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Problems of Law Enforcement in Vietnam: The Case of Wastewater Management in Can Tho City

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Nguyen Thi Phuong Loan

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The Case of Wastewater Management
in Can Tho City

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Problems of Law Enforcement in Vietnam:

The Case of Wastewater Management in Can Tho City

Nguyen Thi Phuong Loan

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Abstract

In order to ensure the sustainable exploitation and use of water resources Vietnam has started to elaborate a legal framework of the water sector during recent years. This new legal framework includes a large set of regulations that deals with waste water management, including the treatment and disposal of waste waters from industries, agriculture and households. The protection of water resources, particularly with respect to water quality and the prevention of water pollution, is a crucial and serious issue due to the country's rapid development and industrialization. Nevertheless, the quality of the current regulations (issued by both national and local levels) on water resources management in Vietnam does obviously not meet reality requirements. Furthermore, there is evidence that the enforcement of the national framework encounters various problems when it comes to the implementation by local governments.

In recent years, more than 300 legal documents required to implement the Law on Water Resources have been developed as secondary regulations to protect and use water resources in a sustainable manner in different legal aspects. Among these 300 legal documents, over 60 are related to wastewater and water pollution management. Moreover, at local level important regulations on water resources protection, particularly regulations on water pollution management have been developed to implement national regulations at sub-national scales of government. In Can Tho City, located in the Mekong Delta, 100 water-related legal documents have been issued by the People's Committee of the city that claim creating a comprehensive legal system on water resources protection for the city's jurisdiction.

By using Can Tho City as a case study, this paper intends to analyze contradictions and conflicts between the national and local regulations, specifically in the field of wastewater management. It will be discussed how the provincial government of Can Tho City enforces the national law on water resource management and how national regulations are interpreted and newly defined in the context of local governance. Furthermore, the study aims at contributing to the debate on how to create a comprehensive and coherent legal framework of the water sector at both national and local scale of government.

Keywords: Vietnam, Mekong Delta, legal framework, water sector, wastewater management, local governance.

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Abbreviations

ADB	Asian Development Bank
BOD	Biochemical Oxygen Demand
CBD	International Convention on Biodiversity
CERWASS	Centre for Rural Clean Water Supply and Sanitation
CWRPI	Centre for Water Resources Planning and Investigation
DARD	Department of Agriculture and Rural Development
DOJ	Department of Justice
DONRE	Department of Natural Resources and Environment
DOST	Department of Science and Technology
DOSTE	Department of Science, Technology and Environment (now changed to DOST)
DWRM	Department of Water Resources Management
EIA	Environmental Impact Assessment
EPZ	Export Processing Zone
GoV	Government of Vietnam
IPs	Industry Parks
IWRM	Integrated Water Resources Management
LEP	Law on Environmental Protection
LPLDs	Law on the Promulgation of Legal Documents
LWR	Law on Water Resources
MARD	Ministry of Agriculture and Rural Development
MOC	Ministry of Construction
MOET	Ministry of Education and Training
MOF	Ministry of Finance
MOFI	Ministry of Fisheries (now merged into MARD)
MOH	Ministry of Health
MOI	Ministry of Industry and Trade
MOJ	Ministry of Justice
MONRE	Ministry of Natural Resources and Environment
MOST	Ministry of Science and Technology
MOSTE	Ministry of Science, Technology and Environment (now changed to MOST)
MOT	Ministry of Transport
MPI	Ministry of Planning and Investment
MRC	Mekong River Commission
NA	National Assembly of the Socialist Republic of Vietnam
NRWSSS	National Rural Water Supply and Sanitation Strategy
NWRC	National Water Resources Council
NWRS	National Water Resources Strategy
PC-CTC	People's Committee of Can Tho City
QCVN	National Technical Regulations
RWSS	Rural Water Supply and Sanitation
SIWRP	Southern Institute of Water Resources Planning
TCVN	National Environmental Standards
VNMC	Vietnam National Mekong Committee
WB	World Bank
WSR	Water Sector Review
WTO	World Trade Organization

Abbreviations of Legal Document Symbols

.../.../QH	Law of National Assembly
.../.../PL-UBTVQH	Ordinance of Standing Committee of the National Assembly
.../.../ND-CP	Decree of Government
.../.../QD-TTg	Decision of Prime Minister
.../.../QD-BNN	Decision of Ministry of Agriculture and Rural Development
.../.../TT-BNN	Circular of Ministry of Agriculture and Rural Development
.../.../TTLT-BNN-BNV	Joint Circular of Ministry of Agriculture and Rural Development and Ministry of Interior Affairs
.../.../TTLT-BNN-BTC	Joint Circular of Ministry of Agriculture and Rural Development and Ministry of Finance
.../.../QD-BTNMT	Decision of Ministry of Natural Resources and Environment
.../.../TT-BTNMT	Circular of Ministry of Natural Resources and Environment
.../.../TTLT-BTNMT-BNV	Joint Circular of Ministry of Natural Resources and Environment and Ministry of Interior Affairs
.../.../TTLT-BTNMT-BTC	Joint Circular of Ministry of Natural Resources and Environment and Ministry of Finance
.../.../CT-BTNMT	Directive of Ministry of Natural Resources and Environment
.../.../QD-TNN	Decision of Department of Water Resources Management
.../.../QD-BTC	Decision of Ministry of Finance
.../.../QD-BXD	Decision of Ministry of Construction
.../.../QD-BGTVT	Decision of Ministry of Transport
.../.../QD-BCA	Decision of Ministry of Public Security
.../.../QD-BKHCMNT	Decision of Ministry of Science, Technology and Environment
.../.../TT-BTC	Circular of Ministry of Finance
.../.../TT-BXD	Circular of Ministry of Construction
.../.../TT-BGTVT	Circular of Ministry of Transport
.../.../TT-BCA	Circular of Ministry of Public Security
.../.../TT-BKHCMNT	Circular of Ministry of Science, Technology and Environment
.../.../QD-UNND	Decision of the People's Committee
.../.../CT-UBND	Directive of the People's Committee
.../.../QD-HDND	Decision of the People's Council
.../.../CT-HDND	Directive of the People's Council

1. Introduction

This paper presents a case study on the legal framework of water quality management and its implementation in Can Tho City. It is closely linked to another paper by the author (2009) on the legal framework of the water sector in Vietnam, providing an overview of the legal documents and institutional arrangements of the sector at national and local levels. The case study therefore investigates the practical implications and shortcomings of the existing framework in a selected province and assesses the implementation of national policies in a local government system. Can Tho City is the main social science research area within the WISDOM project (Water-related Information System for the Sustainable Development of the Mekong Delta, <http://www.wisdom.caf.dlr.de>), and the study herein presented therefore aims at contributing to an in-depth understanding of water resources management in one of the fastest developing provinces in the Mekong Delta.

Located at the heart of the Mekong River Delta, Can Tho City has a dense system of rivers and canals, with specific water resources including the Hau River, underground water and rainwater. Surface water in Can Tho City is used for the following daily and economic activities: irrigation, domestic, industrial and service, aquaculture, waterway transport, and water for pushing seawater.

In recent years, the problem of water pollution in Can Tho city has become a pressing concern. Almost all of the drainage canals and the main water supply sources of the city are heavily polluted; the water turns black and stinks. Almost all of the wastewater remains untreated before discharging into rivers. Industrial waste is not sorted or treated, but also discharged directly into rivers and canals. The Hau River water source, for instance, is seriously polluted with organic, chemical and microbiological substances. When comparing against allowed national water quality standards, the abovementioned exceed the allowed standards by over 100 times. Seriously polluted surface water also poses a pollution risk for groundwater. The uncontrolled digging of ponds and the discharge of wastewater into open water sources from fish farming facilities has led increasingly to a decline in water quality and could eventually pose threats to human health.

With regard to these facts, this paper aims to analyze the lack of law enforcement in the field of wastewater management in the case study area. As a backdrop to the study, local state water resource management in Can Tho City shall be provided. Furthermore, the legal response to water quality problems shall be analyzed.

In order to give a better overview of the legal framework on wastewater management in Vietnam, the paper will focus on the national regulations in general and local regulations, particularly in Can Tho City. Finally, legal problems and conflicting issues arising from the implementation of legislation on wastewater management shall be identified. In detail, the study consists of the following parts:

- Background: Local State Management on Water Resources – the Case of Can Tho City (chapter 2)
- Water Quality Problems in Can Tho City (chapter 3)
- Legal Framework of Wastewater Management in Vietnam (chapter 4)
- Implementation of the Legislation on Wastewater Management in Can Tho City (chapter 5)
- Conclusion and Recommendations (chapter 6)

2. Background: Local State Management on Water Resources – Case of Can Tho City

Pursuant to The Constitution of 1992, amended by Resolution No. 51/2001/QH10 dated December 25 2001, People's Committees are elected by People's Councils¹. These are local administrative state agencies that have responsibility for implementing the constitution, laws and other legal documents adopted by higher state authorities, as well as resolutions of the People's Councils (NA 2001, Article 123). Within the duties and authorities regulated by law, People's Committees shall issue decisions and directives, as well as supervise the implementation of their legal documents (NA 2001, Article 124).

People's Committees are established at all three local levels²: provincial, district and communal (Article 4 of Law No. 11/2003/QH11 on the Organization of People's Committees and People's Councils). The newly formed Can Tho City subordinated to central authority consists of five urban districts (Ninh Kieu, Binh Thuy, Cai Rang, O Mon, and Thot Not), four rural districts (Vinh Thanh, Thoi Lai, Co Do, Phong Dien) and 85 communes, wards and townships³.

Based on Joint Circular No. 03/2008/TTLT-BTNMT-BNV of July 15, 2008 which provides regulations on the functions, tasks, competences and organizational structures of agencies specializing in natural resources and environmental protection – subordinated to People's Committees of all levels – Departments of Natural Resources and Environment (hereinafter referred to as DONREs) have been created. DONREs should assist People's Committees in implementing state management tasks for natural resources and environmental protection, especially the protection of water resources. DONRE offices under People's Committees at district level shall be accountable for the state management of the environment, water resources, mineral resources, and land, as well as sea and island issues in urban and rural districts. At the communal level, civil servants in charge of land and construction issues shall be also responsible for environmental issues, as well as mediation in environmental disputes.

Accordingly, the DONRE for Can Tho City was established as a specialized organization at provincial level under the People's Committee of Can Tho City. As regulated by Decision No. 30/2008/QD-UBND, the Can Tho City DONRE shall assist its People's Committee in implementing its state management tasks on water and mineral resources, land, geology, environment, hydrometeorology, and cartography at local levels.

According to the People's Committee Decision No. 08/2009/QD-UBND of January 23, 2009, the structural organization of a DONRE consists of:

1. Office;
2. Inspectorate;
3. Department of Mineral Resources, Water and Hydrometeorology;
4. Department of Land Management; Department of Planning;

¹ People's Councils are state authorities in respective localities. They are representative bodies of the people's will, aspirations and rights as masters in their localities. Selected by the local population, they are responsible to local people and to higher state authorities (NA 2001, Article 119).

² The administrative units of the Socialist Republic of Vietnam are delimited as follows: (1) the country is divided into provinces and cities directly under central authority; (2) Provinces are divided into districts, provincial cities and towns; cities directly under central authority are divided into urban districts, rural districts and towns; (3) rural districts are divided into communes and townships; provincial cities and towns are divided respectively into wards and communes; urban districts are divided into wards (NA 2001, Article 118).

³ Based on Government Decree No. 05/2004/ND-CP of January 02, 2004 on the establishment of the Ninh Kieu, Binh Thuy, Cai Rang and O Mon urban districts and the Phong Dien, Co Do, Vinh Thanh and Thot Not rural districts of the centrally-run city of Can Tho, as well as their wards, communes and townships; Government Decree No. 12/ND-CP of December 23, 2008 on the rearrangement of administrative units of communes of Thot Not, Vinh Thanh, Co Do rural districts; establishment of Thot Not urban district and subordinated wards; rearrangement of administrative units of Co Do rural district to establish the Thoi Lai rural district subordinated to Can Tho City.

5. Department of Determination on Land Prices;
6. Environmental Protection Agency;
7. Centre for Natural Resources and Environmental Monitoring;
8. Centre for Natural Resources and Environmental Informatics Technology;
9. Centre for Natural Resources and Environmental Technology;
10. Office for Registration of Land Use Right.

Regarding tasks and authorities, the Can Tho City DONRE shall co-ordinate with other related departments to set up (and implement after plans are approved) management plans for using and protecting water resources, as well as measures for preventing and controlling the degradation and depletion of water resources. Furthermore, it shall be responsible for appraising projects in charge of the exploitation and utilization of water resources, as well as those transferring water between river basins. In addition, the DONRE shall be in charge of appraising (and supervising the implementation of permits) permit files/documents for duration changes, adjustment of content, withdrawal or suspension of use, as well as validating permits for the exploration, exploitation and utilization of water resources, permits for the discharge of wastewater into water resources, and those for drilling groundwater (Para.5, Article 2 of People's Committee's Decision No. 08/2009/QD-UBND).

However, rural water supplies are still managed by the Department of Agriculture and Rural Development (hereinafter referred to as DARD) at provincial level (under supervision of MARD), as regulated by Decision No. 72/2008/QD-UBND. Can Tho City's DARD was established as a specialized organization under the People's Committee of Can Tho City, as regulated by Decision No. 33/2008/QD-UBND. It shall assist the People's Committee in implementing its state management tasks for agriculture, forestry, aquaculture, irrigation and rural development, the prevention and control of flood inundation, and the safety of agricultural, forestry and aquaculture products. Regulations on the functions, duties, authorities and structural organization of DARDs at local levels are further controlled by a Joint Circular issued by MARD and the Ministry of Interior Affairs No. 61/2008/TTLT-BNN-BNV on May 15, 2008.

Related departments shall provide support to DONREs and DARDs aimed at protecting the water sector at local levels by implementing regulations in respect to environmental protection measures issued by state organizations at the national level:

- The **Department of Finance** and **Department of Construction** shall be responsible for the implementation of regulations on the determination of prices for clean water, issued by the Ministry of Finance and Ministry of Construction (People's Committee's Decision No. 40/2009/QD-UBND; Decision No. 23/2009/QD-UBND, which was amended by Decision No. 48/2009/QD-UBND).
- Regulations issued by the Ministry of Construction on water supplies to urban areas, as well as the handling of wastewater, solid urban area waste, industrial park waste, export processing zone waste, and high industrial zone waste shall be implemented by the **Department of Construction** at provincial level (Joint Circular of Ministry of Construction and Ministry of Interior Affairs No. 20/2008/TTLT-BXD-BNV, Decision of People's Committee of Can Tho City No. 23/2009/QD-UBND, which was amended by Decision No. 48/2009/QD-UBND).
- As regulated by the Joint Circular of Ministry of Industry and Trade and Ministry of Interior Affairs No. 07/2008/TTLT-BCT-BNV and People's Committee's Decision No. 26 and 81/2008/QD-UBND, the **Department of Industry and Trade** is in charge of guiding and examining the standards and technical quality of industrial products, environmental sanitation and safety, food hygiene and safety.
- The implementation of regulations on the management of quality criteria and standards for clean water issued by the Ministry of Health should be carried out by the **Department of Health** at provincial level (Joint Circular of Ministry of Health and Ministry of Interior Affairs No. 03/2008/TTLT-BYT-BNV, People's Committee's Decision No. 37/2008/QD-UBND and Decision No. 24/2009/QD-UBND).

- The **Department of Transport** shall be accountable for the implementation of regulations on the management of inland waterway navigation issued by the Ministry of Transport at provincial level, and as regulated by the Joint Circular of the Ministry of Transport and Ministry of Interior Affairs No. 12/2008/TTLT-BGTVT-BNV, People's Committee's Decision No. 32/2008/QD-UBND, and Decision No. 21/2009/QD-UBND.
- Finally, responsibility for the examination, review and systemization of legal documents issued by the People's Committee at provincial level shall be that of the **Department of Justice** (People's Committee's Decision No. 28/2008/QD-UBND, which was amended by Decision No. 27/2009/QD-UBND; and Decision No. 60/2009/QD-UBND).

In addition, the People's Council shall be responsible for the enforcement of the Law on Water Resources (LWR) at local level by issuing resolutions. People's Committees are directly in charge of the governance related to the enforcement of the Law on Water Resources at local level. Decisions and directives shall be adapted by the People's Committee to ensure the effective implementation of the LWR. The Department of Culture and Information, Press and Media Organizations shall be in charge of the arrangement of propaganda on the LWR, ensuring its enforcement across relevant departments and individuals in accordance with their competences and responsibilities. Additionally, The Communist Party, Communist Youth Union, Women's Union, Farmers' Association, and other civil societies shall be also in charge of arranging LWR propaganda. Inspectorates, courts, police forces and other law enforcement agencies are in charge of dealing with violations against the legislation on water resources.

Based on Government Decree No. 14/2008/ND-CP on **prescribing the organization of** specialized agencies **under People's Committees at district levels (urban districts and rural districts)**, and the Joint MONRE Circular and the Ministry of Interior Affairs No.03/2008/TTLT-BTNMT-BNV on guiding the functions, tasks, powers and organizational structures of specialized agencies in charge of natural resources and environmental protection subordinated to People's Committees of all levels, specialized offices in charge of environmental protection have been established at district and communal levels in Can Tho City.

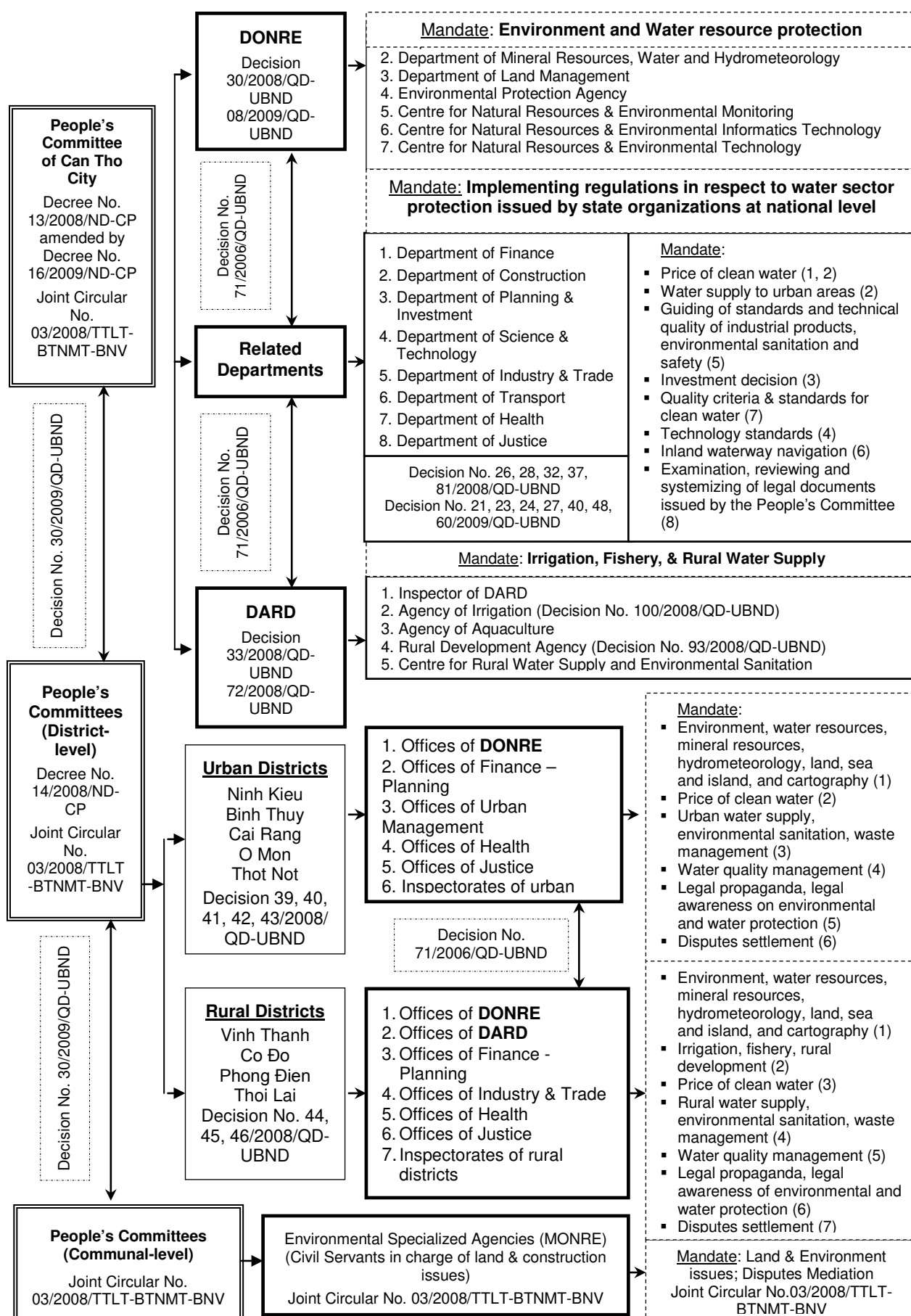
At district level, each urban district (Ninh Kieu, Binh Thuy, Cai Rang, O Mon, and Thot Not district) has its own specialized offices (Office of DONRE, Office of Finance and Planning, Office of Urban Management, Office of Health, Office of Justice and Inspectors of urban district). As regulated by Decisions of People's Committee of Can Tho City No. 39, 40, 41, 42, 43/2008/QD-UBND, each of which is responsible for its own state management tasks. Similar to urban districts, specialized offices in charge of environmental issues have been established at each rural district area (Vinh Thanh, Co Do, Phong Dien, Thoi Lai rural district). The interesting difference between specialized offices at urban and rural district levels is the presence of the Office of DARD in rural districts with duties and authorities of state management on irrigation, fisheries and rural water supply (Decisions of People's Committee No. 44, 45 & 46/2008/QD-UBND).

At communal level, as regulated by the Joint MONRE Circular and the Ministry of Interior Affairs No. 03/2008/TTLT-BTNMT-BNV on guiding the functions, tasks, powers and organizational structures of specialized agencies in charge of natural resources and environmental protection subordinated to People's Committees of all levels, civil servants in charge of land and construction issues shall be also responsible for environmental issues, as well as mediating in environmental disputes.

Based on Law No. 11/2003/QH11 on the Organization of People's Councils and People's Committees, Government Decree No. 144/2005/ND-CP on working regulation of administrative organizations, and the Decision of the People's Committee of Can Tho City No. 30/2009/QD-UBND on working regulation of the People's Committee of Can Tho City, all departments, agencies and offices subordinated to People's Committees at all levels shall operate in coordination with their state management tasks under the supervision of People's Councils. On top of that, their state management tasks shall be implemented in compliance with provisions of the law.

The chart (1) below provides an overview of the local state management of the water sector in Can Tho City, Vietnam:

Chart 1: Local State Management of the Water Sector – Case of Can Tho City, Vietnam



3 Water Quality Problems in Can Tho City

3.1 Can Tho City: Urgent Problems with Water Pollution

Located at the heart of the Mekong River Delta, Can Tho City is bordered by the Hau River to the north-east, Kien Giang province to the west, Hau Giang province to the south and An Giang province to the north-west. As a newly formed, centrally-governed fish-grade City (since August 2009), Can Tho City consists of five urban districts (Ninh Kieu, Binh Thuy, Cai Rang, O Mon, and Thot Not,), four rural districts (Vinh Thanh, Thoi Lai, Co Do, Phong Dien) and 85 communes, wards and townships.



