

AWaP and JICA Activities relating to SDG 6.3

The Inaugural Symposium of Asia Wastewater Partnership (AWAP)

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AWaP and JICA Activities relating to SDG 6.3

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I. What's SDG (from MDG to SDG)

On September 25th 2015, countries adopted a **set of goals** to end poverty, protect the planet and ensure prosperity for all as part of a new **sustainable development agenda**. Each goal has specific targets to be achieved over the next 15 years. **Sustainable Development Goal** relating to water and sanitation is **Goal 6** of SDGs.

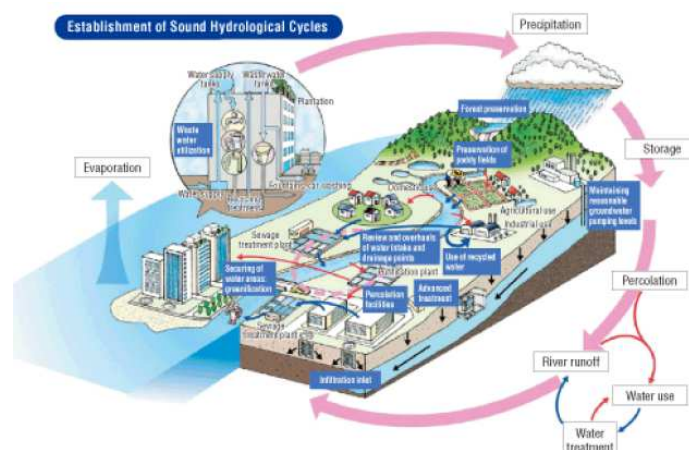
Among the targets of Goal 6, **Target 6.2** and **6.3** are crucial for humankind, because



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I. What's SDG (from MDG to SDG)

Water is an indispensable factor for maintaining the lives of humankind. To maintain healthy and cultural life under sustainable development, it is required to **create and keep sound water cycle** by preserving **a good ambient water quality** (SDG6.3.2) and **utilizing water appropriately and effectively** (SDG6.1.1) including the provision of the services related to **safely managed sanitation** (SDG6.2.1) and **safely treated wastewater** (SDG6.3.1).



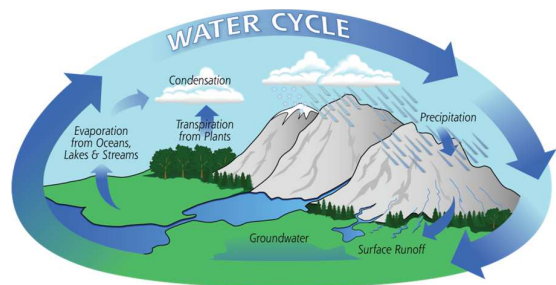
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Safely treated wastewater (6.3.1)

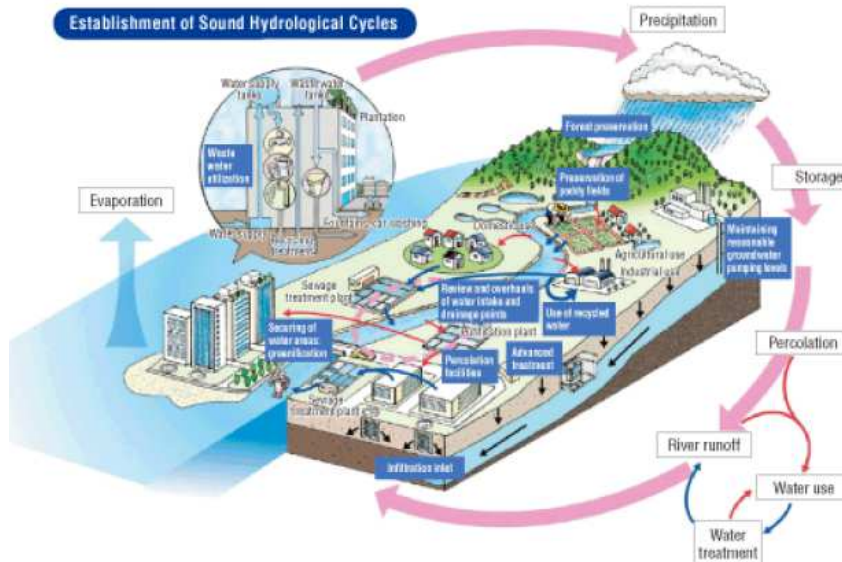
is required to achieve

Good ambient water quality (6.3.2)

for sound ecosystems
in a river basin.



Discharged wastewater will influence the ambient water quality.



Pollution Source

- Domestic Wastewater
- Industrial Wastewater
- Nonpoint Source (Fields, Run-off water from roads, etc.)

