



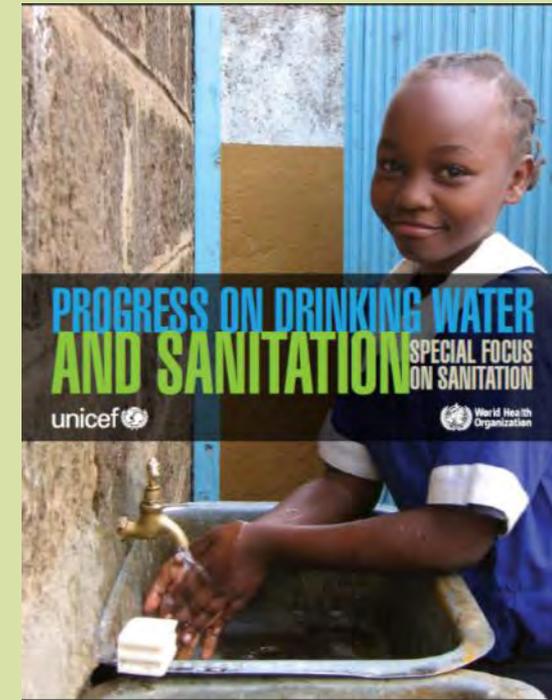
# C2C Cooperation towards Sustainable Wastewater and Water Management

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(presented at the 3<sup>rd</sup> High Level Seminar  
on Environmentally Sustainable Cities)

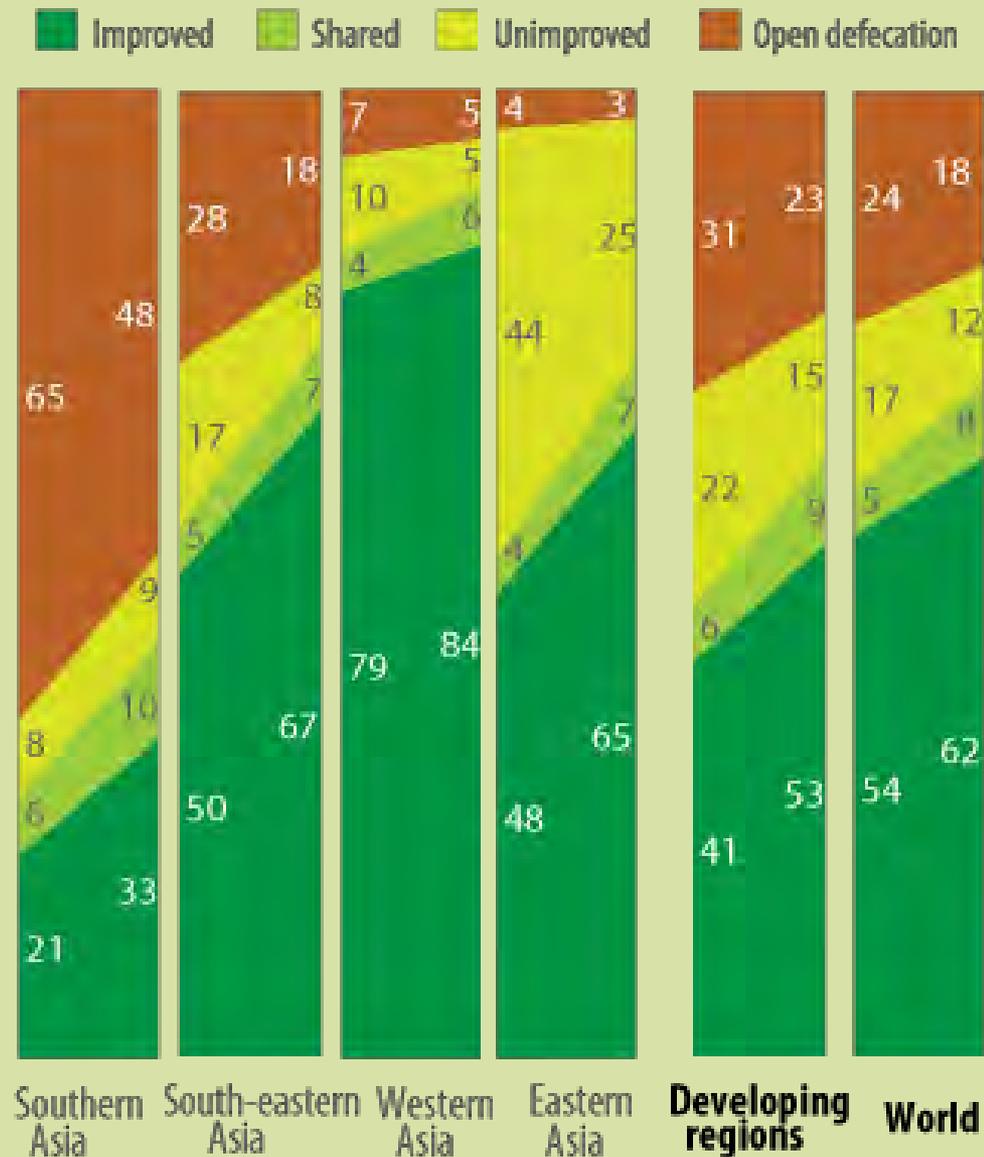
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- **2.5 billion** (36%) **people** in the world remain without access to improved sanitation – mostly in Sub-Saharan Africa and Southern Asia
- This means the world is **not on track** to achieve the MDGs and will be missed by about 700 million people