Figure 1: Provinces of the Mekong Delta

According to 2007's statistical yearbook for Can Tho City, the population up to 2005 was 1,137,269, including 558,752 males (49.13%). The majority of the population belongs to the Kinh (96.89%), while other ethnic groups make up the small remainder: Chinese 1.4%, Khmer 1.7% and others 0.05%. With the birthrate at 1.6%, the population is generally young, with 62% under 40. The population density is 812 people/km²; however, this is distributed unevenly. In particular, the population density of the Vinh Thanh, Co Do and Phong Dien districts is only 383 to 440 people/km², while in the remaining districts it is as high as 1,032 to 7,241 people/km². Especially, it is up to 7,241 people/km² in the Ninh Kieu district (SIWRP 2007:16)

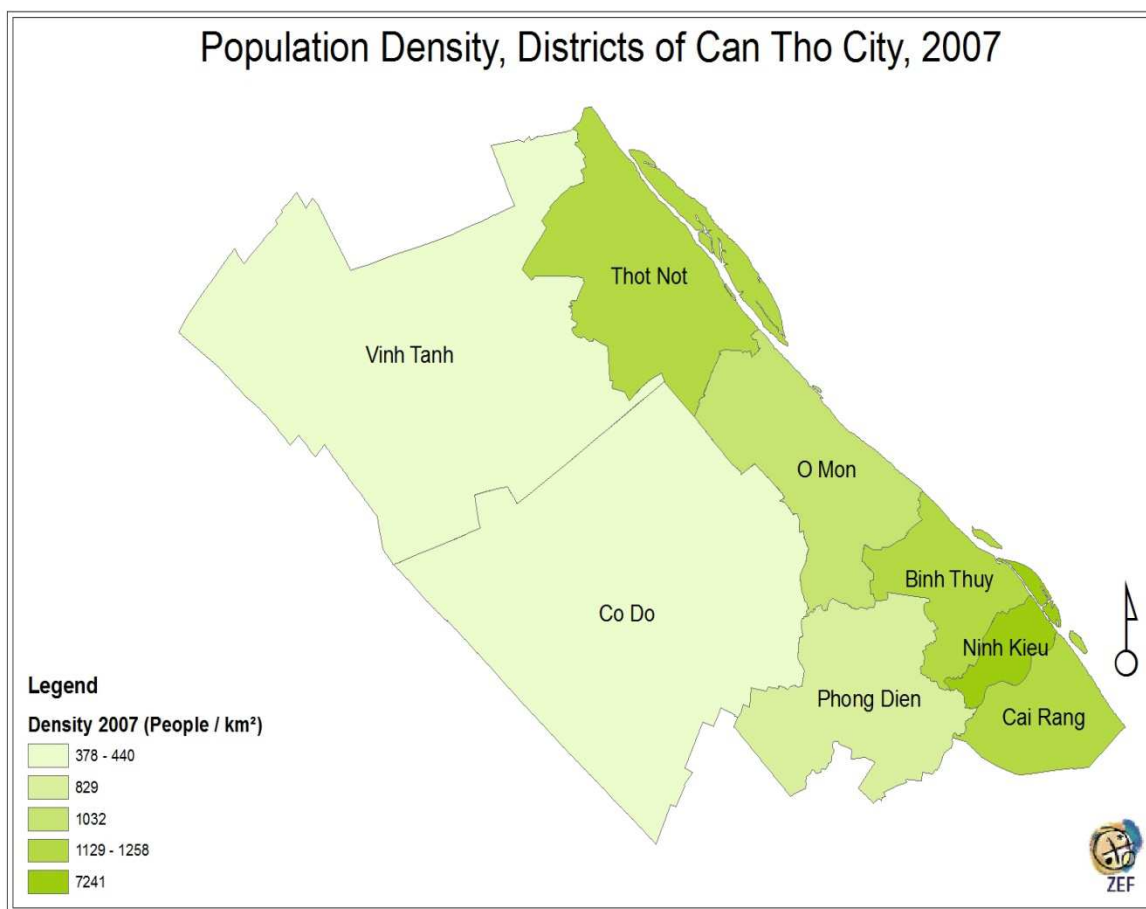


Figure 2: Population Density, Districts of Can Tho City, 2007

Can Tho City has a dense system of rivers and canals. Water resources in Can Tho City include water from the Hau River⁴, underground water⁵ and rainwater. Surface water in Can Tho City is used for the following daily and economic activities: irrigation, domestic, industrial and service, aquaculture, waterway transport, and water for pushing seawater purposes. The chart and the figure below provide an overview of the main rivers and canals of Can Tho City, Vietnam.

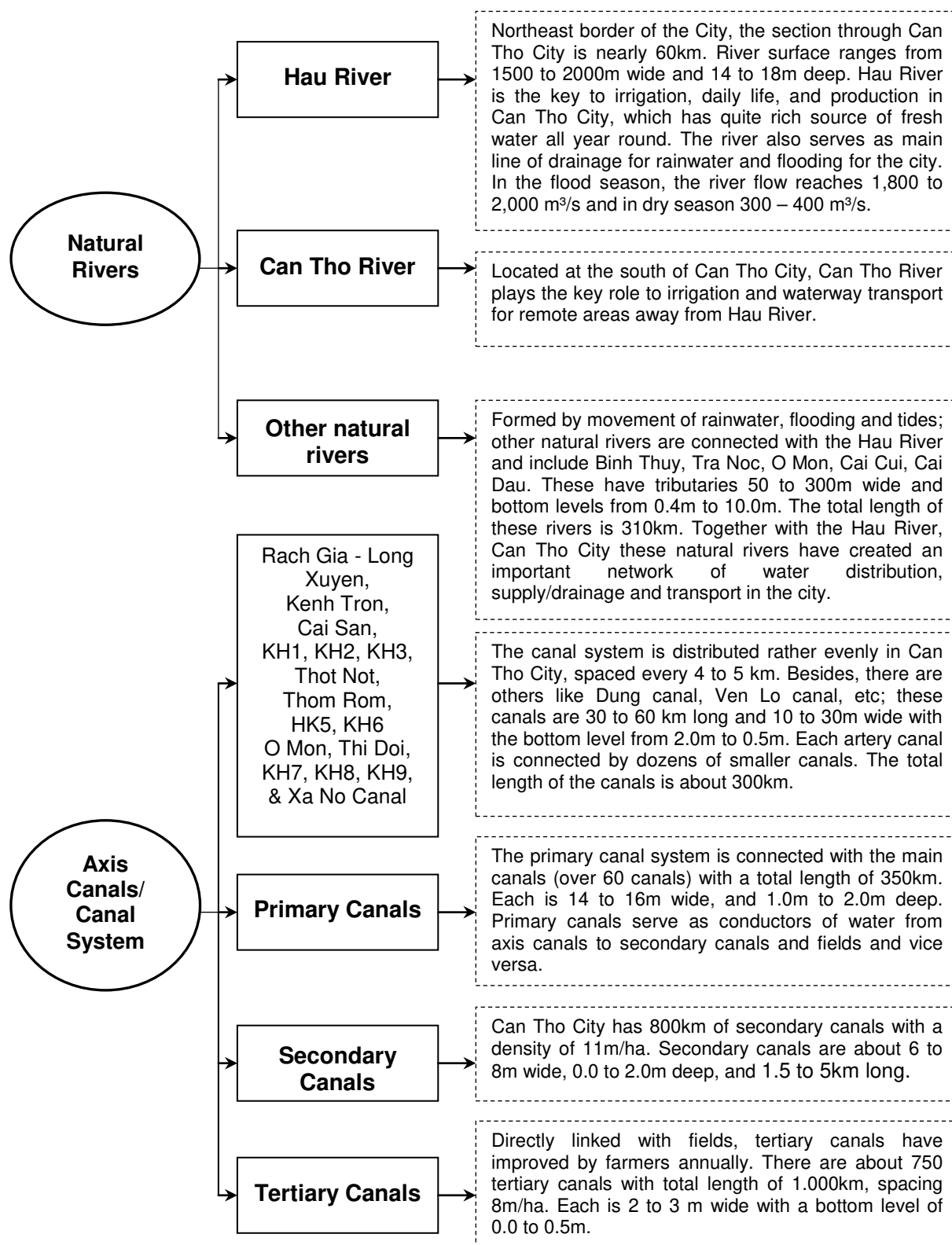
⁴ Hau River water depends on the flow upstream of the Mekong River, regulation of the Tonle Sap Lake, and partly on inland rainfall. Annually, the flow of the Mekong River is affected clearly by the dry and rainy seasons. The Hau River is the western-most tributary of the Mekong River, serving as a supplier of fresh water for the Mekong Delta, Can Tho and the natural border between Can Tho and Dong Thap and Vinh Long provinces. The Hau River also serves as an international route for vessels bound for Cambodia. It is the largest of its kind in the region, with a length across Can Tho of 55km. Each year the river dumps 200 billion cubic metres, or 41% of the Mekong Delta's water, into the sea. The amount of silt produced by the river is 35 million cubic metres/year or half of the Mekong River's total silt output (DONRE 2009:13).

⁵ According to the Planning for Water Supply and Rural Environmental Hygiene in Can Tho City, groundwater in Can Tho City exists in six geological-hydrologic levels as follows:

- Middle-late Pleistocene water holding level (qp2-3);
- Early Pleistocene water holding level (qp1);
- Late Pleistocene water holding level (m4 2);
- Early Pleistocene water holding level (m¹ 4);
- Late Pleistocene water holding level (m³ 3);
- Holocene levels containing little or no water (qh).

Of these water-containing levels, the most often studied and exploited are the qp2 - 3 and qp1 levels, which are rich in water. The depth of exploitation is shallow and the water is basically good quality. The m42, m¹ 4 and m³ 3 levels are rarely studied. The water quality is not even among them. The Holocene level is significant only in identifying its support and impact on other levels (SIWRP 2007:29).

Chart 2: Main Rivers and Canals of Can Tho City, Vietnam



Based on (SIWRP 2007:9)

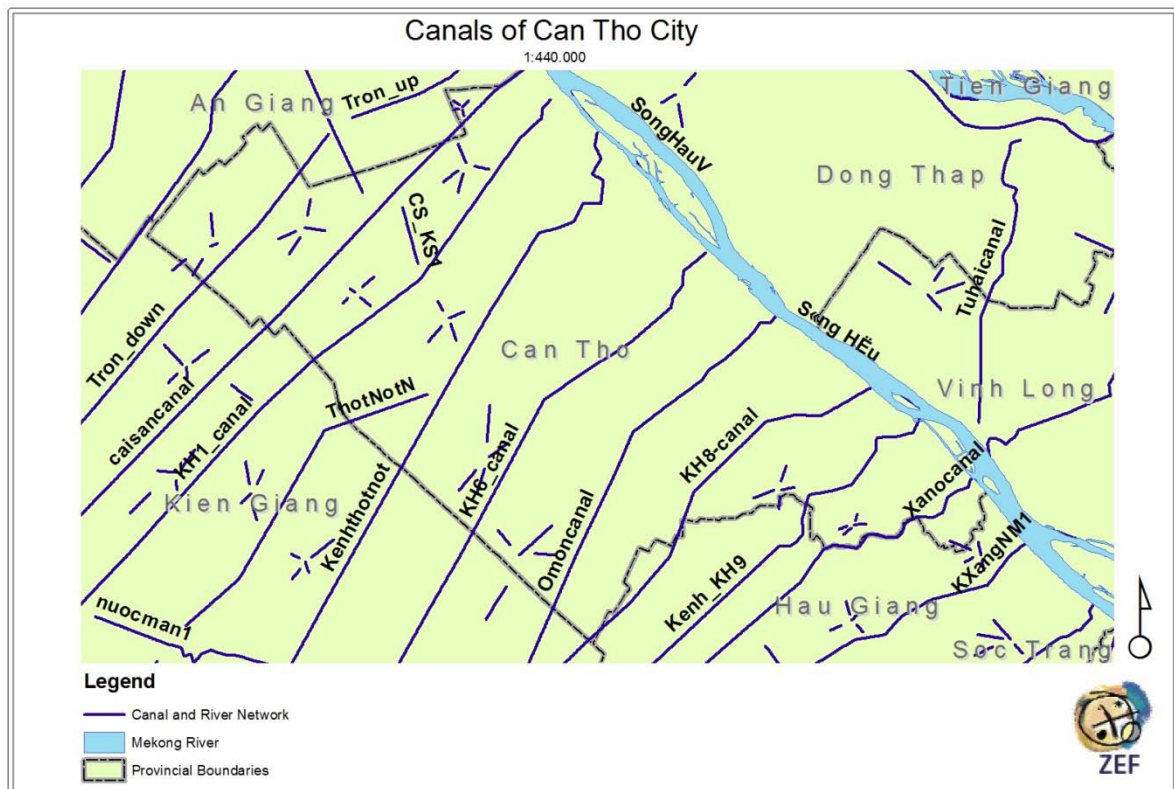


Figure 3: Canals of Can Tho City

Generally, according to the Vietnam Environment Monitor 2003 – Water, the water quality in the major rivers of the Mekong River Delta is within the standard classes A-B. The only parameter that exceeds standard is BOD5⁶ and, occasionally, NH4. However, in the smaller tributaries, especially those in urban and industrialized areas, the water quality has been found to exceed the standard. Groundwater quality in the Mekong River Delta region is variable. An overview of Mekong Delta water quality shall be provided further in Annex 3.

Based on the Southern Institute of Water Resources Research's (SIWRP 2007) main report on "planning for integrated water resources management of river basins in Can Tho City" regarding water quality, Hau River and canal water is not yet heavily polluted (except Coliform and E-Coli). However, signs of organic pollution⁷ have appeared in several places (Can Tho River, O Mon, Tham Tuong canal sluice gates, and especially places where fish cages are installed). In the future, with the planned expansion of industrial zones (allocated planning from Thot Not to Cai Rang) and increasing urbanization, as well as production activities, pollution and quality degradation will pose such significant threats and dangers to the management of water sources quality, unless specific strategic planning on solid waste, wastewater and the usage of chemical agents in agricultural production activities is in place.

In detail, according to the current result of pollution monitoring by DONRE (of Can Tho City) on the development of environmental quality in Can Tho City from 1999 to 2008, almost all of the drainage canals and main water supply sources within the city are heavily polluted; water turns black and smells dreadful. The problem with water pollution in Can Tho city has become a pressing concern. Almost all wastewater in Can Tho City remains untreated before discharging into the Hau River. Industrial waste is not sorted and treated. Surface water in rural areas is polluted mainly by organic matter and germs.

⁶ **BOD5:** the amount of dissolved oxygen consumed in five days by biological processes breaking down organic matter (based on United States Environment: Terms of Environment 2009).

⁷ **Organic Pollution:** Carbonaceous waste contained in plant or animal matter and originating from domestic or industrial sources (based on United States Environment: Terms of Environment 2009).

Seriously polluted surface water pollutes groundwater, while the surface water of the main rivers, Hau River for instance, is contaminated with organic and bacillus pollutants with the following concentrations.

Table 1: Hau River Surface Water Quality (Can Tho City)

	National Standards⁸ (QCVN 08:2008/ BTNMT)	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
pH	6 – 8,5	7,05	7,00	6,63	7,33	7,20	7,30	7,11	7,23	7,29	6,97
COD ⁹ (mg/l)	10	6,3	7,3	4,7	7,9	9,2	9,9	10,2	12,1	14,3	14,8
SS (mg/l)	20	74	63	30	97	48	43	42	62	65	43
Fe _{tc} (mg/l)	0,5	1,27	1,02	0,59	1,05	0,72	0,68	0,72	0,78	0,60	0,52
NO ₂ -N (mg/l)	0,01	0,005	0,007	0,011	0,010	0,015	0,012	0,021	0,027	0,016	0,032
NH ₄ ⁺ -N (mg/l)	0,1	0,056	0,244	0,048	0,123	0,065	0,163	0,235	0,263	0,411	0,508
Coliform ¹⁰ (1000 MPN/100ml)	2.5	44	2	38	18	4	19	35	109	1033	51

In addition, based on the current pollution monitoring results produced by the DONRE on the development of environmental quality in Can Tho City from 1999 to 2008, almost all of the drainage canals (such as Cai Khe, Tra Noc, O Mon, Thot Not, San Trang, Bo Ot canals) and main water supply sources are heavily polluted. Canals polluted with BOD concentrations of 10-15 mg/l exceed the standard by two - three times; Coliform of 4000-160,000 MPN/100ml exceeds by more than 20 times; and BVTV chemicals exit into canals and water channels at an alarming rate. Table 5 provides an overview of the increase of certain important pollutant concentrations in some of Can Tho City's main canals over a ten-year period (1999-2008).

⁸ Based on the Decision of MONRE No. 16/2008/QĐ-BTNMT of December 31, 2008 on promulgating the National Technical Specifications on Environment, the current National Technical Specifications on Environment includes 08 National Technical Regulations, as follow:

1. QCVN 08:2008/BTNMT – National Technical Regulation on Surface Water Quality;
2. QCVN 09:2008/BTNMT – National Technical Regulation on Undergroundwater Quality;
3. QCVN 10:2008/BTNMT - National Technical Regulation on Coastal Water Quality;
4. QCVN 11:2008/BTNMT - National Technical Regulation on the Effluent of Aquatic Products Processing Industry;
5. QCVN 12:2008/BTNMT - National Technical Regulation on the Effluent of Pulp and Paper Mills;
6. QCVN 13:2008/BTNMT - National Technical Regulation on the Effluent of Textile Industry;
7. QCVN 14:2008/BTNMT - National Technical Regulation on Domestic Wastewater
8. QCVN 15:2008/BTNMT - National Technical Regulation on the Pesticide Residues in the Soils.

⁹ **Chemical Oxygen Demand (COD):** A measure of the oxygen required to oxidize all compounds, both organic and inorganic, in water (based on United States Environment: Terms of Environment 2009).

¹⁰ **Coliform Organisms:** Microorganisms found in the intestinal tract of humans and animals. Their presence in water indicates fecal pollution and potentially adverse contamination by pathogens (based on United States Environment: Terms of Environment 2009).

Table 2: Surface Water Quality of Main Canals in Can Tho City¹¹

	National Standards¹² (QCVN 08:2008/ BTNMT)	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
CAI KHE Canal											
pH	6 – 8,5	7.01	6.88	6.58	7.13	7.09	7.07	7.12	6.97	7.09	7.04
COD (mg/l)	10	9.8	9.5	7.2	19.1	17.5	25.4	19.5	18.7	15.4	18.7
SS (mg/l)	20	59	46	23	41	40	46	62	75	64	36
Fe _{tc} (mg/l)	0,5	1.03	1.02	0.59	0.77	1.16	0.69	0.61	1.06	0.54	0.543
NO ₂ -N (mg/l)	0,01	0.027	0.023	0.020	0.028	0.020	0.017	0.017	0.026	0.033	0.033
NH ₄ ⁺ -N (mg/l)	0,1	0.136	1.083	0.832	1.026	1.002	0.712	1.248	1.956	2.065	1.710
Coliform (1000 MPN/ 100ml)	2.5	250	34	44	495	116	76	54	168	507	160
TRA NOC Canal											
pH	6 – 8,5	7,07	6,97	6,56	7,33	7,14	7,25	7,09	7,30	7,27	7,11
COD (mg/l)	10	5,0	8,1	4,4	10,0	9,0	13,1	17,0	13,1	14,6	12,7
SS (mg/l)	20	69	92	50	120	62	68	72	94	62	39
Fe _{tc} (mg/l)	0,5	0,84	1,37	0,86	1,14	0,91	0,82	1,11	1,13	0,57	0,58
NO ₂ -N (mg/l)	0,01	0,007	0,007	0,018	0,012	0,024	0,034	0,058	0,031	0,013	0,012
NH ₄ ⁺ -N (mg/l)	0,1	0,091	0,351	0,146	0,127	0,213	0,165	0,340	0,257	0,268	0,387
Coliform (1000 MPN/ 100ml)	2.5	11	2	25	4	4	31	19	116	31	15
O MON Canal											
pH	6 – 8,5	7,14	7,01	6,79	7,22	7,14	7,28	7,08	7,14	7,21	6,81
COD (mg/l)	10	5,0	6,3	3,5	6,0	7,2	15,5	11,6	12,0	15,1	21,1
SS (mg/l)	20	5	5	5	5	5	76	38	37	78	49
Fe _{tc} (mg/l)	0,5	0,85	0,77	0,40	0,89	0,62	0,87	1,15	1,08	0,80	0,80
NO ₂ -N (mg/l)	0,01	0,006	0,003	0,010	0,001	0,013	0,037	0,029	0,038	0,009	0,013
NH ₄ ⁺ -N (mg/l)	0,1	0,061	0,139	0,047	0,062	0,051	0,167	0,184	0,227	0,243	0,465
Coliform (1000 MPN/ 100ml)	2.5	121	12	24	16	17	32	24	61	105	30

¹¹ Based on (DONRE 2009:24)

¹² Based on the Decision of MONRE No. 16/2008/QD-BTNMT of December 31, 2008 on promulgating the National Technical Specifications on Environment

THOT MOT Canal											
pH	6 – 8,5		6,96	6,68	7,25	7,07	7,20	7,06	7,09	7,15	7,03
COD (mg/l)	10	4,5	7,8	6,8	8,7	9,8	12,9	13,4	14,3	14,2	15,0
SS (mg/l)	20	47	105	61	107	106	125	93	93	60	31
Fe _{tc} (mg/l)	0,5	0,73	1,63	1,00	1,28	1,22	1,09	1,21	1,24	0,80	0,42
NO ₂ -N (mg/l)	0,01	0,004	0,034	0,019	0,018	0,047	0,048	0,031	0,017	0,021	0,031
NH ₄ ⁺ -N (mg/l)	0,1	0,053	0,316	0,140	0,152	0,215	0,369	0,541	0,641	0,652	0,514
Coliform (1000 MPN/ 100ml)	2.5	245	16	41	52	15	17	86	96	116	44
CAI SAN Canal											
pH	6 – 8,5						7,15	7,11	7,15	7,11	6,98
COD (mg/l)	10		2,6	4,0	4,9	4,9	9,0	14,9	11,9	28,3	8,8
SS (mg/l)	20	5	41	29	64	49	191	167	75	47	27
Fe _{tc} (mg/l)	0,5	0,50	0,63	0,48	0,69	0,59	1,05	1,77	0,88	0,36	0,36
NO ₂ -N (mg/l)	0,01	0,001	0,003	0,009	0,001	0,009	0,029	0,060	0,035	0,031	0,031
NH ₄ ⁺ -N (mg/l)	0,1	0,001	0,144	0,061	0,046	0,105	0,247	0,405	0,557	0,547	0,104
Coliform (1000 MPN/ 100ml)	2.5	5	1	4	5	4	146	23	206	57	13
Average levels of Canals											
pH	6 – 8,5	7,07	6,96	6,65	7,08	6,96	7,20	7,09	7,15	7,18	6,99
COD (mg/l)	10	6,9	8,2	5,6	9,9	10,5	14,9	14,7	14,0	17,2	15,2
SS (mg/l)	20	41,1	58,0	31,7	68,2	49,6	86,1	75,1	70,1	62,1	40,3
Fe _{tc} (mg/l)	0,5	0,9	1,1	0,7	1,0	0,9	0,8	1,1	1,0	0,6	0,5
NO ₂ -N (mg/l)	0,01	0,009	0,014	0,015	0,011	0,023	0,029	0,034	0,030	0,024	0,027
NH ₄ ⁺ -N (mg/l)	0,1	0,129	0,616	0,260	0,316	0,342	0,333	0,537	0,633	0,680	0,742
Coliform (1000 MPN/ 100ml)	2.5	235	14	38	94	29	58	63	134	448	62

As demonstrated in Tables 1 and 2, in the last ten years Hau River surface water and some main drainage canals have become heavily polluted and exceed the current National Technical Regulation on Surface Water Quality (QCVN 08: 2008/BTNMT). Particularly:

- The pH¹³ indicator is still within the permissible limit, fluctuating from 6.7 to 7.7 (while it should be fluctuating between 6 to 8.5 according to National Standard QCVN 08: 2008/BTNMT);
- The average content of COD¹⁴ in surface water has increased from 7mg/l to 15mg/l, exceeding the permissible limitation of the current National Standard (QCVN 08: 2008/BTNMT);
- Suspended solids¹⁵ (SS) in the Hau River have decreased from 74mg/l (in 1999) to 43mg/l (in 2008), but still remained higher than the permissible limit set by the National Standard (QCVN 08: 2008/BTNMT - Column 1) of 20mg/l;
- The content of Iron (Fe_{tc}) is higher than the National Standard (QCVN 08: 2008/BTNMT - Column 1) of 0.5mg/l. The content of iron in the Hau River was down due to the decrease in the content of SS;
- Nitrite (NO₂-N) is presented in the surface water with the content ranging from 0.009mg/l to 0.027mg/l, which is higher than the National Standard (QCVN 08: 2008/BTNMT - Column 1) of 0.01 mg/l, having increased by 0.02 mg/l within 10 years;
- Ammonium (NH₄⁺-N¹⁶) is present in surface water with the content ranging from 0.129mg/l to 0.742mg/l, exceeding the National Standard (QCVN 08: 2008/BTNMT - Column 1) of 0.05mg/l Type A1, having increased by 0.05mg/l within 10 years;
- Coliform concentration has always been higher than the National Standard (QCVN 08: 2008/BTNMT - Column 1) of 2,500MPN/100ml. Coliform in the Hau River's surface water fluctuated from 44,000MPN/100ml (in 1999) to 51,000MPN/100ml, exceeding the permissible limit by almost 20 times. The average concentration of Coliform in the surface water of the main canals in Can Tho City rose to 62,000MPN/100ml in 2008, exceeding the permissible limit by almost 25 times.

Water pollution has caused serious consequences in Can Tho City. According to the Department of Health, each year hospitals in Can Tho City treat an average of 431 cases of dysentery syndrome, 33,000 cases of diarrhea, 424 cases of typhoid, and many other serious diseases caused by polluted water (Mekong River 08.01.2002). Water pollution therefore not only represents a real threat to human health, but also has other negative impacts on the people and the environment, as will be shown below.

3.2 Main Sources of Water Pollution

Wastewater sources discharging into rivers and canals in Can Tho City include: domestic (household waste) water, wastewater from industrial parks, handicraft workshops and villages, and from fisheries, aquacultural and agricultural production and solid waste. These are the main sources of surface water pollution in Can Tho City. Other sources include activities upstream on the Mekong River and

¹³ pH is a measure of the balance between acidity and alkalinity. It is measured exponentially on a scale between 0 and 14; a pH of 7.0 is neutral, above 7.0 is alkaline and below 7.0 is acidic. pH is important since it modifies the solubility and toxicity of many compounds (EEPSEA 2009:9).

¹⁴ COD is a chemical measure of the amount of organic substances in water or wastewater. A strong oxidizing agent together with acid and heat are used to oxidize all carbon compounds in a water sample. The COD parameter reflects the entire amount of organic substances in water so it is chosen to denote the organic level in water (EEPSEA 2009:10).

¹⁵ Suspended sediments are particles in the water such as silt. If there are high amounts of suspended solids in the water, it becomes turbid. Turbidity causes problems in that in order to use the water for drinking, the water must first be filtered. It is an important factor if the water is to be used for recreational purposes. If water is too turbid, it can make the recreational activities unsafe, for instance, drowning victims may not be spotted in the water due to poor water clarity (EEPSEA 2009:11).