Source: https://pmm.nasa.gov/education/sites/default/files/article_images/Water-Cycle-Art2A.png
http://www.mlit.go.jp/tochimizushigen/mizsei/water_resources/contents/responding_properly.html

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I. What's SDG (from MDG to SDG)

SDGs: Sustainable Development Goals

Following the Millennium Development Goals (MDGs),
the new SDGs guide development policy and funding for the next 15 years



SDG 6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls

Indicator 6.2.1 Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water

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I. MDG to SDG

III-2. SDGs: Sustainable Development Goals

Following the Millennium Development Goals (MDGs), the new SDGs guide development policy and funding for the next 15 years



SDG 6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, **halving the proportion of untreated wastewater** and substantially increasing recycling and safe reuse globally

Indicator 6.3.1 Proportion of wastewater safely treated

Indicator 6.3.2 Proportion of bodies of water with good ambient water quality

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I. What's SDG (from MDG to SDG)

While the SDGs are not legally binding, governments are expected to take ownership and establish national frameworks for the achievement of the 17 Goals.

Countries have the primary responsibility for follow-up and review of the progress made in implementing the Goals, which will require quality, accessible and timely data collection.

Regional follow-up and review will be based on national-level analyses and contribute to follow-up and review at the global level.



I. What's SDG (from MDG to SDG)

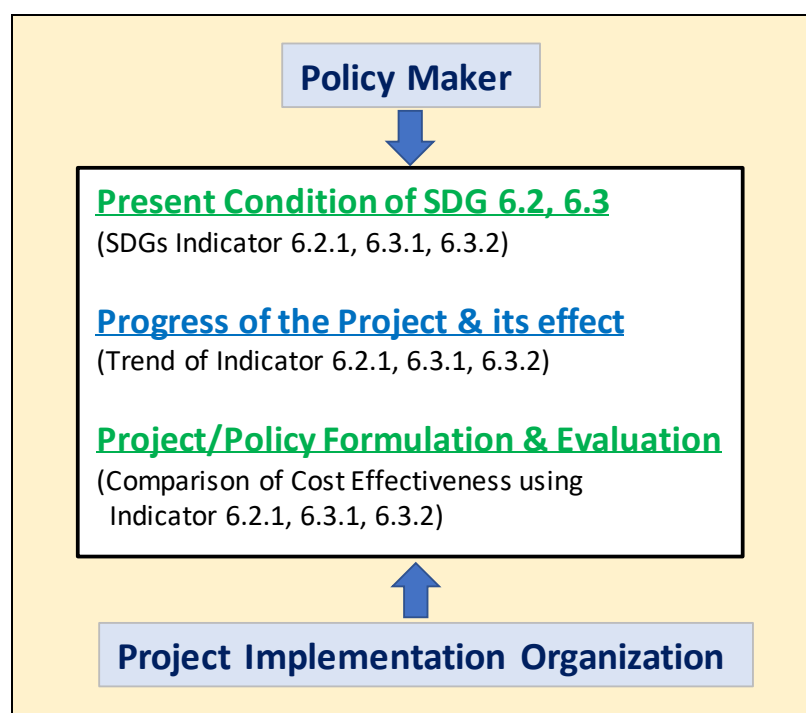
SDGs: Following the Millennium Development Goals (MDGs), the new SDGs guide development policy and funding for the next 15 years



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I. What's SDG (from MDG to SDG)

Monitoring of indicator SDG 6.3.1 is useful to recognize the present situation and the progress regarding safely treated wastewater and to evaluate the effectiveness of the project and/or the policy for the achievement of SDG.



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II-1. Objectives and Contents of the Vietnam Pilot Study

Objectives

to propose appropriate and feasible monitoring methodology and to identify difficulties, gaps and important issues to conduct the monitoring activities related to SDG 6.3.1 in Vietnam and do feed-back for the refinement of the monitoring methodology proposed for the indicator of SDG 6.3.1 by WHO.

Contents

- Proposed Methodology on SDG6.3.1 in Vietnam
- Existing Issues on Methodology on SDG6.3.1 in Vietnam
- Trial Estimation of SDG6.3.1 in Vietnam
- Findings in Vietnam and Recommendations to Other Countries
- **Recommendation for the monitoring of SDG indicator 6.3.1 and the achievement of SDG 6.3**

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II-2. Recommendation based on the Results of the Study

Recommendation for
the monitoring of SDG indicator 6.3.1 and
the achievement of SDG 6.3

