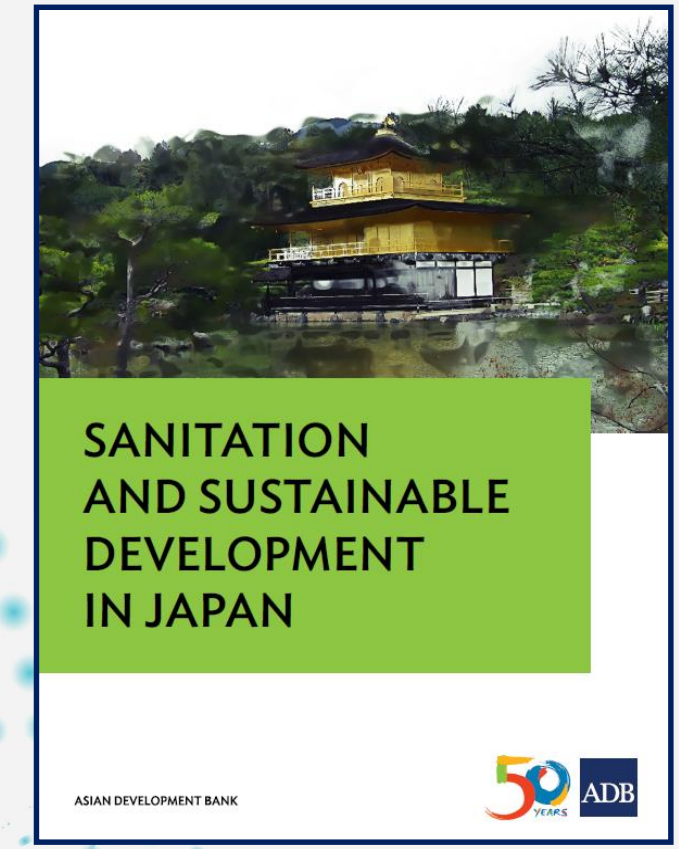
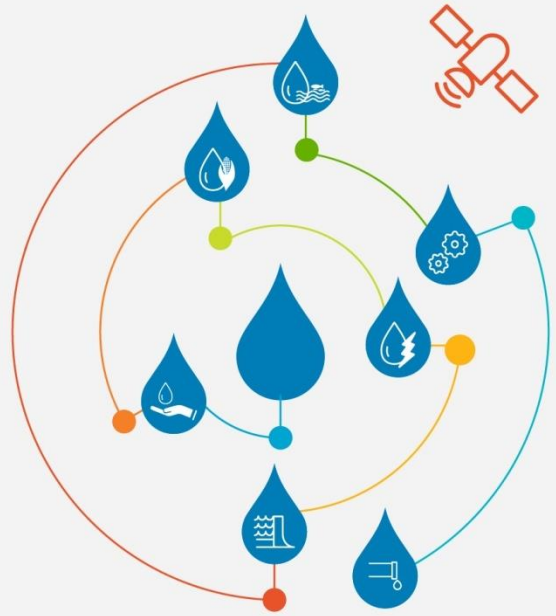
SANITATION AND SUSTAINABLE DEVELOPMENT IN JAPAN