¹⁶ Ammonia-nitrogen or free ammonia (NH₃-N) and ionized-ammonia (NH₄⁺-N) represent two forms of reduced inorganic nitrogen which exists in equilibrium depending upon the pH and temperature of the water in which they are found. One important problem with the presence of reduced nitrogen in water is that its oxidation may impose an oxygen demand by nitrifying bacteria, which might then deplete the available dissolved oxygen concentration to a level which imposes stress on aquatic life (EEPSEA 2009:10).

waterway transport. Over the last few years, water source pollution in Can Tho City has worsened, especially organic pollution (BOD and COD) and microorganism pollution (Coliform). According to recent surveys and measurement results (DONRE 2009; EEPSEA 2009), most of the samples taken from specific areas (main rivers, inner city canals, market areas, industrial parks and fields) contained BOD, COD and Coliform levels that did not meet the A quality water standard (TCVN 5942 – 1995: Water Quality Standards - Surface Water), and even exceeded the permissible limitations regulated by the current National Technical Specifications on Environmental Standard (QCVN 08: 2008/BTNMT) by many times. In the following subsections, the main sources of water pollution and sector-specific development will be outlined in more detail.

3.2.1 Agricultural Production

In 2001, Can Tho used 110,290 tons of chemical fertilizers and pesticide for agricultural production. Parts of these harmful chemical substances were absorbed into the land, trees and grasses, while other parts were discharged into water sources, causing water pollution. In the agricultural and aquacultural sectors, water pollution has been caused by an increasing use of pesticides and fertilizers. Between 1982 and 1997, the usage grew from 40kg to 223kg per cropped hectare (EIU 2000a); as a consequence, the yield increased continuously, although the total of the cultivated land decreased (GSO Vietnam 2007). The most important regional products are rice (90% of the country's export), fruits, and shrimps and fish (MDEC 2008). Especially during the flood season or other run-off events, traces of fertilizers and pesticides are washed out into open waters. Moreover, the increasing use of pesticides and chemical fertilizer leads to groundwater contamination.

3.2.2 Fishery Production

Fish farming in the Mekong Delta has developed rapidly since the Vietnamese government's agricultural policy shifted away from mono-cultural rice production to more diversified models of farming systems (at the end of the 1990s). With over one million tons of farmed fish, today, the Delta's output is six times higher than it was ten years ago in 1997, and accounts for more than 70% of the entire national output of farmed fish.



Fish Farming in Thot Not district, Can Tho City
(Photo by S. Benedikter 2009)

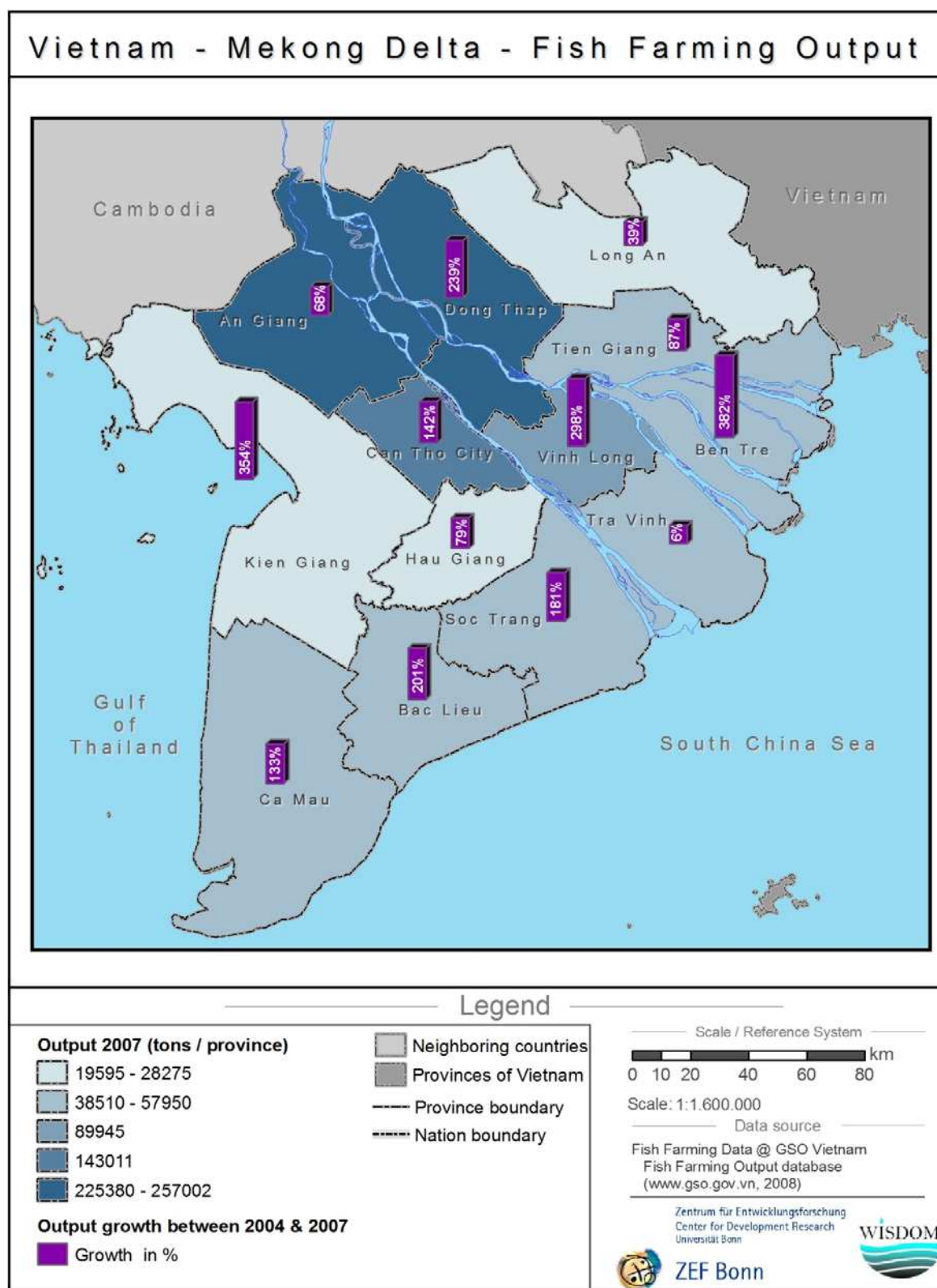


Wastewater discharging from a fish farm pond in O Mon district
(Can Tho City) into water resource
(Photo by S. Benedikter 2009)

In this context, catfish fish farming (*pangasius hypophthalmas* & *pangasius bocourti*) has become a lucrative business for many people in the Delta, in particular in areas where plenty of fresh water is available all year round. Thus, during recent years the upstream provinces of Long An, An Giang and the northern portion of Can Tho City have developed into the collective centre of catfish production. Today, with over 600,000 tons of farmed fish, these three provinces produce 55% of the Delta's output and account for over 40% of the national production of farmed fish. A high proportion of the Mekong Delta's catfish is exported to global markets in the EU or US.

The following map (figure 4) provides an overview of fish farming development in the Mekong Delta between 2004 and 2007.

Figure 4: Vietnam, Mekong Delta, Fish Farming Output 2004 to 2007



Although these impressive growth rates show how important fish farming nowadays has become for the Delta's economic development, new environmental problems are also on the rise. Uncontrolled digging of ponds and the discharge of wastewater caused by fish farming into open water sources has increasingly led to a decline in water quality and could eventually pose threats to human health¹⁷.

According to DARD (Can Tho City), since 2004 the catfish export market has developed rapidly. Most people in Can Tho City have taken full advantage of river water, lakes and ponds for raising fish, causing the area of surface water used for raising catfish increased from 675ha in 2004 to 882ha in 2005. In 2007, the price of exported catfish increased strongly and the fish farming area increased to 1569ha. This is equivalent to the planning target of aquaculture area of the city for the year 2020, which illustrates, how fast the aquacultural production is expanding (*Can Tho* newspaper 14.12.2008). Waste from fish production (nutrients in fish feed¹⁸ and sediment¹⁹) is discharged unconsciously into rivers, canals, ponds and lakes by thousands of fish farms, leading to serious levels of water pollution. In addition, the fact that nearly all of Can Tho City's fields have been taken for fish farming production, and are not yet registered for changing land use purposes, has caused difficulties for the local state management of water pollution. Furthermore, it is even more difficult to control the culture of fish production in cages.

At present, there are 12,216 fishponds in Can Tho City, each of which has an average of a 2m depth and upon renewing the pond water discharge amounts of up to 70 million cubic metres a day or nearly 27 billion cubic metres a year. The content of COD in fishponds can be up to 80mg/l. If this wastewater is diffused with the flow of the Hau River in the best conditions, the river water will carry 10mg/l of COD, which still exceeds the permissible limitation of the current National Technical Specifications on Environmental Standard QCVN 08: 2008/BTNMT, Column 1 (DONRE 2009:37).

Based on the results of a survey examining the environmental consequences arising from pond "Tra" fish breeding in the Mekong Delta (Thot Not District, Can Tho City, Vietnam) (EEPSEA 2009:21-22), 25.9% of the farmers discharged pond effluents into the Hau River, 34.3% into the canals, 5.6% into settling ponds, and 34.3% into paddy fields. Most of respondents (60.2%) reported that they dumped wastewater into public water sources, while 39.8% dumped it onto private land. Wastewater discharging in Tra fish breeding areas has caused public water source pollution and led to inconvenience for local people, as it has reduced their clean water supply, aggravated the shortage of clean water in dry seasons, and therefore seriously affected their general living conditions. Building a settling pond was one of the immediate solutions suggested by the local government. Nevertheless, only 10.2% of the farmers followed this suggestion; the reason for not complying was a lack of land, because land prices were so high that so many fish farmers could not afford to purchase more. In addition, to treat wastewater effectively, it had to be kept in the pond for many hours in order to decompose waste and pollutants before being released into the environment, but due to the fact that the fish farmers changed the water almost every day to avoid fishpond water pollution, this measure alone was not effective in treating wastewater (EEPSEA 2009:21-22).

¹⁷ Source: WISDOM project (<http://www.wisdom.caf.dlr.de>)

¹⁸ Based on the result of the survey (EEPSEA 2009), fish farmers fed their small Tra fish 1 to 5 times/day, usually 2 to 3 times. For big fish, common feeding times numbered 1 to 3 according to the farmer's aims (if he wanted his fish to grow fast, feeding times should be increased). Feed usually consisted of rice bran or broken rice (30%), marine fish or Tra fishmeal (40-50%) and soybean (15-20%). In addition, fish farmers often put Vitamin C, sorbitol, enzymes and mineral premix into the feed to strengthen the resistance of the fish to disease (EEPSEA 2009:19).

¹⁹ Pond sediment elimination is now common practice in Tra fish production. Almost all of the farmers (96,9%) said that they had their ponds dredged several times (1 to 3 times). The dredged sediment was dumped in several places such as dikes, orchards, containment ponds, or water channels (EEPSEA 2009:20).

3.2.3 Industrial Pollution

In addition, three-fifths of the industrial parks located along the Hau River have operated in fishery and aquaculture production (CN-TTCN Thot Not, Tra Noc I, Tra Noc II Industrial Park). According to the DONRE (Can Tho City), the problem of water pollution has become serious in the Tra Noc I & II Industrial Parks. Operating since 1994 (Tra Noc I) and 2000 (Tra Noc II), only 28 of the collective 130 factories have installed wastewater treatment systems to date. The total volume of wastewater discharging from these two industrial parks is over 12,000m³/ day, discharged by 17 rainwater sluices directly into the Hau River (*Can Tho* newspaper 14/12/2008). Due to the fact that a concentrated wastewater treatment system still does not exist, any waste substances remaining after the production process are discharged directly into nearby rivers and canals, leading to water pollution. Furthermore, the number of industrial parks and operating industries is on the increase.



One of the manholes of the Tra Noc Industrial Parks discharges wastewater into Hau River
(Photo by S. Benedikter 2009)

Indications are that industrial parks and small-scale craft discharge around 45.000m³ of wastewater daily, with a concentration of COD averaging 1,500mg/l. If this concentration is not treated, rivers and canals in Can Tho City receive 67,500 tons of COD every day. At this moment in time, most of the industrial estates in Can Tho City do not possess a concentrated wastewater treatment system. Presumably, two-thirds of the COD concentration is disposed of, leaving just one-third of the unprocessed COD to be diffused with Hau River water. However, the concentration of COD measures over 10 mg/l, which still exceeds the permissible limitation of the current National Standard QCVN 08: 2008/BTNMT, Column 1 (DONRE 2009:37-38).

Thousands of households in the Tra Noc (Binh Thuy district) and Phuoc Thoi (O Mon district) wards have no option but to use polluted water for drinking and living. In addition, they have to suffer the horrendous smells and noxious substances caused by these two industrial parks. Nearby canal water has turned black in colour. Many householders living next to the Sang Trang canal (Phuoc Thoi ward, O Mon district) say that Sang Trang canal water is no longer suitable for use. Although on several occasions they have brought this situation to the attention of representative enterprises of the two industrial parks, and even complained to competent local state authorities, the situation has not changed at all. To get clean water, many families have even paid for well drilling and pond digging, but there are still many households too poor to effect such a solution, and as such have to use polluted water from the Sang Trang canal. According to the Health Stations of Tra Noc, every month there are over 1,000 cases of respiratory tract inflammation and other diseases caused by using polluted water

(MONRE 08.08.2006). In this context, Mr. Le Quang Minh, Director of the Environmental Monitoring Centre (the Can Tho City DONRE), said: *“At present, water pollution levels in Sang Tr ng canal have exceeded six times their limit compared with the permissible limitation of the National Standards. Recently, we have laid sanctions against enterprises causing water pollution. Although they have implemented and paid fines, they still have not installed wastewater treatment systems because they are concerned that the investment cost for installation and operation of such systems is too high, and they would rather pay fines”* (MONRE 08.08.2006, translation by author).

According to local agency statistics, Can Tho City has over 1,000 industrial/commercial units including factories, enterprises, markets, hospitals, maternity hospitals, health stations, and clinics which extract solid waste and wastewater containing harmful levels of chemicals (such as iron, sulphur, phosphorous, ammonia, and aerobic microorganisms). Taking advantage of their locations near residential areas, they have treated such wastewater by discharging it directly into the domestic water drainage system (*Can Tho Newspaper* 15.12.2008). Currently, in many areas of the An Phu, Xuan Khanh and An Nghiep wards, people have no other option but to live with the polluted water. In addition, people in the Thot Not district (Thoi Thanh hamlet, Thoi Thuan commune) have to live in a seriously polluted environment. The Rach Canal, which receives wastewater from Dai Tay Duong Co., has turned green and black and reeks of fish, crabs, shrimp and snails. One of the local residents said imperatively, *“After using this water for showering or washing hands, we developed an itch and red spots. None dares to use the water of Rach canal for living anymore”* (*Can Tho newspaper* 10.11.2007, translation by author).

Water for aquaculture in Can Tho City comes from the Hau River and floods. Aquaculture is conducted directly in the river (in cages) or with water taken from the river (in ponds or submerged fields). At present, irrigation works in the service of aquaculture are multi-functional. Canals and embankment systems serving irrigation, drainage and flood control are also used for aquaculture purposes. The main limitation of the system serving aquaculture is that canals become silted up, leading to poor drainage; there is a separate system for irrigation and drainage to prevent pollution, diseases and epidemics from spreading (SIWRP 2007:24).

The Hau River is the last part of the Mekong River before it flows into the East Sea. With an average flow of 2440m³/second, the Hau River is highly respected for its self-cleaning ability. However, according to the results of environmental monitoring conducted since 2005 up to 2008 by the Environmental Monitoring Station (the Can Tho City DONRE), water in the Hau River is polluted seriously with organic, chemical and microbiological substances. In particular, the percentage of Coliform (aerobic organisms which possibly cause intestinal diseases) has now exceeded nearly 27 times the national limit. In late 2007, after taking samples of wastewater discharged into the Hau River (provided by the Environmental Protection Sub-Department in the south-western Vietnam region²⁰), the amounts of suspended solid waste were 12.760mg/l, Nitrogen 171mg/l, Sulphur 9.8mg/l, and Coliform 2,400,000MNP/100ml. Compared with allowed domestic water standards, the abovementioned indices exceeded the allowed standards by between 100 and 600 times (*Can Tho Newspaper* 14/12/2008).

3.2.4 Household Waste Management

Household waste – organic human and animal waste – is also expelled into rivers and canals within the city. In 2001, Can Tho used 110,290 tons of chemical fertilizers and pesticides for agricultural production. Parts of these harmful chemical substances were absorbed into the land, trees and grass, while other parts were discharged into water sources where they caused water pollution. According to the Department of Science Technology and Environment²¹ of Can Tho City’s statistics, people in the city had discharged household waste at an average of 0.89kg/day. The collected amount of garbage

²⁰ According to Decision of MONRE No. 22/2004/QĐ-BTNMT, the Environmental Protection Sub-Department in the West-Southern Vietnam region is an organization in the apparatus assisting the director of the Environmental Protection Department, functioning to assist the director in performing the State management over inter-provincial and inter-regional environmental protection in the south-western region of Vietnam, including 12 provinces and cities, namely Cà Mau, Bạc Liêu, Bến Tre, An Giang, Hậu Giang, Đồng Tháp, Kiên Giang, Sóc Trăng, Tiền Giang, Trà Vinh, Vĩnh Long and Cần Thơ.

²¹ The Department of Science Technology and the Environment was changed to the Department of Science and Technology on August 05, 2002 by the National Assembly’s Resolution No. 02/2002/QH11.

was only about 60%, whereas the rest was discharged directly into rivers, canals, ponds and lakes (Mekong River: 08.01.2002). Apart from discharging their household waste, people also keep trying to use the river-bed for other private, but illegal purposes; these include the building of houses into the water and the construction and use of fish pond toilets. All these activities have an impact on the river flow and cause serious water pollution (Mekong River: 08.01.2002). According to 2008 statistics, Can Tho City discharged around 843 tons of fresh waste per day, or 310,000 tonnes of fresh waste per year; not including industrial, medical and hazardous waste. Meanwhile, Can Tho City has no dumping sites or proper waste disposal plants; furthermore, it has a shortage of waste relay stations, which alone do not conform with the national standard. Waste can be transported to the Tan Long dumping site, but this is costly and causes pollution during the transportation process (DONRE 2009:38).



Polluted canal in an urban area of Can Tho City
(Photo by S. Benedikter 2009)

3.2.5 Fishpond Toilets (*Cầu tiêu ao cá* – “Cầu Cá”)

A ‘fishpond’ is a type of temporary toilet covered by a frame of four stakes, suspended over fishponds, rivers or canals and connected to the shore by a small bridge. They are normally 70 to 80cm in height. Using a fishpond toilet is a long-standing habit for people in the Mekong Delta.

For many, a fishpond toilet is a “*simple, low-cost toilet which can be used for fish breeding*”. People like this type of toilet because it is “*much more comfortable*”, “*cooler*”, “*more convenient*” and particularly “*a habit*”. However, it leads to potential dangers to public health and constitutes one of the reasons for cases of cholera, typhoid and diarrhoea that occur quite frequently in the region. Although Directive No. 200/CT-TTg was issued by the Prime Minister in 1994 prohibiting such types of fishpond toilets, it is still quite popular.

In a study on environmental and hygienic problems (Herbst et al. 2009), fishpond toilets were mentioned as one of the main causes of water contamination. Human contact with fishpond water occurs during fish harvesting, while cyclic flooding episodes contribute to the contamination of ambient waters with human and animal excreta. Water from fishponds is released untreated into rivers or canals. Thus, the discharge of untreated wastewater from the ubiquitous fishponds, as well as domestic wastewater, into ambient waters is an important source of microbiological water pollution. Several studies have shown water-borne disease transmission (Corwin et al. 1996; Hau et al. 1999) and chemical water pollution by pesticides (Minh et al. 2006; Minh et al. 2007) in the region. However, people do not perceive fishpond toilets as an inadequate sanitation facility, but rather as a

source of environmental contamination, responsible for the pollution of channels and rivers (Herbst et al. 2009:704).



Fish Pond Toilet
(Photo by S. Benedikter 2009)



Fish Pond Toilet Inside
(Photo by S. Benedikter 2009)

4 Legal Framework for Wastewater Management in Vietnam

4.1 National Regulations on Wastewater Management

Based on the current Law on Water Resources No. 08/1998/QH10 (hereinafter referred to as LWR), water resources are under the ownership of the entire population and uniformly managed by the state. All organizations and individuals have to the right to exploit and use water resources to meet their daily life and production demands, and also have the responsibility to protect and develop water resources in a sustainable manner, preventing and mitigating harm caused by water in accordance with the provisions of law. However, their legitimate rights and interests in exploiting and utilizing water resources should be protected by the state.

The Law on Water Resources, which was passed by the National Assembly of the Socialist Republic of Vietnam on May 20, 1998, created the foundation for the legal system on water resource protection in Vietnam. After ten years of implementation, the Law on Water Resources represents a major step forward for integrated water resources management. In addition, the legislative framework on water resources management²² is in progress. For the last decade, Vietnam has been setting up a legal foundation with over 300 legal documents to ensure the sustainable use, protection and development of the environment in general, and water resources in particular. Required secondary regulations, for instance, cover most water-related protection issues. Moreover, more than thirty water-related legal documents (including amended Laws, Government's Decrees, Circulars and Joint Circulars of MARD, MONRE and other ministries) have been adopted since May 2009. Important water-related Government decrees, decisions and the circulars of related ministries on guidance for the implementation of the Law on Water Resources have been issued and often amended to meet the requirements of the country's development and its international integration in different issues. Particularly, regulations on wastewater management have been highly valued and developed completely.

4.1.1 Regulations on Wastewater Management

Based on the current Law on Water Resources, organizations and individuals exploiting and using water resources have to apply for permits, except in cases regulated by Clause 2, Article 24 of the LWR. The issuance of permits for water resources exploitation, extraction, utilization, and wastewater discharge into water sources is further regulated by Government Decree No. 149/2004/ND-CP of July 27, 2004 and MONRE Circular No. 02/2005/TT-BTNMT issued on June 24, 2005.

Accordingly, the exploration, exploitation, inventory and use of water resources must comply with planning approved by competent state agencies. Furthermore, permits for the exploitation and use of water resources, as well as the discharge of wastewater into water sources, must stipulate all environmental protection conditions, and must comply with all environmental and water resource laws and regulations. Organizations and individuals have to comply with environmental and water resource protection requirements during the inventory, exploration, exploitation and use of water sources. Waste from production processes, business in general, the service industry, construction, transport, the exploitation of riverbed minerals, and garbage from households living on the rivers must be controlled and treated to meet environmental protection requirements, before being discharged into rivers.

Additionally, lakes, ponds, canals and ditches in urban centres and residential areas must be planned, renovated and protected; organizations and individuals must not transgress water surfaces or build structures and houses over the water's surface or on banks adjacent to the water surfaces of lakes, ponds, canals or ditches already planned. The filling-in and leveling of lakes and ponds in urban centres and residential areas shall be limited as much as possible. Owners of projects that obstruct the flow of canals or ditches or fill-in and level lakes, ponds, canals or ditches must elaborate on the environmental impact of doing so in an assessment report in accordance with the provisions of

²² For further information about the legal framework on the water sector please refer to Nguyen, Loan (2009): "Legal Framework on the Water Sector in Vietnam" – ZEF Working Paper Series.

relevant laws. The discharge of soil, rock, sand, gravel, solid waste and wastewater not yet treated up to environmental standards – and other kinds of waste – into surface water sources such as lakes, ponds, canals or ditches is strictly prohibited.

In addition, aquaculture – the exploitation of marine resources and other activities related to the use of marine resources – must be carried out in line with approved natural resource use planning. Activities within marine nature reserves, submerged forests and natural marine heritage sites must conform to the rules set by their management agencies, the provisions of the laws on environmental protection and other relevant laws. Waste discharged from land, production, business and trading establishments, urban centres and residential areas located in coastal regions or on the sea or islands must be surveyed, enumerated and assessed in order to determine measures preventing and limiting adverse impacts on the marine environment. Waste and other contaminants from marine production, services, construction, transport and exploitation must be controlled and treated to meet environmental standards. In addition, oil, gas, drilling solutions, chemicals and other toxic substances used in marine resource exploration and exploitation must be collected and stored in specialized containers and treated according to hazardous waste management.

Based on the current provisions of the law, the Ministry of Natural Resources and the Environment (below referred to as MONRE) is responsible for setting and announcing water resource standards (or submitting to the Minister of Science and Technology for the promulgation of national standards), formulating and promulgating, according to its competence, national technical regulations on the protection and use of water resources (Point 6, Article 2 of Government Decree No. 25/2008/ND-CP dated March 04, 2008). Currently, Vietnamese **environmental standards**²³, which are compulsory, are regulated by Decision No. 35/2002/QĐ-BKHCMNT issued by the Ministry of Science, Technology and the Environment²⁴ on June 25, 2002. After reaching consensus with the Ministry of Science and Technology, Decision No. 22/2006/QĐ-BTNMT was issued on December 18, 2006 by MONRE, abrogating numerous Vietnamese environmental standards, as well as amending five environmental standards for compulsory application. Accordingly, the following Vietnamese Environmental Standards are mandatory:

- TCVN 5937 : 2005: Air Quality – Ambient air quality standards
- TCVN 5938 : 2005: Air Quality – Maximum allowable concentration of hazardous substances in ambient air

²³ Based on the Law on Environmental Protection 2005, “*environmental standard*” means allowable limits of parameters for the quality of the surrounding environment, the content of pollutants in waste, set by the competent state agencies as a basic for environmental management and protection. Accordingly, Vietnam’s system of environmental standards consists of standards of surrounding environment quality and standards of waste.