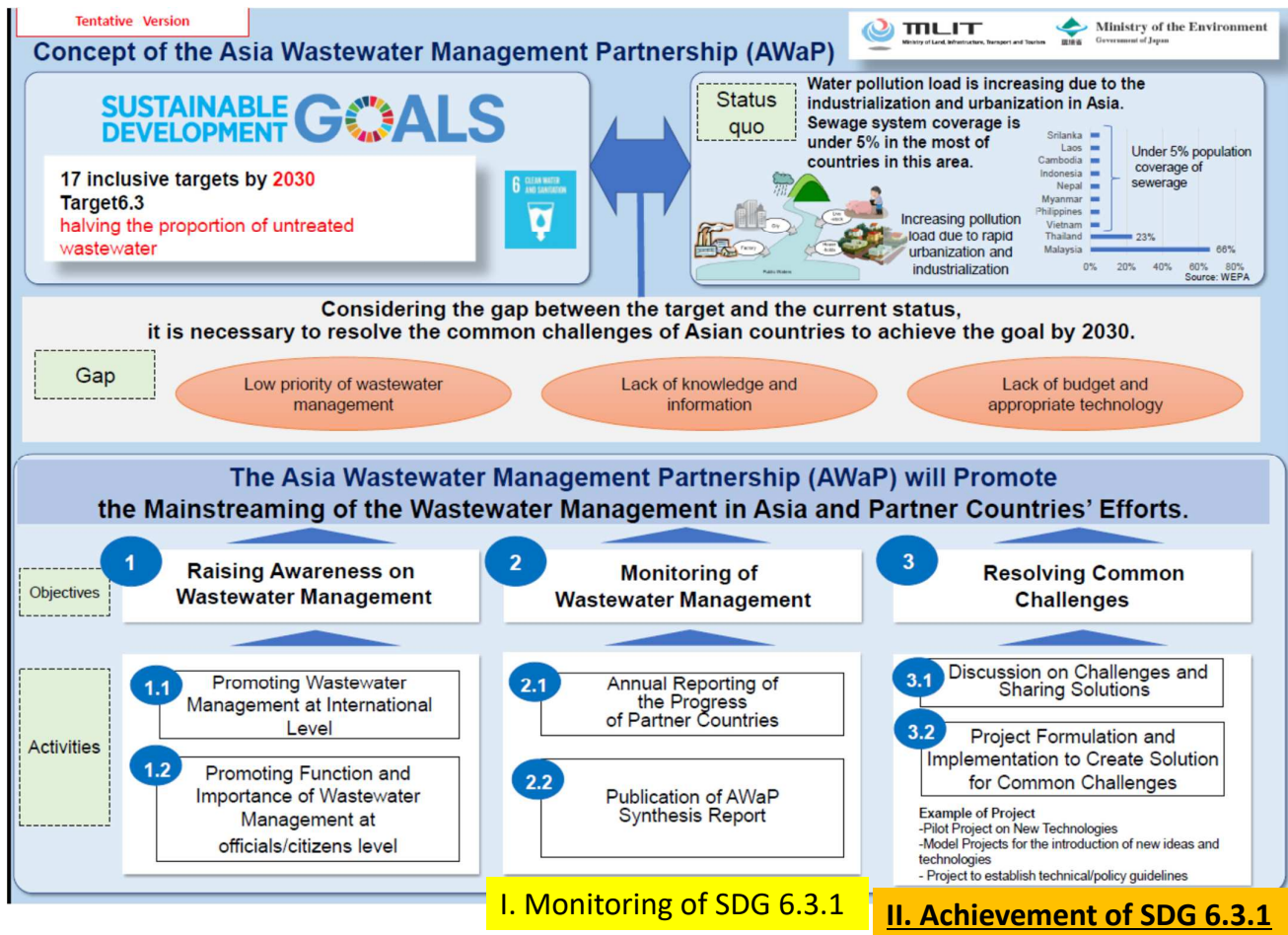
I. Monitoring of SDG 6.3.1 ➡ AWaP Objective 2

Reliable, consistent and, whenever possible, disaggregated data are essential to stimulate political commitment, inform policy-making and decision-making, and trigger well-placed investments towards health, environment and economic gains (SDG 6 Synthesis Report on Water and Sanitation).

II. Achievement of SDG 6.3.1 ➡ AWaP Objective 3

The safely treated wastewater could be obtained by well-designed facilities which are managed properly with regular quality monitoring based on the appropriate planning and legal framework.

