

Recent Development of Water Environmental Management in Vietnam

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CONTENT

Water environment management challenges

Water environment policies

Potential collaboration



Vietnam: some figures

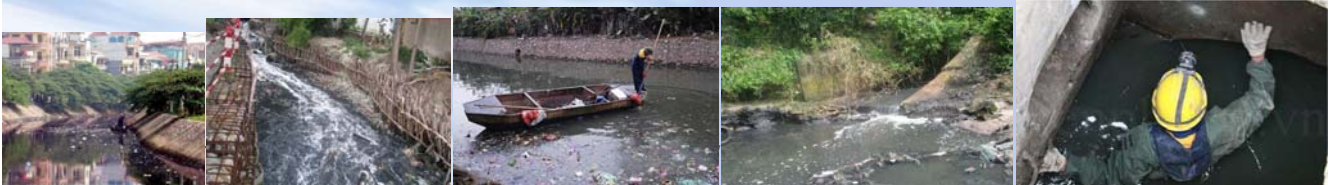
- Population: 90 mil
- Annual GDP:
 - 2001-2010: 7.5 %
 - 2010-now: about 5.5%
- 223 industrial zones; 600,000 factories; 1,700 industrial clusters
- Rapid urbanization





Challenges

- Wastewater management in urban areas
 - 715 cities and towns
 - Only 15 cities have wastewater treatment systems in operation or in construction



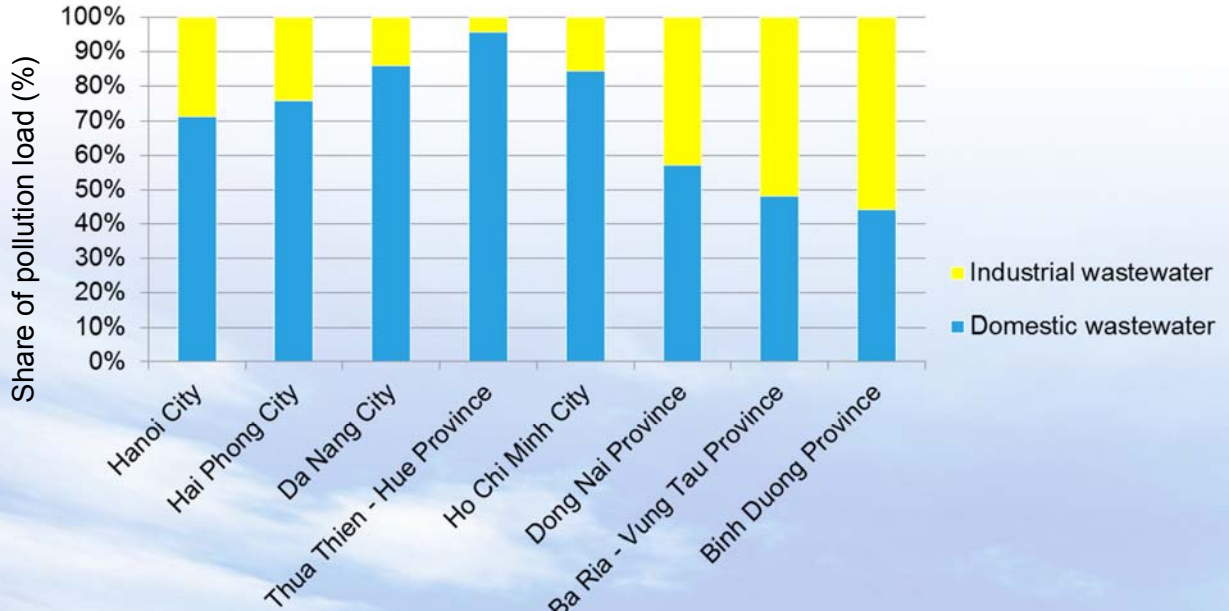
OVERVIEW OF WATER POLLUTION

- Domestic wastewater
 - 90% of domestic wastewater not treated
 - Wastewater treatment plants in some big cities (e.g Ho Chi Minh city, Ha Noi, Da Nang...) but their capacities only meet about 30% of the demand
 - Major pollutants: BOD, $N-NH_4^+$, coliform

PART 1

OVERVIEW OF WATER POLLUTION

BOD discharge into surface water: Share of industrial and domestic



* JICA, Vol5 - Industrial water management 2010

Challenges

- Pollution caused by leachate from landfills
 - 109 landfills
 - Only 10 have leachate treatment systems



Nam Son Landfill leachate treatment system



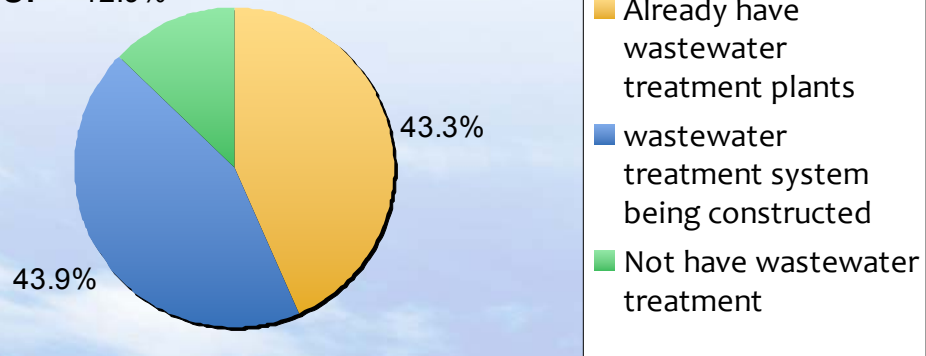
Dong Vinh Landfill leachate treatment system



PART 1

Industrial wastewater treatment

- 223 industrial zones
- Total wastewater discharge: ~ 1,000,000 m³/day
- Current status:



Challenges

- Pollution by wastewater from hospitals
 - 150 of 1,100 hospitals (about 15%) have wastewater treatment systems
- Pollution by wastewater from 1,500 craft-villages
 - Organic pollution: from food processing, cattle-breeding, slaughtering craft villages.
 - Inorganic pollution: high total solid in wastewater from textile dyeing and paper recycling craft-villages; heavy metals in wastewater from metal recycling and plating



Challenges

- Overall assessment

- Limited wastewater treatment, both industrial and domestic
- Causes:
 - Industrial wastewater: low commitment from business and insufficient enforcement
 - Domestic wastewater: lack of finance and public demand
 - Lack for locally tailored technology



PART 2

WATER ENVIRONMENT POLICIES

- Resolution 24-NQ/TW 6/2013
- Law on Environmental Protection 2005
- National strategy on environment 2010 and orientation till 2020
- Green growth strategy

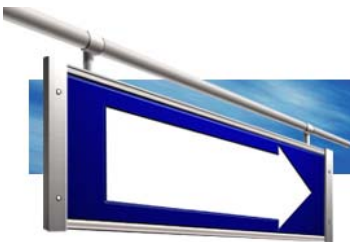
- Vietnam environmental industry development program to 2015, vision to 2025
- Decree 25/2013/NĐ-CP on wastewater fees
- Decree 88/2007/ND-CP on urban and industrial park water drainage
- Decree 04/2009 on supporting environmental protection business

■ National Environment Strategy's Objectives by 2020:

- Waste treatment systems for:
 - 95% of industrial zones and clusters
 - 75% urban areas grade 4 and above
 - 60% craft villages
- Clean water access:
 - 100% for urban residents (2010:80%)
 - 95% for rural residents (2010:79%)



- Criteria for selecting technology
 1. Techniques/advancements
 2. Cost effectiveness
 3. Environmentally friendly
 4. Social acceptance



THANK YOU !