



Water Environment Partnership in Asia

Strengthening Water Quality Governance through Regional Partnership

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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 :

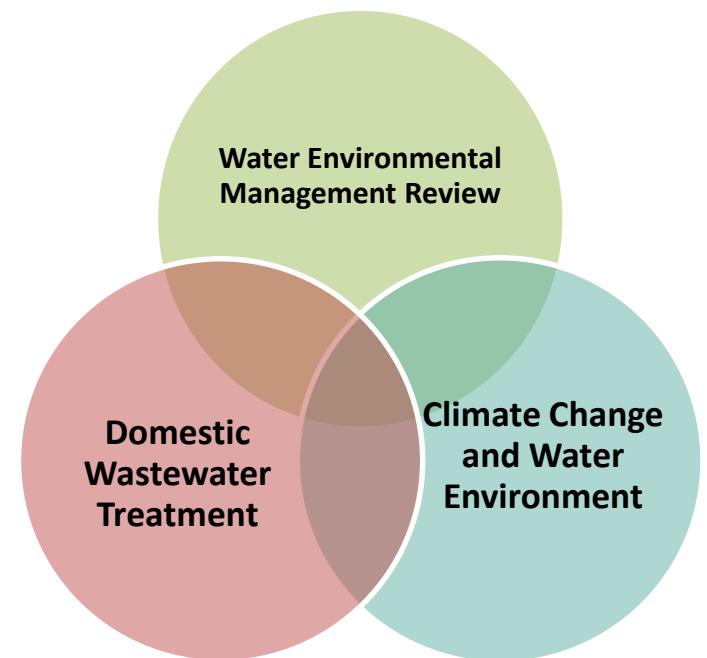
Development of Information Platform of Water Environmental Management



WEPA database [www. wepa-db.net](http://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

Facilitating knowledge exchange and dialogues, thereby building capacity

Group workshop

Identifying critical issues, supporting resolution thereof and sharing experiences related thereto

Annual Meetings

Bilateral Dialogues

Action program

Facilitating cooperation with international organizations and donor agencies

Web-database

Outlook + Other Publications

Inputs to international conferences such as WWF

Outreach

Organization of Workshop and Bilateral Meeting



Workshop
(in Sri Lanka in 2015)



Bilateral Meeting
(in Viet Nam in 2014)

Contribution to World Water Forum



Official Session

“Water Accounting and Information Platforms”

4th World Water Forum (March 2006, Mexico City)



Official Session

“Data Integration and Dissemination: From Data to Information”

5th World Water Forum (March 2009, Istanbul)

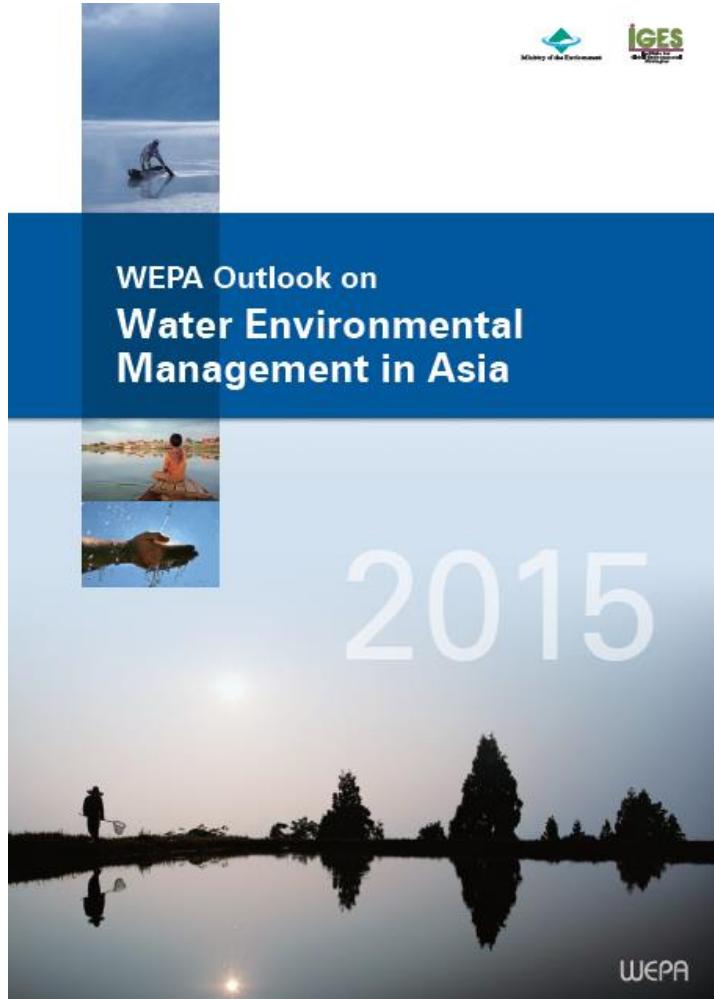


Official Session

“Water Environment Partnership for Sustainable Future”