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II-2. Recommendation based on the Results of the Study

I. Monitoring of SDG Indicator SDG 6.3.1

1. Institutional and Management Arrangements
2. Capacity Development for SDG indicators monitoring
3. Financial System for monitoring SDG indicator monitoring
4. Analyzing and disaggregating data relating to domestic wastewater

Domestic Wastewater (Off-site AND On-site), Industrial Wastewater ([AWaP & WEPA](#))

II. Achievement of SDG 6.3.1

1. Technology Options

Off-site Treatment and On-site Treatment,
Technology Evaluation and Establishment of Design and O&M Manuals

2. Institutional Arrangements including Capacity Development

3. Formulation of Legal System:

Effluent water quality regulation and monitoring(WEPA)
Environmental water quality standard(WEPA)
Management of wastewater treatment systems

4. Public Relation and/or Citizen's Participation

5. Financial System for Sanitation and Wastewater Management

6. Planning : Establishment of planning procedure and methods to reflect SDG indicator monitoring result and linkage of SDG indicators and policy

II-2-II. Recommendation for Achievement of SDG 6.3.1

I) Technology Options: Wastewater treatment process, Reliable facilities and equipment, O&M measures

- For safely treated wastewater, **specific treatment process (technology) to meet the effluent water quality standards is requested, and the performance of specific treatment process (technology) should be evaluated and examined.**
- Based on the evaluation of the treatment process (technology), formulation of design and O&M manual would be requested to treat wastewater safely and steadily.
- Innovation of technology will accelerate the efficiency of wastewater treatment and management and have an impact on existing systems

National Government develops **Technology Standards** in collaboration with local governments, Japan Sewage Works Association and Japan Sewage Works Agency

Technology Standards helps local governments to conduct sewage works properly.

Design guideline



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II-2-II. Recommendation for Achievement of SDG 6.3.1

6) Planning: Establishment of planning procedure and methods to reflect SDG indicator monitoring result and linkage of SDG indicators and

- **Stepwise approach**: Example of Haiphong: Promotion of septage management (SDG 6.2) and sewage works (SDG 6.3)
- **Basin-wide planning** can be developed by “pollution load analysis”. By pollution load analysis, based on the coordination of stakeholders effective treatment systems planned for the river basin to meet the environmental water quality standards. For the analysis, the generated and discharged load (pollution load of human excreta and grey water, performance of treatment process) and the run-off ratio in the river basin is needed.
- Formulation of **short, middle and long term planning reflecting the indicator to achieve SDG 6.3** based on the effective strategy and policy relating to above mentioned aspects

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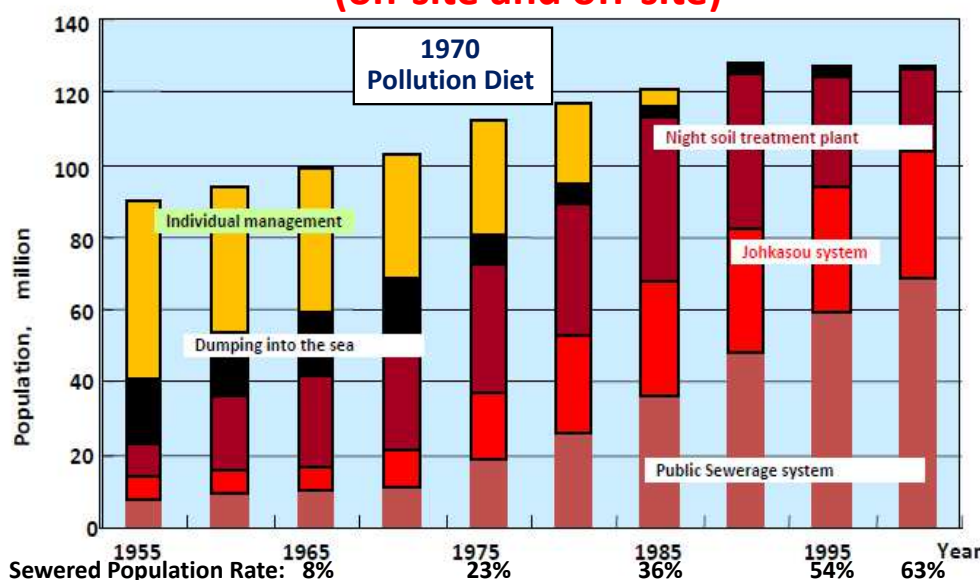
Five Year Plans for Sewerage Systems Development in Japan

