

Japan's Challenge for the Environmental Sanitation



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International Status of Environmental Sanitation

- 2.6 billion people cannot access environmental sanitation facilities.
- Halve the number of people without sustainable access to basic sanitation by 2015. (MDG target10)
- In the “Hashimoto Action Plan”,
 - Without radical change, we will not achieve the MDG sanitation target.
 - National Governments formulate clear-cut strategic sanitation policies and plans.

1.2 billion people
Improved
from 1990 to 2004

2.6 billion people including
1 billion children
Without access

Japan's Challenge



- Japan is willing to work together with the international community to improve worldwide sanitary environment, because Japan has a lot of experience of developing hygienic night soil treatment systems.

- Night soil recycling system which was developed in the past.
- Johkasou, which is a JAPAN ORIGINAL on-site waste water treatment system
- Night soil treatment facilities

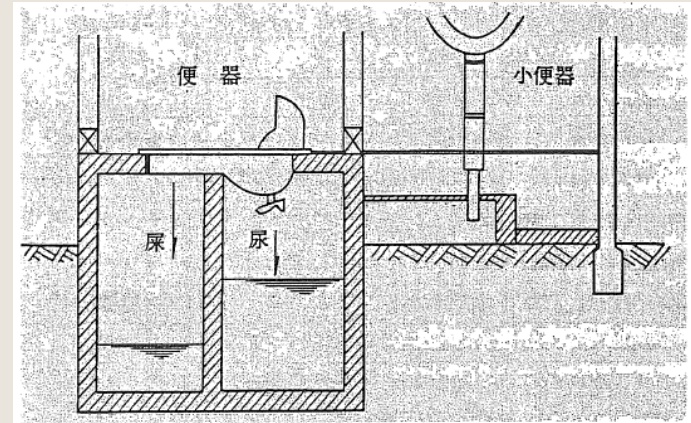


Improvement of sanitary environment

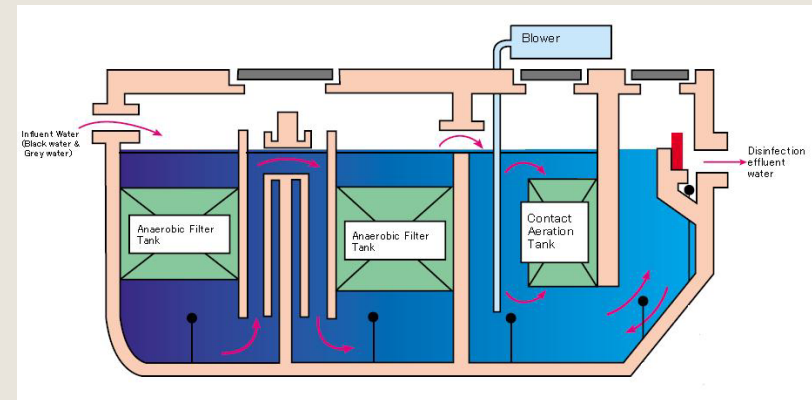
Prevention of water pollution

Dissemination Approach on Environmental Sanitation

- Areas without flush toilets — increase of vault toilets
 - Pit Latrine
 - ECO-San
 - Container-type toilet (Japan)
- Areas with water works — increase of flush toilets
 - Public Sewerage
 - Septic Tanks
 - Johkasou (Japan original)



Stool/urine separation Type Toilet (1950)



Johkasou (Anaerobic Filtration Type)