1. Surrounding environment quality standards include:

- a) Group of environmental standards of soil for agricultural production, forestry, fisheries and other purposes;
- b) Group of environmental standards for surface water and groundwater in the supply of water for drinking, daily life, industries, aquaculture, agricultural irrigation and other purposes;
- c) Group of coastal seawater environmental standards for aquaculture, entertainment, recreation and other purposes;
- d) Group of environmental standards of air in urban areas and rural residential areas; and
- e) Group of standards of noise, light and radiation in residential areas and public places.

2. Standards of waste include:

- a) Group of standards of wastewater discharged from industrial and service activities, wastewater discharged from husbandry and aquaculture, wastewater from daily life, and other activities;
- b) Group of standards of industrial gas emissions, gases emitted from equipment used for incineration of daily-life, industrial and medical waste matters, and from other processes of treatment of waste;
- c) Group of standards of gas emissions from vehicles, machinery and special-use equipment;
- d) Groups of standards of noise and vibration caused by vehicles, production, business and service establishments, and construction activities.

²⁴ The Department of Science Technology and Environment was changed to Department of Science and Technology on August 05, 2002 by the National Assembly’s Resolution No. 02/2002/QH11

- TCVN 5939 : 2005: Air Quality – Industrial emission standards – Inorganic substances and dust
- TCVN 5940 : 2005: Air Quality - Industrial emission standards – Organic substances
- TCVN 5942 : 1995: Water Quality Standards - Surface Water²⁵
- TCVN 5943 : 1995: Water Quality Standards - Coastal Water²⁶
- TCVN 5944 : 1995: Water Quality Standards - Groundwater²⁷
- TCVN 5945 : 2005: Industrial Wastewater Discharge Standards²⁸

In addition, MONRE Circular No. 08/2006/TT-BTNMT and Circular No. 05/2008/TT-BTNMT provided details for the implementation of strategic environmental assessments, **environmental impact assessments** (hereinafter called the EIA) and environmental protection. Accordingly, organizations and individuals that own investment projects subject to the elaboration of an EIA report (below referred to as project owners) shall carry out EIA reports either by themselves or by a qualified consultancy service organization (as specified in Article 8 of Government Decree No. 80/2006/ND-CP). EIA reports have a strict content format.

In addition, project owners are required to apply Vietnam's compulsory environmental standards and national technical regulations (and further compulsory environmental standards and regulations under treaties to which Vietnam is a contracting party), when producing EIA reports or environmental protection commitment documents for their projects. Dossiers of requests for an appraisal of the EIA reports shall be sent to the competent agencies specified at Points a & b, Clause 7, Article 21 of the LEP 2005 and Clause 5, Article 1 of Decree No. 21/2008/ND-CP. Accordingly:

- (1) MONRE shall organize councils or choose service organizations to appraise the EIA reports of projects decided or approved by the National Assembly, the Government, or the Prime Minister, as well as inter-branch or inter-provincial projects.
- (2) Ministries, ministerial-level agencies or government-attached agencies shall organize councils or choose service organizations for EIA report appraisal for any projects falling under their respective competences.
- (3) People's Committees at provincial level shall organize an appraisal council or authorize a specialized environmental protection agency (of the same level) to arrange an appraisal council or select an appraisal service organization to appraise investment projects' EIA reports in their localities.

After receiving a valid dossier, which has qualified for appraisal, the appraising agency shall set up a council to appraise the EIA report. Within five working days after receiving the appraisal result from the appraisal council, the council's standing body shall notify in writing the project owner of the appraisal results and requirements to finalize the EIA report dossier. The finalized EIA report must satisfy the requirements regulated by Section 6, Part III of Circular No. 05/2008/TT-BTNMT. A reappraisal of the EIA report may be carried out by the appraisal council or appraisal service organization. Expenses for the reappraisal of an EIA report shall be paid by the project owner. Approval of an EIA report shall be expressed in a decision. After the EIA report has been approved, the competent agency shall send the certified EIA report together with evidence of the approved decision.

Based on Government Decree No. 149/2004/ND-CP of July 27, 2004 and MONRE Circular No. 02/2005/TT-BTNMT issued on June 24, 2005, permits for the exploration, extraction and utilization of water resources, as well as wastewater discharge into water sources, include: (1) A groundwater exploration permit; (2) A groundwater extraction and utilization permit; (3) A surface water exploitation and utilization permit; and (4) A wastewater discharge permit. A **wastewater discharge**

²⁵ For further information, please see Annex 1: Vietnam's Water Classification and Standards.

²⁶ For further information, please see Annex 1: Vietnam's Water Classification and Standards.

²⁷ For further information, please see Annex 1: Vietnam's Water Classification and Standards.

²⁸ For further information, please see Annex 1: Vietnam's Water Classification and Standards.

permit shall be issued initially for a duration of ten years from the date of its approval and periodically renewed to extend the permit for up to a further five years. The renewal of a wastewater discharge permit shall comply with the provisions in Article 5 of Decree No. 149/2004/ND-CP; in particular, the licensing of wastewater discharge into water sources must be based on the following foundations:

- National water quality standards such as:
 - + TCVN 5942 : 1995 – Water Quality Standards – Surface Water;
 - + TCVN 5943 : 1995 – Water Quality Standards – Coastal Water;
 - + TCVN 5944 : 1995 – Water Quality Standards – Groundwater;
 - + TCVN 5945: 2005 – Industrial Wastewater Discharge Standards
- Assimilative capacity of water sources²⁹;
- Sanitary protection zones defined by competent state agencies.

The procedures for licensing, extending and/or renewing a granted permit for wastewater discharge are specified in Articles 22 and 23 of Decree No. 149/2004/ND-CP. The collection, remittance, management and use, evaluation charge and administrative fee for granting permits for the exploration, exploitation and use of water resources, as well as permits for discharge of wastewater, are regulated by Decision No. 59/2006/QD-BTC issued on October 25, 2006 by the Ministry of Finance.

When conducting periodical or extraordinary inspections or examinations, if detecting that permit holders have violated the provisions of Article 9 of Decree No. 149/2004/ND-CP³⁰, persons with inspecting or examining competence have to report the situation in writing to the permit-granting agencies (according to Circular No. 02/2005/TT-BTNMT). Within thirty days after receiving the reports, the permit granting agencies need to consider whether to suspend the permit. Based on the seriousness of the permit holder's violations and the impact of suspending the permit on local people's livelihoods and daily activities, the permit granting agencies shall decide on the suspension duration, which must not exceed six months for a permit for wastewater discharge. Most seriously, a permit for wastewater discharge can be revoked when permit holder violates permit terms and conditions, by causing seriously pollution of the water sources or put their sustainability at risk (Article 10 of Decree No. 149/2004/ND-CP).

Besides environmental and **water quality standards**, according to the Law on Standards and Technical Regulation 2006, particularly Decision No. 16/2008/QD-BTNMT of December 31, 2008, the following National Technical Regulations on the environment shall be also applied:

1. QCVN 08: 2008/BTNMT – National Technical Regulation on Surface Water Quality;
2. QCVN 09: 2008/BTNMT – National Technical Regulation on Groundwater Quality;
3. QCVN 10: 2008/BTNMT – National Technical Regulation on Sea Coastal Water Quality;
4. QCVN 11: 2008/BTNMT – National Technical Regulation on Industrial Wastewater Processing Aquatic Products;

²⁹ As regulated by current Circular No. 02/2009/TT-BTNMT of March 19, 2009 issued by MONRE on evaluation of the ability of water sources to receive wastewater, "capable of receiving wastewater" is the ability of water source to receive additional load of certain pollutions which ensures that the concentration of water polluted substances still does not exceed the limit values defined by the regulations and standards on water quality for the purposes of the receiving water.

³⁰ Based on Article 9 of Decree No. 149/2004/ND-CP, a permit for wastewater discharge may be suspended when:

- a. Permit holder violates the permit's terms and conditions;
- b. Permit holder deliberately transfers his/her permit to others without approval
- c. Permit holder uses the permit for purposes other than those stated in the permit without approval.

5. QCVN 12: 2008/BTNMT – National Technical Regulation on Industrial Wastewater Processing Papers and Paper Pulps;
6. QCVN 13: 2008/BTNMT – National Technical Regulation on Textile Industrial Wastewater;
7. QCVN 14: 2008/BTNMT – National Technical Regulation on Domestic Wastewater
8. QCVN 15: 2008/BTNMT – National Technical Regulation on Chemical Residues in Soil and Plant Protection.

In addition, based on Circular No. 05/2009/TT-BYT, the national technical regulation on domestic water quality (QCVN 02:2009/BYT) issued by the Ministry of Health on June 17, 2009 shall also be applied to organizations, individuals and households exploiting and trading in domestic water. Individuals and households exploiting water for daily-life purposes are also subjects of this regulation.

Regarding the **collection and treatment of wastewater**³¹, according to the Law on Environmental Protection No. 52/2005/QH11 (hereinafter called LEP 2005), Article 81, in urban centres and residential areas there must be separate systems for the collection of rainwater and wastewater. Wastewater from daily life must be treated up to environmental standards before being discharged into the environment. Wastewater from production, business and service establishments and zones must also be collected and treated up to environmental standards. Mud discharged from waste treatment systems must be managed according to solid waste management regulations. Wastewater and mud containing hazardous elements must be managed according to hazardous waste management regulations.

Practically, **economic zones, industrial parks, export-processing zones, hi-tech parks**, industrial clusters, tourist resorts and entertainment and recreation centres (hereinafter referred to as concentrated production, business and service zones), based on the LEP 2005, must comply with the following environmental protection requirements:

1. Compliance with an approved development master plan;
2. Planning and arrangement of functional zones and activities must be associated with environmental protection;
3. Full and proper implementation of the contents of an approved environmental impact assessment;
4. Adequate equipment and tools for the collection of ordinary solid waste and hazardous waste, and compliance with requirements for the receipt of waste sorted at source from establishments located in production, business and service zones;
5. Regular operation of a concentrated sewage system for the collection and treatment of wastewater, and a system for the treatment of gas emissions up to environmental standards;
6. Compliance with requirements on the landscape and environment, and the protection of communities and labourers' health;

³¹ As regulated by Article 82 LEP 2005, a wastewater treatment system shall be required for:

- a) Concentrated production, business and service zones;
- b) Craft villages;
- c) Production, business and service establishments not linked to a concentrated wastewater treatment system;

In addition, a wastewater treatment system must meet the following requirements:

- a) Having a technological process suitable to the type of wastewater to be treated;
- b) Being of sufficient capacity to treat the wastewater volume discharged;
- c) Treating wastewater up to environmental standards;
- d) Having discharged sluices located at places convenient for supervision and monitoring;
- e) Operating in routine manner.

Besides, owners of wastewater management systems must conduct periodical monitoring of wastewater quality before and after treatment. Monitoring data shall be kept as a basic for checking and supervising the operation of wastewater treatment systems.

7. An environmental monitoring system shall be in place;
8. A specialized section capable of performing environmental protection tasks must also be in place.

In addition, industrial parks, export-processing zones, hi-tech parks and industrial clusters likely to exert a bad impact on the environment must be located at an environmentally safe distance from residential areas and nature conservation zones. Provincial-level People's Committees must collaborate with related ministries, ministerial-level agencies and Government-attached agencies in directing and organizing environmental protection work in concentrated production, business and services zones in localities under their management authorities (Article 36 of LEP 2005).

Organizations and individuals in production, business and service activities have a responsibility to comply with the provisions of legislation on water resource protection. They must take the environmental protection measures stated in approved environmental impact assessment reports and registered environmental protection commitments, and comply with environmental standards (Article 35 LEP 2005). Production, business and service establishments, as specified in Article 37 LEP 2005, must further comply with the following environmental protection requirements:

1. Putting in place a wastewater collection and treatment system that meets environmental standards. Where wastewater is transferred to a concentrated wastewater treatment system, regulations set by the organization that manages the concentrated wastewater treatment system must be complied with.
2. Having adequate means and equipment for collection and storage of solid waste which must be assured at source;
3. Taking measures to minimize and treat dust and gas emission up to standards before discharging them into the environment; ensuring that no gas emissions, toxic gas and/or fumes will be leaked or dispersed into the environment; limiting noise, light and heat that may adversely affect the surrounding environment and labourers;
4. Production establishments or warehouses must be located within residential areas or at an environmentally safe distance from populated areas if they:
 - a. Work with inflammables or explosives;
 - b. Work with radioactive substances or high radiation substances;
 - c. Use substances harmful to human and animal health;
 - d. Discharge odours adversely affecting human health;
 - e. Cause serious pollution to water sources;
 - f. Cause noise, or emit dust or gas in excess of the allowable limits.

In particular, for the **environmental protection of fisheries and aquaculture**, organizations and individuals producing, importing and trading in veterinary drugs and chemicals used in fisheries and aquaculture must observe the legislation on environmental protection and other relevant regulations. Expired veterinary drugs and chemicals used in fisheries and aquaculture, packages of veterinary drugs or medicines after use in fisheries and aquaculture, and mud and residual feed dredged from fishery and aquaculture ponds must be collected and disposed according to waste management regulations. In addition, concentrated fishery and aquaculture zones must be in line with planning and meet the following environmental protection requirements:

1. Waste must be collected and treated up to environmental standards;
2. The environment must be rehabilitated after a fishery or aquaculture have ended;
3. Environmental sanitation and aquatic resource disease prevention conditions must be ensured; toxic or toxin-accumulating chemicals must not be used.

In addition, concentrated fisheries and aquaculture farms must not be built on alluvial ground currently taking shape in estuaries or coastal areas; submerged forests must not be destroyed for fishery and

aquaculture production. The MARD shall assume the prime responsibility for, and coordinate with the MONRE and provincial-level People's Committees in, directing, guiding and supervising the observance of the legislation on environmental protection in fisheries and aquaculture (Article 47 LEP 2005).

According to the current Decision of MARD on the management of Tra catfish raising zones and establishments (No. 70/2008/QD-BNN of June 5, 2008), the location of a Tra catfish raising establishment³² must be in an area planned for Tra catfish raising and already approved by state competent agencies. Additionally, a Tra catfish raising establishment must use industrial feed meeting branch standard No. 28 TCN 188:2004 or self-made feed meeting branch standard No. 28 TCN 176:2002 on quality and hygienic safety. Furthermore, wastewater discharged from Tra catfish raising ponds must be treated to meet Vietnamese standards on wastewater quality (TCVN 6774:2000 and TCVN 5942:1995). Treating the environment with chemicals and biological preparations outside the list of permitted substances is strictly prohibited. "Safe Tra catfish raising establishment" means one which fully satisfies conditions prescribed in Decision No. 70/2008/QD-BNN and that has been granted a certificate, or an establishment which applies one of a number of international sets of standards such as GAP³³, BMP³⁴ and CoC³⁵. GAP, BMP and CoC are formulated based on the principles specified in Article 9 – Aquaculture development of the Code of Conduct for Responsible Fisheries of FAO, 1995.

The Tables 3 and 4 provide a list of chemicals and antibiotics banned and limited for manufacturing or trading in aquaculture.

³² "Safe Tra catfish raising" means a raising process in which proper technical methods are applied in order to ensure food safety for productions, epidemic safety for reared fish, environmental safety and economic efficiency for raiser (defined by Article 3 of Decision No. 70/2008/QD-BNN of June 5, 2008).

³³ GAP (Good Aquaculture Practice) is applied to Tra-catfish raising (defined by Article 3 of Decision No. 70/2008/QD-BNN of June 5, 2008).

³⁴ BMP (Better Management Practice) is applied to Tra-catfish raising (defined by Article 3 of Decision No. 70/2008/QD BNN of June 05, 2008).

³⁵ CoC (Code of Conduct for Responsible Aquaculture) is applied to Tra-catfish raising (defined by Article 3 of Decision No. 70/2008/QD-BNN of June 05, 2008).

Table 3: List of Chemicals and Antibiotics Banned for Manufacturing and Trading in Aquaculture

No.	Chemicals, Antibiotic	Applied for
1.	Aristolochia spp and by-products	<i>Animal feed, veterinary medicines, chemicals environmental treatment substances, disinfectants, substances for maintain, hand cream in all breeding facilities, aqua culture and amphibians, processing and storage for fishery services.</i>
2.	Chloramphenicol	
3.	Chloroform	
4.	Chlorpromazine	
5.	Colchicine	
6.	Dapsone	
7.	Dimetridazole	
8.	Metronidazole	
9.	Nitrofurantoin (including Furazolidone)	
10.	Ronidazole	
11.	Green Malachite (Malachite)	
12.	Iprnidazole	
13.	Nitroimidazoles others	
14.	Clenbuterol	
15.	Diethylstilbestrol (DES)	
16.	Glycopeptides	
17.	Trichlorfon (Dipterex)	
18.	Gentian Violet (Crystal violet)	
19.	Fluoroquinolones (banned for manufacturing and trading in aquaculture exporting to the U.S. and North America)	

Based on: Circular No. 15/2009/TT-BNN on promulgating the list of drugs, chemicals and antibiotics banned and limited for use, which was amended by Circular No. 29/2009/TT-BNN of June 04, 2009

Table 4: List of Chemicals and Antibiotics Limited for Manufacturing and Trading in Aquaculture

No.	Chemicals, Antibiotics	Max. residues (MRL) (ppb)
1	Amoxicillin	50
2	Ampicillin	50
3	Benzympenicillin	50
4	Cloxacillin	300
5	Dicloxacillin	300
6	Oxacillin	300
7	Oxolinic Acid	100
8	Colistin	150
9	Cypermethrin	50
10	Deltamethrin	10
11	Diflubenzuron	1000
12	Teflubenzuron	500
13	Emamectin	100
14	Erythromycine	200
15	Tilmicosin	50
16	Tylosin	100
17	Florfenicol	1000
18	Lincomycine	100
19	Neomycine	500
20	Paromomycin	500
21	Spectinomycin	300
22	Chlortetracycline	100
23	Oxytetracycline	100
24	Tetracycline	100
25	Sulfonamide	100
26	Trimethoprim	50
27	Ormetoprim	50
28	Tricainemethanesulfonate	15-330
29	Danofloxacin	100
30	Difloxacin	300
31	Enrofloxacin + Ciprofloxacin	100
32	Sarafloxacin	30
33	Flumequine	600

Based on: Circular No. 15/2009/TT-BNN on promulgating the list of drugs, chemicals and antibiotics banned and limited, which was amended by Circular No. 29/2009/TT-BNN of June 04, 2009

For **environmental protection in hospitals and other medical establishments**, the following environmental protection requirements must be complied with:

1. There must be in place a system or measures to collect and treat medical wastewater, which operates on a routine basis and meets environmental standards;
2. Specialized equipment must be arranged to sort at source any pathological materials and medical garbage;
3. Measures must be taken to treat and incinerate pathological materials, medical garbage and expired medicines, ensuring environmental sanitation and standards;
4. The necessary plans, facilities and equipment must be provided to prevent and respond to environmental incidents caused by medical waste;
5. Solid waste and wastewater discharged from patients' daily life must be pre-treated to eliminate contagious germs before transfer to concentrated treatment and incineration establishments.

In addition, hospitals and other medical establishments treating transmissible diseases must be isolated from residential areas and water sources. New hospitals and other medical establishments treating transmissible diseases must not be built within residential areas (Article 39 LEP 2005).

Based on Decision No. 43/2007/QĐ-BYT of November 30, 2007 promulgating regulations on medical waste³⁶ management, each hospital must have a synchronous wastewater collection and treatment system that must be qualitatively examined periodically. Those hospitals which do not have wastewater treatment systems must build complete wastewater treatment systems. Those hospitals that already have wastewater treatment systems which are, however, out of order or have operated inefficiently, must repair and upgrade them for operation up to environmental standards. Hospital wastewater treatment technologies must satisfy environmental standards and conform to topographical conditions, investment, transportation and maintenance costs.

Regarding hospital wastewater collection, hospitals must have separate systems for collecting surface water and wastewater from various departments and rooms. Wastewater culvert systems must run underground or be covered with lids. Wastewater treatment systems must have mud-gathering tanks. As regulated by Article 29 of the Decision of Ministry of Health No. 43/2007/QĐ-BYT, hospital wastewater treatment systems must meet the following requirements:

- They must be structured with an appropriate technological process for the treatment of wastewater up to environmental standards;
- Their capacities must suit the volume of hospitals' wastewater;
- Wastewater discharge gates must be conveniently located for inspection and supervision;
- Wastewater treatment must be qualitatively inspected periodically. There must be books on the management of operation and the results of relevant quality inspections.

Medical establishments shall register to be owners of waste sources and waste treatment under the guidance of the MONRE Circular No. 12/2006/TT-BTNMT of December 26, 2006 guiding conditions for professional practice and procedures for facilitating dossiers, registration, grants for practice licences and hazardous waste³⁷ management codes.

³⁶ As defined by Decision 43/2007/QĐ-BYT of November 30, 2007, "*medical waste*" means materials in solid, liquid or gaseous form, discharged from medical establishments, including hazardous medical waste or ordinary medical waste. "*Management of medical waste*" means activities of managing the classification, preliminary treatment, collection, transportation, storage, minimization, re-use, recycling, treatment and destruction of medical waste, and inspecting as well as overseeing the implementation.

³⁷ As defined by Decision 43/2007/QĐ-BYT of November 30, 2007, "*hazardous medical waste*" means medical waste containing elements hazardous to human health and the environment such as contagiousness, intoxication, radiation, flammability, explosiveness, corrosiveness or other hazardous properties if this waste is not safely destroyed.

The planning, building, renovation and development of **craft villages** must be associated with environmental protection. Wastewater from production establishments in zones and clusters of industrial craft villages must be collected and transferred to the concentrated wastewater treatment system; if such a system is not available, measures must be taken to treat wastewater up to environmental standards before discharging into the environment (Article 38 LEP 2005).

For **environmental protection in agricultural production**, as regulated by Article 46 LEP 2005, organizations and individuals producing, importing and trading in fertilizers, plant protection drugs and/or veterinary drugs must comply with the provisions of the law on environmental protection and other relevant laws. The trading and use of expired plant protection drugs and veterinary drugs, or those not on permitted lists, is prohibited. Expired fertilizers, plant protection drugs and veterinary drugs, tools and packages containing fertilizers, and plant protection drugs and veterinary drugs after use must be disposed of according to waste management regulations. In addition, concentrated husbandry farms must comply with the following environmental protection requirements:

1. Ensuring environmental sanitation for residential areas;
2. Having a wastewater collection and treatment system up to environmental standards;
3. Managing solid waste discharges from husbandry according to waste management regulations, not dispersing them into the environment;
4. Routinely cleaning stables and farms; ensuring the prevention and combat of epidemics;
5. Managing the carcasses of animals that have died from disease, according to regulations on hazardous waste management, hygiene and disease prevention.

In addition, as regulated by Article 53 LEP 2005, **Households** also have responsibilities to protect the environment, and water resources in particular, as follows:

1. Collecting and carrying garbage to places designed by local environmental sanitation-keeping organizations, discharging wastewater into the sewage system;
2. Not dispersing discharged gas, making noise and dispersing other agents in excess of environmental standards that may affect the health and lifestyles of communities;
3. Paying fully and in a timely manner any environmental protection fees as provided by laws;
4. Participating in environmental sanitation activities in streets, village roads, alleys, public places and the environmental protection self-management activities of communities;
5. Having hygienic latrines, breeding stables and poultry and livestock farms located at a safe distance from people's living areas;
6. Observing environmental sanitation rules in line with village codes or other environmental protection commitments.

4.1.2 Regulations on Violations and Sanctions

Based on Government Decree No. 34/2005/ND-CP of March 17, 2005 on sanctions against administrative violations of **water resources** management regulations, and Circular No. 05/2005/TT-BTNMT of July 22, 2005 on guiding the implementation of Decree No. 34/2005/ND-CP, any act by an individual or organization, whether deliberate or not, which violates the principles of the regulations on the state management of water resources, shall be subject to administrative sanctions. Administrative violations of water resources management regulations subject to this case consist of:

- (1) Violations of regulations on water resource protection;
- (2) Violations on regulations on the exploration, exploitation, utilization and discharge of wastewater into the water resources;
- (3) Violations of regulations on the collection, management, dissemination and use of water resources data and/or information.

This Decree applies to domestic as well as foreign individuals and organizations (hereafter referred to as individuals and organizations) who commit administrative such violations within the territory of Vietnam. If any sanctions or provisions regulated by international treaties to which the Socialist Republic of Vietnam is a party or signatory of, the subjects of this regulation shall be bound by those treaties.

Accordingly, forms of sanction and mitigation measures consist of warnings, fines (the maximum fine for an administrative violation of regulations on water resources is VND 100,000,000) and additional sanctions. The specific fines for each administrative violation are addressed as follows:

1. A fine of VND 200,000 – 30,000,000 shall be applied for violations of water resources exploration, abstraction and utilization, as well as the discharge of wastewater into water sources without required permits.

Additional sanctions and mitigation measures include the confiscation of the material evidence, tools and means used to commit the violations, and forcible implementation of measures for overcoming water source pollution and degradation caused by each of the violations (Article 8 of Decree No. 34/2005/ND-CP);

2. A fine of VND 100,000 – 25,000,000 shall be applied for violations of provided permit regulations for exploration, abstraction and utilization of water resources, and the discharge of wastewater into water sources.

Mitigation measures for such violations include the forcible undertaking of measures for overcoming water source pollution and depletion caused by the violations, and forcible observation of terms and conditions given in the permit (Article 9 of Decree No. 34/2005/ND-CP);

3. A fine of VND 10,000,000 – 12,000,000 shall be applied for the lending, leasing or transferring of such permits. A fine of VND 20,000,000 – 30,000,000 shall be applied for changing the contents of such permits.

