

Challenges and Targets of South East Asian Water Environment - Insights from WEPA Activities -

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Water Environmental Partnership in Asia (WEPA)

Recognizing the **improvement of water environmental governance** is essential to solve water pollution problems in the Asian region, the Water Environmental Partnership in Asia (WEPA) was launched in 2004 by the Ministry of the Environment, Japan. WEPA conducts its activity on a 5-year cycle and the third phase started in April 2014

WEPA consists of partners in **13** Asian countries

1. Democratic Socialist Republic of Sri Lanka (Sri Lanka)
2. Federal Democratic Republic of Nepal (Nepal)
3. Japan (Japan)
4. Kingdom of Cambodia (Cambodia)
5. Kingdom of Thailand (Thailand)
6. Lao People's Democratic Republic (Lao PDR)
7. Malaysia (Malaysia)
8. People's Republic of China (China)
9. Republic of Indonesia (Indonesia)
10. Republic of Korea (Republic of Korea)
11. Republic of the Philippines (Philippines)
12. Socialist Republic of Viet Nam (Viet Nam)
13. Union of Myanmar (Myanmar)



Purpose of WEPA (2004-2013)

1st Phase of WEPA:

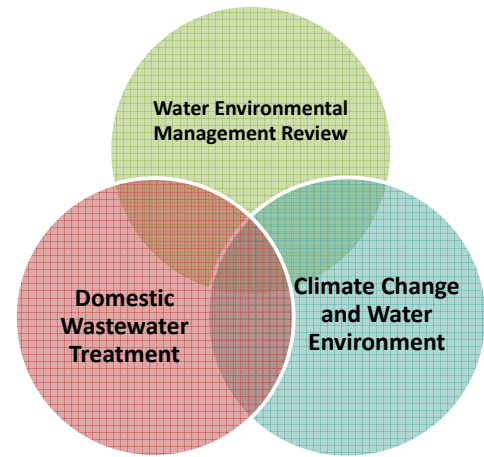
Development of Information Platform of Water Environmental Management



WEPA database www.wepa-db.net

2nd Phase of WEPA:

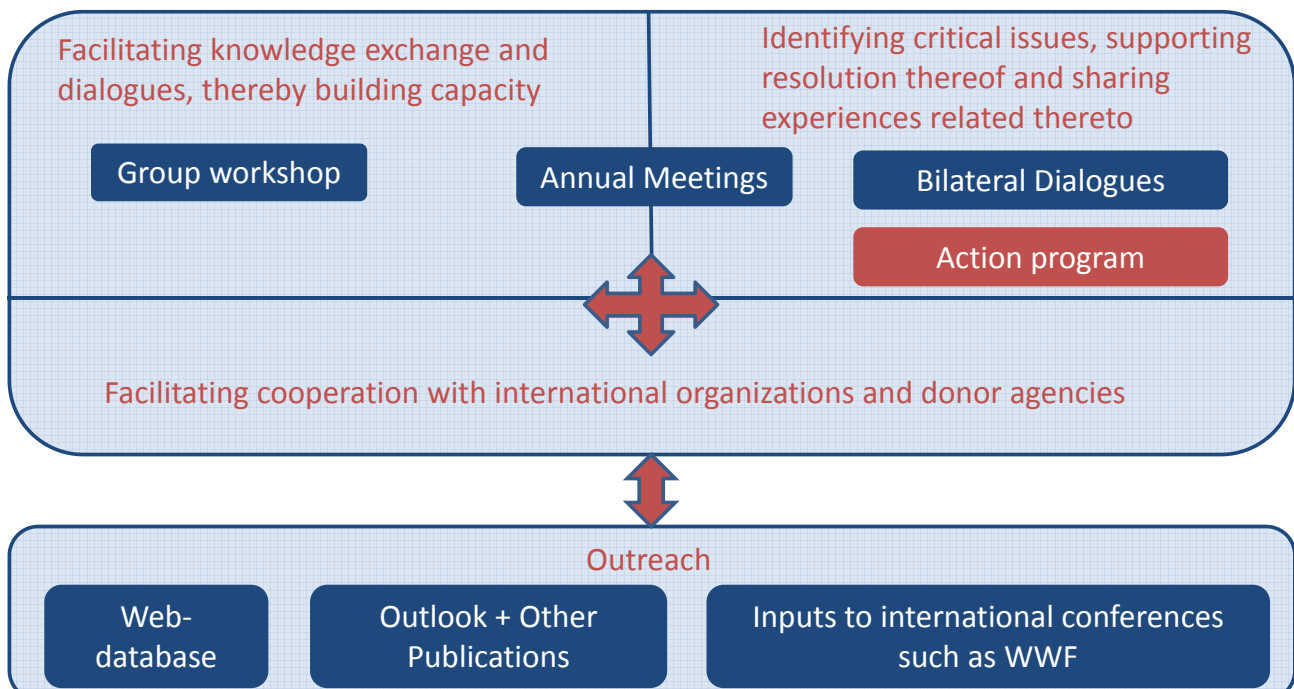
Knowledge Sharing for Solution Finding



Identified Issue for 2nd Phase

Purpose of WEPA (2014-)

3rd Phase of WEPA: Actions for Issue Solution



Organization of Workshop and Bilateral Meeting



Workshop
(in Sri Lanka in 2015)



Bilateral Meeting
(in Viet Nam in 2014)

5

WEPA Database



www.wepa-db.net

1. Policy

- State of Water environment
- Legislative Framework (Such as Ambient Water Quality Standard)
- Water Quality Monitoring, etc

2. Technology

- Wastewater treatment facility under operation in Asia

3. NGO & CBO Activities

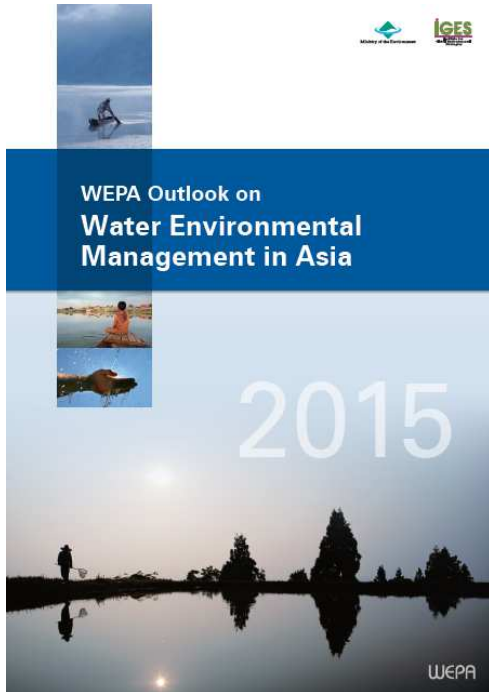
- Water environmental conservation activities

4. Information Source

- Links to useful sites on water environmental management

6

Publications



WEPA Outlook



Policy Brief

Review Points of Water Environmental Management in WEPA

1. Legislation, policies and strategies for water environmental management

- Objectives of water environmental management, ambient water quality standards as the administrative target, strategies or plans for water environment

2. Monitoring of water environment

- Ambient water quality monitoring, recording, maintenance, evaluation, and disclosure of their results

3. Measures to ensure implementation and compliance, focusing on wastewater management

- Inventory data of pollution load, industrial and domestic wastewater management

