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.

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.
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.

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)
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.

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-charge 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

- Overlapping of laws/regulations related to industrial wastewater; weak punishment system against non-compliance
- Too stringent effluent standards, ...
- Number and profiles of factories/business entities registered/approved are not well-recorded, ...
- No official monitoring/measurement methods
- Insufficient number, capacity, facility of authorities to check effluent discharged from factories to verify the status of compliance, especially at local level, ...
- Unclear responsibilities/weak coordination among relevant agencies, ...

Laws, regulations and other legal documents to regulate industrial wastewater (permission, registration, EIA, effluent standards, etc.)

Environment Awareness of companies/citizens

Punishments

Improvement plan

Guidance to correct non-compliance

Application/Submission for registration

Approval

Monitoring and report of effluent quality

Maintain/record the information

Check/verification of report/effluents

Maintain/record the information

Inspection

Complaints from local people

Regulatory Authorities (Organization in charge of enforcement)
Initial Findings from the Interviews in FY 2012

PART 1: Challenges of implementing industrial wastewater management

- Challenge 1: Laws, regulations, effluent standards
- Challenge 2: Registration, approval/permission process
- Challenge 3: Monitoring and reporting by industries
- Challenge 4: Inspection, verification of report and provision of guidance
- Challenge 5: Organizational issues
- Challenge 6: Low awareness of business sector on compliance of environmental regulations and weak concerns on environmental conservation of citizens

- Low awareness of business sectors on compliance of environmental regulations as a main cause of non/weak environmental actions
- Low awareness of local people, which means that social pressure from the society to the industrial sector to comply with environmental regulations is relatively low.
- Encouragement of industries to environmental audit system such as ISO14001 and internal environmental audit system
- IETS, pollution control manager systems
- Disclosure/ranking of environmental performance of industries (e.g. PROKASH, PROPER in Indonesia)

Initial Findings from the Surveys in FY 2013

PART 2: Questionnaire and Field Surveys

<table>
<thead>
<tr>
<th>TARGET COUNTRIES</th>
<th>Availability of information related to inventory of industrial wastewater</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Inventory data</td>
</tr>
<tr>
<td>Cambodia</td>
<td>Only available at specific areas</td>
</tr>
<tr>
<td>Philippines</td>
<td>Available at national, basin level and specific areas/industries</td>
</tr>
<tr>
<td>Nepal</td>
<td>N/a</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>Only available at industrial zone level</td>
</tr>
<tr>
<td>Thailand</td>
<td>Available at basin level and specific areas/industries</td>
</tr>
<tr>
<td>South Korea</td>
<td>Available at national level</td>
</tr>
</tbody>
</table>
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!