Requirements for toilet



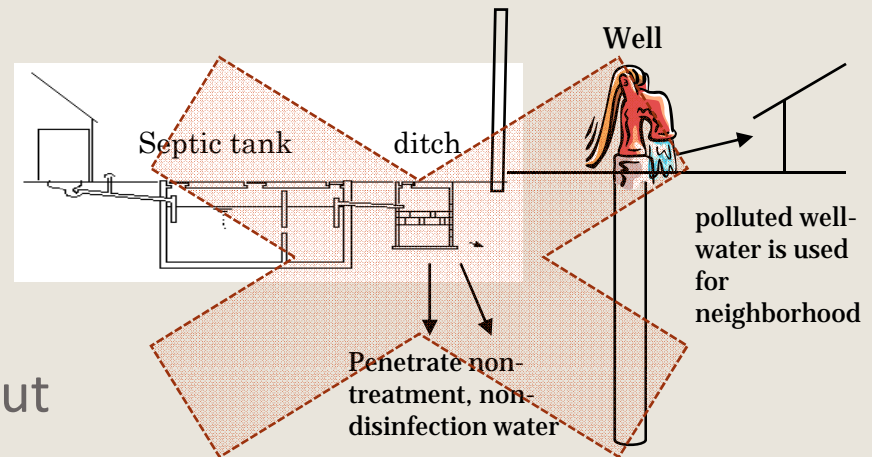
- **Installation of sanitary toilets**
 - Separation of night soil from inhabitants
 - Prevention of waterborne disease
- **Clean toilets**
 - Smell-free
 - Quick removal of night soil by flush toilet
- **Safe and sanitary life**
 - Water pollution control

Crucial point on Septic Tank

- Dissemination of flush toilet follows water works extension
- Problems with septic tanks
 - Effluent may be discharged without sufficient treatment.
 - May cause drinking water pollution & untreated sludge dumping

⇒ Threat to the “safe and sanitary life”

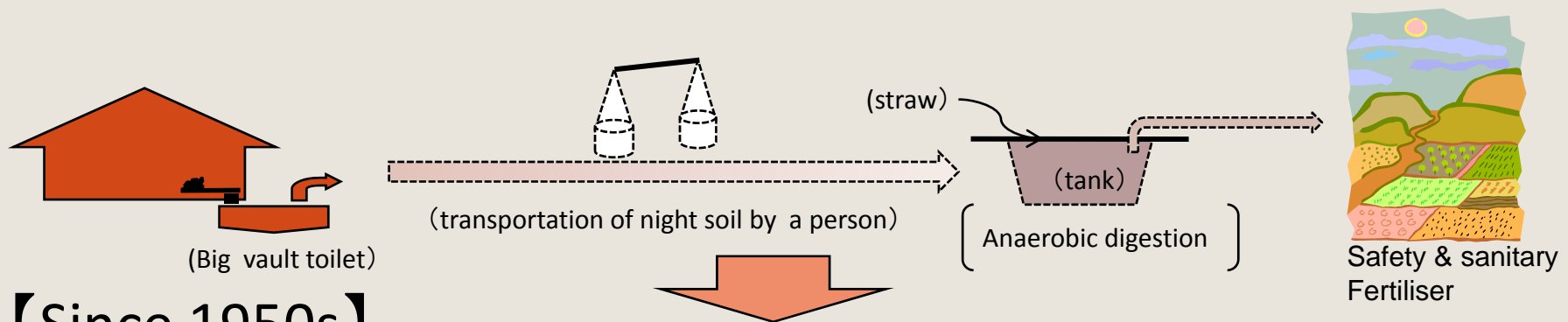
- An appropriate on-site waste treatment facility replaced for septic tank is required, when a flush toilet is installed.



Japan's experience of night soil treatment system

【In the past (Until 1950)】

- Night soil had been utilized as a good fertilizer
- Establishment of recycling systems in urban & rural areas



【Since 1950s】

- Faced difficulty with night soil recycling because of rapid urbanization and increasing production of chemical fertilizers
- Japan has developed hygienic night soil treatment technology.