Planned Period	Planned and Actual Investments (Achievement ratio) [Unit: billion yen]	Objective of Construction	
		Targets	Achieved Levels
First (FY 1963 - FY 1967)	440.0 296.3 (67.3%)	Percent of area provided with drainage systems (*1)	
		16 → 27%	20%
Second (FY 1967 - FY 1971)	930.0 617.8 (66.4%)	Percent of area provided with drainage systems	
		20 → 33%	23%
Third (FY 1971 - FY 1975)	2600.0 2,624.1 (100.9%)	Percent of area served by sewerage systems (*2)	
		23 → 38%	26%
Fourth (FY 1976 - FY 1980)	7500.0 6,867.3 (91.6%)	Percent of total sewered population(*3)	
		26 → 40%	30%
Fifth (FY 1981 - FY 1985)	11,800.0 8,478.1 (71.8%)	Percent of total sewered population	
		30 → 44%	36%
Sixth (FY 1986 - FY 1990)	12,200.0 11,693.1 (95.8%)	Percent of total sewered population	
		36 → 44%	44%
		Percent of area provided with stormwater drainage systems (*4)	
		35 → 43%	43%
Seventh (FY 1991 - FY 1995)	16,500.0 16,710.5 (101.3%)	Percent of total sewered population	
		44 → 54%	54%
		Percent of area provided with stormwater drainage systems	
		40 → 49%	47%
		Percent of population served by advanced wastewater treatment (*5)	
Eighth (FY 1996 - FY 2002)	23,700.0	Percent of total sewered population	
		54 → 66%	58%
		Percent of area provided with stormwater drainage systems	
		46 → 55%	49%
		Percent of population served by advanced wastewater treatment	
		5.3 million → 15 million people	8 million people

Trend of Long-term programs for Promotion of Sewerage Systems

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Population trends of wastewater treatment in Japan (on-site and off-site)



Wastewater Treated Population in 2011 in million

Sewerage 93.5 (76%)

Rural Sewerage 3.5 (3%)

Johkasou* 10.8 (9%)

Total 108.1 (88%)

* Tandoku Joukasou is not included



Individual Management : Agricultural Use as Fertilizer

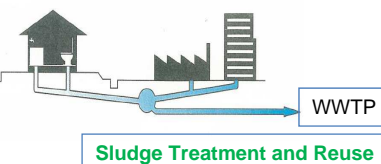
Night Soil Treatment



Johkasou System



Public Sewerage System



JICA's Comprehensive Approach (Bilateral)

Loan Projects

Construction

- Sewage Treatment Plants
- Pipe Works

(Trunk Sewer, Branch Sewer, House Connection)

Consulting Services

Detailed Design

Tender Assistance

Supervising Construction

Preparatory Studies

- Feasibility Study
- Project Plan, Basic Design, Cost Estimation

Technical Cooperation Projects

Expert dispatch

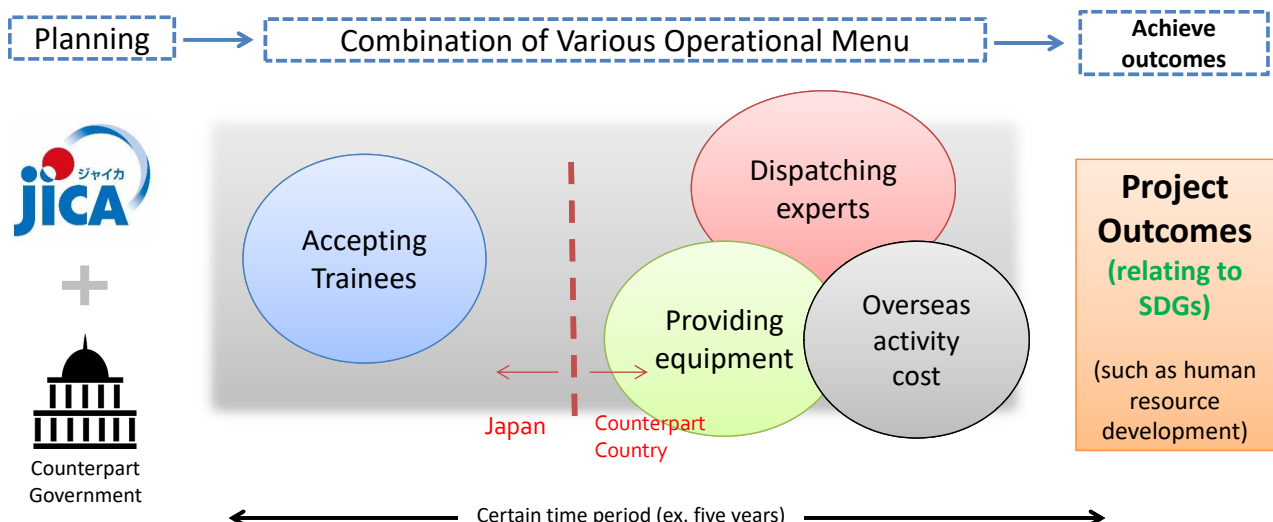
- O&M Capacity Building
- Training Center for Sewerage works
- Rehabilitation and Improvement Programs

In collaboration with WEPA and AWaP (Regional)

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What is Technical Cooperation Project ?