Additional fining measures for such violations include suspension of the permit for a period ranging from ninety (90) days to a hundred and eighty (180) days if the permit owner lends or leases his/her permit, and stripping of the right to use the permit if the permit owner transfers and changes the contents of his/her permit (Article 10 of Decree No. 34/2005/ND-CP);

4. Warning sanctions shall be applied for an individual or organization that continues to explore, abstract and utilize water resources or discharge wastewater into water sources when the permit has been expired for thirty (30) days or less.

A fine of VND 100,000 – 10,000,000 shall be applied for continuing to explore, abstract and utilize water resources or discharge wastewater into water sources when the permit has been expired for between thirty (30) days and sixty (60) days. If the permit has been expired for sixty (60) days or more, the applicable sanctions are the same as those stipulated by Article 8 of this Decree.

Additional fining measures for such violations include (i) confiscation of the material evidence, tools and means used to commit the violations; (ii) stripping of the right to use the such permits; and/or (iii) the forcible implementation of measures for overcoming water source pollution and degradation caused by such violations (Article 11 of Decree No. 34/2005/ND-CP 11);

5. A fine of VND 500,000 – 14,000,000 shall be applied for violations of regulations on groundwater drilling practices (Article 12 of Decree No. 34/2005/ND-CP);
6. Other violations against regulations on water resources are stipulated by Article 16 of this Decree, and further details specified by Circular No. 05/2005/TT-BTNMT of July 22, 2005 issued by the MONRE.

As regulated by Articles 17, 18, 19 and 20 of Decree No. 34/2005/ND-CP, state organizations in charge of the sanctioning of violations against water sector regulations consist of People's Committees (at communal, district and provincial levels) and natural resources and environment Inspectors.

In addition, organizations and individuals discharging waste into the environment or engaged in activities causing adverse impacts on the environment shall have to pay **environmental protection charges/fees** (Article 113 LEP 2005). Organizations and households discharging wastewater are liable to pay environmental protection charges for wastewater. Subject to the environmental protection charges for wastewater prescribed in Government Decree No. 67/2003/ND-CP, which was amended by Decree No. 04/2007/ND-CP of January 08, 2007, are industrial wastewater and daily-life wastewater. “Industrial wastewater” refers to water discharged into the environment from industrial production establishments and agricultural, forestry and aquatic product processing establishments. “Daily-life wastewater” means water discharged into the environment from households and organizations. Organizations and households discharging wastewater as defined above are liable to pay environmental protection charges for wastewater. Environmental protection charge rates applicable to industrial wastewater are prescribed in Table 5. However, environmental protection charges for wastewater shall not be collected in cases where daily-life wastewater from households comes from geographical areas currently enjoying the subsidy price by the state in order to keep water prices suitable for socio-economic life, or from daily-life wastewater from households in communities in rural areas and localities where clean water supply systems are not yet available.

Table 5: Environmental protection charge rates applied to industrial wastewater

No.	Pollutants in Wastewater		Charge Rates (VND/kg of pollutants found in wastewater)	
	Name	Symbol	Minimum	Maximum
1.	Bio-chemical oxygen demand	ABOD	100	300
2.	Suspended solids	ATSS	200	400
3.	Mercury	AHg	10,000,000	20,000,000
4.	Lead	APb	300,000	500,000
5.	Arsenic	AAs	600,000	1,000,000
6.	Cadmium	ACd	600,000	1,000,000

Based on: Government Decree No. 67/2003/ND-CP, which was amended by Government Decree No. 04/2007/ND-CP of January 08, 2007

For daily-life wastewater, the environmental protection charge rates shall be calculated as a percentage (%) of the selling price per 1m³ (one cubic metre) of clean water, but must not exceed 10% (ten per cent) of the non-VAT clean water selling price. For daily-life wastewater discharged from organizations and households which exploit by themselves water for their own use (except for households in localities where no clean water supply systems exist), the charge rate shall be determined for each water user and based on the average clean water use volume per head in the commune or ward where water is exploited, and on the average supply price of 1m³ of clean water in the locality.

People’s Councils (at provincial level) shall decide the specific rates of the environmental protection charges for the above mentioned daily-life wastewater applicable to each geographical area and each subject in their localities based on their socio-economic situation and living conditions, as well as the incomes of the local populations.

Furthermore, according to the Ordinance on **Natural Resources Tax** (amended) No. 05/1998/PL-UBTVQH10 of April 16, 1998 (hereafter called Ordinance on Natural Resources Tax, amended) issued by the Standing Committee of the National Assembly; Government Decree No. 05/2009/ND-CP³⁸ of January 19, 2009 on detailing the implementation of the Ordinance on Natural Resources Tax,

³⁸ Government Decree No. 68/1998/ND-CP of September 03, 1998 on detailing provisions and providing guidelines for implementing the Ordinance on Natural Resource Tax, and Decree No. 147/2006/ND-CP of December 01, 2006, were abrogated and replaced by Decree No. 05/2009/ND-CP of January 19, 2009 issued by the Government.

and Circular No. 124/2009/TT-BTC of June 17, 2009 (issued by the Ministry of Finance) guiding the implementation of Government Decree No. 05/2009/ND-CP, all organizations and individuals that exploit all kinds of natural resources found within inland areas, offshore islands, internal waters, territorial waters, exclusive economic zones, and the continental shelf under the sovereignty of the Socialist Republic of Vietnam shall be subject to natural resources taxes, including:

- (1) Metallic minerals;
- (2) Non-metallic minerals, including minerals used as common construction materials, and earth exploited for ground-leveling, fill-up and/or building of projects as raw materials or for other purposes; mineral water and natural thermal water as specified in the Law on Minerals;
- (3) Petroleum: crude oil as specified in Clause 2, Article 3 of the Petroleum Law;
- (4) Gas: natural gas as specified in Clause 3, Article 3 of the Petroleum Law;
- (5) Coal gas means hydrocarbon, the main element of which is methane in gaseous or liquid form, contained in coal seams or other adjacent seams as specified in Clause 3, Article 1 of the Petroleum Law (amended in 2008);
- (6) Natural forest products: including plants and animals of various species and other products of natural forests;
- (7) Natural aquatic products: including animals and plants of various species in seas, rivers, streams, lakes, etc.;
- (8) Natural water, including surface water and groundwater, except natural mineral water and natural thermal water.

The bases for calculating natural resource tax are the actual exploited volume of commercial natural resources, the tax calculation price and the tax rate. The price for calculating natural resources tax is the selling price of a natural resource product unit at the place of exploitation. For natural water used for hydroelectric power generation, the natural resource tax calculation price is the selling price of commercial electricity. The natural resources tax index, in particular the tax rates of water resources, is prescribed as follows.

Table 6: Natural Resource Tax Index

No.	Categories, Groups of natural resources	Tax rate (%)
...
V.	Natural Mineral Water, Natural Water	
1.	Natural mineral water; purified natural water, bottled or canned	8
2.	Natural water used for hydroelectric power generation	2
3.	Natural water exploited in service of production sectors (except those specified in Points 1 and 2)	
3.1	Used as main or auxiliary raw materials to create material content of products	3
3.2	Used in the common service of production (industry hygiene, cooling, steaming, etc.) a. Used of surface water b. Used of groundwater	1 2
3.3	Natural water used for the production of clean water, in service of agriculture, forestry, fishery, and natural water exploited from dug wells and drilled wells in service of daily life - Case of groundwater used for production of clean water	0 0,5
4.	Natural water exploited for other purposes except those stipulated in Points 1,2, and 3	
4.1	For services purposes a. Used of surface water b. Used of groundwater	3 5
4.2	For industry production, construction, mining purposes a. Used of surface water b. Used of groundwater	3 4
4.3	Exploited for other purposes a. Used of surface water b. Used of groundwater	0 0,5
...

Based on: Ordinance on Natural Resource Tax (amended), and Government Decree No. 05/2009/ND-CP of January 19, 2009

Regarding **violation and handling of productions, business and service establishments caused by water pollution**, as regulated by Article 49 LEP 2005, organizations and individuals carrying out production, business or service activities causing environmental pollution³⁹ shall have to face the following sanctions:

1. Fine and forced application of measures to minimize and treat waste up to environmental standards;
2. Suspension from operation until the necessary environmental protection measures are applied;
3. Other sanctions provided in regulations on the handling of administrative violations;
4. In the case of loss of human life or damage to human health, property and the legitimate interests of other organizations or individuals due to environmental pollution, compensation must be paid according to the provisions of relevant regulations.

³⁹ As regulated by Article 92 of the Law on Environmental Protection 2003, regarding foundations for identifying polluted areas, the environment shall be considered polluted when the content of one or more polluting substances exceeds environmental quality standards.

Seriously polluting production⁴⁰, business and service establishments have to not only face the sanctions mentioned above, but also have to be handled with one of the following measures:

1. Forced application of measures to remedy environmental pollution and rehabilitate the environment as provided in Article 93 of the LEP 2005;
2. Forced relocation to a place far from residential areas and consistent with the load capacity of the environment;
3. A ban from operating.

Those who violate the legislation on environmental protection shall, depending on the nature and severity of their violations, be administratively sanctioned or examined for penal liability; if causing environmental pollution, degradation or incidents, damage to other organizations and individuals, they must remedy the pollution, rehabilitate the environment and pay compensation for such damage in accordance with the provisions of the Law on Environmental Protection 2005, Law on Water Resources 1998 and other relevant laws. Heads of organizations, cadres or public servants who abuse their positions and authority to cause trouble or hassle organizations or individuals to cover up violators of the legislation on environmental protection or neglect their responsibilities leading to serious environmental pollution or incidents, shall, depending on the nature and severity of their violations, be disciplined or examined for penal liability; if causing damage, they must pay compensation according to the provisions of laws (Article 127 LEP 2005)

The responsibility and competence for handling production, business and service establishments that cause environmental pollution or serious pollution are provided as follows:

- Provincial-level specialized environmental protection agencies shall be responsible for detecting and making annually a list of polluting or seriously polluting establishments in their respective totalities, reporting the results to People's Committees at the same level, the Ministry of Natural Resources and the Environment, and related ministries, ministerial-level agencies and Government-attached agencies;
- Provincial-level People's Committees shall decide on the handling of polluting establishments in their localities according to their competences and decentralization by the Prime Minister;
- Ministers, heads of ministerial-level agencies and heads of Government-attached agencies shall be responsible for coordinating with related provincial-level People's Committees in deciding the list of polluting establishments under their management and directing the handling of such establishments;
- The Ministry of Natural Resources and the Environment shall assume the prime responsibility for, and coordinate with, concerned ministries, ministerial-level agencies and provincial-level People's Committees in submitting to the Prime Minister for a decision the list of establishments causing serious environmental pollution on a scale beyond the handling competence or ability of ministries, ministerial-level agencies, Government-attached agencies or provincial-level People's Committees.

Decisions on handling polluting or seriously polluting establishments must be notified to district and commune-level People's Committees of the places where such establishments are located, and then made public for supervision by the people. The Ministry of Natural Resources and the Environment shall specifically guide the inspection and supervision of the handling of polluting establishments. The state encourages all organizations and individuals to develop environmental pollution treatment technologies, and provides state budget support, land funds, preferential credits and other resources for the handling of seriously polluting establishments (Article 49 LEP 2005).

⁴⁰ The environment shall be considered seriously polluted when the content of one or more chemicals and heavy metals exceeds three times the environmental quality standards, or the content of one or more other polluting substances exceeds five times the environmental quality standards. The environment shall be considered particularly seriously polluted when the content of one or more chemicals and heavy metals exceeds five times the environmental quality standards, or the content of one or more polluting substances exceeds ten times the environmental quality standards (Article 92 the Law on Environmental Protection 2003).

Environment-related disputes, as regulated by Article 129 LEP 2005, consist of (1) disputes over environmental protection rights and responsibilities in the exploitation and use of environmental components; (2) disputes over the identification of the causes of environmental pollution, degradation and incidents; responsibilities to remedy the consequences of, and provide compensation for, damage caused by environmental pollution, degradation or incidents. Environmental-related disputes on Vietnamese territory to which one party is a foreign organization or individual shall be settled in accordance with Vietnamese laws, unless otherwise provided for in treaties to which the Socialist Republic of Vietnam is a contracting party. Regulations on dispute settlement on the water sector shall be addressed further as follows in the next subsection.

4.1.3 Regulations on Environmental Dispute Settlement

Any organization or individual sanctioned for an administrative violation of water resources regulations, or their legitimate representative, has the right to complain and denunciate against sanctioning decisions given by an authorized state agency. All citizens have the right to denunciate any individual and/or organization that commits violations regulated in Decree No. 34/2005/ND-CP, and any authorized state agency that misuses his/her authority and contravenes the regulations provided by Decree No. 34/2005/ND-CP. The competences, procedures and schedules for setting complaints and denunciations shall be implemented in accordance with the current regulations on complaints and denunciations (the Law on Complaints and Denunciations 1998, amended in 2004 and 2005).

Particularly, according to Article 62 of the Law on Water Resources, disputes within the water sector shall be settled as follows:

- (1) The People's Committees of communes shall have the responsibility for dispute mediation;
- (2) Agencies with authority to issue certain types of water resource permits shall have the responsibility of settling claims as well as complaints arising from the implementation of these types of permits;
- (3) If the claimant disagrees with the decision made by said administrative body to settle a dispute, he shall be entitled to bring the case to the competence courts, in accordance with the provisions of the law.

As regulated by Government Decree No. 149/2004/ND-CP, Decree No. 13/2008/ND-CP, and Decision of the Ministry of Natural Resources and the Environment No. 216/2009/QĐ-BTNMT, the agencies with the authority to issue permits and to license the exploration, extraction, exploitation and utilization of water resources, as well as wastewater discharge into water resources are: the Ministry of Natural Resources and the Environment, the Department of Water Resources Management, People's Committees of provinces, and other agencies in charge of the state management of water resources.

Presidents of People's Committees of provinces and centrally-run cities (hereinafter referred to as 'provincial-level People's Committees') shall have the competence: (1) to settle complaints about their own administrative decisions or administrative acts; and (2) to settle complaints further lodged after having been first settled by directors of provincial services or equivalent agencies under provincial-level People's Committees, with the contents falling under the management of provincial-level People's Committees (Article 23 of the Law on Complaints and Denunciations 1998, amended in 2004 by Law No. 26/2004/QH11 and in 2005 by Law No. 58/2005/QH11).

The Minister of the Ministry of Natural Resources and the Environment, as regulated by Article 25 of the Law on Complaints and Denunciations 1998, amended in 2004 and 2005, shall have the competence: (1) to settle complaints about administrative decisions or administrative acts of their own or of cadres and employees under their direct management (in this case, the Department of Water Resources Management); (2) to settle complaints with the contents falling under the state management of its respective ministry or agencies, which are further lodged after having been first settled by the directors of provincial services or equivalent agencies under provincial-level People's Committees.

Should the complainant disagree with the complaint settlement decision of the Minister of the Ministry of Natural Resources and the Environment, the Head of the Department of Water Resources

Management or the President of provincial-level People's Committees, he/she may, within thirty days from the date of expiration of the settlement time limit defined in Article 43 of the Law on Complaints and Denunciations (the same 30-day limit applies if the complaint has not yet been settled), initiate an administrative lawsuit before the provincial-level People's Court (Articles 39, 46 of the Law on Complaints and Denunciations 1998, amended in 2004 and 2005).

The court system in Vietnam is divided into three levels: District People's Courts (*Tòa án Nhân dân tỉnh, thành phố trực thuộc Trung ương*), Provincial People's Courts (*Tòa án nhân dân huyện, quận, thị xã, thành phố thuộc tỉnh*), and the Supreme People's Court (*Tòa án Nhân dân Tối cao*). Each administrative district has a District People's Court, which is responsible, in the first instance, for dealing with criminal cases and civil, economic, labour and administrative disputes. There is a Provincial People's Court in each province, which acts mainly as a court of appeal for cases decided by the District People's Courts. Provincial People's Courts can also act as the first port-of-call for certain types of cases. Its decisions can be appealed against directly to the Supreme People's Court, which is the highest appellate court in Vietnam. The Standing Committee of the National Assembly⁴¹ (*Ủy ban Thường vụ Quốc Hội*) is responsible for constitutional matters.

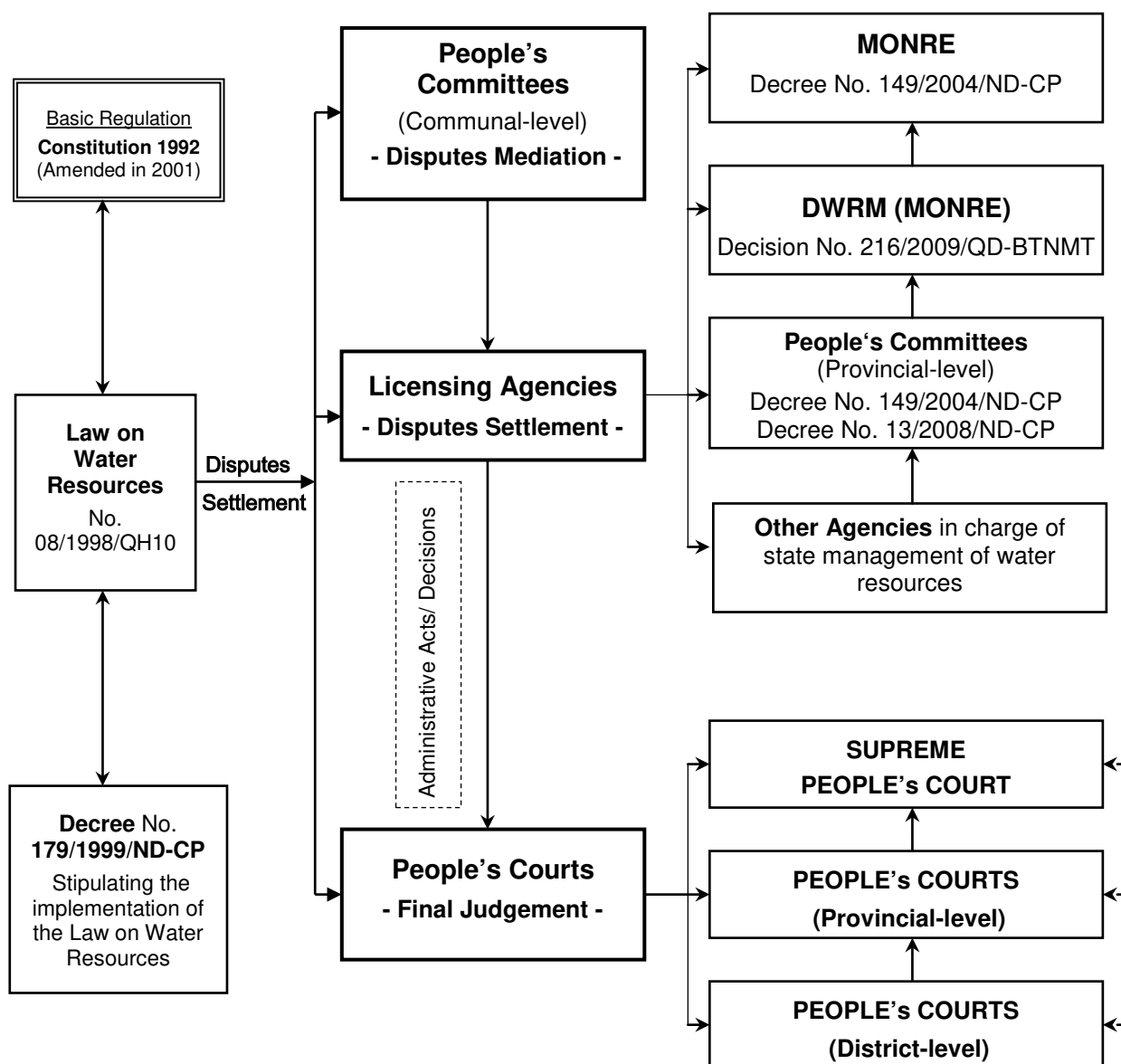
The following chart (3) provides an overview of the current dispute settlement system in environmental fields in Vietnam.

⁴¹ Based on the 1992 Constitution (as amended), Article 90, the Standing Committee of the National Assembly is the permanent body of the National Assembly, which consists of:

- The Chairman of the National Assembly;
- The Deputy-Chairmen of the National Assembly;
- Members.

The number of members of the Standing Committee is determined by the National Assembly. A member of the Standing Committee cannot be at the same time a member of the Government. The Standing Committee of each legislature of the National Assembly shall discharge its duties and exercise its power until the next legislature of the National Assembly has elected a new Standing Committee.

Chart 3: Dispute Settlement in Environmental Fields



Related Regulations:

- Constitution 1992 - amended 2001 (basic regulation)
- Law on Organization of the Government No. 32/2001/QH10
- Law on Organization of the People's Courts No. 33/2002/QH10
- Labour Code 1994 (amended in 2002, 2006, 2007)
- Penal Code 1999 (amended by Law No. 37/2009/QH12) & Penal Procedure Code No. 19/2003/QH11
- Civil Code 2005 & Civil Procedure Code No. 24/2004/QH11
- Law on Complaints and Denunciations No. 09/1998/QH10 (amended in 2004, 2005)
- Law on Environmental Protection No. 52/2005/QH11
- Ordinance on Natural Resource Tax No.05/1998/PL-UBTVQH10 (amended)
- Ordinance on Handling of Administrative Violations No. 44/2002/PL-UBTVQH10 (amended in 2007, 2008)
- Other related legal documents

4.2 Local Regulations on Wastewater Management - Case of Can Tho City

In Can Tho City, important regulations on water resource protection⁴², particularly regulations on water pollution management, have been developed recently to ensure the sustainability and efficiency of the exploitation and use of water resources. Most of the regulations issued by People's Committees can be found at the Official Gazette of the People's Committee. However, regulations on wastewater management are dispersed and scattered in many different regulations. For instance, there is still no systematized disposition of regulations on the water sector in general, and on wastewater management in particular. Furthermore, the accession to regulations (guiding regulations), which is adapted by Departments or Branches (DONRE, DARD, etc.) is still limited. All the regulations issued by local state agencies are still in the Vietnamese language only. Nevertheless, after a collected study and examination of selected regulations on wastewater management, an overview of the key regulations on wastewater management issued by the People's Committee of Can Tho City shall be provided as follows:

1. Directive No. 11/2009/CT-UBND of September 25, 2009 on the intensive management of medical waste;
2. Decision No. 07/2009/QD-UBND of January 20, 2009 on the minimum tax rates applied to the exploitation of natural resources in Can Tho City;
3. Decision No. 62/2008/QD-UBND of July 18, 2008 on the management of mineral operations in Can Tho City;
4. Directive No. 10/2008/CT-UBND of July 02, 2008 on the intensive management of aquaculture hatching, aimed at protecting the environment in Can Tho City;
5. Decisions No. 48/2008/QD-UBND of May 13, 2008 on the management of aquaculture production in Can Tho City;
6. Decision No. 08/2008/QD-UBND of January 25, 2008 on charges for projects, reports of exploration, exploitation, and the use of groundwater; exploitation and use of surface water; discharge of wastewater into water resources; hydraulic work in Can Tho City;
7. Decision No. 48/2007/QD-UBND of December 28, 2007 on the management of aquaculture exploitation and transport in Can Tho City;
8. Decision No. 11/2007/QD-UBND of March 07, 2007 on ensuring inland waterway traffic safety and orders in Can Tho City;
9. Decision No. 105/2005/QD-UBND of December 28, 2005 on promulgating regulations on the procedure for complaint and denunciation settlement in Can Tho City;
10. Decision No. 283/2004/QD-UBND of August 23, 2004 on the implementation of the examination and handling of legal documents on a city scale.

Regarding **aquaculture production**, based on the Law on Fisheries 2003, Law on Environmental Protection 2005, Decree No. 128/2005/ND-CP (amended by Decree No. 154/2006/ND-CP on sanctions for violations of regulations on aquatic resources protection), Decree No. 59/2005/ND-CP on conditions for aquatic production, and related regulations, Decision No. 48/2008/QD-UBND issued by the People's Committee on May 13, 2008 has created a legal foundation for aquatic protection and operating conditions in Can Tho City. Accordingly, organizations and individuals producing and/or trading in aquaculture must have aquatic resource exploitation permits⁴³ granted by competent state

⁴² For further information, please refer to Annex 5: List of selected regulations on the protection of the water sector in Can Tho City.