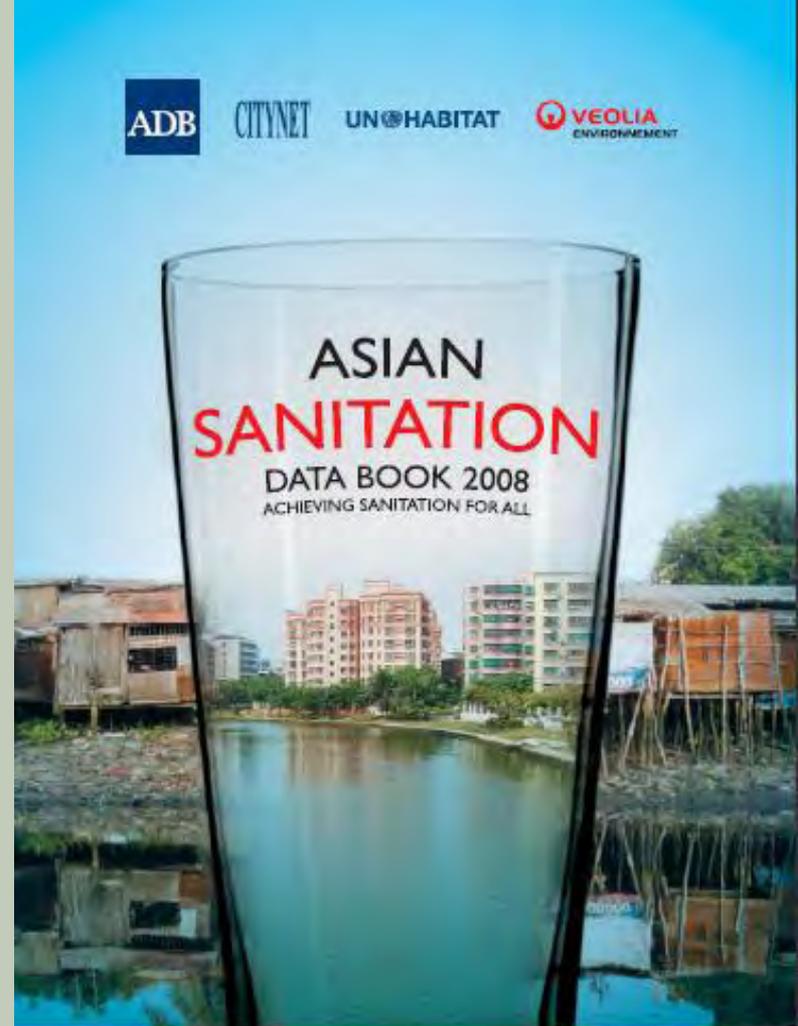


- Only **68% of urban population** in Asia have access to safe sanitation
- **Open defecation** is still a common practice in most of South Asia (48% of total in 2006)
- **Piped sewerage is very limited** in most urban areas in South and Southeast Asia – 11.7% in Ho Chi Minh, 1.9% in Jakarta and 7% in Manila (ADB, 2004)
- **Environmental conditions** are generally poor because only part of the wastewater collected is treated, with most discharged directly to water courses (ADB, 2004)

Trend in sanitation coverage and open defecation across Asia by MDG regions (1990-2006) ►



# Asian Sanitation Data Book 2008 Achieving Sanitation for All



A first initiative of:

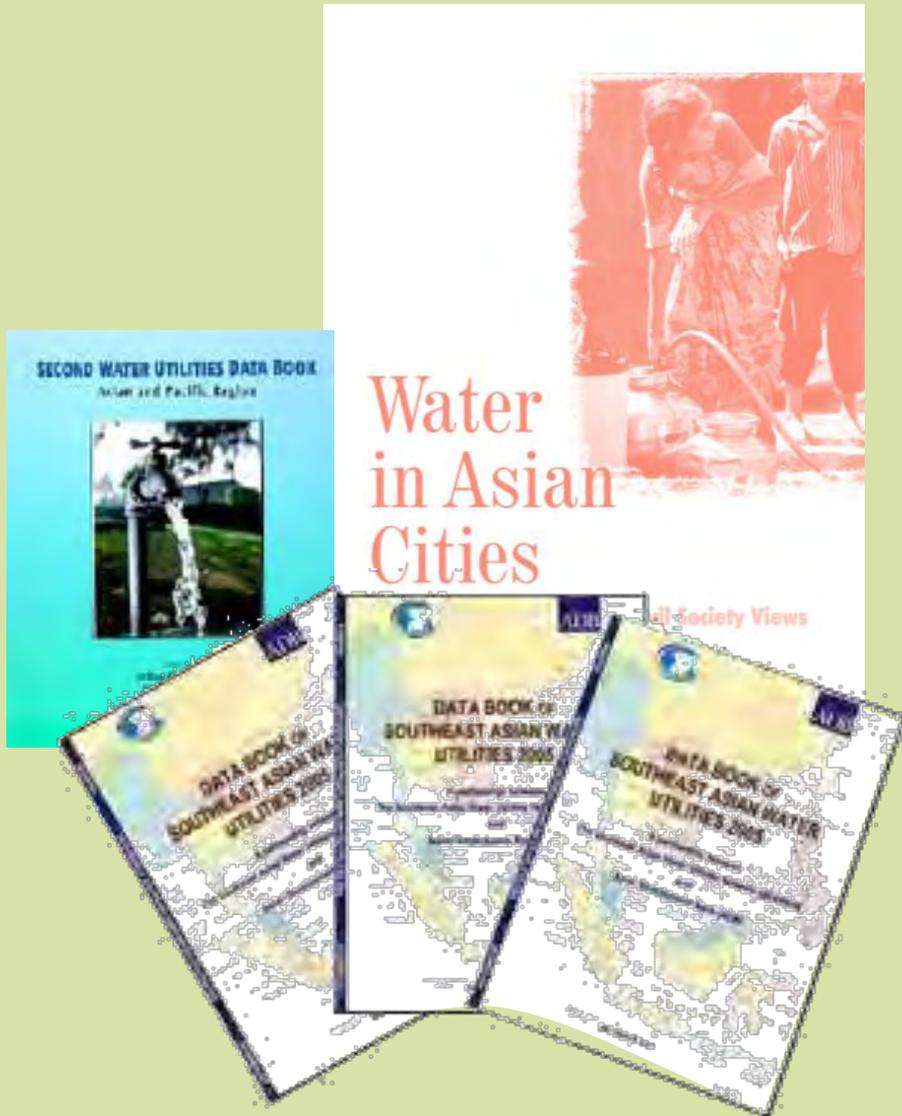
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UN HABITAT



# Why making a Sanitation Data Book?



- There were several **data books for water utilities**, which have proven useful in understanding the challenges and find the solutions
- However no data book was available to evaluate the performance of sanitation service provision in Asian cities
- The ability to find solutions has been undermined by the **lack of data** and information on the sanitation situation in Asian cities
- 2008 was the international year of sanitation

# What is the Sanitation Data Book?

survey of sanitation service providers in Asian cities using performance indicators