6th World Water Forum (March 2012, Marseille)

Publications



The cover of the WEPA Outlook on Water Environmental Management in Asia 2015. It features a large blue banner at the top with the text 'WEPA Outlook on Water Environmental Management in Asia'. Below this, the year '2015' is prominently displayed in large white digits. The background of the cover is a photograph of a person in a small boat on a body of water, with a small inset image in the top left corner showing a person in a boat. The bottom of the cover shows a silhouette of a person fishing at sunset, with the WEPA logo in the bottom right corner.

WEPA Outlook



The cover of the WEPA Policy Brief Series 1: Decentralised Domestic Wastewater Management in Asia – Challenges and Opportunities. It features the WEPA logo and the IGES logo. The title is at the top, followed by a blue wavy graphic. The bottom right corner shows the text 'Policy Brief Series 1' and 'March 2014'.

DECENTRALISED DOMESTIC WASTEWATER MANAGEMENT IN ASIA – CHALLENGES AND OPPORTUNITIES

1. Introduction

Toward the end of 20st century, it has been widely accepted that sustainable economic growth requires not just accumulation of physical capital, technologies and labour or increasing Gross Domestic Product (GDP), but also the preservation of the natural resources, and the protection of our environment as well as our sustainable future. This message is especially becoming more and more important for the Asian region, which is a focal point for the world's economic growth, demonstrating a 7% increase in GDP in the region, and accounting for 60% of the world's population growth (WEPA-IGES, 2012). The rising Asian economies are incredibly successful when judged by their rapid economic growth but less so when environmental damage is accounted for (Howes and Wyrwoll, 2012). As Asia's population and economies continue to grow, the need to collectively deal with the increasing pollution caused by poor sanitation and wastewater discharges becomes one of the biggest challenges and urgent issue of many countries in the region.

Recently, global attention has focused on sanitation targets in the United Nations Millennium Development Goals (MDGs), aiming to increase proportion of population using improved toilet facilities including ventilated improved pit (VIP) latrine, pit latrine with slab, composting toilet, and flush or pour-flush to (i) piped sewer system; (ii) septic tank; or (iii) pit latrine, rather than paying appropriate attention to the consequences of its effluent. Corcoran et al. (2010) estimated that globally two million tons per day or more than 80% of sewage, agricultural and industrial waste in the world is discharged untreated into water bodies and at least 1.8 million children under 5 years-old die every year, or one every 20 seconds, because

of water and sanitation related-diseases. The United Nations estimates that the total amount of global wastewater produced annually is about 1,600 km³ per day for 1995. It is assumed that each litre of wastewater pollutes at least 8 litres of freshwater, and then an estimate of 12,000 km³ of the globe's water resources is not available for use. If the world population keeps growing to 9 billion by 2050, the world's water resources would be reduced by some 18,000 km³ (UNESCO-WWAP, 2003). Nelson and Murray (2008) and Baum et al. (2013) have stressed the importance of decentralised wastewater to include treatment of all waste materials as "the entire community, as well as downstream populations, must be protected from discharge of untreated wastes". Although conventional centralised wastewater management system has been utilized in densely populated areas for decades, mainly in urban centres of developed countries, to solve the problem of wastewater treatment, but unfortunately it has been proven unfeasible and unsustainable in many areas of Asian developing countries. Many drawbacks associated with the centralised approach of wastewater treatment have been pointed out in literature, such as its huge investments as well as operation and maintenance cost requirements. In addition, restricted local budget allocations, lack of expertise for properly operation and maintenance, unfeasible technology selection under local contexts due to lack of stakeholder involvements in the decision making process, and often inappropriate management models have resulted in inadequate operation of wastewater treatment plants in many countries, and their effluents have caused many threats to our natural water resources and human health. It is estimated that about 85% - 89% of Asian's wastewater is discharged untreated, polluting