⁴³ As regulated by Article 5 of Decree No. 59/2006/ND-CP, to be granted permits, organizations and individuals must fully meet the following conditions:

- a. Be issued with a fishing ship registration certificates;
- b. Be issued with certificates of technical safety of fishing ships, for the types of ship defined by MARD;
- c. Be in possession of crew registry books, for the types of ship defined by MARD;

management agencies, and locations for the construction of aquaculture establishments must conform to local planning regulations. Furthermore, establishments must ensure suitable technical conditions and criteria on aquaculture as well as criteria on veterinary sanitation, food safety, hygiene and environmental protection according to current provisions of the law. For use in aquaculture, feeds, veterinary drugs, bio-products, microorganisms and chemicals, as regulated in detail by Circular No. 02/2006/TT-BTS, must comply with the following provisions:

- They are on the list of those permitted for circulation in Vietnam, as announced by MARD;
- They do not contain substances on the list of chemicals and antibiotics banned from use, promulgated together with Decision No. 07/2005/QĐ-BTS of February 24, 2005 and other related provisions of the law;
- Establishments culturing aquatic animals for commercial purposes must observe regulations on the control of noxious residues in cultured animal products, issued together with Decision No. 15/2002/QĐ-BTS of May 17, 2002;

Regarding **aquatic product processing**, organizations or individuals engaged in aquatic product processing must have business registration certificates for aquatic product processing, issued by competent state management agencies. Locations for the construction of aquatic product processing establishments must conform to local planning regulations. Workshops, storehouses, facilities and equipment, processing tools, sanitary tools, water treatment system, system for treatment of wastewater, solid waste and exhaust gases, as well as equipment for the inspection of product quality, must meet sanitary conditions for food safety and environmental protection conditions under law provisions. With regard to newly built establishments processing aquatic products for food, fifteen days before commencing operation and production, they must notify such to competent agencies in order to be inspected and recognized as meeting sanitary conditions for food safety. Newly built aquatic product-processing establishments must prepare EIA reports, which describe solutions for the treatment of waste (solid, liquid and gaseous) in conformity with environmental standards and the environmental monitoring regime. Such reports must be approved by provincial-level environmental management agencies. In addition, establishments processing aquatic products by industrial methods must each have at least one official or technical member of staff that possesses a university degree in food technology, aquatic product processing, biology or bio-chemistry. Moreover, labourers working directly in aquatic product processing establishments must meet the prescribed health criteria and be equipped with necessary labour protection devices.

Regarding **rates of fees/charges for the evaluation of proposals and reports on the discharge of wastewater into water sources**, according to Decision No. 08/2008/QĐ-UBND on charges for projects, reports of exploration, exploitation, and the use of groundwater; exploitation and use of surface water; discharge of wastewater into water resources; and hydraulic work, the rates are as follows:

- VND 300.000/dossier for scheme exploration flow of water from 3000 to under 100 m³/ day;
- VND 900.000/dossier for scheme exploration flow of water from 100 to below 500 m³/ day;
- VND 2.200.000/dossier for scheme exploration flow of water from 500 to below 2.000 m³/ day;
- VND 4.200.000/dossier for scheme exploration flow of water from 2.000 to below 5.000 m³/ day;

Regarding *natural resources taxes*, as regulated by Decision No. 07/2009/QĐ-UBND, Table (7) below provides an overview of the minimum tax rates applied to the exploitation of natural resources in Can Tho City:

-
- d. Shipmasters and chief engineers, for types of ship defined by MARD, must have shipmaster or chief engineer diplomas;
 - e. Have suitable exploitation trades and fishing gears as provided for by MARD
Each permit may be extended many times, with each extension not exceeding 12 months.

Table 7: Minimum Tax Rates Applied to Natural Resources Exploitation in Can Tho City, Vietnam

No.	Natural Resources Groups	Tax rates
1.	Exploration of sand (basic sand) land filling spaces, building works	
	- Sand on alluvial plain	10.000VND/m ³
	- Sand on rivers, land	4.000VND/m ³
2.	...	
3.	Using of natural water (river water, underground water, etc.) for production of beer, soft-drink, ice (except water supplied by Water Supply Company)	
	- Natural water for production (industrial hygiene, using to cool down electronic generator, other production purposes)	600VND/m ³
	- Soft-drink (0,25liter/bottle)	250VND/bottle
	- Beer (0,5 liter/bottle)	600VND/bottle
	- ice carton (50 kg/carton)	1.000VND/carton
4.	...	
5.	Exploration of natural aquaculture	
	- Fish and other aquacultures	20.000VND/kg
	- Shrimp	80.000VND/kg

Based on: Decision No. 07/2009/QĐ-UBND of January 20, 2009 issued by the People's Committees of Can Tho City on the minimum tax rates applied to the exploitation of natural resources in Can Tho City

Vietnamese organizations and individuals, as well as foreign organizations and individuals, that commit acts of administrative violation in the fisheries domain on the territory, excluding economic zones and the continental shelf of the Socialist Republic of Vietnam, shall all be sanctioned under the provisions of Decree No. 128/2005/ND-CP issued on October 11 2005 on sanctions of administrative violations in fisheries domains, which was amended by Decree No. 154/2006/ND-CP of December 25, 2006 and other relevant laws, unless otherwise provided for by treaties that Vietnam has signed or acceded to. According to Decree No. 128/2005/ND-CP, administrative violations in the fisheries domain are acts of violating regulations on state management in the fisheries domain, which are intentionally or unintentionally committed by organizations or individuals, but are not criminal offenses and, according to the provisions of the Ordinance on Handling of Administrative Violations and this Decree, must be administratively sanctioned. Administrative violations in the fisheries domain include:

- (1) Violation of regulations on aquatic resources protection;
- (2) Violation of regulations on the exploitation of aquatic resources and management of fishing vessels;
- (3) Violation of regulations on aquaculture;
- (4) Violation of regulations on aquatic resource processing, trading, collection, preservation and transportation; aquatic food hygiene and safety;
- (5) Violation of regulations on fisheries services and business lines;
- (6) Obstructing activities of the state management of fisheries.

Regarding sanctions for violations of wastewater discharge from producing fisheries, based on Government Decree No. 128/2005/ND-CP, which was amended by Decree No. 154/2006/ND-CP of December 25, 2006, sanctions are as follows:

- (1) A fine of between VND 1,000,000 and VND 3,000,000 shall be imposed for acts of wastewater discharging oils, greases, toxic chemicals, animals or plants containing toxic elements or other hazardous waste at less than double the permitted amounts into the environment of the natural habitats, reproductive and growth areas of aquatic species or into the environment of areas under aquaculture. The forced restoration of the environment's original status is also imposed.
- (2) A fine of between VND 5,000,000 and VND 10,000,000 shall be imposed for acts of discharging the waste mentioned above if the quantity is more than double the permitted amounts. The forced restoration of the environment's original status is also imposed.
- (3) A fine of between VND 15,000,000 and VND 30,000,000 shall be imposed for acts of discharging extremely hazardous substances in quantities more than the permitted amounts into the natural habitats, reproductive and growth grounds of aquatic species or areas under aquaculture. The forced restoration of the environment's original status is also imposed.

Acts of administrative violation in the domain of animal breeds and plant varieties shall be sanctioned under the provisions of Government Decree No. 47/2005/ND - CP of April 8, 2005, providing for the sanctioning of administrative violations in the domain of reared animal breeds and Decree No. 57/2005/ND-CP of April 27, 2005, on the sanctioning of administrative violations in the domain of cultivated plant varieties. Accordingly:

- (1) A fine of between VND 500,000 and VND 1,500,000 shall be imposed on breed-producing or -trading establishments for one of the following acts:
 - a) The sites of the establishment failing to be in line with planning;
 - b) Failure to ensure the maintenance of standards on veterinary sanitation and environmental protection for ponds, tanks, equipment, water supply systems and wastewater treatment systems used in aquatic breed production or trading, according to MARD regulations;
 - c) Using expired feeds, veterinary drugs, bio-preparations, microorganisms or chemicals in aquatic breed production and training, as well as the forced destruction of feeds, veterinary drugs, bio-preparations, microorganisms, and chemicals used in aquatic breeding production or trading which have expired for use or are on the ban lists.
- (2) A fine of between VND 2,000,000 and VND 4,000,000 shall be imposed for using feeds, veterinary drugs, bio-preparations, microorganisms, and chemicals which contain substances on the list of those restricted from use in aquatic breeding production or trading at variance with MARD regulations. Included is the forced destruction of feeds, veterinary drugs, bio-preparations, microorganisms, and chemicals used in aquatic breeding production or trading which have expired for use or are on the ban lists.
- (3) A fine of between VND 3,000,000 and VND 5,000,000 shall be imposed for using feeds, veterinary drugs, bio-preparations, microorganisms, and chemicals which contain substances on the list of those banned from use or circulation in Vietnam in aquatic breeding production or trading under MARD regulations. Included is the forced destruction of feeds, veterinary drugs, bio-preparations, microorganisms, and chemicals used in aquatic breeding production or trading which have expired for use or are on the ban lists.
- (4) A fine of between VND 20,000,000 and VND 30,000,000 shall be imposed for acts of producing, trading in or transporting aquatic breeds or releasing into the natural environment aquatic species not on the list of those permitted for production or trading. Furthermore, confiscation of aquatic breeds and forced compliance by producing establishments within the provisions of law on assay of new breeds; forced release of rare and precious aquatic species which need to be conserved back into their habitats, and the forced destruction of harmful, alien organisms shall be enforced.

4.3 Discussion: Contradictions and Conflicts between National and Local Regulations on Wastewater Management

Although the legislation of water sector management in Vietnam has improved greatly during the last decade, it has obviously not yet come into life. The current legal system to protect the water resources in Vietnam therefore seems to be insufficient. One of the main causes that make the legal framework in Vietnam incomprehensible and inadequate is the lack of a united and stable legal system; conflicts and contradictions between laws, ordinances and secondary regulations still persist. Due to the fact that the legal system of Vietnam is generally complex with varied legal documents ordered at many levels and adopted by different state authorities, the current legal framework on the water sector is thus complicated with overlapping and contradictory regulations⁴⁴.

Additionally, in recent years, most of the legal documents on environmental and water resource protection issued by local state agencies, therefore, have conformed to national legal documents relating to competences, procedures and form aspects. However, the quality of legal documents issued by local governments has not yet met the requirements of the realities, as there are still contradictions and conflicts between national and local regulations, particularly in the field of water resources management, which have caused confusion, misunderstanding, problems and difficulties in the implementation process. Moreover, contradictions with other water-related secondary regulations have bared themselves in the implementation process.

The urgent matter of water pollution, for instance, has proved that the current legal framework on wastewater management in Vietnam is ineffective and unsuitable, causing problems and legal conflicting issues. According to the Department of Water Resources Management, the licensing of wastewater discharge into water sources is still limited in quantity. Up to this point, only 5,000 permits on water resources have been issued, among which are only 400 permits on wastewater discharge into water sources (gain ca. 8% (DWRM 15.05.2009). Obviously, the number of licences issued is quite far from the needs.

At local levels, the licensing of water resources is still fraught with difficulties. In Can Tho City, for instance, from 2004, 82 licences on operating in the field of water resources have been granted, including 41 licences for the exploitation of underground water, 10 licences for the exploration of underground water, 10 licences for the extraction and use of surface water, 20 permits for the drilling of underground water and only one licence for discharging wastewater. As reported by DONRE (of Can Tho City), the situation of observation of licences' provisions on the exploitation and use of water resources and discharging of wastewater into water sources is yet to be conformed by laws. Most organizations and individuals using and exploring water resources and discharging wastewater have not yet conducted monitoring or reported about their exploration status or the uninstalled flow meter system. Furthermore, the extension of permits is pretty slow as regulated by water-related regulations (DWRM 22.11.2008).

The following synopsis shall address in detail the contractions and conflicts between the national and local regulations (case of Can Tho City) on wastewater management.

⁴⁴ For further information about these issues, please refer to Nguyen, Loan (2009): "Legal Framework of the Water Sector in Vietnam" – ZEF Working Paper Series.

Synopsis 1: Contradictions and Conflicts between the National and Local Regulations on Wastewater Management

Issues	National Regulations	Local Regulations (case of Can Tho City)	Contradictions and Conflicts
1. Natural Resources Tax	<p>Related regulations:</p> <ul style="list-style-type: none"> Ordinance on Natural Resources Tax (amended) No. 05/1998/PL-UBTVQH10 Government Decree No. 05/2009/ND-CP⁴⁵ of January 19, 2009 on detailing the implementation of the Ordinance on Natural Resources Tax; MOF Circular No. 124/2009/TT-BTC of June 17, 2009 on guiding the implementation of Government Decree No. 05/2009/ND-CP <p>Accordingly, the bases for calculating natural resource tax are the actually exploited volume of commercial natural resources, the tax calculation price and the tax rate (in %).</p> <p>For instance, water exploited for industry production, construction and mining purposes: a. Use of surface water (tax rate: 3%); b. Use of groundwater (tax rate: 4%)</p>	<p>Related regulations:</p> <ul style="list-style-type: none"> Decision No. 07/2009/QĐ-UBND of January 20, 2009 issued by the People's Committees of Can Tho City on the minimum tax rates applied to the exploitation of natural resources in Can Tho City. <p>Accordingly, organizations or individuals engaged in using natural resources shall have to pay natural resources tax.</p> <p>For instance, using natural water for production (industrial hygiene, using to cool down electrical generators, and other production purposes) with tax rate: VND 600/m³; exploration of natural aquaculture:</p> <ul style="list-style-type: none"> a. Fish and other aquacultures (tax rate: 20.000VND/kg); b. Shrimp (tax rate: 80.000VND/kg); 	<p>There are contradictions and conflicts between national and local regulations on natural resources tax. While the national basis for calculating the natural resource tax is a specific percentage of the price of the used water, the local government tax applies a fixed amount in VND Dong per unit of water. This means that with the national provision for tax will change accordingly to changing prices of water, while in local prescriptions the tax will not change when water prices are changed.</p> <p>Furthermore, as regulated by local regulations, using and the exploration of sand (basic sand) shall also be liable to natural resources tax with tax rates as follows:</p> <ul style="list-style-type: none"> a. Sand on alluvial plain (VND 10.000/ m³ ; b. Sand on rivers, land (VND 4.000/ m³), while the national regulations have not mentioned about it. <p>This is a case of legal contradiction. As the hierarchy of the legal system of Vietnam has not been observed, initiatives for new regulations must always start at the national level.</p>
2. Regulations on fishery and aquaculture production	<p>Main related regulations:</p> <ul style="list-style-type: none"> Law on Fisheries 2003; Law on Environmental Protection 2005; Decision No. 22/2004/QĐ-BTS of September 15, 2004 issued by the Ministry of Fisheries (now merged into MARD) on promulgating of branch standards Branch Standard No. 28 TCN 213 : 2004: Technical procedure for intensive grow-out of Tra fish breeding; Decision of MARD No. 70/2008/QĐ-BNN of 	<ul style="list-style-type: none"> Guidance of Agency of Aquaculture (of Can Tho City) No.126/HD.CCTS of August 24, 2005 on guiding the implementation of Tra fish breeding in the most effective way to minimize environmental pollution. Decision No. 48/2008/QĐ-UBND of May 13, 2008 on the management of aquaculture production in Can Tho City. 	<p>Both current regulations of Can Tho City on the management of aquaculture production do not mention about the rights and obligations of organizations and individuals operating fishery and aquaculture production facilities, while regulations on sanctions against violations of legislation on the fishery and aquaculture industry have not yet specified.</p> <p>Moreover, there is still a lack of guidance regulations (at local level) on guiding the implementation of Ba Sa Fish breeding in the most effective way to minimize environmental pollution.</p> <p>However, one of the main reasons why the current legal framework of wastewater management (at national and local levels) has not yet come to life is due to the lack of specific guiding regulations (at both</p>

⁴⁵ The Government Decree No. 68/1998/ND-CP of September 03, 1998 on detailing provisions and providing guidelines for implementing of the Ordinance on Natural Resource Tax; and Decree No. 147/2006/ND-CP of December 01, 2006 were abrogated and replaced by Decree No. 05/2009/ND-CP of January 19, 2009 issued by the Government.

	June 5, 2008 on the management of Tra-catfish raising zones and establishments;		<p>national and local levels) on applying technical measures to treat fishpond pollutants; and regulations on obligatory establishment of concentrated wastewater treatment system; as well as regulations on “suitable” sanctions against violations acts.</p> <p>In addition, the use of specific guiding regulations issued by the national level has also caused difficulties in implementation at local levels. Many localities are troubled when dealing with new situations.</p>
	<ul style="list-style-type: none"> ▪ Government Decree No. 59/2005/ND-CP of May 04, 2005 on conditions for aquatic production; ▪ Circular No. 02/2006/TT-BTS of March 20, 2006 on guiding the implementation of Government Decree No. 59/2005/ND-CP on conditions for aquatic production; 	<ul style="list-style-type: none"> ▪ Decision No. 48/2008/QD-UBND of May 13, 2008 on the management of aquaculture production in Can Tho City. 	<p>Regarding conditions for the production and/or trading of aquatic breeds, as regulated by national regulations, organizations and individuals producing and/or trading in aquatic breeds must apply the compulsory technical process to production practices in accordance with the regulations on the Ministry of Fisheries (now merged into MARD); in addition to that, as regulated by local regulations, they also have to announce product quality in line with the regulations on the Ministry of Fisheries (MARD).</p> <p>Furthermore, organizations and individuals producing and/or trading in male breeds, female breeds, breeding sperm, breeding eggs and the larvae of aquatic animals must fully meet the conditions regulated in Government Decree No. 59/2005/ND-CP (Article 11); where the male and female breeds of aquatic animals must have clear sources and conform to veterinary quarantine measures. In addition, as regulated by Decision No. 48/2008/QD-UBND, male and female breeds of aquatic animals must have clear sources, conform to veterinary quarantine measures and be certificated by competent agencies.</p> <p>Above all, the Decision of the People’s Committee of Can Tho City No. 48/2008/QD-UBND of May 13, 2008 on the management of aquaculture production in Can Tho City does not mention about the four branch standards adopted by the Decision of the Ministry of Fisheries (No. 22/2004/QD-BTS) on promulgating branch standards⁴⁶.</p>

⁴⁶ As regulated by Decision No. 22/2004/QD-BTS of September 15, 2004 issued by the Ministry of Fisheries (now merged into MARD), the four branch standards are promulgated as follows:

- 28 TCN 211 : 2004: Technical procedure for the production of Tra Fish breeds;
- 28 TCN 212 : 2004: Technical procedure for the production of Ba Sa Fish breeds;
- 28 TCN 213 : 2004: Technical procedure for intensive grow-out of Tra fish breeding;
- 28 TCN 214: 2004: Technical procedure for intensive grow-out of Ba Sa Fish breeding.

Issues	National Regulations	Local Regulations (case of Can Tho City)	Contradictions and Conflicts
3. Management of medical waste	<ul style="list-style-type: none"> Law on Environmental Protection 2005; Decision No. 43/2007/QĐ-BYT of November 30, 2007 issued by the Ministry of Health on promulgating regulations on medical waste; MONRE Circular No. 12/2006/TT-BTNMT of December 26, 2006 guiding conditions for professional practice and procedures for making dossiers, registration, grant for practice licences and hazardous waste management codes. 	<ul style="list-style-type: none"> Directive No. 11/2009/CT-UBND of September 25, 2009 on intensify management of medical waste 	<p>Based on national regulations, each hospital <u>must have</u> a synchronous wastewater collection and treatment system that must be qualitatively examined periodically. Hospitals that do not have wastewater treatment systems <u>must build</u> complete wastewater treatment systems. Those hospitals already with wastewater treatment systems that are, however, out of order or operating inefficiently, <u>must repair and upgrade</u> them for operation up to environmental standards. Hospital wastewater treatment technologies <u>must satisfy environmental standards</u> and conform to topographical conditions, investment, transportation and maintenance costs. Obviously, there is a “must” according to the national regulations on medical waste management. However, it seems that this “must” has not yet been properly controlled by laws.</p> <p>As we can see, the many problems of surface water pollution caused by medical waste have been dramatically increasing.</p> <p>In Can Tho City for instance, many large hospitals do not even have a so-called “concentrated wastewater treatment system”. Wastewater from these hospitals is still discharged untreated directly into nearby rivers. The Hau River, which is the main source of “clean” water supply for the whole city, is one of the main “receiving” sources of such cases.</p> <p>At local levels, in Can Tho City for instance, up to 2009 only one regulation on medical waste management had been issued. However, this regulation specifies only in general what should be “intensively” done by related state agencies.</p> <p>In addition, there is still a lack of specific guiding regulations (both national and local levels) on applying technical measures to treat medical wastewater, regulations on the obligatory establishment of concentrated wastewater treatment systems, and regulations on “suitable” sanctions against violations.</p> <p>Moreover, a lack of specific guiding regulations issued at the provincial level has also caused difficulties in the implementation at district and communal levels. Many localities face difficulties when dealing with new situations relating to medical wastewater management.</p>

The above analyzed contradictions and conflicts between the national and local regulations on wastewater resources management have caused problems and legal conflicting issues in the implementation process at local levels. The following section shall address further the main problems and legal conflicting issues that have occurred in the implementation of the current legal framework on wastewater management in Can Tho City.

5 Implementation of the Legislation on Wastewater Management in Can Tho City

5.1 Problems and Legal Conflicting Issues

Obviously, Vietnam has started to set up a framework of regulations to ensure the sustainable use, protection and development of water resources. In particular, regulations on wastewater management have been highly valued and developed almost completely. In recent years, policy and institutional systems on water resources management have been developed and improved step-by-step. The task of protecting the water sector in Vietnam has changed positively and, by consequence, the awareness of water resource protection.

At sub-national levels, legal documents on water resources management issued by competent state agencies have been developed in recent years, and have created a rather comprehensive legal system of the state management on water sector protection at their localities on the one hand, and raised the awareness of local people and enterprises on the other. Leadership at provincial levels is nowadays aware of the importance of water sector management by laws. Annually, based on the suggestions of specialized departments and sections, legislative programmes on water sector management have been issued in most localities. According to these legislative programmes and the guidance of People's Committees at provincial levels, agencies assigned to lead legal document development have the responsibility to undertake research and develop drafts for such legal documents. Furthermore, they collect the comments of related departments and sections, submit drafts to Departments of Justice for appraisal and submit the appraised drafts to the People's Committees (provincial level) for promulgation. After that, leading agencies organize training courses, propagandize and popularize these legal documents to related state departments and sectors, private organizations and enterprises, as well as individuals.

In recent years, local state agencies have issued many legal documents on environmental and water resource protection. However, the current legal documents issued by local governments seem not as effective as they will have to be in order to meet the requirements in the future. In addition, the lack of specific guiding regulations issued at the national level has also caused difficulties in implementation at local levels. Many areas face difficulties when dealing with new situations (interview with the Can Tho City DONRE: 23.03.2009). Regarding wastewater discharge, there is still a lack of specific guiding regulations (at national level) on the level of environmental protection fees applied for the Tra fish industry, regulations on applying technical measures to treat fishpond pollutants, regulations on the obligatory establishment of concentrated wastewater treatment systems, etc. Moreover, the state management capacity of Natural Resources and Environment departments, as well as those of other related departments, are unspecialized and too small in number to effectively undertake the significant tasks assigned (interview with the Can Tho City DONRE: 23.03.2009). The situation at district level is even worse (ADB: 2008, 9). Most authorities in charge of water management lack not only specialized awareness on water management, but also on legal awareness.

The following synopsis (2) shall provide the main problems and legal conflicting issues in the implementation of the current legal framework on wastewater management in Can Tho City.