Technical Cooperation Project is to **combine various operational menu**, such as dispatching experts and providing equipment, in accordance with **agreed plan** for the cooperation **to attain certain outcomes (relating to SDGs)** within **certain time period**



SDGs and JICA activities **SDG 6.2 and 6.3**

SDG 6.2: Safely Managed Sanitation

Relating JICA Project: Cebu and Davao in Philippines,
Hai Phong in Vietnam

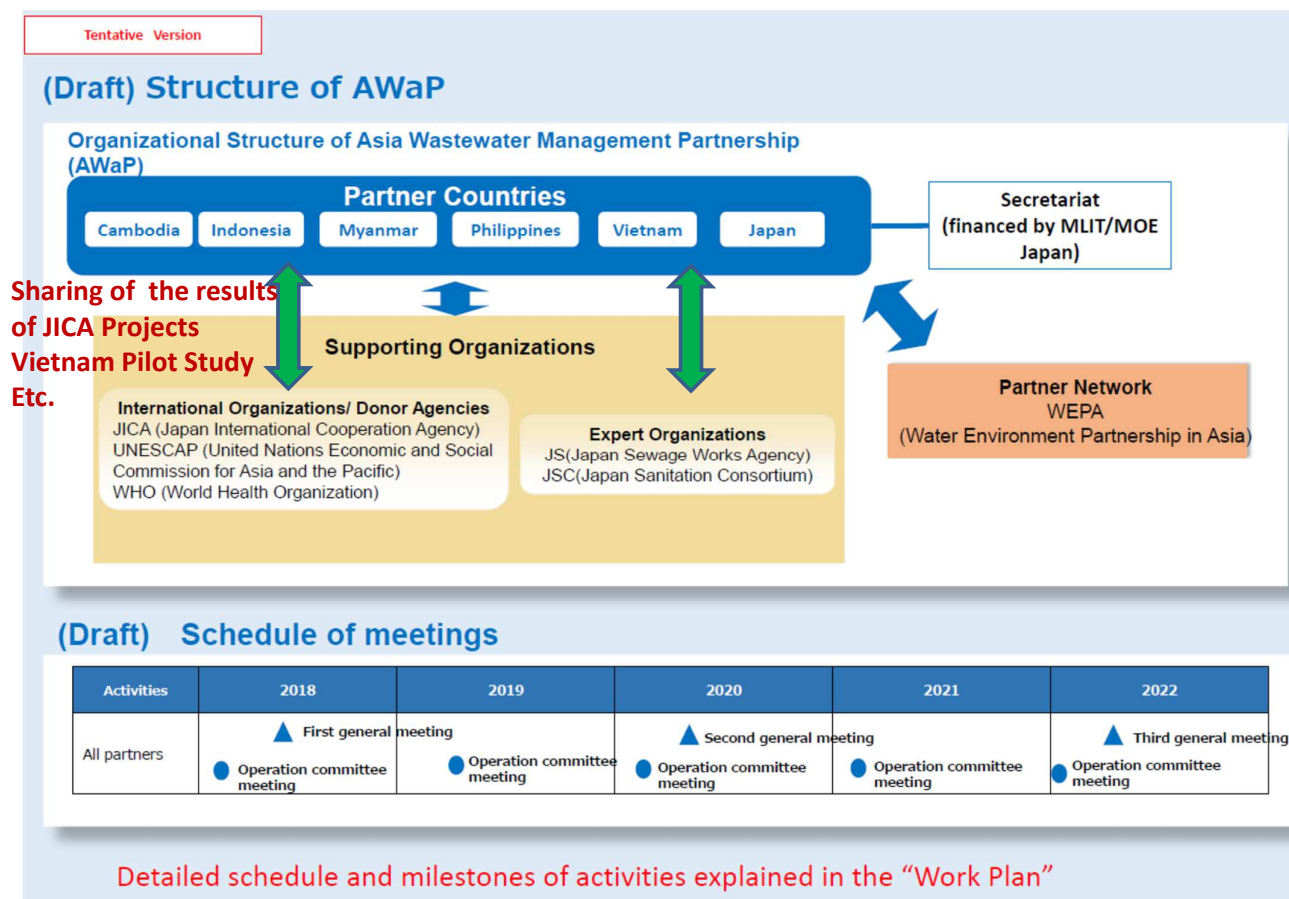
SDG 6.3.1: Safely Treated Wastewater

Relating JICA Project: **Pilot Study** with related Ministries in Vietnam
in cooperation with WHO

