



**WATER ENVIRONMENTAL
MANAGEMENT POLICY
IN VIETNAM
(The role of Experts/Researchers)**

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OUTLINE

- **State of water environment in Vietnam**
- **Legal system of Water Environment Management**
- **Current role of experts and researchers in policy making process**
- **Example of policy oriented research**
- **Expected role of experts and researchers in policy making**



State of water environment in Vietnam

Geography

- Vietnam is a country bordered by the Pacific Ocean on the Eastern side
- Area: 331,114 sq. km. (127,243 sq. mi.)
- Population: 90 millions (1/11/2013))
- Terrain: Varies from mountainous to coastal delta
- Climate: Tropical monsoon.
- Ethnic groups: 54 groups including Vietnamese



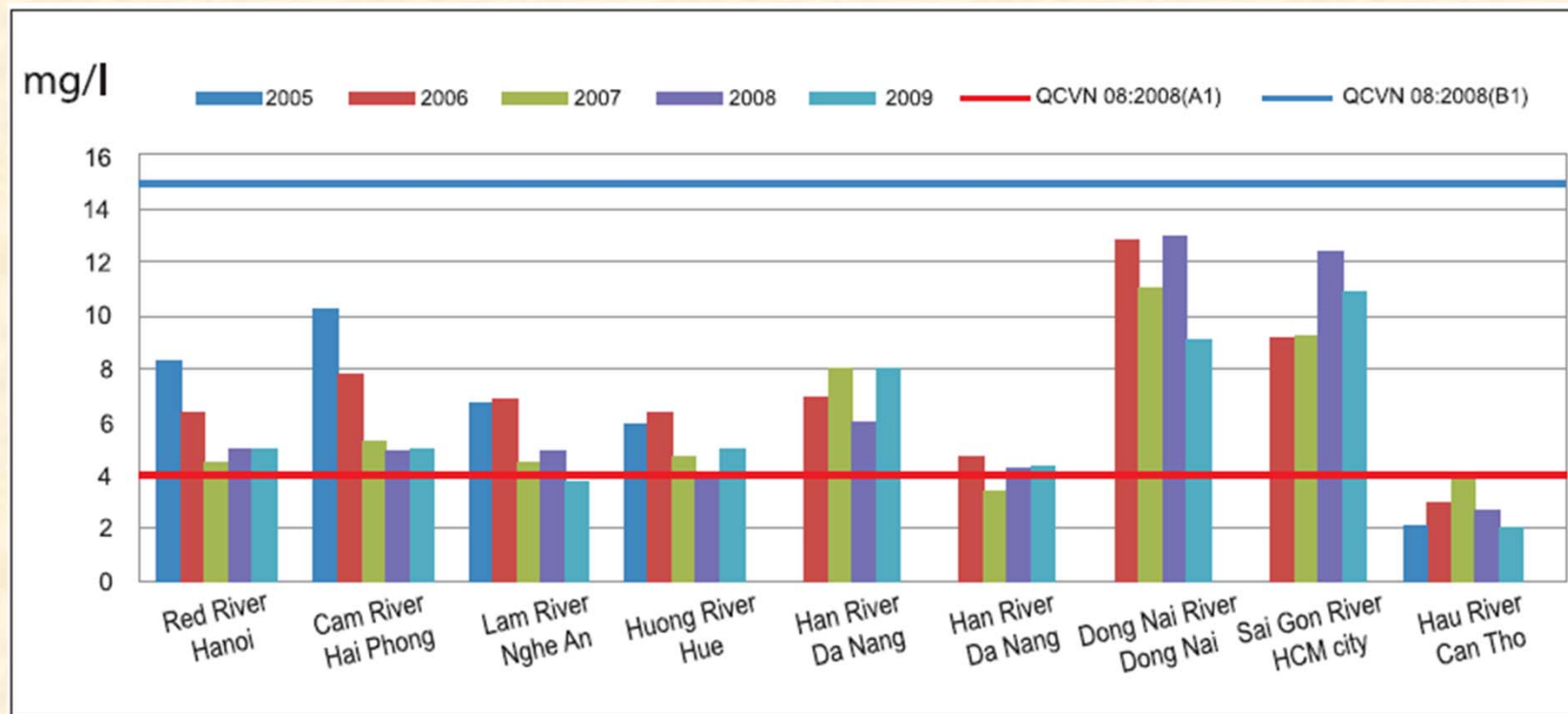
State of water environment