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

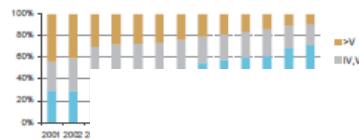
Country	Surface Water	Groundwater	Marine Water
Cambodia	Water Quality Standards in Public Water Areas	Water Quality Standards in Public Water Areas	Water Quality Standards in Public Water Areas
China	Environmental Quality Standards for Surface Water	Quality Standard for Ground Water	Sea Water Quality 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

Implementation of Ambient Water Quality Monitoring

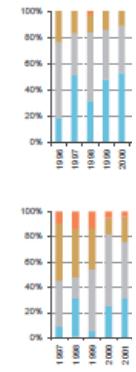
Country	No. of Monitoring Stations	Frequency	Year
Cambodia	10 (rivers)	Monthly	2011
China	469 (rivers), 26 (main lakes and reservoirs), 4 (Three Gorges Dam), 4100 (Groundwater), 279,225 km ² (marine water)	Unknown	2011
Indonesia	Unknown (40 rivers)	At least twice a month	2011
Japan	4,550 (rivers), 475 (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

Implementation of Ambient Water Quality Monitoring and Disclosure of the result

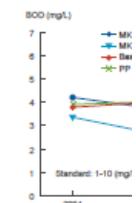
China



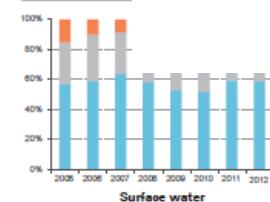
Thailand



Cambodia



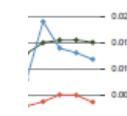
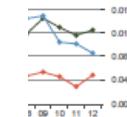
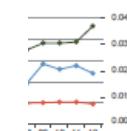
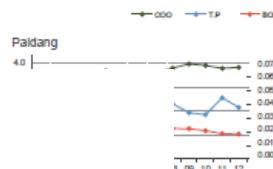
Malaysia



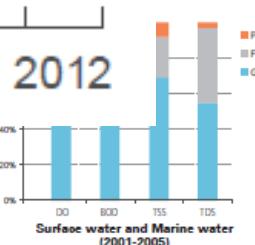
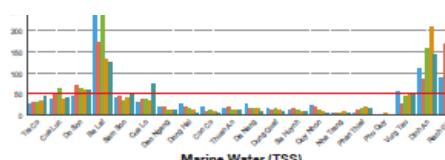
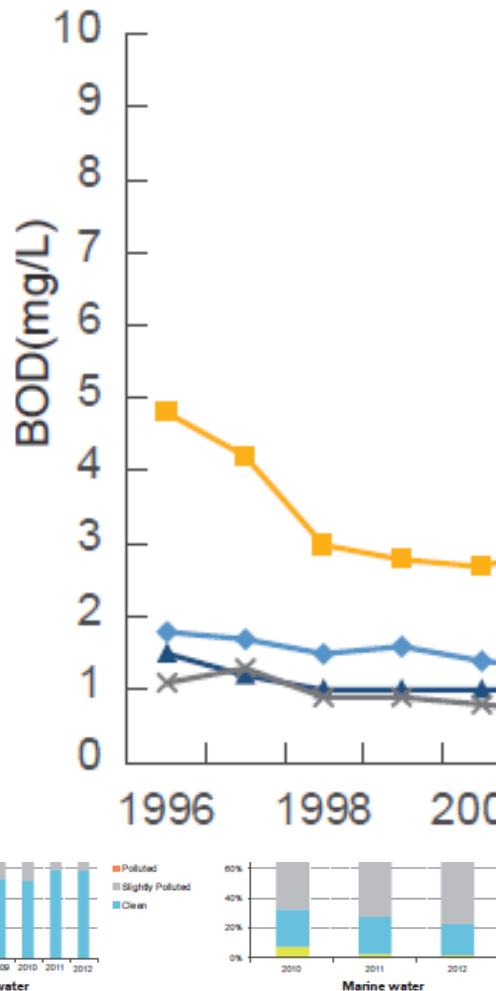
Japan