sanitation city profiles

benchmarking

performance monitoring & improvement

promotion of best-practices transfer

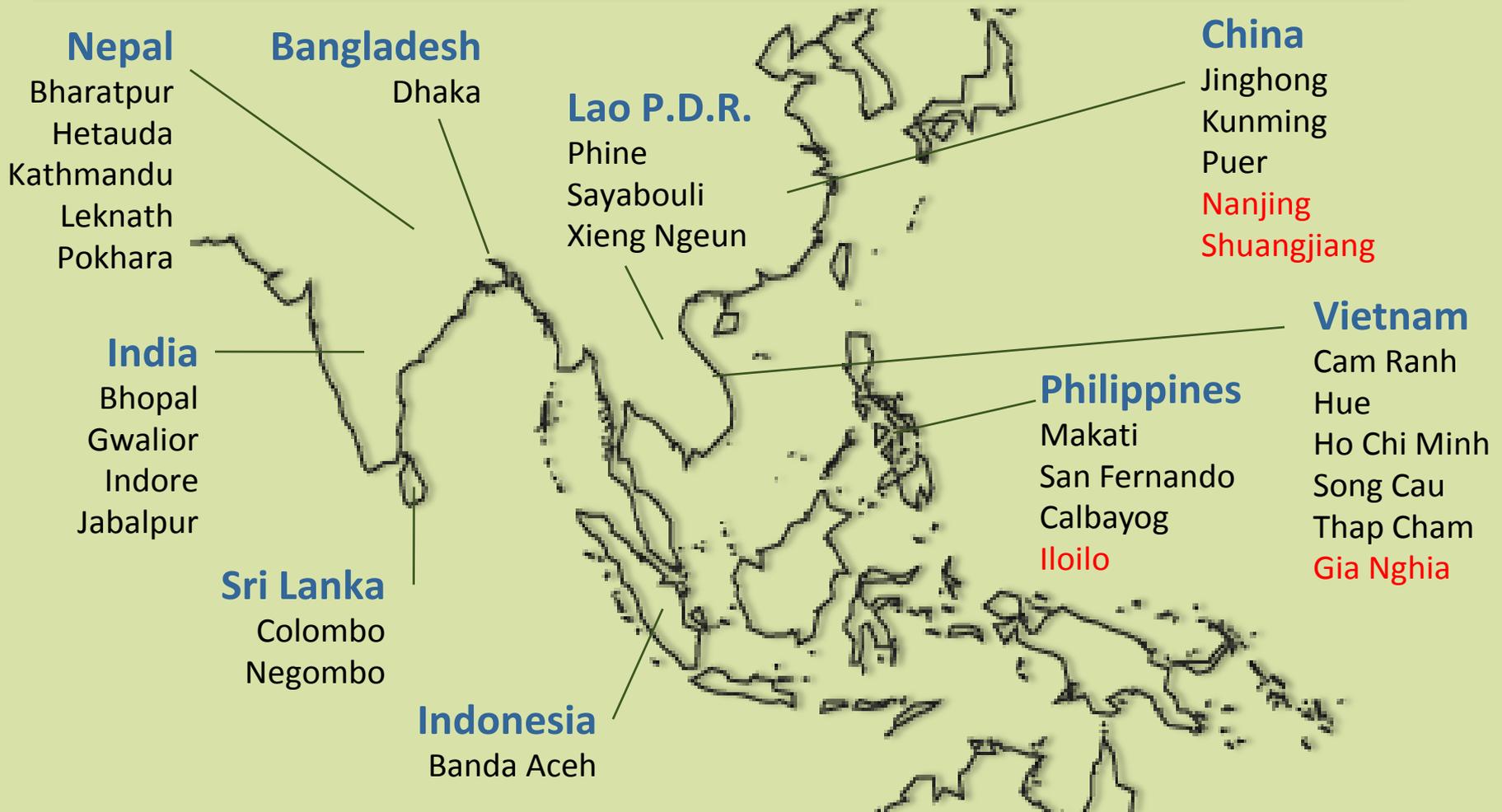
support for investment programmes

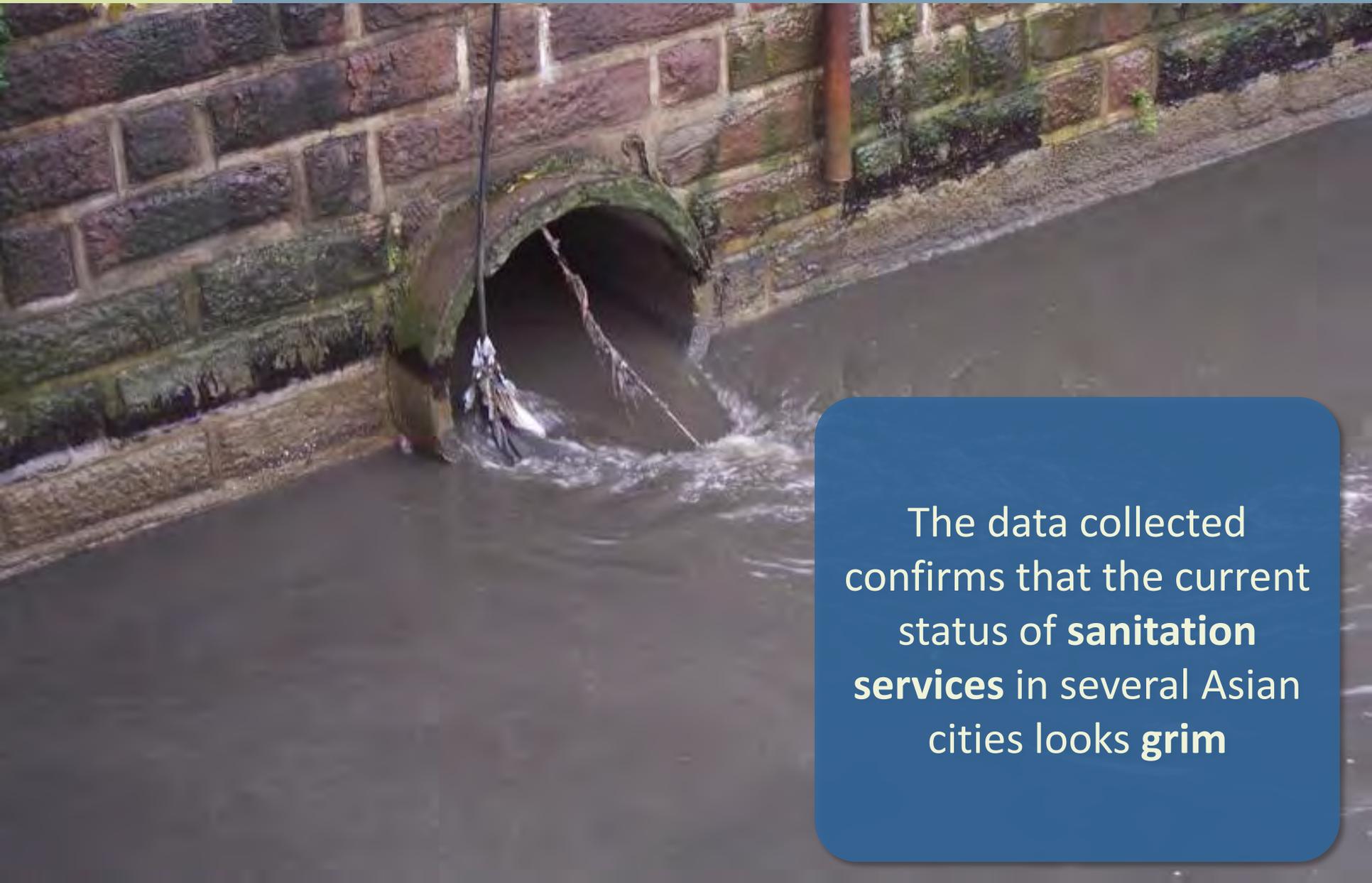
Indicators are grouped in 6 sections:

- **Demographics** (population, density, growth rate, etc.)
- **Water** and **Sanitation** coverage and treatment facilities
- **Institutional** and **legal** framework
- **Financial aspect** (e.g. annual budget, investment plans, funding sources)
- **Environmental** statistics (e.g. status of water pollution in surrounding areas, quality of water discharged as effluent)
- **Health** Statistics (incidence of water borne diseases)

# What is the Sanitation Data Book?

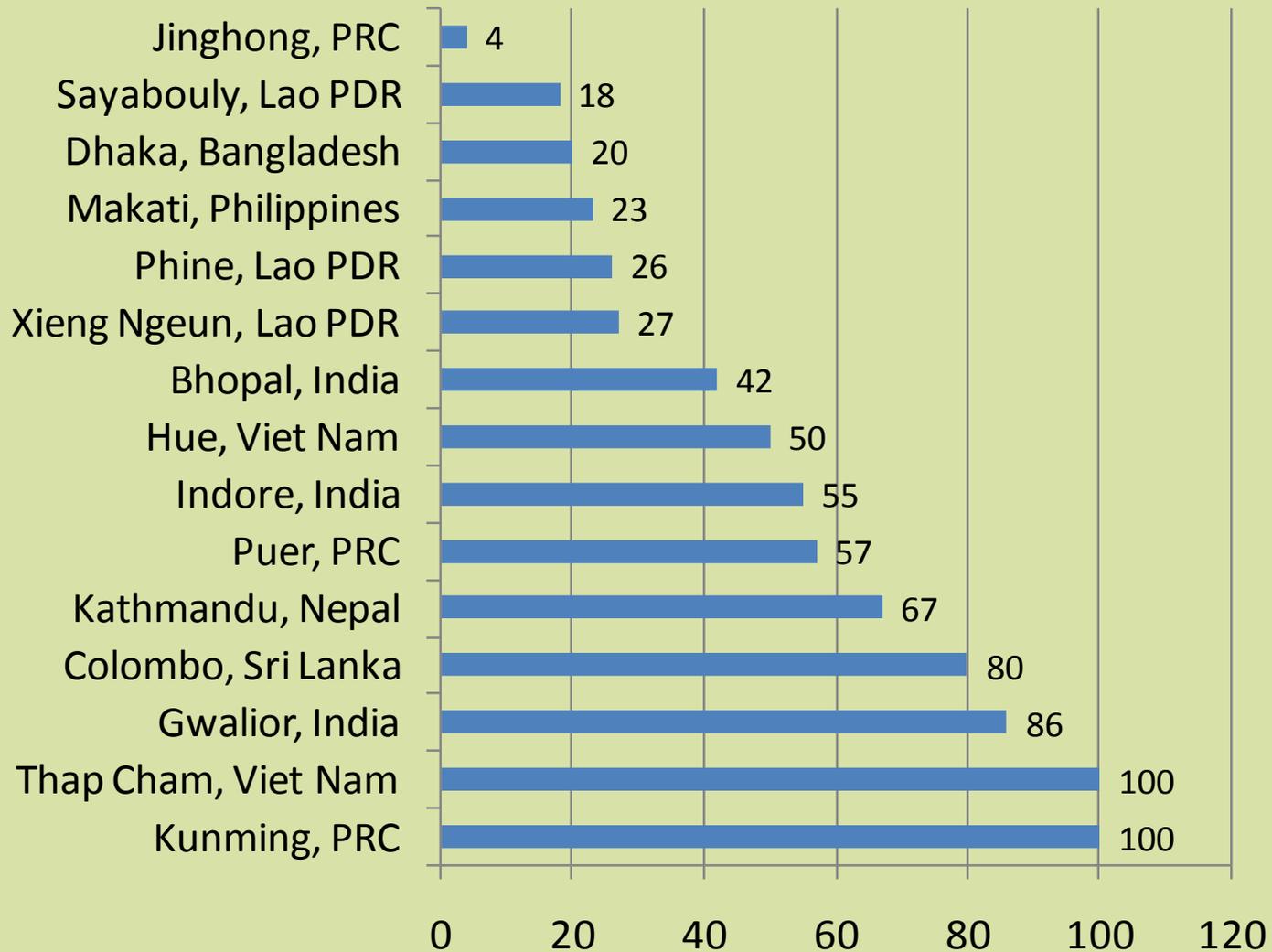
27 Cities surveyed and selected



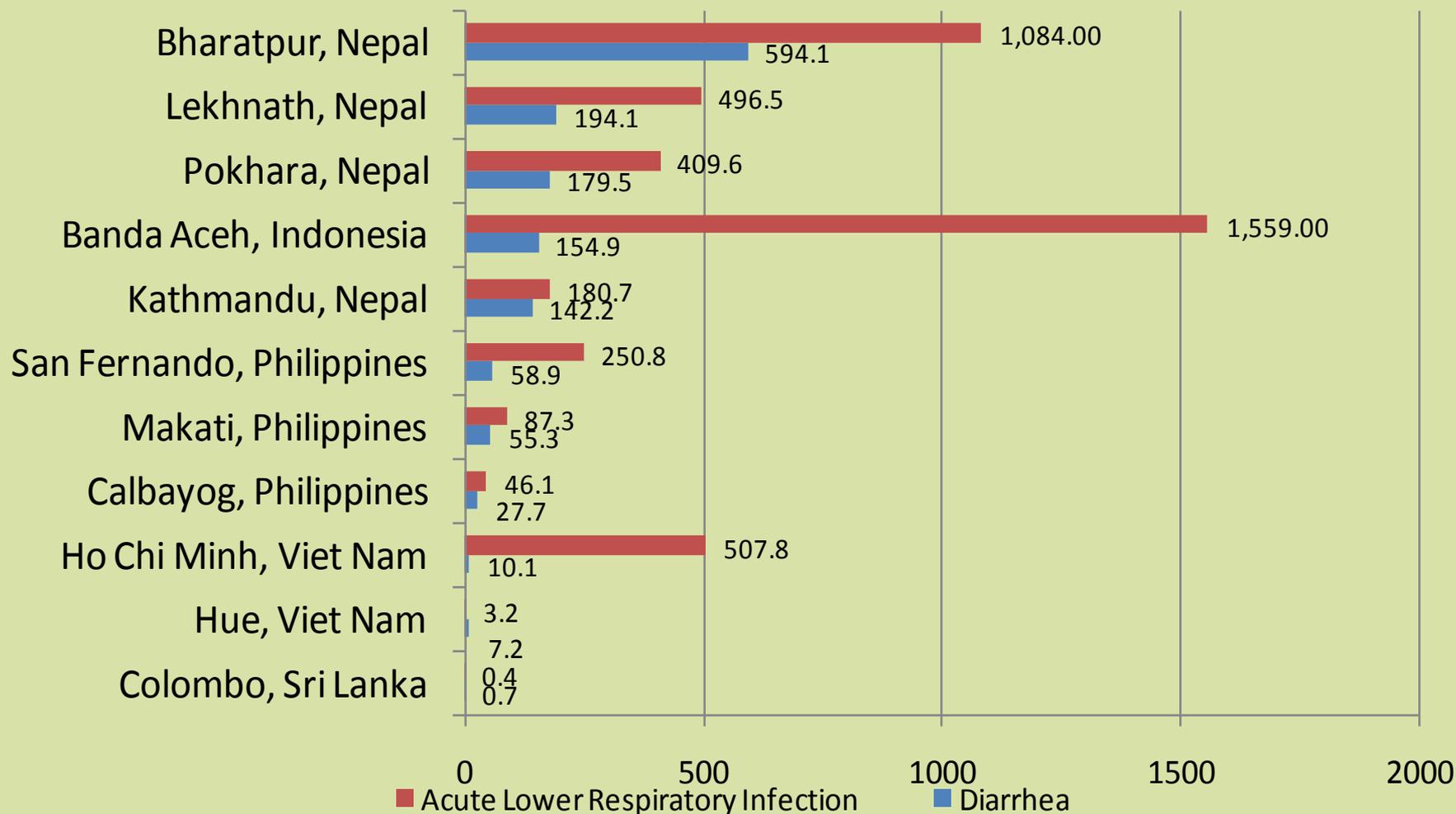


The data collected confirms that the current status of **sanitation services** in several Asian cities looks **grim**

## Central sewerage system coverage (household level) sanitation in some cities (% out of total)



## Water borne diseases in participating cities (reported cases per 10.000 inhabitants)



## Environmental and health outcomes

- **Wastewater**, particularly from household is slowly **polluting** the **surface and ground water sources**
- **70% of wastewater** was **discharged to water bodies** without any treatment
- The **majority** of cities (24) reported surface **water pollution** load of **2-8 times standards**
- Reported cases of **diarrhoea** are **increasing** in cities as the share of household solid and liquid waste rises (in the 12 cities that provided health statistics),