- ❖ Vietnam has a large river and canal network
- *More than 2,360 rivers with the length of more than 10km, including 10 main rivers*
- *16 river basins with basin area of more than 2,500km².*

Wastewater generated has been discharged untreated to nearby rivers, lakes, canals and ponds, causing severe water degradation and pollution nationwide, especially in urban areas.

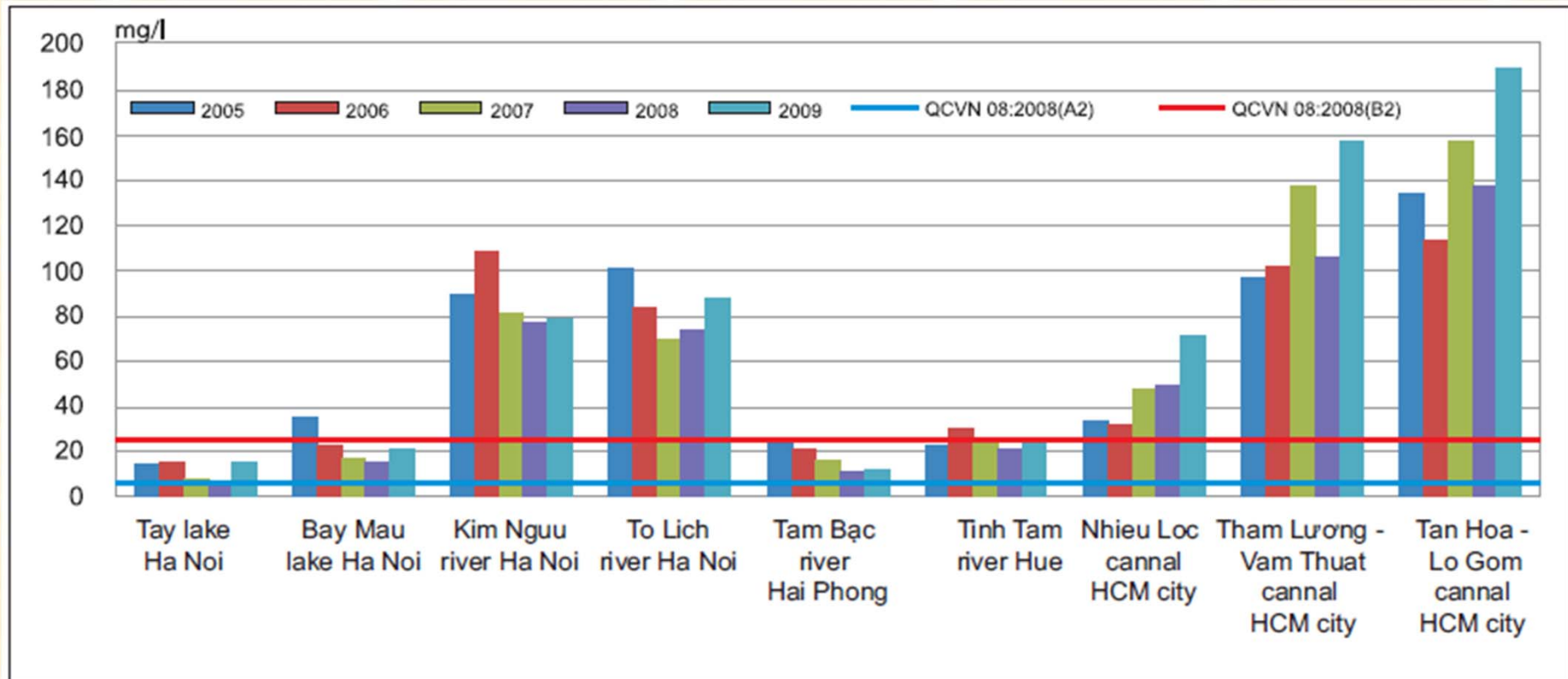
- ❖ Domestic wastewater accounts for about 30% of direct discharged wastewater into rivers, lakes, canals and ponds in Vietnam, especially in the South-East region and Red river delta with high population density (MONRE, 2012).
- ❖ Industrial wastewater discharges place the greatest burden on water bodies across the country, especially in 3 most polluted river basins, including Cau, Nhue-Day and Dong Nai river basin

