

Industrial Pollution Prevention and Control Policies and Laws in Cambodia

Regional Forum on Environmental
Compliance in Industrial Sector

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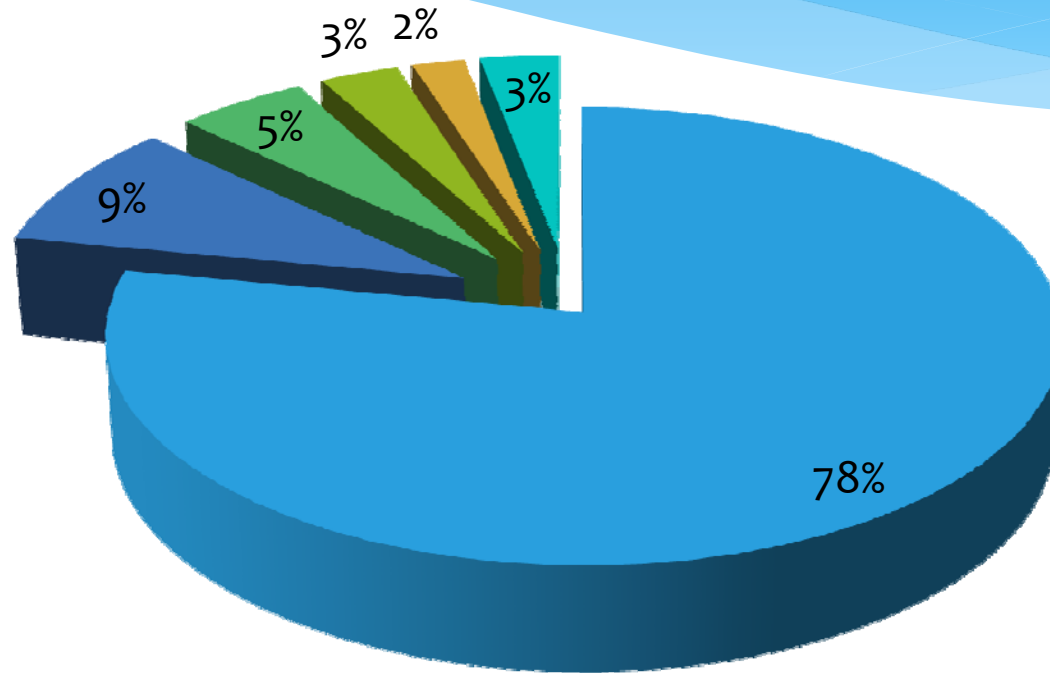
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1. Industrial development

- Industrial sector has been remarkably grown in since 1994, particularly within the last 5 years
- Industrial sector has contributed in country's GDP with 24% and provided labor force around 2 millions in 2013