Japan's proposal —Johkasou—

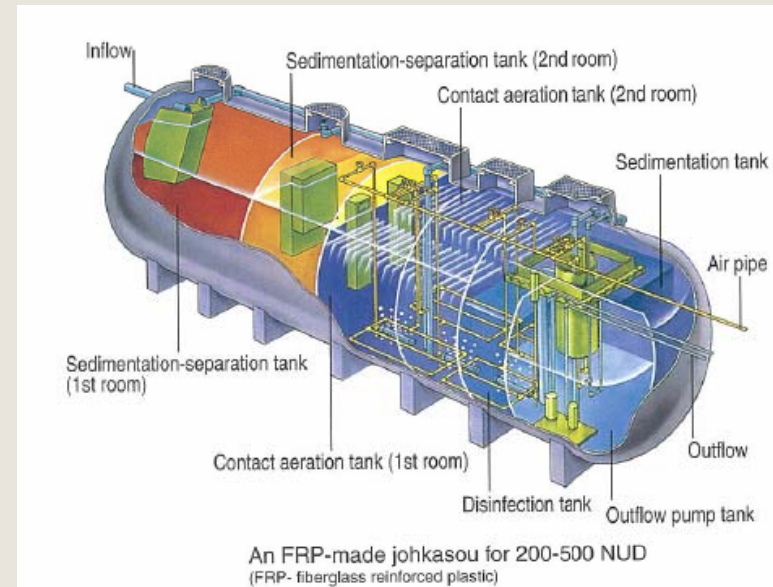
- Advanced domestic waste water treatment system (tank) developed in Japan
- Treats wastewater as clean as 20 ppm as BOD
- Treats not only wastewater but night soil
- Operated for 11 million Japanese people in less populated areas around Japan, as a technique which is cost-effective and able to be installed in a short time.



Johkasou (Anaerobic filter contact aeration type)

Japan's proposal — Johkasou — (continued)

- Properly disinfected effluent
- Protect water environment and ensure rural water resources
- Employ such technologies as
 - Biological contactor ditch process
 - Trickling filter process
 - Anaerobic filter-contact aeration process
 - Biofilm filtration tank
 - Moving bed biofilm tank, etc.
- Varieties of Johkasou with different treatment capacity to conform to the required effluent level and cost in each country



Japan's proposal — Johkasou — (continued)

- Requires periodical maintenance such as maintenance of biofilm and removal of sludge
- Requires certified technicians/engineers for maintenance