Establishment of Water Environmental Standard in WEPA Countries

Country	Surface Water	Groundwater	Marine Water
Cambodia	Water Quality Standards in Public Water Areas	Water Quality Standards in Public Water Areas	Water Quality Standards in Public Water Areas
China	Environmental Quality Standards for Surface Water	Quality Standard for Ground Water	Sea Water Quality Standard
Indonesia	Water Quality Criteria	Water Quality Criteria	Standard Quality of Seawater
Japan	Environmental Quality Standards for Water Pollution	Environmental Water Quality Standards of Groundwater	Environmental Quality Standards for Water Pollution
Republic of Korea	Environmental Standards for Water Quality and Aquatic Ecosystem	Environmental Standards for Water Quality and Aquatic Ecosystem	Environmental Standards for Water Quality and Aquatic Ecosystem
Lao PDR	Surface Water Quality Standard	Groundwater Quality Standard	
Malaysia	National Water Quality Standards		Marine Water Quality Criteria and Standard
Myanmar			
Nepal			
Philippines	Water Quality Criteria for Fresh Surface Waters		Water Quality Criteria for Coastal and Marine Waters
Sri Lanka			
Thailand	Surface Water Quality Standards	Groundwater Quality Standards	Marine Water Quality Standard
Vietnam	National Technical Regulation on Surface Water Quality	National Technical Regulation on Ground Water Quality	National Technical Regulation on Coastal Water Quality