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Japan Sanitation Consortium
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JSC Japan Sanitation Consortium
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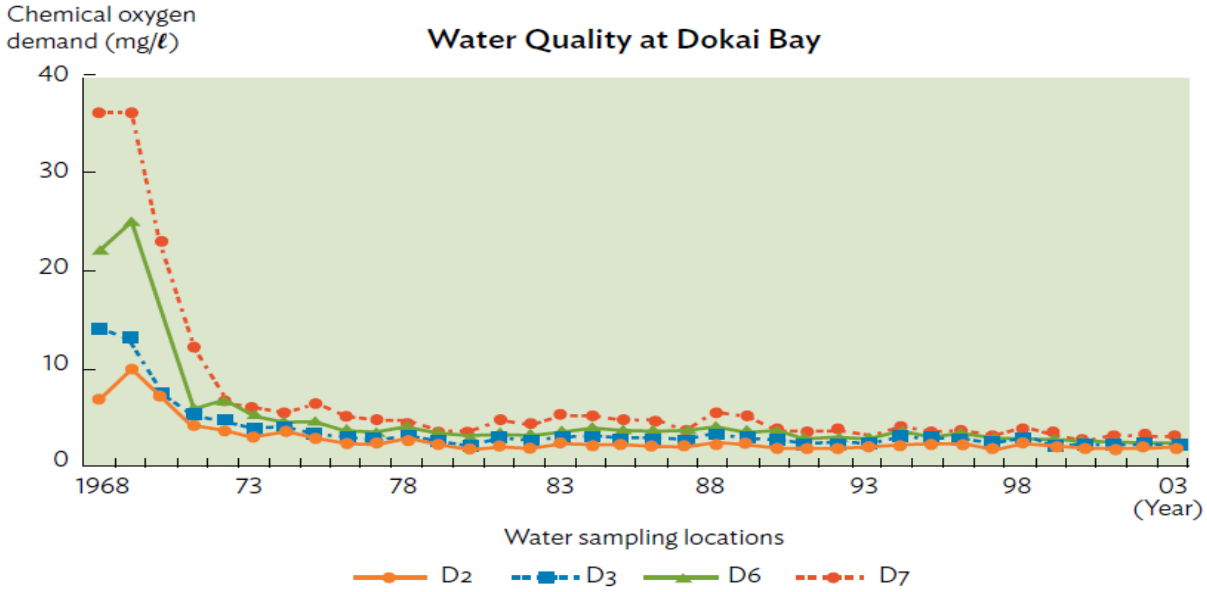
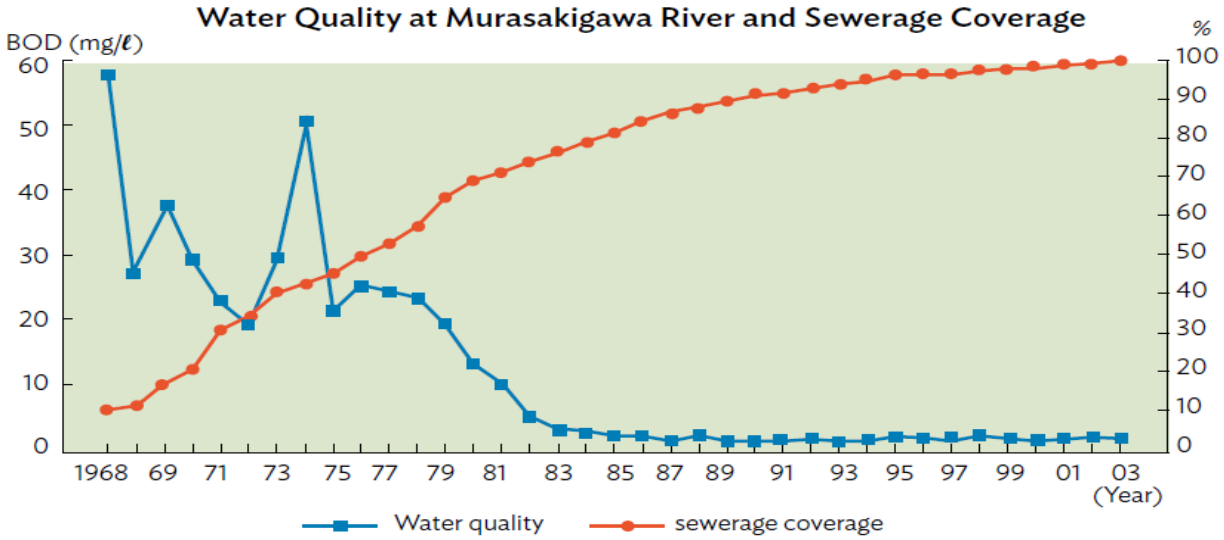
Difficulties currently faced by many Asian countries in wastewater management

- **Sanitation: low priority of sanitation and wastewater management for the country and the people**
- **Difficulties in mobilizing huge financial resources particularly for the development of sewerage systems**
- **Low willingness of people to pay for the installation cost of toilets and the operation and maintenance cost of sewerage systems or other forms of sanitation systems**
- **Difficulties in securing the cooperation of residents for building sewerage facilities such as wastewater treatment plants**

50 years ago, the situation in Japan was the same as the current situation in many Asian countries

Japan, now


Chemical oxygen demand (mg/ℓ)
Water Quality at Dokai Bay
40
30
20
10
0
1968
73
78
83
88
93
98
03
(Year)
Water sampling locations
D2
D3
D6
D7


Water Quality at Murasakigawa River and Sewerage Coverage
BOD (mg/ℓ)
%
60
50
40
30
20
10
0
100
90
80
70
60
50
40
30
20
10
0
1968 69 71 73 75 77 79 81 83 85 87 89 91 93 95 97 99 01 03
(Year)
Water quality
sewerage coverage

How did Japan do it?
(Examples of financial measures) (1)

- **The Sewerage Finance Research Committee was created to establish the basic principles for cost sharing between private and public, and between central and local governments**
- **The national subsidy system was created for the development of sewerage systems**
- **Local governments were encouraged to issue local government bonds to cover the portion that was not covered by central government subsidy.**

  In Japan, substantial portion of national tax revenue is transferred to the local governments of which the standard financial needs exceeds the standard financial revenue. This system is called 'Local Allocation Tax'. Certain percentage of the repayment amount of principals and interests of the local government bonds issued for the development of sewerage systems are included in the calculation of the standard financial needs.