Synopsis 2: Main Problems and Legal Conflicting Issues occurring in the Implementation of the Legislation on Wastewater Management in Can Tho City

Main Issues	National Regulations	Local Regulations (Case of Can Tho City)	Main problems and legal conflicting
1. Wastewater discharge permit	<ul style="list-style-type: none"> Government Decree No. 149/2004/ND-CP of July 27, 2004 on the licensing of water resources exploitation, extraction and utilization and wastewater discharge into water sector; MONRE Circular No. 02/2005/TT-BTNMT of June 24, 2005 on guiding the implementation of Government Decree No. 149/2004/ND-CP on the licensing of water resources exploration, exploitation, utilization and waster discharge into water resources; MONRE Circular No. 02/2009/TT-BTNMT of March 19, 2009 on the evaluation of the ability of water sources to receive wastewater. 	<p>There are still no legal documents issued in this field at local level.</p> <p>Based on Circular No. 02/2005/TT-BTNMT, the People's Committees of the provinces or centrally run cities (in this case the People's Committee of Can Tho City) shall be responsible for directly implementing this Circular in their respective localities (Can Tho City).</p> <p>Particularly, the Department of Natural Resources and the Environment (of Can Tho City) has to assist the Peoples Committees of Can Tho City in the managing, summing up and making of annual reports on the granting and observance of water resource exploration, exploitation and use permits and permits for discharge of wastewater into water sources under their respective local administrative management, and send annual reports to the Department of Water Resources Management.</p>	<p>From 2004, 82 licences on operating in the field of water resources have been granted; among from these, there is only 01 licence on discharging of wastewater granted in Can Tho City. As reported by DONRE (of Can Tho City), situation of observation of licences' provisions on exploitation and use of water resources and discharging of wastewater into water sources is not yet conformed by laws (DWRM: 22.11.2008).</p> <p>As regulated by Government Decree No. 149/2004/ND-CP, MORNE (at national level) and the People's Committees (at provincial levels) are the licensing agencies for wastewater discharge permits.</p> <p>Furthermore, People's Committees (at provincial level) are also in charge of the dispute settlement in environmental field. However, there is also none of regulations in this issue adapted by the People's Committee of Can Tho City.</p> <p>Problem is, how the licensing procedure could be transparent at local levels when it still lacks of guiding regulations? It leads to other problems where the rights of organizations and individuals exploiting and using water resources are not guaranteed.</p>

Main Issues	National Regulations	Local Regulations (Case of Can Tho City)	Main problems and legal conflicting
2. Environmental protection charge rates applied to wastewater	<ul style="list-style-type: none"> Government Decree No. 67/2003/ND-CP on environmental protection charge rates applied to industrial wastewater, which was amended by Government Decree No. 04/2007/ND-CP of January 08, 2007; MOF' Decision No.59/2006/QD-BTC of October 25, 2006 on the regime of collection, remittance, management and use, evaluation charges and administrative fees for granting permits for the exploration, exploitation and use of water resources, as well as permits on the discharge of wastewater; TCVN 5945 : 2005: Industrial Wastewater Discharge Standards 	<ul style="list-style-type: none"> Decision No. 08/2008/QD-UBND of January 25, 2008 on charges for projects, reports of exploration, exploitation, and use of groundwater; exploitation and use of surface water; discharge of wastewater into water resources; hydraulic work in Can Tho City. 	<p>Regarding environmental protection charge rates applied to wastewater, up to now, the Government has only adapted one Decree (No. 67/2003/ND-CP) which specifies the environmental protection charge rates applied to <u>industrial wastewater</u>. There is still lacking of specific guiding regulations (both national and local levels) on environmental protection fees applied for Tra fish industry; on shrimp, aquatic, aquaculture productions, etc.</p> <p><i>There is need of a specific regulation on environmental protection fees applied for Tra fish industry.</i> As mentioned above (2.2, page 20) one of the main sources caused water pollution in Can Tho City is the fishery production and aquaculture industry. The fish farming in the Mekong Delta has developed rapidly since the Vietnamese government' s agricultural policy shifted away from mono-cultural rice production to more diversified models of farming systems. In Can Tho City, cases of wastewater treatment systems have occurred frequently and become a seriously problem without answers or solutions for the local state agencies in charge of the water sector management.</p>

Main Issues	National Regulations	Local Regulations (Case of Can Tho City)	Main problems and legal conflicting
3. Regarding environmental protection in fishery and aquaculture production	<p>Main related regulations:</p> <ul style="list-style-type: none"> ▪ Law on Water Resources 1998; ▪ Law on Fisheries 2003; ▪ Law on Environmental Protection 2005; ▪ Ordinance on Food Hygiene and Safety 2003; ▪ Decision of MARD No. 70/2008/QD-BNN of June 5, 2008 on the management of Tra-catfish raising zones and establishments; ▪ Circular of MARD No. 15/2009/TT-BNN on promulgating the list of drugs, chemicals, antibiotics banned for use and limited to use for manufacturing and trading in aquaculture, which was amended by Circular No. 29/2009/TT-BNN of June 04, 2009; ▪ Government Decree No. 59/2005/ND-CP on conditions for aquatic production; ▪ Government Decree No. 128/2005/ND-CP on sanctions against administrative violations in the fisheries domain; ▪ Government Decree No. 70/2003/ND-CP on sanctions against administrative violations in the aquatic resources domain. 	<p>Related regulations:</p> <ul style="list-style-type: none"> ▪ Directive No.10/2008/CT-UBND of July 02, 2008 on the intensive management of aquaculture hatching, aimed at protecting environment in Can Tho City; ▪ Decision No.48/2008/QD-UBND of May 13, 2008 on the management of aquaculture production in Can Tho City; ▪ Decision No.48/2007/QD-UBND of December 28, 2007 on the management of aquaculture exploitation and transport in Can Tho City; ▪ Guidance of Agency of Aquaculture (of Can Tho City) No. 126/HD.CCTS of August 24, 2005 on guiding the implementation of Tra fish breeding in the most effective way to minimize environmental pollution. 	<p>In fact, there is still lacking of specific guiding regulations (both national and local levels) on guiding of applying technical measures to treat fishpond pollutants; as well as regulations on obligatory establishment of concentrated wastewater treatment system.</p> <p>According to DARD (Can Tho City), since 2004 the export market of catfish has rapidly developed. Most of people in Can Tho City have taken full advantage of river water, lakes and ponds for raising fishes. Area of surface water for raising catfish has increased from 675ha in 2004 to 882ha in 2005(Can Tho Newspaper: 14.12.2008). Waste from fish production (nutrients in fish, feed, and sediment) are discharged unconsciously into rivers, canals, ponds and lakes by thousands of home processed framings with thick density of fish farming led to seriously water pollution. Besides, uncontrolled digging of ponds and discharge of wastewaters caused by fish farming into open water sources has increasingly led to a decline in water quality and could eventually pose threats to human health.</p> <p>Due to the fact that, nearly all areas of fields in Can Tho City have taken for fish farming production, and not yet registered for changing land used purposes, has caused difficulties for the local state management of water pollution. Besides, it is even more difficult to control the culture of fish production in cages.</p> <p>However, the legal framework (both national and local levels) on environmental protection in fishery and aquaculture protection has been developed comprehensively. Obviously, it has not yet come to life. There is a <i>need of specific regulations</i> (both national and local levels) <i>on guiding of applying technical measures to treat fishpond pollutants; as well as regulations on obligatory establishment of concentrated wastewater treatment system.</i></p>

5.2 Knowledge Dissemination of the Legal Framework

In general, the state encourages and facilitates all organizations, population communities, households and individuals to participate in environmental, water resource protection activities. At local levels, local governments have generally stepped up propaganda, education and mobilization in combination with the application of administrative, economic and other measures to build self-consciousness and discipline in water resource protection activities. Additionally, agent environmental problems and seriously water polluting establishments have been settled. However, regarding the improvement of water resources management capacity, Vietnam still has not attained consistency and coordination of the systems of policies, laws, standards and norms in the domain of water resources for the sustainable development of the water sector. The system of state management of the water sector has not proved its worth in formulating and ensuring its effectiveness in a coordinated manner (for more detail, see Nguyen, 2009). The functions and tasks of state management agencies for the water sector are still not clearly distinguished from those of agencies managing the operation of works for the exploitation and use of water resources and water service supplies.

Furthermore, there is still a lack of appreciation of water resources management regarding the legal aspects. *On the side of state* management, most of the state agencies at local levels are generally very poor at appreciating the legal framework of the water sector due to the need to consider water resources in socio-economic development. At district and communal levels, there is even less awareness of the need to conform to the legal framework, as well as the need to conserve water resources and recognize the impact that people's activities have on water resources. However, the state capacity of water management at local levels is currently very limited (interview with the Can Tho City DONRE: 23.03.2009). Regarding the state capacity of water management at local levels, in the interview with the DONRE of Can Tho City on March 2009, one of the state authorities in charge of water sector management imperatively expressed his opinion: *"Lack of capacity and staff in charge of waste resources management at district and communal levels are not only poor at specialist knowledge but also legal awareness; people are 'thin' but the responsibilities are 'too thick'"* (translation by author). Thus, the state system of water sector management has operated so far with many weaknesses; responsibility assignment is still unclear, unreasonable and limited in number and capacity. At national level, the Department of Water Resources Management in the Ministry of Natural Resources and the Environment, for instance, is far too small in numbers and capacity to undertake the significant tasks assigned to it effectively. The situation in the provinces is even worse (ADB: 2008).

Regarding legal propaganda on environmental and water protection, once a month – or based on requirements – a legal awareness on environmental protection event is conducted by the Department of Justice (Interview with DOJ: 23.03.2009). According to the Department of Justice of Can Tho City, in principle they do not have any difficulties in implementing such activities in local areas (oral propaganda, gathering at an information house, training key state authorities, etc.). They hope, however, to have more funds to be able to conduct more efficient activities such as undertaking surveys. Up to March 2009, there were 146 public bookcases with 20,313 law books set up at provincial, district and communal levels (Interview with DOJ: 23.03.2009). Nevertheless, *"...those books are not used as much as they should be. Access to these bookcases is still limited, due to the fact that such bookcases are located directly in the People's Committee office at each locality. People are therefore afraid of coming to such offices. In addition, the officers in charge are not only unspecialized but also unfriendly in guiding local people in how to manage and use such books. The other problem is that there are only law books. There is still a lack of books on secondary regulations"*, as explained by a state official of the DOJ in charge of legal propaganda in an interview on March 2009.

However, *on the side of enterprises, factories, and manufacturers*, they are only aware of temporary solutions on how to cope with the controls of environmental state agencies for a certain time. In most violation cases, they would rather pay fines than have environmental-friendly production systems. One reason for this is that paying the fines is still cheaper than the investment required for the installation and running of wastewater treatment plants. In the interview with the Can Tho City DONRE on March 2009, one of the state officials in charge of wastewater management emphasized that: *"The current sanctions against administrative violations are not convincing and suitable. In many cases the fines are even 'dirt-cheap' compared with the profits that they can gain through violating the regulations and destroying the*

environment” (translation by author). Cases of deficient wastewater treatment systems have occurred frequently and become a serious problem in Vietnam. In many provinces, “red carpets” are even laid to attract foreign projects, despite their underdeveloped technologies which could lead to potential causes of environmental pollution.

Regarding fish raising by local people in Can Tho City, Mr. Ky Quang Vinh – Director of the Environmental Monitoring Centre (the Can Tho City DONRE) – said imperatively: *“Dealing with the fact that people in the Mekong Delta have swarmed into destroying fields, digging ponds and dividing rivers to build cages for exported catfish production, in 2006, in coordination with the DONRE and Can Tho University, EEPSEA conducted a programme researching water pollution caused by fish farming in Can Tho City. After interviewing 500 cage and fishpond owners about their awareness of environmental water protection, we came to the conclusion that 80% of cage and fishpond owners felt they were not responsible for the polluted water, and fish breeding was not prohibited by laws”* (Can Tho Newspaper: 14.12.2008, translation by author).

Obviously, most authorities at local levels in charge of water management lack not only specialized awareness of water management, but also they have little or no legal awareness. Many large enterprises, factories and manufacturers that know about the legal framework for the water sector have been taking advantage of the legal interstices and incomprehensible state management system to achieve their goals, without paying any attention to environmental protection issues. Hence, it would be very useful and necessary to conduct further studies on this issue.

5.3 Participant of Judicial Organization

This subsection addresses the right to complain, denunciate and initiate lawsuits against acts/ decisions issued by administrative agencies. Based on the Law on Water Resources (Article 22, para.4, Article 69), organizations and individuals have the rights to complain, denunciate and initiate lawsuits against acts/decisions issued by administrative agencies infringing upon their rights to exploit and utilize water resources and other legitimate interests.

However, in many secondary regulations on water source protection, as well as current regulations on wastewater management, organizations and individuals have the right to complain and denunciate only. There is no mention of the right to initiate lawsuits to the courts. For instance, lawsuits are not regulated for by Government Decree No. 67/2003/NC-CP, which was amended by Decree No. 04/2007/ND-CP, regarding the collection, remittance, management and use of environmental protection charges for wastewater. Furthermore, according to the Decision of MONRE No. 05/2003/QD-BTNMT of September 04, 2003 promulgating the regulations on the licensing of groundwater exploration, exploitation and drilling practice, there is mention of the responsibilities and rights of organizations and individuals licensed to explore groundwater (Article 13) and the responsibilities and rights of organizations and individuals licensed to exploit groundwater (Article 14), but the right to complain and initiate lawsuits against acts/decisions issued by administrative agencies is not specified.

Obviously, the rights of organizations and individuals exploiting and using water resources cannot be guaranteed, particularly when there is a lack of participation by judicial organizations. Furthermore, organizations and individuals exploiting and using water resources still have no rights to initiate lawsuits to the courts against acts/decisions issued by administrative agencies when the regulations are unclear, or not specifically provided. The question as to which state agencies should be responsible for such cases where the regulations are unclear is still open.

In addition, in the administrative dispute process, it is not only the Administrative Court but also the next higher executive authorities that are responsible for the final decision. Before the establishment of the Administrative Court (1995), all claims by citizens against administrative decisions/acts were resolved by the administrative authorities only; the administrative organization was both the defendant and state agency in charge of the administrative dispute settlement. During this period, the administrative organization was considered as an “executive authority – judge”, and there was a lack of independent judicial participation. Since July 1996, citizens – for the first time – have been able to initiate administrative lawsuits against administrative decisions/acts before the Administrative Court. However, the role of the Administrative Court, mainly due to its limited competence, is still restricted and poorly marked. In addition, within the

regulations on administrative procedure, the Administrative Court is generally in charge of the legality revision, while the administrative authorities have both legality and factual inspection competences.

Historically, national laws – as well as legitimate regulations – have not been considered as a suitable defence instrument to guarantee the rights of citizens, but rather as an instrument of state power and arbitrariness together with “punishment” (*hình phạt*). Citizens have not found their rights guaranteed by imperial laws, but by the internal rules of their villages, which can vary greatly from village to village. Traditionally, villages in Vietnam were viewed as an outstanding social unit, whose institutions, rules and codes would largely determine the social life of pre-colonial and colonial Vietnam. Without the protection and care of villages, it was almost impossible for an individual to survive. For this reason, village customary law was considered far more important than state laws and regulations. Central government and its laws/regulations were therefore stuck on the village gate. Hence, the villages enjoyed enough administrative autonomy to regulate internal affairs by themselves. The Vietnamese saying: “Imperial laws stop at the village gate” (*“Phép nước thua lệ làng”*) clarifies this situation. While village community regulations embodied the sense of community of the villagers, people associated state laws as harsh, inhuman, strange, and draconian.

The same applies to the court, which people still consider as a place of imperial despotism and punishment; for many people, “*it is a place where you would be better having nothing to do with*”. Knowledge of state laws and regulations was almost non-existent in the population at that time, and limited only to the Imperial Court and bureaucracy. This historical and socio-cultural specificity still influences the relationship between most Vietnamese and state laws and courts; in turn, this exemplifies how difficult it could be to change public opinion. Moreover, because many Vietnamese are poor at being aware of this issue, state laws and regulations have not been taken seriously. Therefore, the people of Vietnam are not accustomed to exercising and defending their legitimate rights. Up to this point, they have not considered court as a “suitable” place where their legitimate rights and interests can be guaranteed or protected. For many legal experts, it was expected that the Administrative Court would provide a flood of complaints to the Administrative Court, with people taking advantage of the new situation to defend their rights. It has subsequently proved, however, to be a non-event. Hence, it would be regrettable if this reform remained unused (Vu Thu 2003:25).

The Law on Water Resources, which was passed by the National Assembly of the Socialist Republic of Vietnam on May 20, 1998, created the foundation for the legal system on water resource protection in Vietnam. After ten years of implementation, this law represents a major step forward on integrated water resources management. In addition, the legislative framework on water resources management, in which the legitimate rights and interests of organizations and individuals should be also guaranteed by judicial organizations, is progressing much better nowadays. However, the right to initiate lawsuits against decisions/acts issued by administrative agencies has remained unused. In Can Tho City, for instance, the People’s Court has not yet exercised its recently introduced power to settle disputes on environmental matters. Regarding disputes within the water sector, there are only a small number of cases within the communal domain that civil servants in charge of land and construction issues are responsible mediating, according to Joint Circular No. 03/2008/TTLT-BTNMT-BNV (interview with the Can Tho City DONRE 23.03.2009, and interview with DOJ of Can Tho City 23.03.2009).

6 Conclusions and Recommendations

As outlined in the study, there are numerous problems and challenges with regard to water quality management in Can Tho City. The question is how to revise, improve and implement the current legal system regarding the water sector in general, and wastewater management in particular, so that it can start doing what it is meant to do. In order to deal with and overcome the aforementioned problems and challenges with regard to water quality management, the following suggestions are recommended.

On a fundamental level, Vietnam is ***in need of a system of review and systematization of legal documents on water sector management***. In recent years, over 300 legal documents required to implement the Law on Water Resources have been developed as secondary regulations to protect and sustain the development of water resources from different legal angles. Among these 300 legal documents, over 60 are related to wastewater management. Moreover, at local level, with the main aim of creating a rather comprehensive

legal system on water resource protection at its locality on the one hand, and raising the awareness of local people and enterprises on sustainable use and development of water resources on the other, the People's Committee of Can Tho City has, based on suggestions from water-related departments and branches, issued more than 100 legal documents (among which, over 70 regulations address the state management of water resources in the city, and more than 30 implement national legal documents).

However, the quality of the current legal framework for the water sector in Vietnam (issued at national and local levels) has obviously not met the requirements of the current situation. There are still contradictions, conflicts and overlaps within the current legislation⁴⁷, which cause confusion, misunderstanding and difficulties in the implementation process. Furthermore, as we can see from the two synopses mentioned above, contradictions and conflicts between the national and local regulations, specifically in the field of wastewater management, have made the current legislation on wastewater management insufficient and unsuitable for the current problems of water pollution. Thus, there is a need for a united and stable legal system in general, and particularly in the field of water resources management.

According to Law No. 31/2004/QH11 on the Promulgation of Legal Documents of People's Committees and People's Councils (*Luật ban hành Văn bản quy phạm pháp luật của Hội đồng Nhân dân, Ủy ban Nhân dân*), in order to have a legal foundation for developing legal documents, numerous localities have issued regulations on procedures for drafting, developing and collecting comments, as well as appraising and promulgating legal documents in accordance with their authorities. Specifically, regarding the promulgation of legal documents in Can Tho City, numerous regulations have been adapted by the People's Committee, as follows:

- Decision No. 67/2008/QĐ-UBND of August 15, 2008 on estimating management and balance-sheet drawing of expense for developing and examining of legal documents issued by the People's Council and People's Committee at all levels subordinated to Can Tho City
- Decision No. 66/2008/QĐ-UBND of August 14, 2008 on promulgating regulations on formats and techniques for presenting legal documents;
- Decision No. 59/2006/QĐ-UBND of June 13, 2006 promulgating regulations on the procedures of drafting, appraising and issuing the legal documents of People's Committees at all levels subordinated to Can Tho City;
- Decision No. 08/2004/CT-UBND of April 23, 2004 on implementing the examination and handling of legal documents in Can Tho City;

Based on the Law on the Promulgation of Legal Documents [*Luật Ban hành Văn bản quy phạm pháp luật*] No. 17/2008/QH12 (hereafter called LPLDs 2008), legal documents must be checked and reviewed, collated and codified into thematic volumes of codes. State agencies with their authorities and responsibilities shall be responsible for regularly checking and periodically systematizing legal documents. Accordingly, the procedure for checking and dealing with overlapping and unjustified regulations on water sector management is specified as follows:

- At national level, the Minister of the Ministry of Natural Resources and the Environment, and the heads of ministry-equivalent agencies (in this case the Head of the Department of Water Resources Management) shall be responsible for checking legal documents issued by themselves, and other legal documents issued by other ministries and ministry-equivalent agencies with regard to contents related to sectors and fields falling under their authorities. Upon detecting any legal documents that are against the constitution or other laws, or are contradictory, overlapping or no longer appropriate or suitable for the development of the country, the Minister of MONRE and the Head of the DWRM by themselves, or through other competent state agencies, must revise, amend, replace, abolish and suspend the implementation of such legal documents.
- At local levels, presidents of People's Committees (provincial and district levels) are responsible for any unjustified regulations issued by themselves. Specialized local state agencies (such as DONRE,

⁴⁷For further information about the contradictions, conflicts and overlaps within the current legislation on water resources and other related legislations please refer to Nguyen, Loan (2009): "Legal Framework on Water Sector in Vietnam" – ZEF Working Paper Series.

DARD, DOST, DOJ, DOC, etc.) shall regularly supervise and examine these legal documents, and identify and deal with them in a timely manner.

Although the current legal framework for the protection of the water sector contains a “bulky” system of legal documents, it seems to be a “grandiose” legal system and therefore does not suit the realities of life. In other words, it has still not yet come to life. In certain fields, regulations on wastewater management are dispersed and scattered across many legal documents with identical content, and even different hierarchies contradict one another. Additionally, the development and promulgation of legal documents must ensure their constitutionally, legality and consistency within the legal system (Article 3 of the LPLDs 2008). The problem is that current legislation on wastewater management in Vietnam is lacking a general regulation on dealing with unfeasible, overlapping and unjustified water sector regulations with other related regulations. Moreover, there is still a lack of specific guiding regulations issued at national level, which causes difficulties in implementation at local levels. Many local state agencies in charge of water sector management are confused when dealing with new situations or specific situations that have not yet been specified by national regulations. Nevertheless, the specific regulations mentioned above should not be promulgated incoherently.

Thus, a ***requisition of a general regulation on wastewater management*** (such as a Government Decree or Joint Circular issued by all ministries in charge of wastewater management) could specify all wastewater-related issues, especially the following issues, which would have to be mentioned by this regulation:

Issues	Current status	Recommendations
1. Issuance and with-drawal of permit for the discharge of wastewater into water sources	<p>This issue is currently regulated by Government Decree No. 149/2004/ND-CP of July 27, 2004, and Circular No. 02/2005/TT-BTNMT of June 24, 2005.</p> <p>Accordingly, the issuance of a permit for discharging wastewater into water sources is incompletely specified, along with other issuances of permits for the exploration, exploitation and use of water resources.</p>	<p>It should be therefore regulated separately with other permits for exploration, exploitation and the use of water resources.</p> <p>Hence, it is the most important issue, which should be specified as clearly as possible by the above-mentioned “<i>general regulation on wastewater management</i>”. The following points should be regulated specifically:</p> <ul style="list-style-type: none"> ▪ Authorities and obligations of the licensing agencies; ▪ Authorities and obligations of the permit holders; ▪ Licensing, extension, amendment, termination and withdrawing of permits; ▪ Procedures for the licensing, extension, amendment, termination and withdrawal of permits;
2.Environmental Impact Assessment (EIA)	<p>Currently, MONRE Circular No. 08/2006/TT-BTNMT and Circular No. 05/2008/TT-BTNMT provide details for the implementation of strategic environmental assessments, the Environmental Impact Assessment (hereinafter called EIA) and environmental protection.</p> <p>Accordingly, organizations and individuals that own investment projects subject to an EIA report shall carry out by themselves EIA reports or use a qualified consultancy service or organization (as specified in Article 8 of Government Decree No. 80/2006/ND-CP) to do this job. EIA reports have a strict content format.</p>	<p>However, the Environmental Impact Assessment (EIA) is still a new issue in Vietnam. Hence, its implementation is still limited.</p> <p>Therefore, this issue must be specifically regulated in the above mentioned “<i>general regulation on wastewater management</i>” as a compulsory condition.</p>

3. Waste-water stand-ards	<p>Currently, regarding water quality standards, the environmental standards of Vietnam consist of four “Vietnamese Environmental Standards”⁴⁸ (<i>Tiêu chuẩn Việt Nam về môi trường</i>) and eight National Technical Specifications on Environment⁴⁹ (<i>Quy chuẩn kỹ thuật quốc gia về môi trường</i>).</p> <p>In addition, based on Circular No. 05/2009/TT-BYT, the national technical regulation on domestic water quality (QCVN 02:2009/BYT) issued by the Ministry of Health on June 17, 2009 shall also be applied to organizations, individuals and households exploiting and trading in domestic water. Individuals and households exploiting water for daily-life purposes are also subject to this regulation.</p>	Which standards should be applied in which specific situations is still unclear. Thus, there must be a general regulation which regulates the wastewater standard only to avoid problems, difficulties and confusions in the implementation process.
4. Wastewater receiving ability of water sources	On March 19, 2009, the Ministry of Natural Resources and the Environment has issued the circular No. 02/2009/TT-BTNMT on evaluation of water resources capacity to receive wastewater	Furthermore, the issue regarding the <u>wastewater receiving ability of water sources</u> must not be forgotten by the “general regulation on wastewater management”
5. Collec-tion and treatment of waste-water	According to the Law on Environmental Protection 2005, in urban centres and residential areas, there must be separate systems for the collection of rainwater and wastewater. Wastewater from daily life must be treated up to environmental standards before being discharged into the environment. Wastewater from production, business and service establishments and zones must be collected and treated up to environmental standards. Mud discharged from waste treatment systems must be managed according to solid waste management regulations. Wastewater and mud containing hazardous elements must be managed according to hazardous waste management regulations.	Although it is an important issue for wastewater management, this issue has not been found in many related laws or secondary regulations on water sector management. Moreover, the regulation on the obligation to establish a concentrated wastewater treatment system has not yet been mentioned by current key regulations on wastewater management.
6. Environmental protection charges/fees for wastewater	The current environmental protection charges for wastewater, as regulated by Government Decree No. 67/2003/ND-CP of June 13, 2003 which was amended by Decree No. 04/2007ND-CP of January 08, 2007, are no longer suitable for specific violations against water sector regulations. Furthermore, there	<p>The current regulations on environmental protection charges/fees for wastewater should be revised by changing the bases for the collection of the charges/fees.</p> <p>These should be collected as a percentage of the profits that are gained though using water</p>

⁴⁸ TCVN 5942 : 1995: Water Quality Standards - Surface Water
TCVN 5943 : 1995: Water Quality Standards - Coastal Water
TCVN 5944 : 1995: Water Quality Standards - Groundwater
TCVN 5945 : 2005: Industrial Wastewater Discharge Standard

⁴⁹ QCVN 08:2008/BTNMT – National Technical Regulation on Surface Water Quality;
QCVN 09:2008/BTNMT – National Technical Regulation on Underground Water Quality;
QCVN 10:2008/BTNMT - National Technical Regulation on Coastal Water Quality;
QCVN 11:2008/BTNMT - National Technical Regulation on the Effluent of Aquatic Products Processing Industry;
QCVN 12:2008/BTNMT - National Technical Regulation on the Effluent of Pulp and Paper Mills;
QCVN 13:2008/BTNMT - National Technical Regulation on the Effluent of Textile Industry;
QCVN 14:2008/BTNMT - National Technical Regulation on Domestic Wastewater
QCVN 15:2008/BTNMT - National Technical Regulation on the Pesticide Residues in the Soils

	are still problems and difficulties in applying regulations on environmental protection charges.	resources, as well as an obligation to pay even higher charges when discharging untreated wastewater into the water sources. In certain cases, besides administrative sanctions, there must be the opportunity to apply civil and criminal sanctions.
7. Natural resources Tax	The current Ordinance on Natural Resources Tax (amended) and Decree No. 05/2009/ND-CP issued by the Government (on detailing provisions and providing guidelines for implementing of the Ordinance on Natural Resource Tax), and the Ordinance on amendment of and addition to article 6 of the Ordinance on Natural Resource Tax still have not provided specific regulations to protect and sustainably develop water resources in different legal aspects.	There is a need for specific regulations to protect and sustainably develop water resources in different legal aspects.
8. Sanctions against violations	<p>Sanctions against <u>administrative violations</u> of water resources management regulations are currently regulated by Government Decree No. 34/2005/ND-CP of March 17, 2005, and Circular No. 05/2005/TT-BTNMT of July 22, 2005.</p> <p>On June 19, 2009 the National Assembly passed the Law (No. 37/2009/QH12) on the amendment of and supplement to a number of articles of the Criminal Code 1999, which specifies additional sanctions (<u>criminal sanctions</u>) against violations of legislation on environmental protection and water resources particularly.</p> <p>Accordingly, those who have discharged waste into the air, water sources, soil and environmental pollutants, dispersal of radiation, radioactivity exceeding the national waste discharge standards by a severe level or “seriously polluted the environment”⁵⁰ or causing any other serious consequences, shall be fined from 50.000.000 VND (fifty million) to 500.000.000 VND (five hundred million), be rehabilitated through non-imprisonment for up to three years, or face imprisonment from six months to five years.</p> <p>In the following cases, offenders shall be imprisoned from three years to ten years: (a) organized cases; (b) causing “particularly serious polluted environment”⁵¹ or any other extremely serious consequences.</p>	<p>In fact, the sanction form (fine) for administrative violations is no longer suitable, and even unfair in many cases. The proof is that most of the organizations and individuals who have violated the legislation would rather pay fines than invest their capital on installing such environmentally friendly systems.</p> <p>Therefore, sanctions against violations should be considered as an important and essential point in the above-mentioned “<i>general regulation on the wastewater management</i>”. Thus, sanctions (administrative and criminal) must be combined and completely regulated.</p>

⁵⁰ As regulated by Article 92 of the Law on Environmental Protection 2003, the environment shall be considered seriously polluted when the content of one or more chemicals and heavy metals exceeds three times the environmental quality standards or the content of one or more other polluting substances exceeds five times the environmental quality standards.

