:

- Night soil/sludge collection & treatment management (planning & assessment)
- Environmental & biological assessment: air/water quality, soil contamination problem solving
- Solid waste management & environment, waste specialist training
- International training activities for developing countries (training courses in environment-related issues)







## List of dispatched sanitation experts worldwide from JSC member organizations

*Off-site sanitation*

Countries	Number of experts
Republic of Peru	1
Republic of India	4
Republic of Indonesia	14
Palestinian Interim Self-Government Authority	3
Kingdom of Thailand	25
Republic of China	1
Republic of Mauritius	1
Federative Republic of Brazil	4
Federal Democratic Republic of Nepal	1
People's Republic of Bangladesh	1
Kingdom of Belgium	1
Republic of Cuba	3
People's Republic of China	7
Democratic Socialist Republic of Sri Lanka	1
Republic of Panama	1
Kingdom of Saudi Arabia	4
Syrian Arab Republic	2
Socialist Republic of Viet Nam and Malaysia	3
Romania	1
Republic of Lithuania and Republic of Bulgaria	
Republic of Costa Rica	1
Republic of EL Salvador and Dominican Republic	
Federal Republic of Germany	1
Dominican Republic	2
Republic of Turkey	3
United Mexican States	1
<b>Total</b>	<b>86</b>

## JSC Activities: *Networking & Information Sharing*

- Japan-Indonesia Seminar  
On Sewerage and Water  
Environmental Issues  
(23 February, 2010, Jakarta, Indonesia)



- IWA Decentralized Wastewater  
Treatment Solution in Developing  
Countries Conference (DEWATS)  
(23-25 March 2010, Surabaya, Indonesia)



- Regional Dialogue on Wastewater Management  
in Asia  
(15-16 June 2010, Kuala Lumpur, Malaysia)



# JSC Activities: *Networking & Information Sharing*



4<sup>th</sup> MEETING OF THE INDO - JAPAN JOINT WORKING GROUP ON URBAN DEVELOPMENT  
17<sup>th</sup>- 18<sup>th</sup> June 2010, New Delhi

- 4th Meeting of the Indo-Japan Joint Working Group on Urban Development (17-18 June, 2010, New Delhi, India)

- Sanitation KnowledgeHub Seminar at Singapore International Water Week 2010 (30 June 2010, Singapore)



- World Water Week in Stockholm (5-11 September 2010, Stockholm, Sweden)



# JSC Activities: *Networking & Information Sharing*

- Expert Group Meeting on Monitoring of Investment and Results in the Water Sector in Asia and the Pacific (11-13 October 2010, Manila, Philippines)
- InterAqua 2011 International Water Solution Exhibition (16-18 February 2011, Tokyo, Japan)
- IWA Development Congress & Exhibition (21-24 November 2011, Kuala Lumpur, Malaysia)
- IWA World Water Congress (16-21 September 2012, Busan, Korea)
- 5<sup>th</sup> IWA ASPIRE (8-12 September 2013, Daejeon, Korea)
- 11<sup>th</sup> IWA Conference on Small Water & Wastewater Systems and Sludge Management (27-30 October 2013, Harbin, China)



## Others

- Consultation on access to Safe Drinking Water and Sanitation in Japan (collaboration with United Nations High Commissioner for Human Rights) (21, 27 July 2010, Tokyo, Japan)
- 47<sup>th</sup> Sewage Works Exhibition and Conference 2010 (27-30 July, 2010, Nagoya, Japan)
- 48<sup>th</sup> Sewage Works Exhibition and Conference 2011 (26-29 July, 2011, Tokyo, Japan)
- 49<sup>th</sup> Sewage Works Exhibition and Conference 2011 (24-27 July, 2012, Kobe, Japan)





# JSC Activities: *Knowledge Diffusion*

## *Organization of Conferences & Workshops*



- Follow-up Conference of the International Year of Sanitation (IYS)  
(26-27 January 2010, Tokyo, Japan)

- ADBI-JSWA-JSC Regional Workshop on Sanitation (Wastewater and Sludge Management) in the Asia-Pacific  
*-Side event of IWA Aspire 2011-*  
(4-6 October 2011, Tokyo, Japan)



- Workshop on Capacity Building of the Responsible Authority for Better Night Soil Disposal System in Asian region  
(14-16 March, 2011, Tokyo, Japan)





# JSC Activities: *Knowledge Diffusion*

## *Organization of Conferences & Workshops*

### ■ Workshop on Urban Fecal Sludge Management – Problems & Solutions

Hanoi, Vietnam  
23 February 2012



### ■ MOC-MOE Joint Workshop on On-site Wastewater Treatment and Septage Management in Vietnam

Hanoi, Vietnam  
22 March 2013



### ■ Technical Workshop at 2<sup>nd</sup> Asia-Pacific Water Summit: *“What is needed to achieve sustainable sanitation management?”*