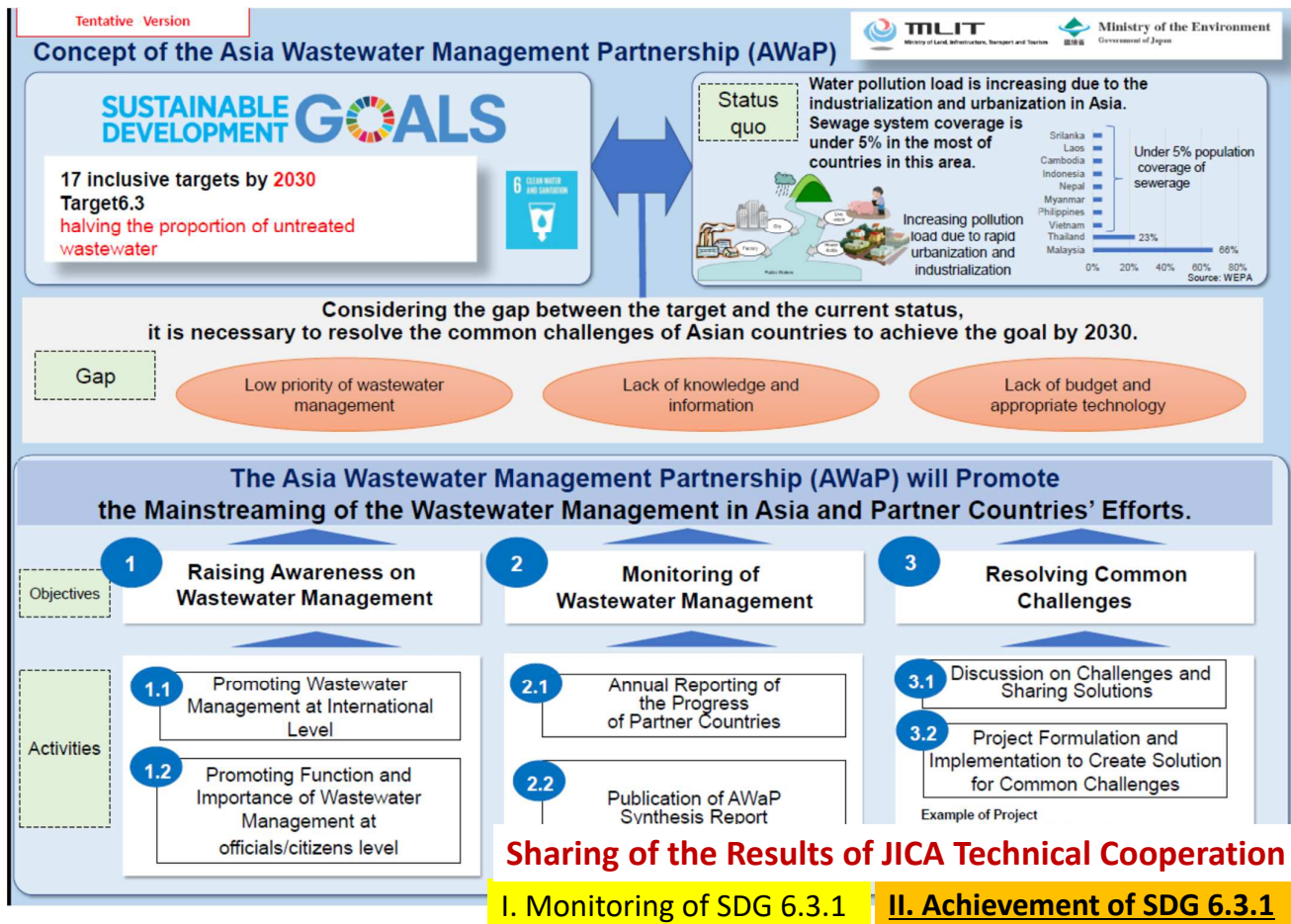
SDG 6.3.2: Good Ambient Water Quality

Relating JICA Project: Sri Lanka, Vietnam

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AWaP: SUPPOSED AND POSSIBLE ISSUES (DRAFT)

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Technical Cooperation Projects

Expert dispatch

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Note ; JICA's projects are Bilateral activities,
while AWaP activities are Regional base.

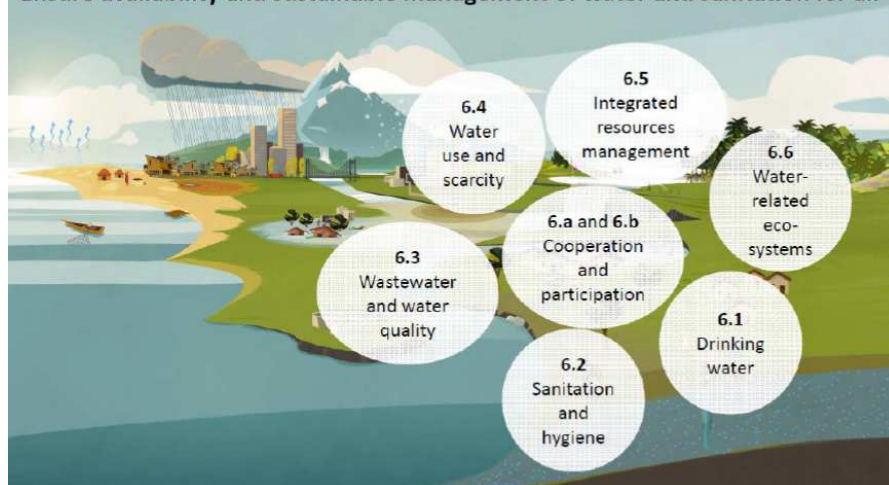
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SDGs: Sustainable Development Goals