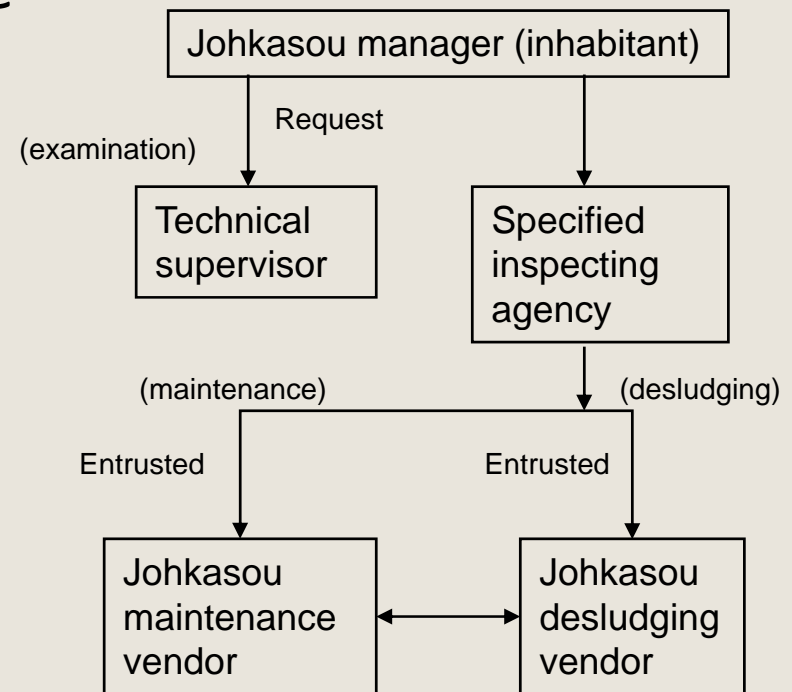


Figure. Organization for maintenance, desludging and inspection in Japan

Japan's proposal
— Night soil treatment system —

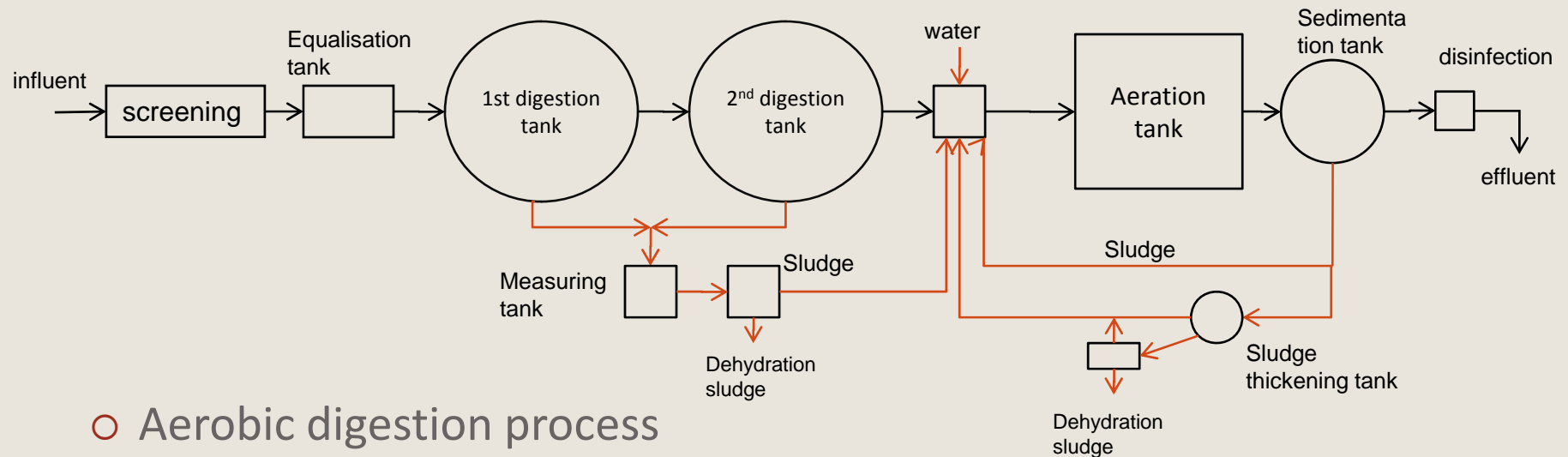


- Collects night soil from each home and transfers it to central night soil treatment plants
- Operated for 14 million Japanese people in rural areas around Japan
- Recovery of methane or production of fertilizer

Japan's proposal — Night soil treatment system — (continued)