Chiang Mai, Thailand  
16-20 May 2013



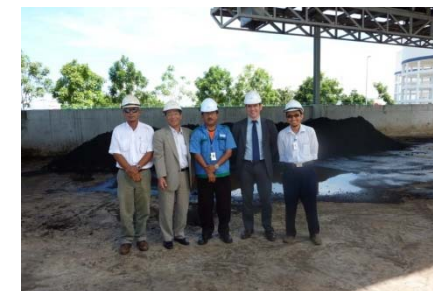
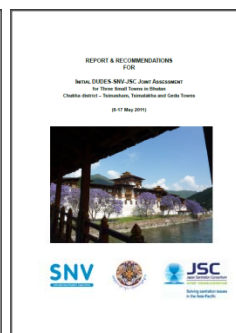
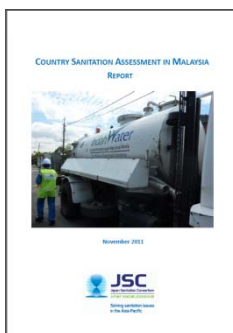
# JSC Activities: Information Gathering & Knowledge Diffusion

## ■ Comprehensive Sanitation Assessment Missions

- *Indonesia* (30 November-5 December 2009)
- *Indonesia* (22-27 February 2010)
- *India* (19-21 June 2010)
- *Bhutan* (7-17 May 2011)
- *Bhutan* (17-28 August 2011)
- *Malaysia* (20-29 November 2011)
- *Vietnam* (19-25 February 2012)
- *Vietnam* (7-13 April 2013)
- *India* (17-30 April 2013)
- *India* (7-20 September 2013)



*and reports...*



# JSC Activities: *Information Gathering & Knowledge Diffusion*

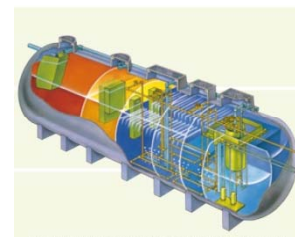


Asian Development Bank



- **2013: COLLABORATION BETWEEN ADB AND JSC IN A TECHNICAL ASSISTANCE PROJECT IN INDIA**

**GOALS:** - To introduce best practices in septage management  
 - To implement *Johkasou* for a pilot project in a small city



Medium-scale johkasou (FRP-made)



Large-scale johkasou (RC-made)





# WES Hub - *Overview*

- Water and Environment Solution Hub (WES Hub): established in 2012

## Mission

- **Help cities in developing countries** to improve water and environmental quality through knowledge sharing

## Vision

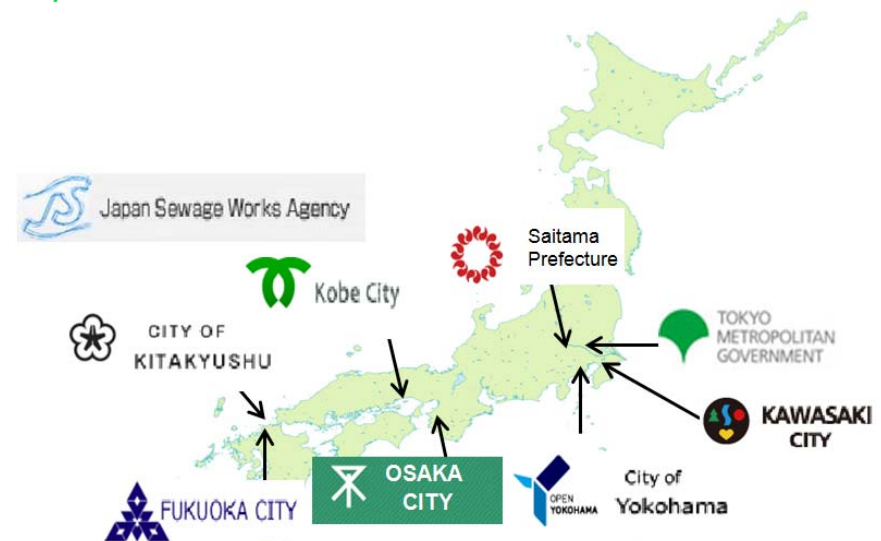
- **Establish long-term partnerships with cities in developing countries** and support their challenge in establishing sustainable water and environment management systems

## Value

- **Experience-based knowledge** → *main bodies for the implementation of policies and the construction of infrastructure in Japan*
- **Field-based cooperation** → *Human resource capacity development, financing and administrative management, technology and system management (on-site/off-site sanitation, management of collaboration with the private sector)*
- **Long-term partnership** → *e.g. mentors for cities via Water Operator Partnership – WOP*

# WESHub

Japan Water and Environment Solution Hub



Network of 9 cities and 1 professional organization

## CONCLUSION

### Strengths of JSC

- ❑ JSC builds on Japan's know-how in sanitation and successful experiences developed in other countries
- ❑ Consortium gathering expert organizations specialized in on-site and off-site sanitation (from 'toilet-to-river')
- ❑ Gathers and disseminates knowledge, success stories, and good practices for wastewater and sludge management
- ❑ Third party advice for policy strengthening and technology selection
- ❑ Provides strategies for long-term sanitation improvement and support for capacity development





## Japan Sanitation Consortium (JSC) Regional Water Knowledge Hub for Sanitation

### JSC Expertise

- Member of a regional network of water experts, committed for sanitation improvement in the Asia-Pacific region
- On-site and off-site sanitation professional organizations

### JSC Services

- Networking, information gathering & knowledge sharing, support to international donor organizations, NGOs

### JSC Partners

- ADB, JICA, Japan Water Forum, UNICEF, etc.

*Thank you for your attention*



e-mail: [info@jsanic.org](mailto:info@jsanic.org)  
[www.jsanic.org](http://www.jsanic.org)

*Knowledge Networking for Water Security in the 21st Century*