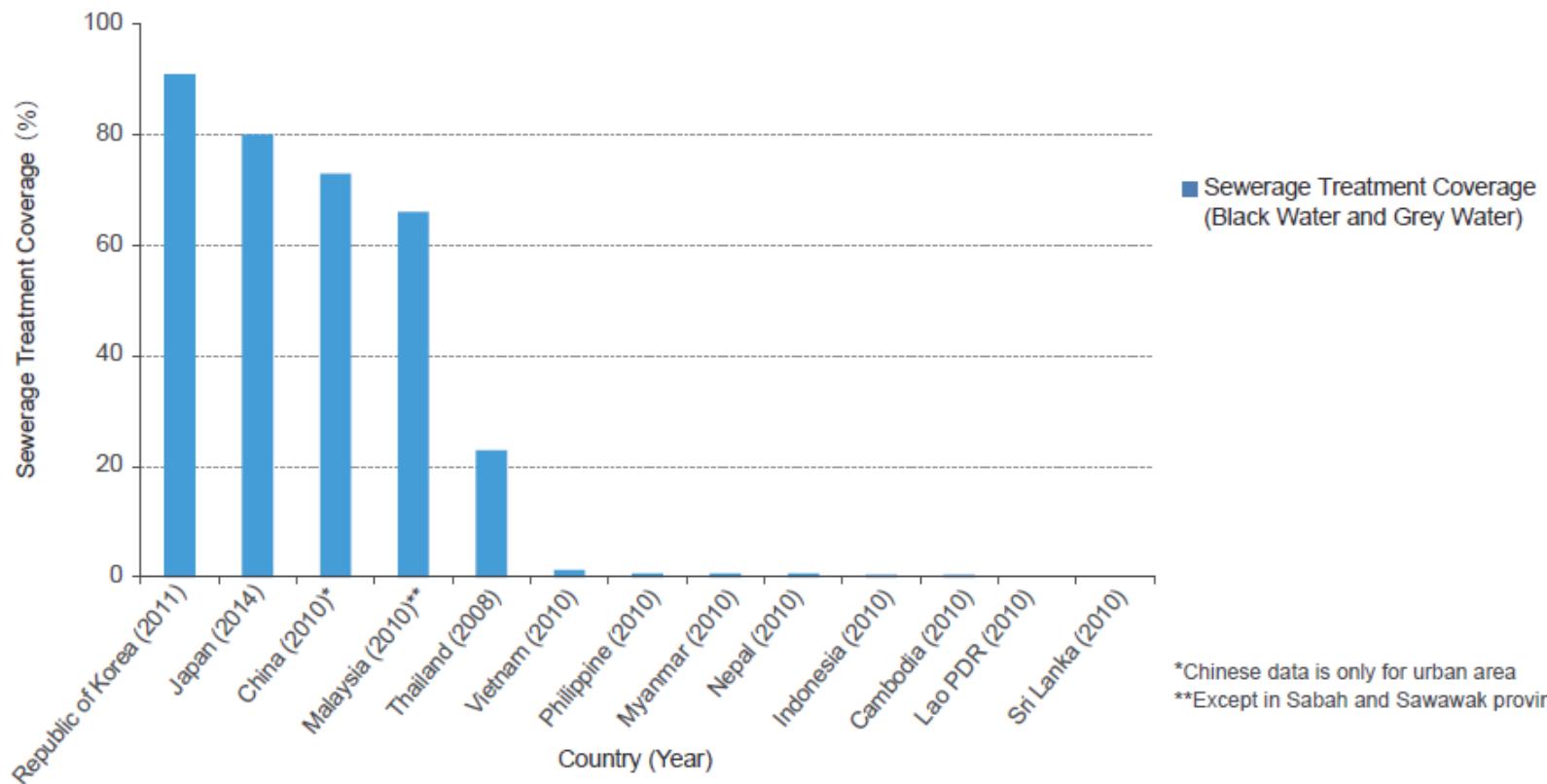
Republic of Korea



Waters



Situation of Domestic Wastewater Treatment in Asia



Service coverage rates of sewerage treatment in WEPA countries

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.
- However, many countries face problems in enforcement of wastewater management framework.

Our Commitment for Sustainable Water Environmental Management in Asia

- Scheme to **promote actions within WEPA partner countries (Action Programs)** has been launched , with the aim of addressing critical barriers of implementation of pollution control.
- Under this scheme, WEPA supports implementation of small but relevant attempts to solve specific **‘bottleneck’ problems** that currently hinder sound planning and implementation of water environment policy and management.
- In 2015, an action program will be implemented in Vietnam to improve **livestock (pig-farming) wastewater management** .

Thank you for your listening



WEPA database www.wepa-db.net