

Industrial Wastewater Management in WEPA Member Countries

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Outline of Today's Presentation

- Background of industrial wastewater management in WEPA countries**
- Introduction of industrial wastewater surveys**
- Findings and discussion from the surveys**
- Action needed to address the challenges identified from the surveys – and linkages to 3rd Phase of WEPA Activities**

Background of Industrial Wastewater Management in WEPA Countries

- ✓ Rapid **industrialization** and urbanization appears to be associated with rapid environmental degradations and great pressures on the natural resources.
- ✓ Industrial wastewater has been identified as one of **major causes of water pollution**.
- ✓ It has been evidenced that industrial wastewater has caused negative impacts to water environment in several WEPA countries such as in China, Lao PDR, Vietnam.

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Background of Industrial Wastewater Management in WEPA Country

- ✓ Most of WEPA countries have made great progress and **established their own** industrial wastewater management **system**.
- ✓ However, due to **lacking of information related to industrial wastewater**, thus the government monitoring, control and enforcement of environmental regulations is still inadequate in many countries.

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Introduction of Industrial Wastewater Surveys in WEPA Countries

- ✓ **Critical factor for developing an effective industrial wastewater management strategy is the **availability and accessibility of inventory data.****
- ✓ **Inventory information is used to describe the facility's wastewater, development of potential management strategies, selection of appropriate wastewater treatment technologies, and inventory development of national greenhouse gas inventory, etc.**



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Introduction of Industrial Wastewater Surveys in WEPA Countries

- ✓ **Under a WEPA discussion topic “Water Environmental Governance” as a follow-up of the framework analysis of water environmental management conducted in 2011.**



- ✓ **Interviews and Questionnaire survey related to industrial wastewater inventory were conducted during the 2nd phase of WEPA activities (FY2012 & FY2013)**

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Introduction of Industrial Wastewater Surveys in WEPA Countries

Objectives:

- ✓ Identify the current frameworks, practices and especially challenges found in each stage of the implementation flow **(Through Literature review and Interviews - FY 2012).**
- ✓ Availability and accessibility of inventory data related to industrial wastewater management in all WEPA partner countries **(Through Questionnaire and Field surveys - FY 2013).**
- ✓ Findings from the interviews and surveys will be a basis of lessons-learning and knowledge sharing, as well as for discussions on the future WEPA activities during its 3rd phase. 7

WEPA Partner Countries in the Surveys in FY 2013

In 2013

Questionnaire have been sent to all WEPA partner countries, BUT the only **COUNTRIES** below have **ANSWERED FOR THE QUESTIONNAIRE.**

1. CAMBODIA
2. NEPAL
3. SOUTH KOREA
4. SRI LANKA
5. PHILIPPINES
6. THAILAND



Questionnaire Surveys in FY 2013

The following issues have been considered in our questionnaire:

(i) Availability of inventory data of industrial wastewater at national level, basin level or specific administrative areas or specific industrial zones/parks/estates.

(ii) How to use/utilize the inventory data in policy making or policy implementation.

(iii) Cost of inventory development.

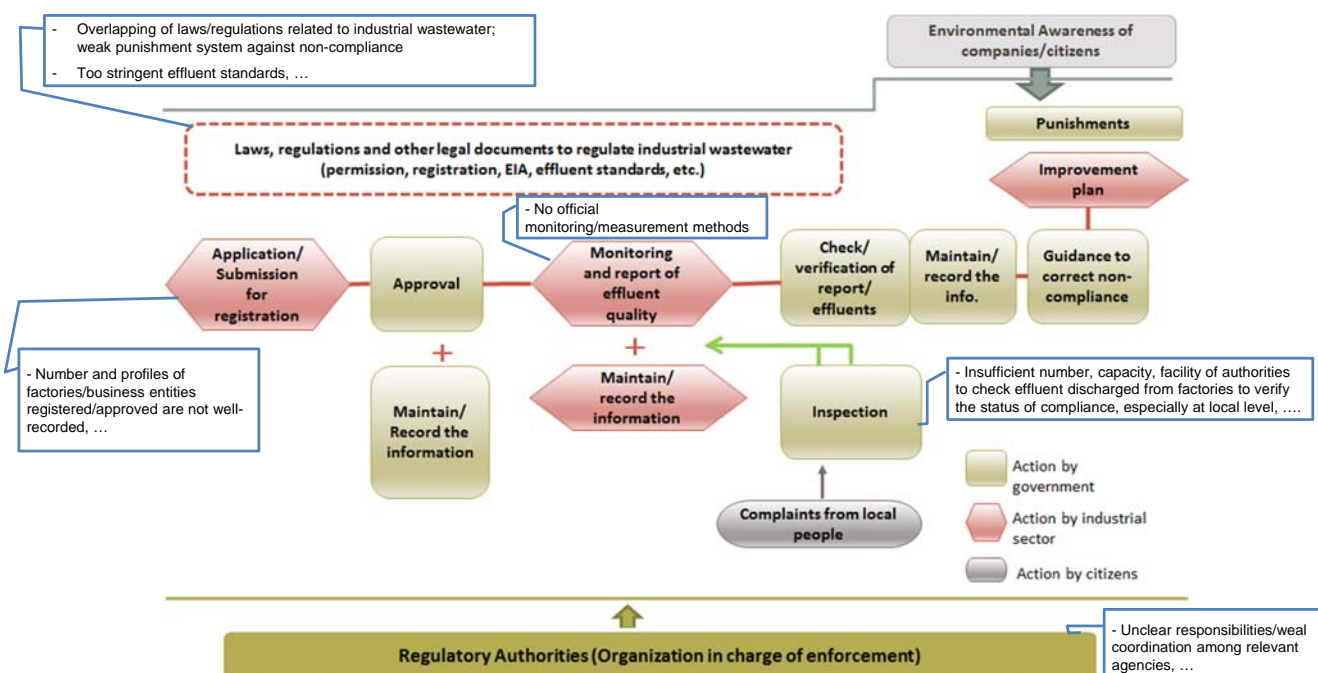
(iv) Governmental or non-governmental agencies, which are in-charged of maintaining the inventory.