Industry grouping by manufac. type



■ Garment, Textile and Shoe

■ Agro-industry processing

■ Power

■ Food processing and Beverage

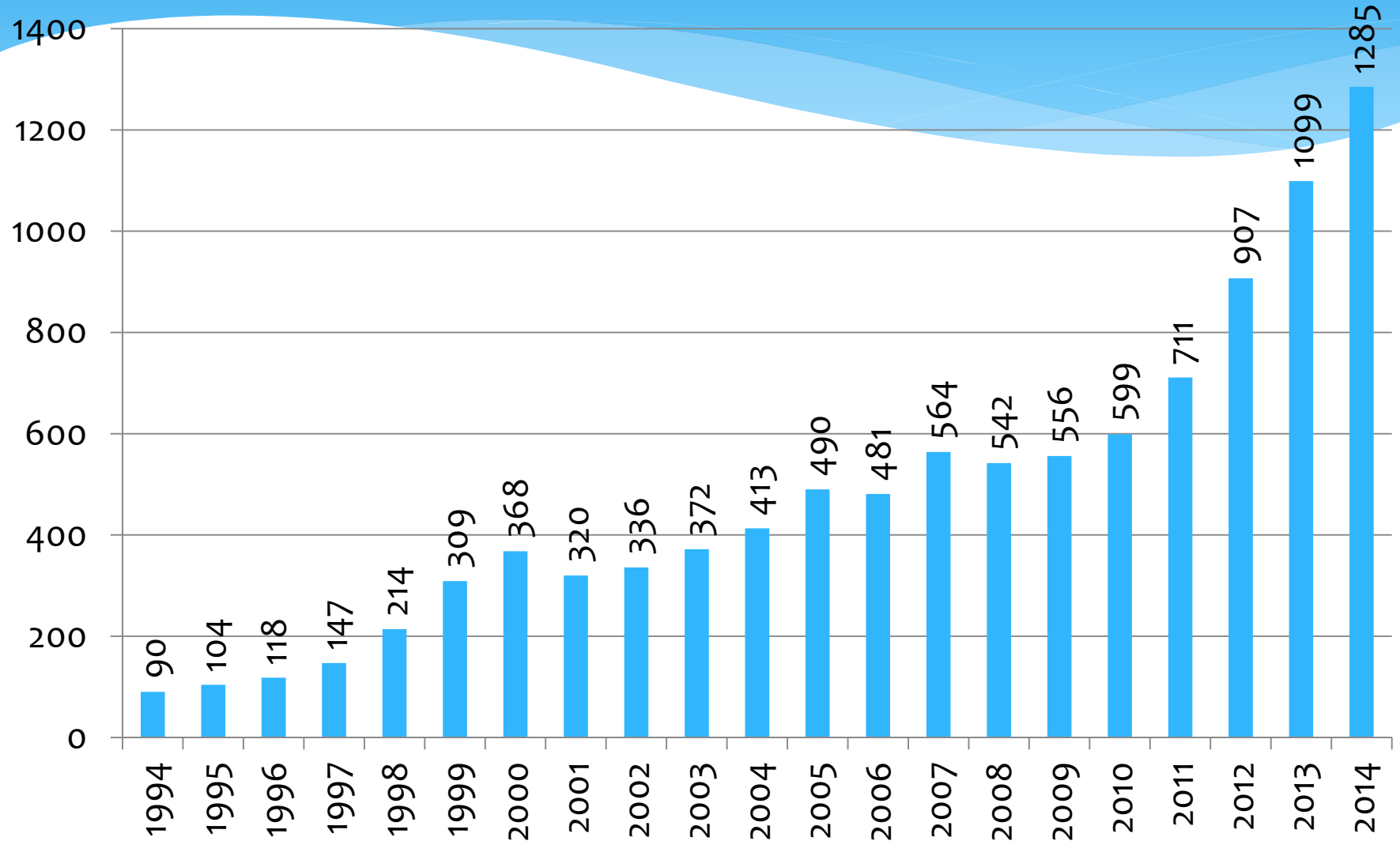
■ Construction materials

■ Other

1. Industrial development (cont.)

- This sector has been classified into 4 groups:
 - ✓ Micro-enterprise (workers<10): 97.3% of the TT, with 29.3% of TT. labor force
 - ✓ Small enterprise (10<workers<50): 1.9% of the TT, with 5.2% of TT. labor force
 - ✓ Medium enterprise(50<workers<100): 0.2% of the TT, with 2.2% of TT. labor force
 - ✓ Large factories (workers>100): 0.6% of the TT, with 63.3% of TT. labor force

Number of large factory within last 20 years



1. Industrial development plan

- First Cambodian Industrial Development Policy just adopted with the key visions:
 - ✓ Increasing GDP of industrial sector up to 30% in 2025 (24% in 2013)
 - ✓ Increasing number of small and medium enterprises up to 12% in 2025 (2.4% in 2015)

2. Status of industrial pollution

- Pollution from industrial sector is in 2nd range, while the pollution from urban areas is in the 1st one
- Environmental water pollution caused by discharging of industrial WW is often happened on from large industry such as:
 - ✓ Garment & textile (dyeing and washing)
 - ✓ Food processing & beverage
 - ✓ Agro-industry processing

2. Main reasons of industrial pollution

- Growing very fast, while the infrastructure for WM is insufficient and less considering
- Most of the polluting factories are located in the residential area where the space to install treatment facilities is not available
- Some factories, that used more water, have been built close to the watercourse resulting in illegal discharge without treatment

3. Structure of legislations

- First legislation to regulate environmental pollution issues was adopted in 1996, namely Law on Environmental Protection and Natural Resources Management
- This law gives 3 key mandates to MoE:
 - ✓ Controlling all kind of pollution sources, where the wastes are produced and discharged
 - ✓ Reviewing EIA report of all develop. project
 - ✓ Monito. envin. quality throughout the country

3. Related regulations

- Under the Environmental Law, some regulations were issued by the Government such as:
 - ✓ Sub-decree on Water Pollution Control, 1999
 - ✓ Sub-decree on Solid Waste Management, 1999
 - ✓ Sub-decree on Environmental Impact Assessment Process, 1999
 - ✓ Sub-decree on Air Pollution Control and Noise Disturbance, 2000
 - ✓ Sub-decree on Management of Ozone Depletion Substances, 2005