Many of the major rivers have pollution levels (BOD) exceed the allowed level by 1.5 to 3 times, especially in the river sections which run through the urban centers, industrial zones



Annual average BOD5 in major rivers in Vietnam in the 2005-2009 period
 (Source: National State of Environment 2010 (MONRE, 2010))

Many of lakes, ponds, canals and rivers in many cities and provinces are seriously polluted



Annual average BOD5 in major rivers, lakes and canal inside cities in the 2005-2009 period

(Source: National State of Environment 2010 (MONRE, 2010))



Current situation of domestic wastewater treatment

- Most drainage and sewerage systems in large cities were constructed over three decades ago. More than 90% of wastewater is conveyed by using of combined sewer systems, primarily serving as storm-water drainage,
- Most urban domestic wastewater is only primarily treated by septic tanks, thus both storm-water and domestic wastewater are finally discharged together into nearby water environments such as rivers, lakes and canals.
- The total design capacity of 17 in-operation centralised wastewater treatment plants is about 580,000 m³/day, accounting for only about 10 percent of total generated urban wastewater in Vietnam (World Bank, 2013).



Current situation of domestic wastewater treatment

- Wastewater treatment technologies at centralised treatment plants: the most common technologies are based on “conventional” activated sludge (AS) process, such as aeration tanks or sequencing batch reactors (SBR)
- Nearly 90% centralised wastewater treatment plants for the near future will use this “conventional” activated sludge-based treatment technologies (World Bank, 2013), which may negatively impact on sustainability and viability of the sanitation projects over the long term.