## Adequacy of sanitation infrastructure

- There is **over reliance** on **individual household** to provide their own sanitation treatment facilities,
- Only **8** out of 27 cities had sanitation **treatment facility**
- **50%** of respondent **cities** reported **open defecation**, 10 of them indicating between 10-35%
- Most cities (22) rely on **septic tank** system but only **4 reported** a septage **treatment plant**
- **Eco-sanitation** was only implemented in 2 cities

## Availability of water infrastructure

- All cities have a **central water supply system**, however **coverage** is still **low**
- Due to poor water quality, the population of 12 cities indicated they are buying **bottled water**
- 22 cities reported having a water treatment plant with a capacity ranged from **1.4 to 137 litre/cap/day**
- Large **investment** in water supply are still **required**, which means cities must partner with national government, the private sector and external supporting agencies

## Operation and maintenance costs

- Proper design and planning shows that sanitary **revenues can cover the O&M costs**
- On average the **funding sources** for O&M costs were local government (70%), tariff revenues (20%), loans (9%), and national government (1%)
- **5 out of the 15 cities** that have a central sewer system stated they **have a sewer tariff rate**.
- Desludging fees vary greatly between private and public agencies.

## Sanitation Plans and Investments

- Only 40% of cities have a sanitation plan
- The comprehensive and quality of plans need to be improved with the assistance of external agencies
- Cities that are developing sanitation plans should be monitoring benchmark data
- Almost all cities were aware of the sanitation problems but only 2 indicated a definite project to resolve it
- No city has indicated tariff revenue as source of capital investment