4. Organization structures

- MoE was established since 1993, while the control of industrial pollution is one of its role and responsibility
- Under the MoE, there are two agencies responsible in enforcing law and regulations related to pollution prevention:
 - ✓ DG of Environmental Protection (DGEP), as the nation level
 - ✓ Provincial Environmental Department (PED), as the provincial level

4. Role and responsibility

- DGEP & PED have performed and implemented their tasks in pollution prevention such as monitoring, surveillances, inspections, sampling, testing, and taking measures to prevent pollution issues:
 - ✓ DGEP is responsible in controlling factory
 - ✓ PED is responsible in controlling micro, small and medium enterprises

5. Legislative measures to control IP

- Large and polluting factories must submit EIA report including EMP to MoE for reviewing
- Polluting factories must install treatment facility to treat their waste as noted in EMP
- Polluting factories must treat their waste to comply with the effluent discharge and air emission standards respectively

Cambodia effluent discharge standard

Parameters	Allowable limits		Parameters	Allowable limits	
	Protected public water areas	Public water areas and sewer		Protected public water areas	Public water areas and sewer
Temp. °C	<45	<45	Grease & Oil mg/l	<5	<15
pH	6-9	6-9	Detergents mg/l	<5	<15
BOD ₅ mg/l	<30	<80	Nitrate mg/l	<10	<20
COD _{Cr} mg/l	<50	<100	Phosphate mg/l	<3	<6
TSS mg/l	<50	<80	Cyanide mg/l	<0.2	<1.5
TDS mg/l	<1000	<2000	Hg mg/l	<0.002	<0.05

Cambodia air emission standard

Parameters	Allowable limits	Parameters	Allowable limits
TSP	<400 mg/m ³	H ₂ S	<2 mg/m ³
CO	<1000 mg/m ³	NH ₃	<100 mg/m ³
SO ₂	<500 mg/m ³	Hg	<0.1 mg/m ³
SO ₃	<35 mg/m ³	Pb	<20 mg/m ³
NO _X	<1000 mg/m ³	Cd	<1 mg/m ³

5. Legislative measures ... (cont.)

- Polluting factories must apply a permits from MoE for discharge or disposal of their waste
- DGEP and PED have an authority to:
 - ✓ Conduct routine monitor in industrial premise
 - ✓ Perform inspection of industrial pollution case
 - ✓ Issue notice to polluting factories to take additional measures to prevent pollution

5. Legislative measures ... (cont.)

- MoE have the power to issue a written order to industries to :
 - ✓ Correct violating activity within specific time
 - ✓ Cease their activities until violation has been corrected, or
 - ✓ Clean-up of pollution immediately and to pay an administrative fine for their pollution cases

6. Obstacles to law enforcement

- Capacity of institution responsible in controlling industrial pollution is still limited:
 - ✓ Lack of human resources and technical skills
 - ✓ Lack of experiences in performance of monitoring, sampling or inspection
 - ✓ Insufficiency of means and equipment to support activities of monitoring or inspection

6. Obstacles in law enforcement. .(cont.)

- Law and regulations related to industrial pollution control have not so much, while the existing one could not cover all cases of industrial pollution
- Most of existing law, regulations including emission or discharge standards have been not amended since they were adopted or issued

6. Obstacles in law enforcement. .(cont.)

- Implementation of the law and regulations is not effectiveness due to the performance of industry monitoring or inspection need to inform in advance to owner of the factories
- Some violation activities such as WW discharge without treatment have been executed in the nigh time or at weekend

7.

Conclusion

- Industrial sector development is increased remarkably, particularly within the last 5 years almost double
- Mechanism of industrial pollution control such as monitoring agencies, waste management infrastructures and legislative instruments could not respond with those increasing
- Environmental Pollution from industrial sector is one of the country's concerns now on

7.

Solutions

- To improve the control of industry pollution some appropriate forward solutions should be put in the practice:
 - 1) Improving and being adequate as much as needed of legislative instruments for waste management and pollution prevention from industrial sector

7.

Solutions

(cont.)

- 2) Strengthening capacity of governmental agencies in industrial pollution control through providing technical skills and monitoring equipment
- 3) Encouraging development of proper waste management infrastructure in each industry zones for final treatment and disposal of the industrial waste



Thank You !