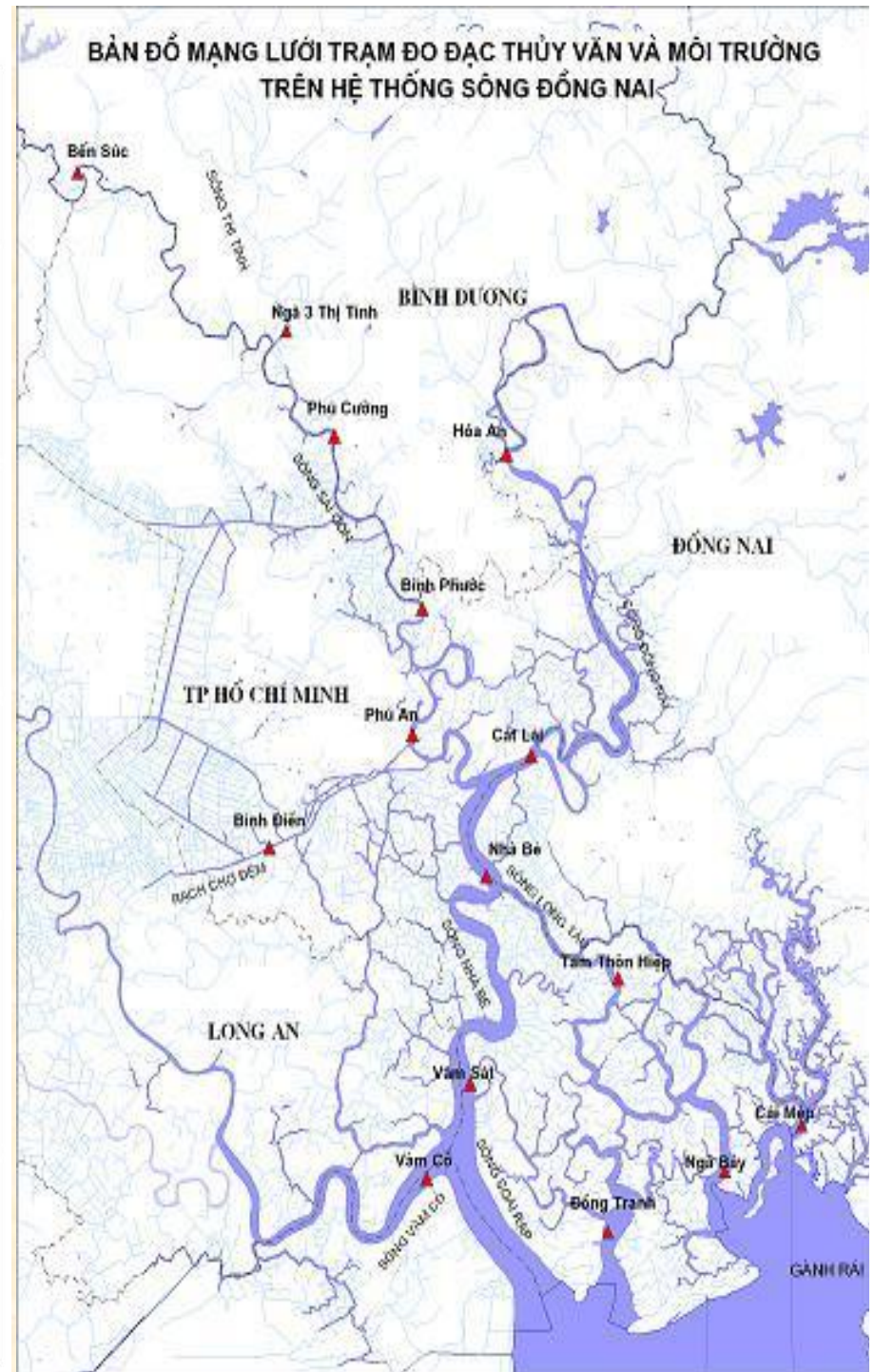
Current situation of industrial wastewater (country, hot spot area)

- More than 1 million cubic meters of untreated wastewater per day directly to receiving water bodies i.e., about 70% of the total industrial effluent discharge (World Bank, 2012).
- The Cau and Nhue-Day River in the North and Dong Nai River in the South that pass through the country's most industrialized provinces are recognized as the three most polluted rivers.

BẢN ĐỒ HỆ THỐNG CÁC ĐIỂM QUAN TRẮC THUỘC MẠNG LƯỚI QUAN TRẮC MÔI TRƯỜNG QUỐC GIA



BẢN ĐỒ MẠNG LƯỚI TRẠM ĐO ĐẶC THỦY VĂN VÀ MÔI TRƯỜNG TRÊN HỆ THỐNG SÔNG ĐỒNG NAI



Center for Environmental Monitoring

4 Water and Environmental Quality Monitoring (EQM) Programs in key economic zones:

Special economic zone in the North, Central, South and Mekong Delta Program

7 Water Quality Monitoring Programs in the following river basins:

Nhue-Day, Cau, Dong Nai, Ma-Chu, Vu Gia - Thu Bon river basin and South West region
Red –Thai Binh river basin (2012)

2 Environmental Impact Monitoring Programs: Impact Monitoring (initiated in 2013):

Supervision of bauxite project in the Central Highlands
Monitoring hydropower dams in the Central