- Treat night soil in sanitary manner to meet standards

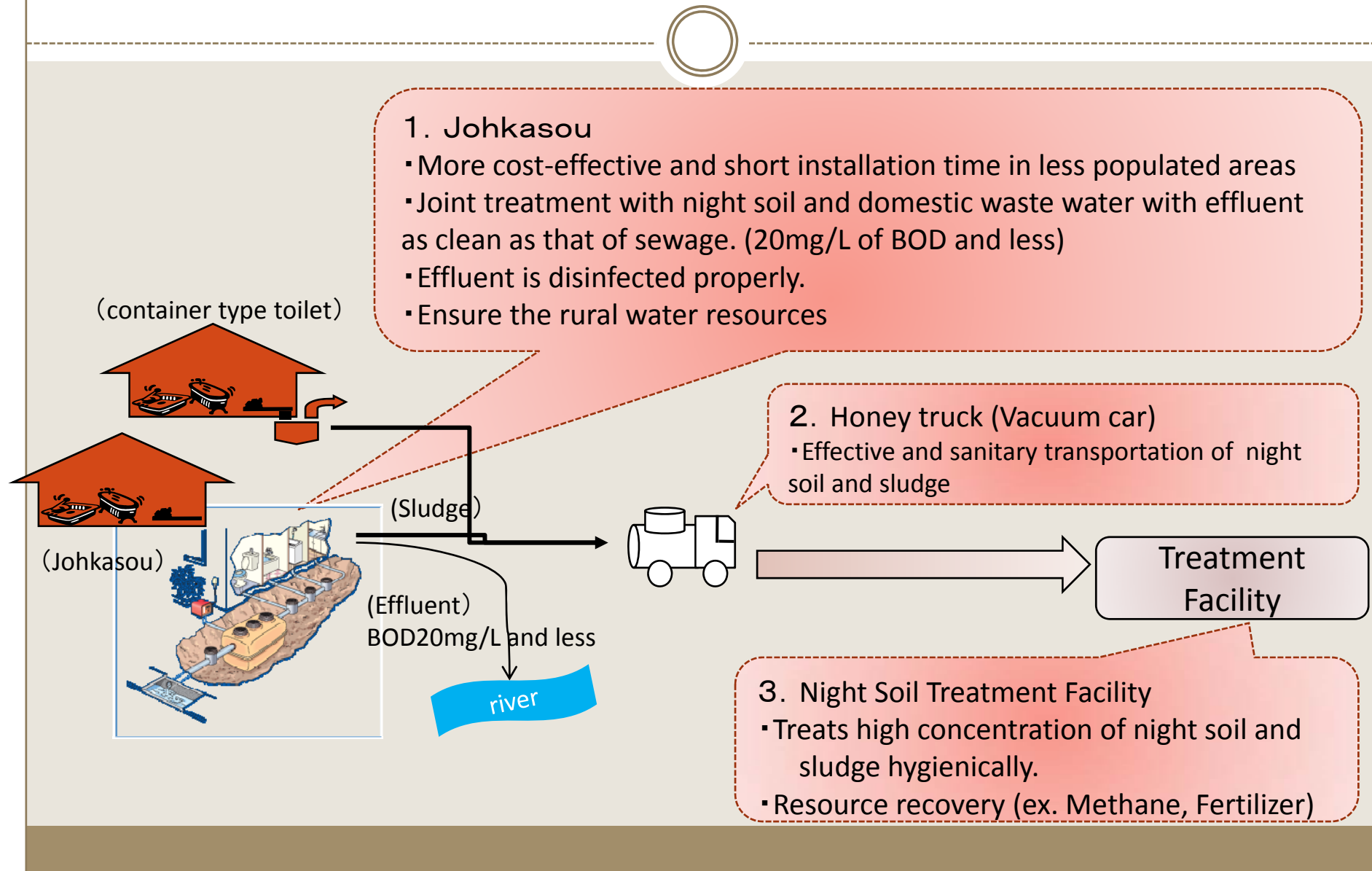
- Anaerobic digestion process



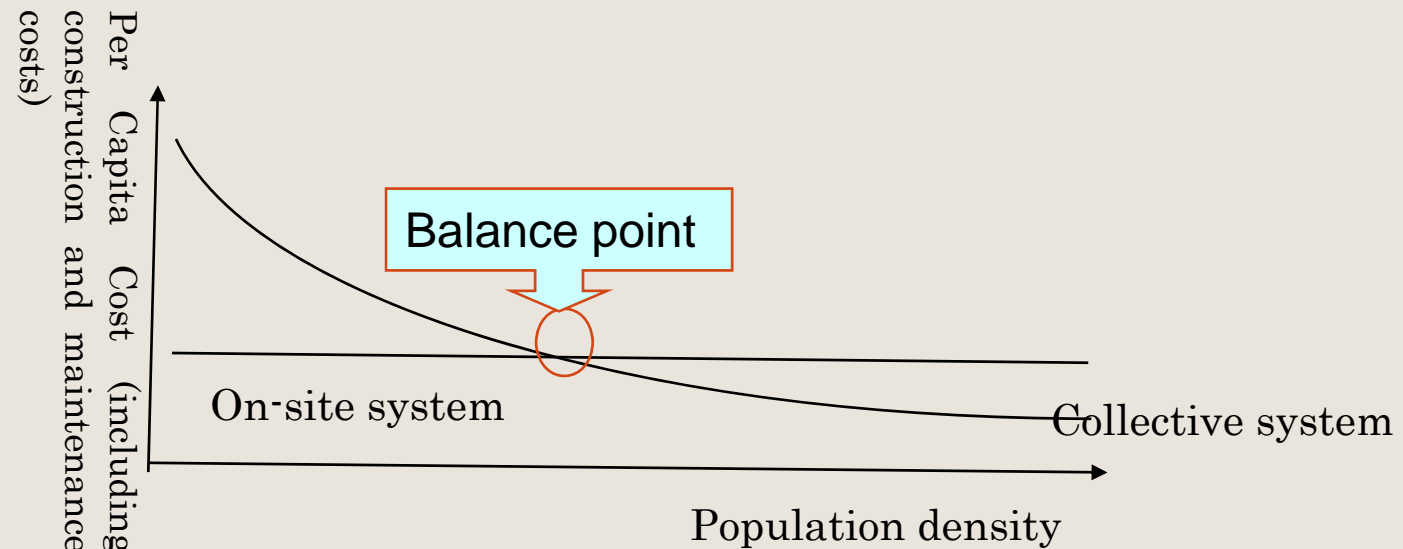
- Aerobic digestion process

- Double-step activated sludge (biological denitrogen) process, etc.

Features of Japan's on-site treatment system