How did Japan do it?
(Examples of financial measures) (2)

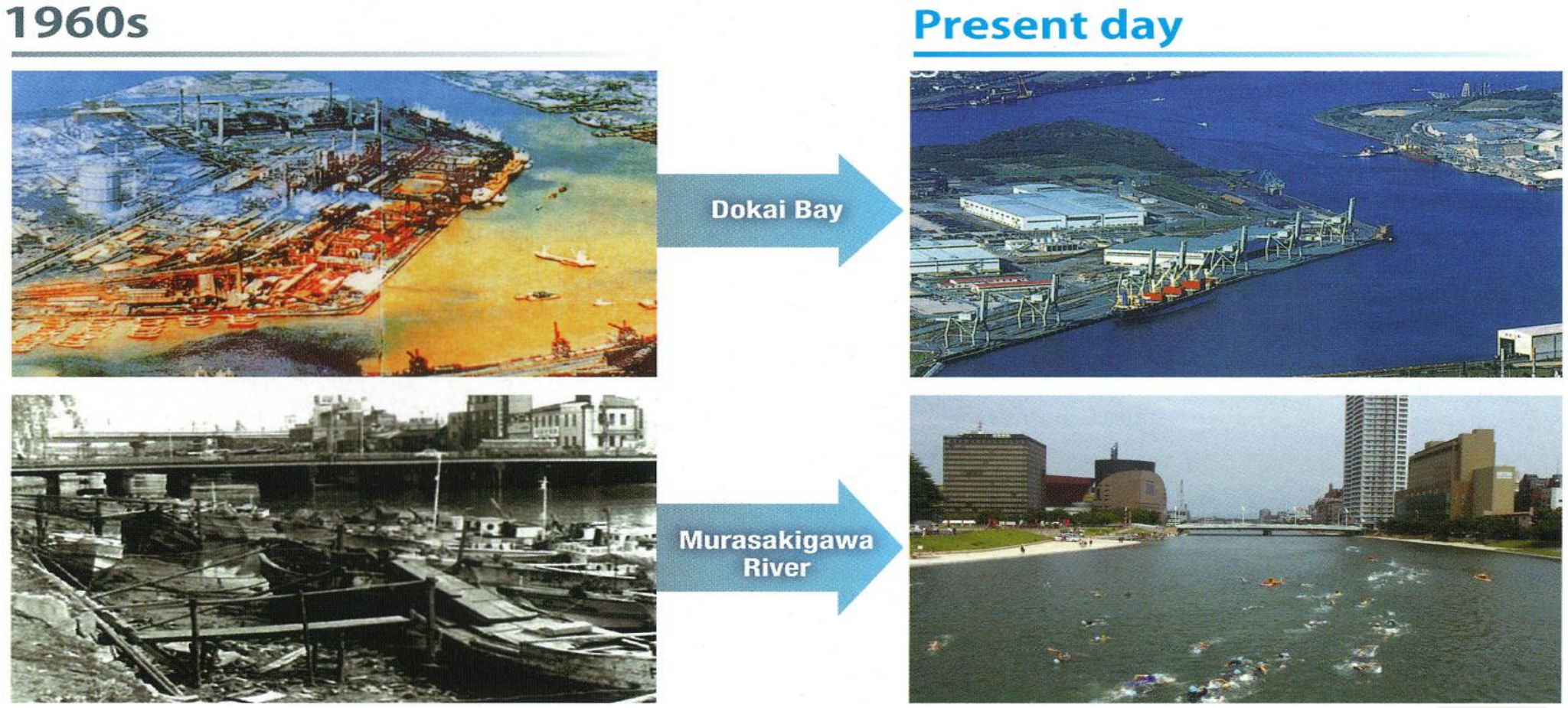
- **In Japan, operation and maintenance cost of the sewerage system needs to be covered by the sewerage user charge, except such costs as the cost related to the storm water management, the cost for advanced treatment, etc., which are to be covered by the municipal general account.**
- **In Japan, generally, sewer user charges are calculated by adding the basic charge and the charge from the amount of the water supplied. The amount is cheaper than in many cities of Europe.**
- **A new subsidy system was introduced recently to encourage innovative initiatives by local governments for water reuse and recycling.**

As a result (1): River Clean up in *Kitakyushu City, Fukuoka Prefecture, Japan*

- **Extreme water pollution in the 1960s due to rapid industrialization and urbanization**
- **Development of a legal and financial support system from the central government, which was a powerful incentive for sewerage implementation: *99.8% coverage now***