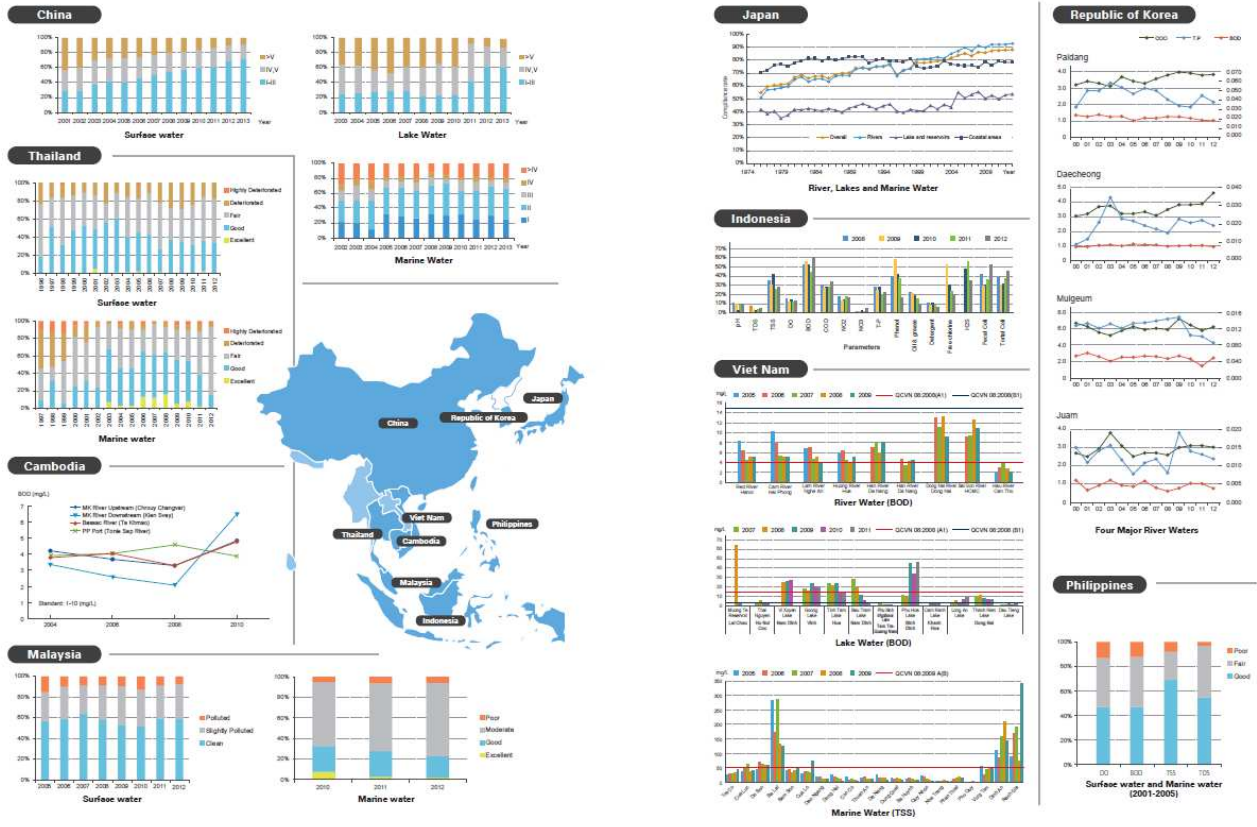
9

Implementation of Ambient Water Quality Monitoring

Country	No. of Monitoring Stations	Frequency	Year
Cambodia	10 (rivers)	Monthly	2011
China	469 (rivers), 26 (main lakes and reservoirs), 4 (Three Gorges Dam), 4100 (Groundwater), 279,225 km ² (marine water)	Unknown	2011
Indonesia	Unknown (40 rivers)	At least twice a month	2011
Japan	4,550 (rivers), 475 (lakes and reservoirs), 2,044 (sea), 3,680 (Groundwater)	Monthly	2013
Republic of Korea	697 (rivers), 185 (lakes), 2,499 (groundwater)	Monthly for rivers and lakes (48 times/year for key locations) 2 times/year for Groundwater	2008
Malaysia	901 (rivers), 105 (groundwater), 321 (marine water)	Unknown	2013
Philippines	192 (rivers), 4 (lakes), 88 (groundwater), unknown (marine water)	Monthly or 4 times/year (rivers) unknown (groundwater, marine water)	2001-2015
Thailand	366 (rivers and lakes), 170 (marine waters), 620 stations (groundwater)	4 times/year (rivers and lakes) 2 times/year (marine water)	2012
Viet Nam	248 (surface water)	4 times/year	2007