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"Ensure availability and sustainable management of water and sanitation for all"



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JICA's Major Projects for Wastewater Treatment from 2000 (2000-2017)

EUROPE

- TURKEY**
 - Municipal Sewerage and Wastewater Treatment Improvement Project (2011)
- UKRAINE**
 - Dniproch Sewage Treatment Plant Modernization Project (2016)

MIDDLE EAST

- IRAQ**
 - Baghdad Sewerage Facilities Improvement Project (Engineering Service (E/S)) (2009)
 - Sewerage Construction Project in Kurdistan Region (I) (2016)
- PALESTINE**
 - Jericho Wastewater Collection, Treatment System and Reuse Project (2011)

LATIN AMERICA

- BRAZIL**
 - Project for Improvement of Operation and Maintenance of Water Supply and Sewerage Systems in Paraná states (2012-2016)
 - Project of Training in Operation and Maintenance of Sewerage System (2014-2017)
 - Sanitation Improvement Project for Baixada Santista Metrop.RCQ. (I), (II) (2004,2010)
 - Sanitation Improvement Project for Santa Catarina Coastal Region (2010)
 - Environmental Improvement Project in the Caxias Lake Drainage (2010)

PANAMA

- Panama Metropolitan Area Wastewater Management Improvement Project (2015-2018)
- Panama City and Panama Bay Sanitation Project (2007)

OCEANIA

- PAPUA NEW GUINEA**
 - The Project for Improvement of Management Capacity for Port Moresby Sewerage System (2017-2020)
 - Port Moresby Sewerage System Upgrading Project (2010)

Asia Wastewater Partnership (AWAP)

AFRICA

- MAURITIUS**
 - Grand Desle Sewerage Project (2010)
- SENEGAL**
 - Project for Treatment of Sewage, Rainwater and Wastes in Kaolack City (2011-2014)

SOUTH ASIA

- INDIA**
 - The Study for Formulation and Revision of Manuals of Sewerage and Sewage Treatment (2010-2014)
 - Yamuna Action Plan Project (II), (III) (2009, 2011)
 - Ganga Action Plan Project (various) (2005)
 - Ganga Water Supply and Sewerage Project (B-1), (B-2) (2005, 2006)
 - Orissa Integrated Sanitation Improvement Project (I), (II) (2007, 2016)
 - Guwahati Sewerage Project (2016)

PAKISTAN

- The Project for Upgrading of Mechanical System for Sewerage and Drainage Services in Gujranwala (2014)

SRI LANKA

- The Project for the Strategic Master Plan under Sewerage Sector (2015-2017)
- Kandy City Wastewater Management Project (2010)

SOUTHEAST ASIA

- CAMBODIA**
 - The Study on Drainage and Sewerage Improvement Project in Phnom Penh Metropolitan Area (2014-2016)

INDONESIA

- Advisor for Sewerage Management (2015-)
- Project for Improving Planning Capacity for Sewerage System in DKI Jakarta (2015-2017)
- Denpasar Sewerage Development Project (I) (2008)
- Metropolitan Sanitation Management Investment Program: Engineering Service (E/S) for Sewerage System Development in DKI Jakarta (2014)

VIETNAM

- The Project for Water Quality Improvement for Japanese Bridge Area in Hoi An City (2015)
- Project for Capacity Development on Sewerage Management in Ho Chi Minh City Phase1 and Phase2 (2009-2014)
- Advisor for Urban Environment (Sewerage) Policy (2010-2015, 2015-2018)
- Technical Assistance Project for Enhancing Management Capacity of Sewage Worker (2015-2018)
- Ho Chi Minh City Water Environment Improvement Project (I-III) (2001, 2008, 2010)
- Hai Phong City Environment Improvement Project (2005)
- 2nd Hanoi Drainage Project for Environmental Improvement (I) (2006)
- 2nd Ho Chi Minh City Water Environment Improvement Project (I-III) (2006, 2008, 2016)
- Southern Binh Duong Province Water Environment Improvement Project (I), (II) (2007, 2012)
- Hanoi City Yen Xa Sewerage System Project (I) (2013)

- Grant
- Technical Cooperation
- ▲ Loan

Thank you for your attention.