Cost comparison of collective systems and on-site systems



On-site system (Johkasou) for less populated areas

Collective system (Sewage) for densely populated areas

Japan's international cooperation

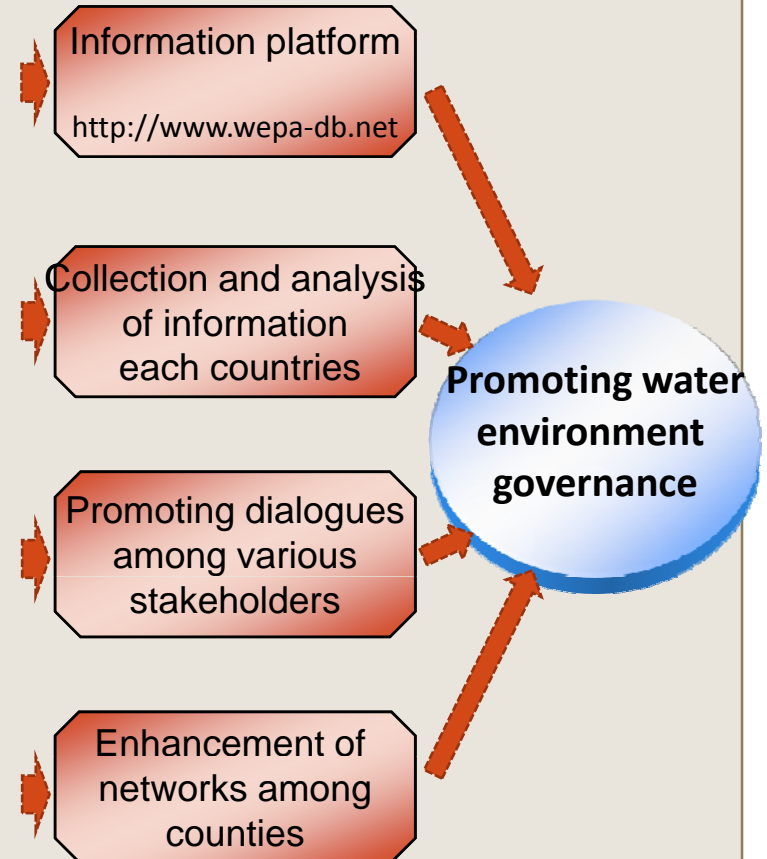
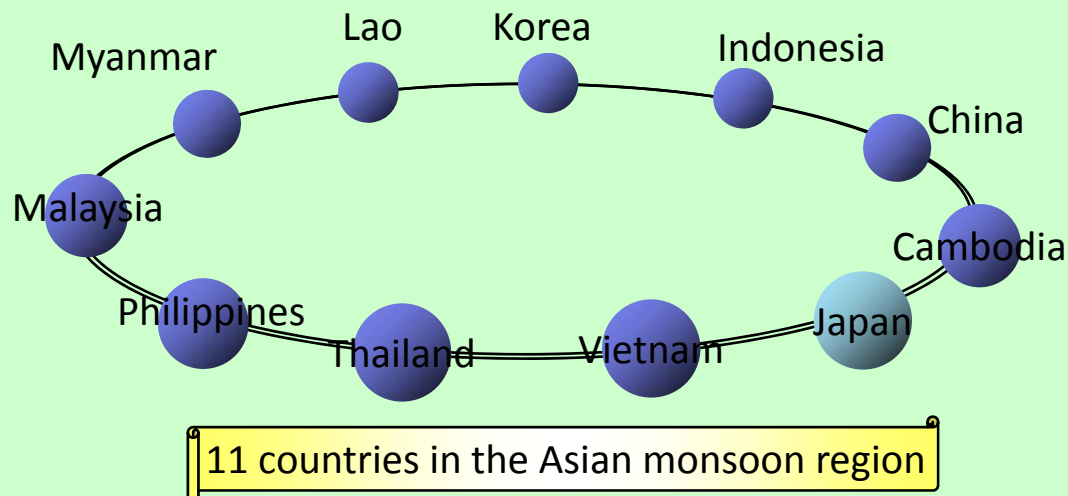