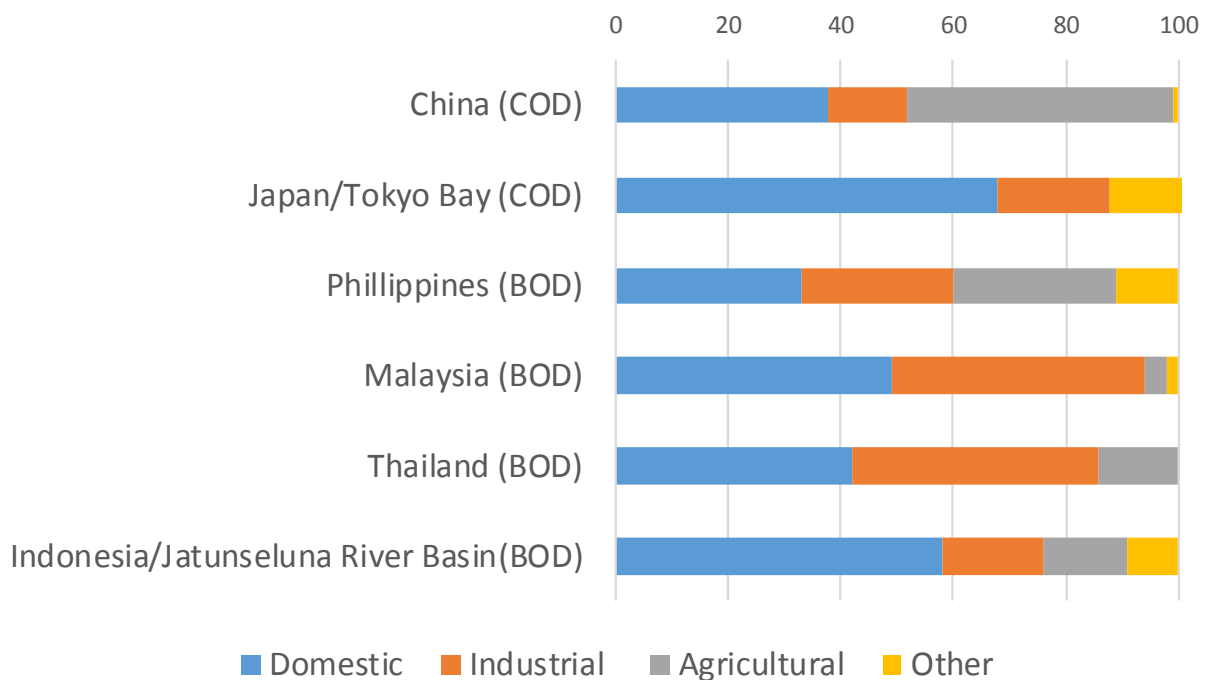
10

Implementation of Ambient Water Quality Monitoring and Disclosure of the result



11

BOD/COD Pollution Load from Different Sectors in Selected WEPA Countries



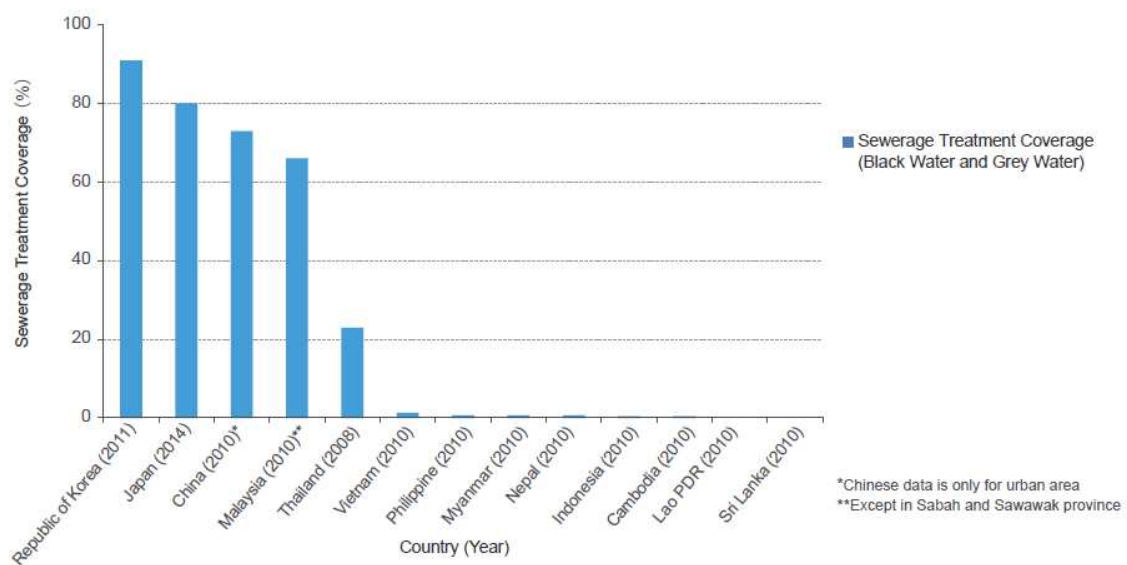
12

Establishment of Effluent Water Standard in WEPA Countries

Country	Industry	Domestic	Remarks
Cambodia	●	●	
China	●	●	Domestic: for urban wastewater treatment facilities
Indonesia	●	●	
Japan	●	●	
Republic of Korea	●	●	
Lao PDR	●	●	Domestic: For urban areas
Malaysia	●	●	
Myanmar	-	-	Yangon has effluent standard; establishment of national standard is under discussion by national government
Nepal	●		Domestic: unknown
Philippines	●	●	Domestic: municipal wastewater
Sri Lanka	●	●	
Thailand	●	●	
Viet Nam	●	●	

13

Situation of Domestic Wastewater Treatment in Asia



Service coverage rates of sewerage treatment in WEPA countries

14

Septic Tank Coverage in Selected WEPA Countries

Country	Year	Area	Coverage Rate (%)
Vietnam	2008	National Average	41
		Urban Area	79
		Rural Area	26
Malaysia	2010	National Average	21
Indonesia	2011	National Average	60
		Jakarta	93
Philippines	2010	Manila	71

15

Our Understanding on Water Environmental Management in Asian countries

- **Basic water environmental management framework** such as legal systems, policy and strategies, has already been developed in most WEPA countries.
- In addition, most of WEPA Asian countries implement **regular water quality monitoring** and disclose the results of the monitoring, although the level of the monitoring differs among different countries.

16

Our Understanding on Water Environmental Management in Asian countries

- However, many countries face **problems in enforcement of wastewater management framework.**
- As the first step toward the solution of this issue, **baseline information such as impact of domestic wastewater to water environment, current situation of domestic wastewater management** should be accumulated and shared among responsible institutions.

17

Thank you for your listening



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