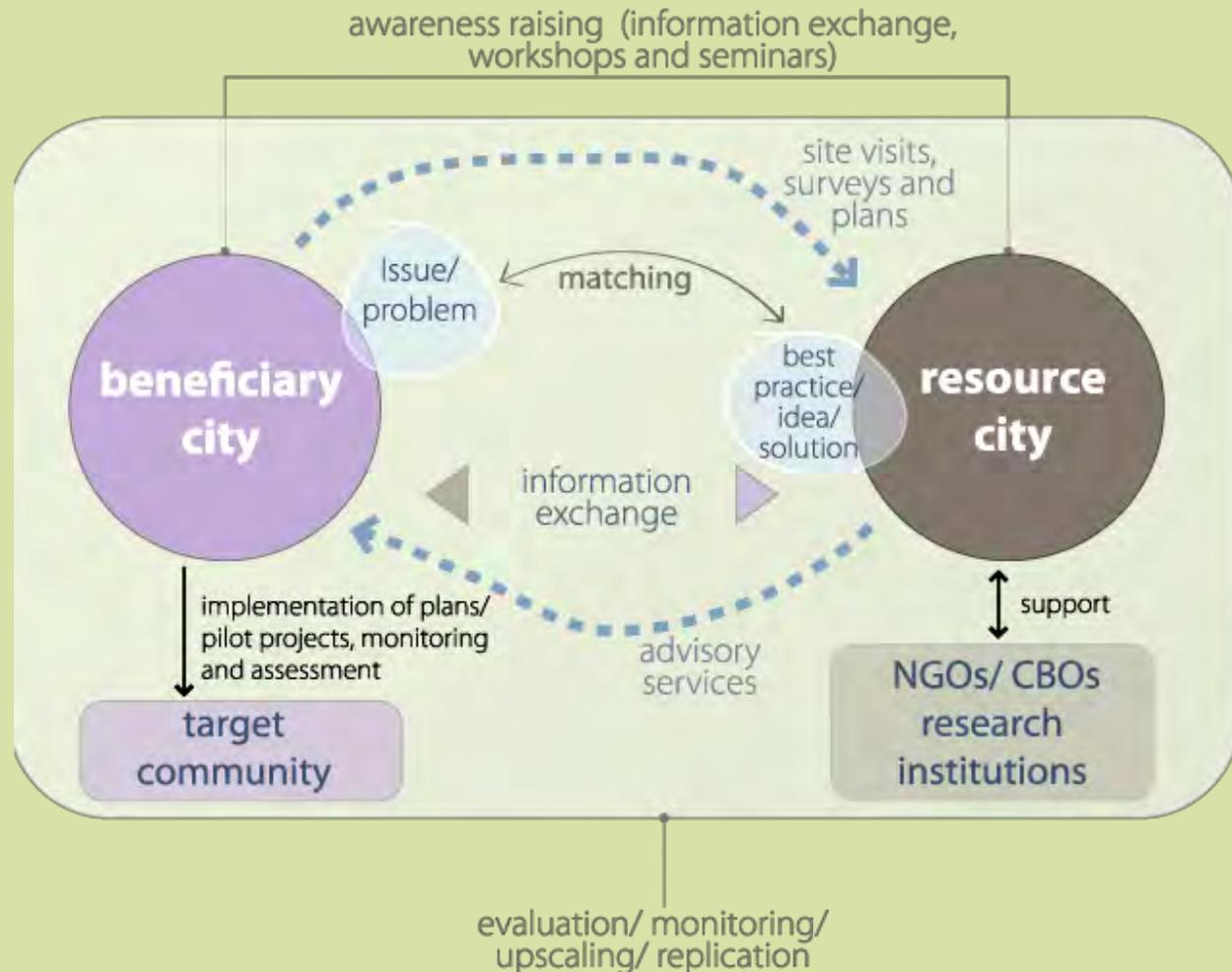
## Institutional and Legal Framework

- Institutional arrangements should be simplified so governments should review the institutional set-up for city sanitation and corresponding enacting laws. Provision of sanitary treatment facilities is generally the mandate of local governments.
- Assistance in legal and institutional reforms is necessary.

- **Lack of government priority on sanitation**
- **Lack of sanitation undermines the expansion of water supply in many cities**
- **Governments should provide at least minimum infrastructure (desludging and septage treatment facilities)**

## City-to-City Cooperation Model

**City2City Cooperation plays a major role to advance the exchange of experiences and best practices**



**Further Advocate  
Sanitation for ALL among  
Local Governments**

**Actions:  
Indonesian version  
of Data Book  
Sanitation**

**Actions:  
Best practices  
transfers**

**Actions:  
Promote  
cooperation with  
private sector**



## Transfer Japanese (jokaso) to Bangkok and to other Asian Cities

**“Eco Tanks are innovative small-scale sewerage treatment systems composed of a disposal tank that receives and purifies wastewater before discharging it into the environment. The compact, ready-made septic tank works independently and without power supply using anaerobic bacteria to bio-chemically transform wastewater into a safe, non-contaminated effluent.”**



## Transfer Japanese (jokaso) to Bangkok and to other Asian Cities

### Negombo

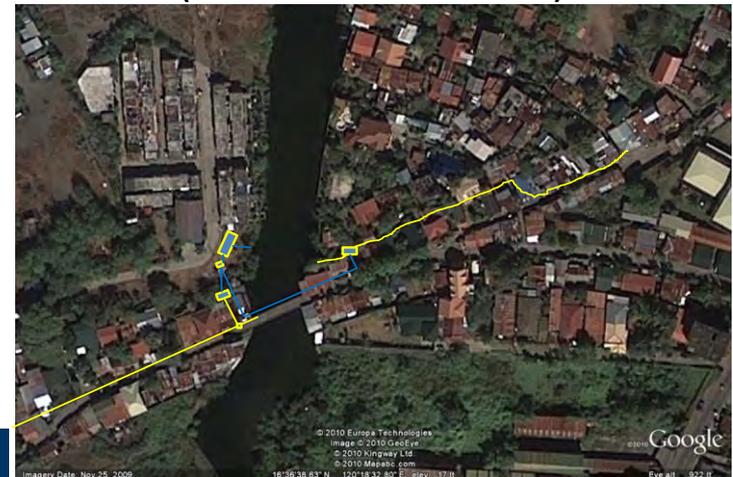


The new bus terminal in Negombo, Sri Lanka. Two EcoTank systems were installed to treat restroom wastewater from what is anticipated to be a very busy facility.

### Palembang



SITE OF ECOTANK PROJECT  
(PORO-CATBANGEN)



### San Fernando



**AWAREE – (Yokohama, JICA, Phnom Penh and Hanoi)**



# Environmental educational programmes



**Value-based**

**Water Education - a manual**



Environment and Public Health Organization (ENPHO)

&

Center for Integrated Urban Development (CIUD)

# C2C Cooperation on Water Supply



**Main resource city:  
Yokohama Water works**  
\* **First modern water supply  
system in Japan (1887)**

**Annual Training in  
Yokohama since 1998**

- \* **Customer Service  
Quality Improvement**
- \* **Pipe distribution**
- \* **NRW (non-revenue  
water)**
- \* **Water Quality  
Improvement**
- \* **Disaster Prevention**

**Yokohama +  
CITYNET +  
(CLAIR)**



**Hanoi (Vietnam)**

## Summary – Key Points

1. Willingness to invest on health and sanitation needs to be at the forefront;
2. Prioritization of the city budget for healthy society should be a must;
3. Sanitation infrastructure is one of the most important fundamental of healthy society;
4. Technology transfer and institutional strengthening should be accompanied with continuous learning;
5. C2C cooperation has been a key tool to transfer successful practices to many other places.

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*.....The cities that make the best investments in their future will be the best positioned to attract private investment and create jobs.....*

**Michael R. Bloomberg,**  
Mayor of New York

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