- Disseminate Japan's experience of night soil treatment
- Capacity building on night soil treatment
- Suggest night soil treatment system/technology which is applicable for developing countries
- Provide relevant technical cooperation
- "Water Environment Partnership in Asia (WEPA)" aims to promote good governance in water environment management
- Japan-China Cooperation including model project for decentralized wastewater treatment in rural and other areas in China.

Strategy of “Water Environment Partnership in Asia (WEPA)”

【What's WEPA?】

- WEPA is an initiative that the Ministry of the Environment of Japan proposed at the 3rd World Water Forum held in Japan in 2003.
- WEPA aims to strengthen governance through capacity building and sharing knowledge and information on water environmental governance.
- The 2nd WEPA International Forum that stakeholders representing government, academia, the private sector and NGOs participated in was held last December as an open event of the 1st Asia-Pacific Water Summit.



Japan-China Cooperation for water environment protection

The current conditions of water environment problems in China

The issue of water pollution is becoming more serious



Drainage into the Chang

Jiang (http://www.chinadaily.com.cn/china/2007-04/15/content_850842.htm)



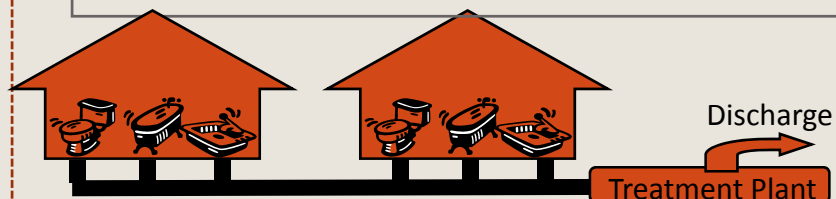
The Algae outbreak in Taihu Lake

(The Yomiuri Shimbun 12 JUL Y 2007)



Japan's cooperation for water environment

Model project for decentralized wastewater treatment in rural and other areas



- Construction of small size wastewater treatment facilities
- Study of valuation and management

Examples of decentralised wastewater treatment plant adapted to the each areas



Rock bed filter



Rotating biological contactor



Trickling filter process

Extend to all China

Prevention of pollution of rivers, lakes, seas and groundwater

Joint Statement by Japan and the People's Republic of China on the Further Enhancement of Cooperation for Environmental Protection (Provisional Translation) 11 April 2007 Tokyo

1. Cooperation will be implemented to enhance the protection of drinking water reservoir areas, prevention of pollution of rivers, lakes, seas and groundwater, in particular water pollution prevention measures in important water basins including the Bo Hai and Huang Hai regions and the Yangtze basin.