As a result (1): River Clean up in

Kitakyushu City, Fukuoka Prefecture, Japan

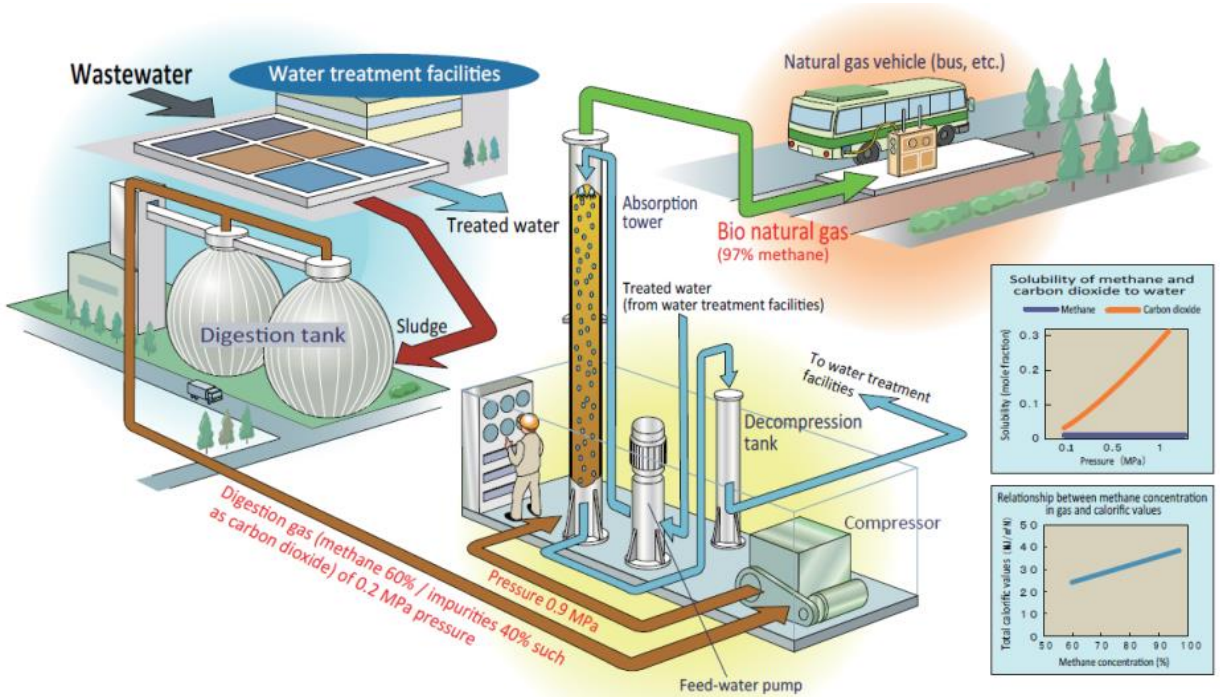


As a result (2): From Wastewater Treatment to Fuel for Transportation and Homes in *Kobe City, Japan*

- **Adoption of measure to cope with global warming → Goal: 25% (from 1990 levels) greenhouse gas emissions reduction in the whole city by 2020**
- **Recycling of gas from anaerobic digestion in WWTP (Kobe Biogas) used, after refinement, as fuel for vehicles (14,000 vehicles) and city gas (2,500 households)**
- **About 2,700 tons of CO_2 reduced/year with effective use of digestion gas**

As a result (2): From Wastewater Treatment to Fuel for Transportation and Homes in *Kobe City, Japan*

Digestion Tanks and Kobe Biogas Eco-station



Biogas Generation System

As a result (3): Collection, Treatment, and Recycling of Sludge from Johkasou: Case of *Saitama, Japan*

- **Neighboring city of Tokyo, 1.26 million population, 91.5% covered by the public sewerage system and 8.5% by Johkasou**
- **Sludge from Johkasou collected, treated and reused as fertilizer**
- **Sustainable septage management system in Japan has been working over several decades**
- **Sludge composting is advantageous in areas where land is limited and landfilling restricted**
- **Compost from sludge recycling gets attention from residents & raises awareness on the importance of preserving the environment**

As a result (3): Collection, Treatment, and Recycling of Sludge from Johkasou: Case of *Saitama, Japan*




Sludge collection, transport, discharge

+

treatment + reuse (composting)

Conclusion

- Sound sanitation policies are essential to achieve a nation's growth
- Sustainable sanitation systems can deliver economic and environmental benefits
- Similar initiatives are adopted in many municipalities in Japan

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Japan Sanitation Consortium (JSC)

Regional Water Knowledge Hub for Sanitation

JSC Expertise

- Member organization of a regional network of water experts committed for sanitation improvement
- On-site and off-site sanitation expert organizations

JSC Services

- Networking, information gathering & knowledge sharing, support to international donor organizations activities, NGOs, and other sanitation-related organizations

JSC Partners

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

Thank you for your attention

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