(v) Availability and accessibility of any statistics about industrial sector.

(vi) Any other critical issues or areas related to industrial wastewater management.

Initial Findings from the Interviews in FY 2012

PART 1: Challenges of implementing industrial wastewater management



Initial Findings from the Interviews in FY 2012

PART 1: Challenges of implementing industrial wastewater management



Initial Findings from the Surveys in FY 2013

PART 2: Questionnaire and Field Surveys

TARGET COUNTRIES	Availability of information related to inventory of industrial wastewater			
	Inventory data	Purposes of using inventory data	Cost of inventory development	In-charged governmental or non-governmental agencies or institutes
Cambodia	Only available at specific areas	Estimation of discharging industrial effluent (both quality and quantity) to ensure meeting national legislations before discharging into receiving sources	Government budget as proposed by the Ministry of Environment (MoE)	Department. of Environmental Pollution Control of the MoE, through the Office of Water and Soil Quality Management
Philippines	Available at national, basin level and specific areas/industries	For regulation, monitoring and planning purposes. To determine the compliance of the industry relative to the Philippine Clean Water Act of 2004 (Republic Act No. 9275)	Government budget	The Department of Environment and Natural Resources through the Environmental Management Bureau (EMB)
Nepal	N/a	N/a	N/a	N/a
Sri Lanka	Only available at industrial zone level	N/a	N/a	N/a
Thailand	Available at basin level and specific areas/industries	As a basis for making standard. In other areas, as information for policy making such as loading control, control establishment of new factories/evaluate how effective pollution control policy.	Funds from government as well as from international cooperation such as PRTR with JICA	Ministry of Industry
South Korea	Available at national level	To figure out the discharge of pollutants from industrial wastewater as a data for policy-making.	Government budget	Ministry of Environment (MOE) and National Institute of Environmental Research (NIER)

Initial Findings from the Surveys in FY 2013

Challenges that we faced during the questionnaire and field surveys

Accessibility of information: low willingness to share information, maybe due to the reason that **industrial wastewater management** is a quite **sensitive issue**. Respondents at the industrial zones/parks/estates are **suspicious to share data** that is considered **confidential**.

Weak coordination among agencies in different sectors, thus it is sometimes not easy for our focal points in partner countries to obtain information if it is managed by the other sectoral ministries.

Availability of information: lack of inventory information at both national and local level in many countries, thus it is not easy to gather/collect all requested information mentioned in the questionnaire officially from a single ministry or agencies.

Data reliability: Low reliability of existing data, high uncertainty



Actions Needed to Address the Challenges in the 3rd Phase of WEPA Activities

- (i) Request WEPA member countries for their **further cooperation in the survey**.
- (ii) Organizing **bilateral and international workshops** that can timely **transfer knowledge related to immediate policy needs** such as revision of standards and drafting water pollution control plan.
- (iii) Capacity development programs targeted at those who are in charge of environmental management in industrial zones/parks/estates or economic special zones, and local officials relevant ministries.
- (iv) Organizing workshops where private sector and other relevant stakeholders can transfer their knowledge/experiences of water pollution control in factories in different countries.
- (v) Implementing **pilot projects on industrial wastewater inventory** in selected WEPA partner countries, which support the countries to develop an appropriate method for inventory development.

Thank you so much for your kindly attention !