Type of monitoring data and reporting system

Type of monitoring	Data sources	Reporting and Evaluation System
<ul style="list-style-type: none"> - Regular monitoring - Automatic & Continuous monitoring 	Monitoring programs led by VEA-MONRE	Updated regularly and in real time to a database at the CEM, VEA
<ul style="list-style-type: none"> - Regular monitoring - Automatic monitoring 	Network of national environmental monitoring stations;	<ul style="list-style-type: none"> - Sent to VEA to update into the database at the CEM -VEA by email or postal mail. - Frequency: 1 time/year
<ul style="list-style-type: none"> - Both Regular and Non-regular monitoring (Project-based monitoring) 	Information, monitoring data recorded and analyzed by the other Departments/Divisions or agencies under the MONRE;	<ul style="list-style-type: none"> - Sent to VEA to update into the database at the CEM- VEA by email. - Frequency: 1 time/month (only applied to air monitoring data from the National Hydro-Meteorological Service))
<ul style="list-style-type: none"> - Non-regular monitoring (Project-based monitoring) - Automatic monitoring 	Local monitoring programs;	<ul style="list-style-type: none"> - Except monitoring data from automatic monitoring stations in An Giang, Lao Cai, Ha Nam, information and database has not been shared regularly with VEA.
<ul style="list-style-type: none"> - Both Regular and Non-regular monitoring (Project-based monitoring) 	Information, monitoring data from the other Ministries.	<ul style="list-style-type: none"> - Sent to VEA to update into the database at the CEM- VEA by postal mail (non-regular)

**Legal system
of Water Environment Management**

Legal system of Water Environment Management

General law

Law on Environmental Protection 2014

Law on Water Resource 2012

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Regulation

National Strategy on environmental protection by 2020

National Strategy on water resources by 2020

River basin management

Fee on environment protection of the waste water

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National Technical Regulation on Environment

- National Technical Regulation on Surface Water Quality;
- National Technical Regulation on Ground Water Quality;
- National Technical Regulation on Coastal Water Quality;
- National Technical Regulation on Surface Water Quality for Protection of Aquatic Life
- National Technical Regulation on Water Quality for Irrigated Agriculture
- National technical Regulation on Off-Shore Water Quality

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Pollution source inventory

- No unified pollution source inventory (PSI) system in Vietnam, especially for industrial wastewater.
- Data is mostly available on project basis.
- No responsible department, shortage of budget and few human resources in the environmental field for PSI development.
- Very few experiences on the available and existing methodologies to develop a PSI, and no experience on how to input collected data to PSI and usage of PSI including estimation of pollution load for decision making and for systematic planning of water pollution control measures.
- Little understanding among DONREs on why it is important to share necessary data or information among relevant governmental agencies.

**Current role of experts and researchers
in policy making process**

Current role of experts and researchers in policy making process

- Resolution 24 of central committee of Com. Party 2013 on “proactively responding to climate change, boosting resources management and environment protection”
- Resolution 41 of Political bureau of Com. Party 2004 on “Environmental protection in the period of accelerated national industrialization and modernization”

- Resolutions of the Government to implement Res. 24, 41
- Resolution 35 of the Government on “some pressing matters for environment protection” 2013

Science and technology research
(experts and Researchers)

- National strategy of environment protection by 2020
- National strategy of water resource by 2020

- Environment protection law 2014
- Water resource law 2012
- Biodiversity law 2008
- Science and technology law 2013

Example of policy oriented research

- State research program 08 on nature and environment protection
- MONRE research program on env. science
- State research program on Climate change

Expected role of experts and researchers in policy making

Policy need to have experts and researchers contribution:

- Policy and organizations responsibility of water environment management
- Community based river management
- Economic tools; payment for environmental service
- Water Environmental conflict/dispute
- Env. monitoring and pollution inventory
- Water Environment poll. Treatment technology
- Cleaner technology/ ecofriendly technology
- Green economy



THANK YOU FOR YOUR ATTENTION!