⁵¹ The environment shall be considered particularly seriously polluted when the content of one or more chemicals and heavy metals exceeds five times the environmental quality standards, or the content of one or more polluting substances exceeds ten times the environmental quality standards (based on Article 92 of the Law on Environmental Protection 2003)

	<p>In addition, offenders can be fined from 10.000.000 VND (ten million) to 150.000.000 VND (one hundred and fifty million), prohibited from undertaking any positions, and banned from practicing or undertaking certain business practices for one to five years.</p> <p>Aside from the criminal sanctions mentioned above, those who have violated the regulations on hazardous waste management, causing serious environmental pollution or any other serious consequences, shall be fined from 50.000.00 VND (fifty million) to 500.000.000 VND (five hundred million), rehabilitated through a non-custodial sentence for up to two years, or imprisoned from six months to three years.</p> <p>In the following cases, offenders shall be imprisoned from two to seven years: (a) organized cases; (b) causing seriously consequences; (c) serious repeat offences. Offenders causing particularly serious consequences shall be punished by a custodial sentence of between five and ten years.</p>	
<p>9. Complaints, denunciations and the participation of judicial organizations</p>	<p>This relates to the right to complain, denunciate and initiate lawsuits against acts/decisions issued by administrative agencies. In many secondary regulations on water source protection, as well as current regulations on wastewater management, organizations and individuals shall have the right to complain and denunciate only.</p> <p>There is no mention of the right to initiate lawsuits to the courts. This might have been “forgotten” to be mentioned. This important right has not yet been guaranteed by many water-related secondary regulations.</p> <p>The current regulations of secondary legal documents are unclear. They can be misunderstood, causing confusion. Furthermore, there are violations against the Law on Water Resources, and against the Law on the Promulgation of Legal Documents 2008⁵².</p>	<p>Questions:</p> <ol style="list-style-type: none"> 1. How can the rights of “organizations and individuals” exploiting and using water resources are guaranteed, when there is a lack of participation by judicial organizations? 2. Do “organizations and individuals” exploiting and using water resources still have the right to initiate lawsuits to the courts against acts/decisions issued by administrative agencies, when the regulations are unclear or not specifically provided? 3. Who should be responsible for such cases where the regulations of secondary legal documents are unclear? <p>This issue deserves a high level of attention and to be specifically regulated by the “<i>general regulation on wastewater management</i>”</p>

⁵² For further information about this issue please refer to Nguyen, Loan (2009): “Legal Framework of the Water Sector in Vietnam”.

<p>10. Waste-water management in specific domains</p>	<p>Based on the current regulations, in certain fields, regulations on wastewater management are dispersed and scattered in many legal documents with identical content, and even different hierarchies contradict one another.</p>	<p>Thus, the “<i>general regulation on wastewater management</i>” should gather all regulations regarding this issue and control them through one general regulation accompanied by greater detail about water source protection in specific domains, which might affect the water resource environment and cause water pollution. These areas include: fishery, aquaculture, agriculture, industrial production, craft villages, households, etc.</p> <p>Regarding wastewater management in the fields of the fishery and aquaculture industries, for instance, the following cases must be specified in the above-mentioned “<i>general regulation on wastewater management</i>”:</p> <ul style="list-style-type: none"> ▪ Guides for the application of technical measures to treat fishpond pollutants; ▪ Obligatory establishment of concentrated wastewater treatment system; ▪ Environmental protection fees applied to the fishery and aquaculture industries; ▪ Sanctions against violations of the legislation on wastewater management.
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Moreover, the implemented regulations must be drafted in a timely manner by local state agencies in charge of water sector management.

To enhance water resource protection and the water supply to meet the demands of socio-economic development, environmental protection and sustainable development in the period of industrialization, modernization and international integration, Vietnam needs a completely new and comprehensive Law on Water Resources. General regulations on wastewater management should be an indispensable part of the forthcoming Law on Water Resources. Furthermore, these upcoming regulations must be minimized, avoiding an incomprehensible system. According to the Legislative Program to 2010, approved by the Resolution of the National Assembly on July 17, 2009, together with other water-related laws (e.g. Law on Irrigation Works, Law on Protection of Maritime Environment, Law on Minerals (as amended), Law on Handling of Violations against Administrative Regulations), the Law on Water Resources (as amended) shall be submitted to the Government, and suggestion collected from the National Assembly, in 2010. A comprehensive Law on Water Resources and its consequently improved legal framework are only the first, but absolutely necessary, steps for overcoming current, as well as upcoming, environmental and water problems.

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Annexes

Annex 1: Vietnam's Water Classification and Standards

Based on the Law on Environmental Protection 2005, the Decision No. 35/2002/QD-BKHCMNT issued by Ministry of Science Technology and Environment which was amended by the Decision of the Ministry of Natural Resources and Environment No. 22/2006/QD-BTNMT dated December 18, 2006 providing Vietnamese environmental standards compulsory applied, regarding water quality standards, the following standards (for surface water, coastal water, and groundwater quality) are compulsory applied:

- TCVN 5942 : 1995: Water Quality Standards - Surface Water
- TCVN 5943 : 1995: Water Quality Standards - Coastal Water
- TCVN 5944 : 1995: Water Quality Standards - Ground Water

Table 8: Water Quality Standards 1995 - Surface Water (TCVN 5942)

N°	Parameter and Substance	Unit	Limitation Value	
			A ⁵³	B ⁵⁴
1	pH value	--	6 - 8,5	5,5 - 9
2	BOD ₅ (20°C)	mg/l	<4	<25
3	COD	mg/l	<10	<35
4	Dissolved oxygen	mg/l	³ 6	³ 2
5	Suspended solids	mg/l	20	80
6	Arsenic	mg/l	0,05	0,1
7	Barium	mg/l	1	4
8	Cadmium	mg/l	0,01	0,02
9	Lead	mg/l	0,05	0,1
10	Chromium, Hexavalent	mg/l	0,05	0,05
11	Chromium, Trivalent	mg/l	0,1	1
12	Copper	mg/l	0,1	1
13	Zinc	mg/l	1	2
14	Manganese	mg/l	0,1	0,8
15	Nickel	mg/l	0,1	1
16	Iron	mg/l	1	2
17	Mercury	mg/l	0,001	0,002
18	Tin	mg/l	1	2
19	Ammonia (as N)	mg/l	0,05	1
20	Fluoride	mg/l	1	1,5
21	Nitrate (as N)	mg/l	10	15
22	Nitrite (as N)	mg/l	0,01	0,05
23	Cyanide	mg/l	0,01	0,05
24	Phenol compounds	mg/l	0,001	0,02
25	Oil and grease	mg/l	not detectable	0,3
26	Detergent	mg/l	0,5	0,5
27	Coliform	MPN/100 ml	5000	10000
28	Total pesticides (except DDT)	mg/l	0,15	0,15
29	DDT	mg/l	0,01	0,01
30	Gross alpha activity	Bq/l	0,1	0,1
31	Gross beta activity	Bq/l	1,0	1,0

Parameter Limits and Maximum Allowable Concentration of Pollutants in Surface Water

Based on: TCVN 5942: 1995 Water Quality Standards - Surface Water

⁵³ Values in the column A are applied to the surface water using for source of domestic water supply with appropriate treatments.

⁵⁴ Values in the column B are applied to the surface water using for the purposes other than domestic water supply. Quality criteria of water for aquatic life are specified in a separate standard.

Table 9: Water Quality Standards 1995 – Coastal Water (TCVN 5943)

N°	Parameter and Substance	Unit	Limitation Values		
			Bathing and Recreation Area	Aquatic Cultivation Area	Others
1	Temperature	°C	30	--	--
2	Odor		unobjectionable	--	--
3	pH value		6,5 - 8,5	6,5 - 8,5	6,5 - 8,5
4	Dissolved solid	mg/l	>or= 4	>or= 5	>or= 4
5	BOD ₅ (20°C)	mg/l	<20	<10	<20
6	Suspended solid	mg/l	25	50	200
7	Arsenic	mg/l	0,05	0,01	0,05
8	Ammonia (as N)	mg/l	0,1	0,5	0,5
9	Cadmium	mg/l	0,005	0,005	0,01
10	Lead	mg/l	0,1	0,05	0,1
11	Chromium (VI)	mg/l	0,05	0,05	0,05
12	Chromium (III)	mg/l	0,1	0,1	0,2
13	Chloride	mg/l	--	0,01	--
14	Copper	mg/l	0,02	0,01	0,02
15	Fluoride	mg/l	1,5	1,5	1,5
16	Zinc	mg/l	0,1	0,01	0,1
17	Manganese	mg/l	0,1	0,1	0,1
18	Iron	mg/l	0,1	0,1	0,3
19	Mercury	mg/l	0,005	0,005	0,01
20	Sulfide	mg/l	0,01	0,005	0,01
21	Cyanide	mg/l	0,01	0,01	0,02
22	Phenol compounds	mg/l	0,001	0,001	0,002
23	Oil and fat film	mg/l	none	none	0,3
24	Oil and fat suspension	mg/l	2	1	5
25	Total pesticides	mg/l	0,05	0,01	0,05
26	Coliform	MPN/100 ml	1000	1000	1000

Parameter Limits and Allowable Concentrations of Pollutants in Coastal Water
Based on: TCVN 5943:1995 Water Quality Standards - Coastal Water

Table 10: Water Quality Standards 1995 – Ground Water (TCVN 5944)

N°	Parameter and Pollutant	Unit	Limitation Value
1	pH value		6,5 - 8,5
2	Color	Pt - Co	5 - 50
3	Hardness (as CaCO ₃)	mg/l	300 - 500
4	Total solids	mg/l	750 - 1500
5	Arsenic	mg/l	0,05
6	Cadmium	mg/l	0,01
7	Chloride	mg/l	200 - 600
8	Lead	mg/l	0,05
9	Chromium (VI)	mg/l	0,05
10	Cyanide	mg/l	0,01
11	Copper	mg/l	1,0
12	Fluoride	mg/l	1,0
13	Zink	mg/l	5,0
14	Manganese	mg/l	0,1 - 0,5
15	Nitrate	mg/l	45
16	Phenol compound	mg/l	0,001
17	Iron	mg/l	1 - 5
18	Sulphate	mg/l	200 , 400
19	Mercury	mg/l	0,001
20	Selenium	mg/l	0,01
21	Fecal coli	MPN/100 ml	Not detectable
22	Coliform	MPN/100 ml	3

Parameter Limits and Maximum Allowable Concentrations of Pollutants in Groundwater
Based on: TCVN 5944: 1995 Water Quality Standards - Ground Water

Table 11: Industrial Waste Water – Discharge Standards (TCVN 5945)⁵⁵

N°	Parameters and Substances	Unit	Limitation Values ⁵⁶		
			A	B	C
1	Temperature	°C	40	40	45
2	pH value	-	6 - 9	5,5 - 9	5 - 9
3	Odour	-	endurable	endurable	-
4	Color Co-Pt at pH=7		20	50	-
5	BOD ₅ (20°C)	mg/l	30	50	100
6	COD	mg/l	50	80	400
7	Suspended solids	mg/l	50	100	200
8	Arsenic	mg/l	0,05	0,1	0,5
9	Mercury	mg/l	0,005	0,01	0,01
10	Lead	mg/l	0,1	0,5	1
11	Cadmium	mg/l	0,005	0,01	0,5
12	Chromium (VI)	mg/l	0,05	0,1	0,5
13	Chromium (III)	mg/l	0,2	1	2
14	Copper	mg/l	2	2	5
15	Zinc	mg/l	3	3	5
16	Nickel	mg/l	0,2	0,5	2
17	Manganese	mg/l	0,5	1	5
18	Iron	mg/l	1	5	10
19	Tin	mg/l	0,2	1	5
20	Cyanide	mg/l	0,07	0,1	0,2

⁵⁵ It replaced the TCVN 5945-1995: Industrial Waste Water Discharge Standards

This standard specifies limit values of parameters and concentration of substances in waste water of production, servicing and trading establishments, etc. (hereafter called industrial waste water), applying to control of quality of industrial waste waters before being discharged into a water bodies using for sources of domestic water supply, water bodies using for other water usage purpose with lower quality requirements, or discharge into waste water receiving resources.

⁵⁶ Limitation Values

- + Limit values of parameters and maximum allowable concentrations of pollutants in industrial waste water before being discharged into water bodies shall not exceed the values given in the Table 1.
- + Industrial waste water containing the values of parameters and concentrations of pollutants which are equal to or lower than the values specified in the column A may be discharged into the water bodies using for sources of domestic water supply.
- + Industrial waste water containing the values of parameters and concentration of pollutants which are greater than the values specified in the column A and lower than or equal to those specified in the column B is allowed to be discharged into the water bodies other than those water bodies stipulated for column A.
- + Industrial waste water containing the values of parameters and concentration of pollutants which are greater than those specified in the column B but not exceeding those specified in the column C (table 1) is allowed discharged only into specific water bodies (such as reservoir specially built for waste water, sewerage pipe leading to concentrated waste water treatment plant, etc.).
- + Industrial waste water from some particular production, trading or service activities with specific pollutant contents due to characteristics of particular industries shall be regulated in separate standards.
- + Standard methods of sampling, analysis, computing and determining certain parameters and concentrations of pollutants are stipulated in the ruling TCVN or specified by the competent authority.

21	Total phosphorous	mg/l	0,1	0,5	1
22	Mineral oil	mg/l	5	5	10
23	Animal-vegetable fat and oil	mg/l	10	20	30
24	Chlorine	mg/l	1	2	-
25	PCBs	mg/l	0,003	0,01	-
26	Pesticide: organic phosphorous	mg/l	0,3	1	
27	Pesticide: organic chlorine	mg/l	0,1	0,1	
28	Sulfide	mg/l	0,2	0,5	1
29	Fluoride	mg/l	5	10	15
30	Chloride	mg/l	500	600	1000
31	Ammonia (as N)	mg/l	5	10	15
32	Total Nitrogen	mg/l	15	30	60
33	Total phosphorous	mg/l	4	6	8
34	Coliform	MNP/100ml	3000	5000	-
35	Bioassay		90% of fishes alive after 96 hrs in 100% waste water		-
36	Gross a activity	Bq/l	0,1	0,1	-
37	Gross b activity	Bq/l	1,0	1,0	-

Industrial Waste Water: Limit Values of Parameters and Maximum Allowable Concentration of Pollutants
Based on: TCVN 5945: 2005: Industrial Waste Water - Discharge Standards

Table 12: National Technical Regulation on Surface Water 2008/BTNMT (QCVN 08)

NO	INDICATOR	UNIT	LIMIT			
			A		B	
			A1	A2	B1	B2
1.	pH		6-8.5	6-8.5	5.5-9	5.5-9
2.	Diluted oxygen (DO)	mg/l	≥ 6	≥ 5	≥ 4	≥ 2
3.	Total Suspended solids (TSS)	mg/l	20	30	50	100
4.	COD	mg/l	10	15	30	50
5.	BOD5 (20oC)	mg/l	4	6	15	25
6.	Amoni (NH ₄) (By N)	mg/l	0.1	0.2	0.5	1
7.	Chloride (Cl ⁻)	mg/l	250	400	600	-
8.	Fluoride (F ⁻)	mg/l	1	1.5	1.5	2
9.	Nitrit (NO ₂) (By N)	mg/l	0.01	0.02	0.04	0.05
10.	Nitrate (NO ₃) (By N)	mg/l	2	5	10	15
11.	Phosphate (PO ₄ ³⁻) (By P)	mg/l	0.1	0.2	0.3	0.5
12.	Xianua (CN ⁻)	mg/l	0.005	0.01	0.02	0.2
13.	Asen (As)	mg/l	0.01	0.02	0.05	0.1
14.	Cadmium (Cd)	mg/l	0.005	0.005	0.01	0.01
15.	Lead (Pb)	mg/l	0.02	0.02	0.05	0.05
16.	Chromium III (Cr ³⁺)	mg/l	0.05	0.1	0.5	1
17.	Chromium VI (Cr ⁶⁺)	mg/l	0.01	0.02	0.04	0.05
18.	Copper (Cu)	mg/l	0.1	0.2	0.5	1
19.	Zinc (Zn)	mg/l	0.5	1.0	1.5	2
20.	Nickel (Ni)	mg/l	0.1	0.1	0.1	0.1
21.	Iron (Fe)	mg/l	0.5	1.0	1.5	2.0
22.	Mercury (Hg)	mg/l	0.001	0.001	0.001	0.002
23.	Surface active substances	mg/l	0.1	0.2	0.4	0.5
24.	Oils & grease	mg/l	0.01	0.02	0.1	0.3
25.	Phenol (total)	mg/l	0.005	0.005	0.01	0.02
26.	Organic chlorine - plant protection chemicals					
	Aldrin+Dieldrin	μg/l	0.002	0.004	0.008	0.01
	Endrin	μg/l	0.01	0.012	0.014	0.02
	BHC	μg/l	0.05	0.1	0.13	0.015
	DDT	μg/l	0.001	0.002	0.004	0.005
	Endosulfan (Thiodan)	μg/l	0.005	0.01	0.01	0.02
	Lindan	μg/l	0.3	0.35	0.38	0.4
	Chlordane	μg/l	0.01	0.02	0.02	0.03
	Heptachlor	μg/l	0.01	0.02	0.02	0.05
27.	Organic phosphorus - plant protection chemicals					

	Paration	µg/l	0.1	0.2	0.4	0.5
	Malation	µg/l	0.1	0.32	0.32	0.4
28.	Weed killing chemicals					
	2,4D	µg/l	100	200	450	500
	2,4,5T	µg/l	80	100	160	200
	Paraquat	µg/l	900	1200	1800	2000
29.	Total active radiation α	Bq/l	0.1	0.1	0.1	0.1
30.	Total active radiation β	Bq/l	1.0	1.0	1.0	1.0
31.	E. Coli	MPN/100ml	20	50	100	200
32.	Coliform	MPN/100ml	2500	5000	7500	10000

Based on the Decision of MONRE No. 16/2008/QD-BTNMT of December 31, 2008 on promulgating the National Technical Specifications on Environment

It includes 08 National Technical Regulations, as follow:

1. QCVN 08:2008/BTNMT – National Technical Regulation on Surface Water Quality;
2. QCVN 09:2008/BTNMT – National Technical Regulation on Underground Water Quality;
3. QCVN 10:2008/BTNMT - National Technical Regulation on Coastal Water Quality;
4. QCVN 11:2008/BTNMT - National Technical Regulation on the Effluent of Aquatic Products Processing Industry;
5. QCVN 12:2008/BTNMT - National Technical Regulation on the Effluent of Pulp and Paper Mills;
6. QCVN 13:2008/BTNMT - National Technical Regulation on the Effluent of Textile Industry;
7. QCVN 14:2008/BTNMT - National Technical Regulation on Domestic Waste Water
8. QCVN 15:2008/BTNMT - National Technical Regulation on the Pesticide Residues in the Soils.

Note: The classification of surface water is for the different purposes of using water:

A1: For residential use and other purposes like A2, B1 and B2.

A2: For residential use with proper treatment; preservation of aquatic plants or other purposes like in B1 and B2.

B1: For irrigation or other purposes requiring the similar quality of water or other purposes like B2.

B2: For water transport and other purposes requiring low quality.

Table 13: National Technical Regulation on Underground Water 2008/BTNMT (QCVN 09)

No	Indicator	Unit	Limit
1	pH		6.5 - 8.5
2	CaCO ₃	mg/l	500
3	Total solids	mg/l	1500
4	COD (KMnO ₄)	mg/l	4
5	Amoni(By N)	mg/l	0.1
6	Chloride (Cl ⁻)	mg/l	250
7	Fluoride (F ⁻)	mg/l	1.0
8	Nitrit (NO ₂ ⁻)(By N)	mg/l	1.0
9	Nitrate(NO ₃ ⁻)(By N)	mg/l	15
10	Sulfate	mg/l	400
11	Xianua(CN ⁻)	mg/l	0.01
12	Phenol	mg/l	0.001
13	Asen(As)	mg/l	0.05
14	Cadmium(Cd)	mg/l	0.005
15	Lead (Pb)	mg/l	0.01
16	Chromium VI(Cr ⁶⁺)	mg/l	0.05
17	Copper(Cu)	mg/l	1.0
18	Zinc(Zn)	mg/l	3.0
19	Manganese (Mn)	mg/l	0.5
20	Mercury	mg/l	0.001
21	Iron (Fe)	mg/l	5
22	Selenium (Se)	mg/l	0.01
23	Total active radiation α	Bq/l	0.1
24	Total active radiation β	Bq/l	1.0
25	Fecal coli	MPN/100 ml	None
26	Coliform	MPN/100 ml	3

Based on: Decision of MONRE No. 16/2008/QĐ-BTNMT of December 31, 2008 on promulgating the National Technical Specifications on Environment

Table 14: National Technical Regulation on the Effluent of Aquatic Products Processing Industry 2008/BTNMT (QCVN 11)

Not	Indicator	Unit	Limit	
			A	B
1.	pH	-	6 - 9	5.5 - 9
2.	BOD ₅ at 20°C	mg/l	30	50
3.	COD	mg/l	50	80
4.	Total Suspended solids (TSS)	mg/l	50	100
5.	Amoni (By N)	mg/l	10	20
6.	Total N	mg/l	30	60
7.	Oils and grease	mg/l	10	20
8.	Residual chlorine	mg/l	1	2
9.	Coliform	MPN/100ml	3000	5000

Based on: Decision of MONRE No. 16/2008/QĐ-BTNMT of December 31, 2008 on promulgating the National Technical Specifications on Environment

Note:

- Column A regulates the C value of pollution indicators as the basis for calculating the allowable maximum for the waste water of seafood processors before being discharged into the sources of water for residential use (with the quality corresponding to that in Columns A1 and A2 of the national technical norms for surface water).
- Column B regulates the C value of pollution indicators as the basis for calculating the allowable maximum of the waste water of seafood processors before dumping into the sources of water not for residential use (with the quality corresponding to that in Columns B1 and B2 of the national technical norms for surface water).
- Apart from the 09 indicators in Table 1, depending on the needs and purposes of pollution control, the C value of other pollution indicators follows the regulations in Column A or B of Table 1 Vietnam Standards 5945: 2005 Water quality - Industrial waste water - Discharge standards.

Annex 2: Glossary of Water-Related Legal Terminology

Due to the fact, that almost legal terms related to water sector in Vietnam are only recognized by the definition in accordance with provisions of law, the “Glossary of water-related Legal Terminology” aims to provide some key legal terminologies. According to the current regulations of Vietnam, the following legal terms related to water management shall be defined as follows:

- “**Accreditation**” means certification that a testing laboratory, calibration laboratory, conformity certification organization or inspection organization has the capacity conformable with relevant standards (Article 3 of the Law on Standards and Technical Regulations).
- “**Announcement of standard conformity**” means announcement by an organization or individual of the conformity of objects of activities in the domain of standard with relevant standards (Article 3 of the Law on Standards and Technical Regulations).
- “**Announcement of technical regulation conformity**” means announcement by an organization or individual of the conformity of objects of activities in the domain of technical regulation with relevant technical regulations (Article 3 of the Law on Standards and Technical Regulations).
- “**Aquatic resources**” mean natural organisms in natural water areas, of economic or scientific value for development of the exploitation of aquatic resources, for conservation and development of aquatic resources (Article 2 of the Law on Fisheries).
- “**Area with difficult socioeconomic conditions**” is an ethnic minority, mountainous area; area with undeveloped infrastructure; or area with unfavorable natural conditions (Article 3 of the Law on Water Resources).
- “**Area with especially difficult socioeconomic conditions**” is an ethnic minority area with the high mountain region, island area, area with poor infrastructure or area with very unfavorable natural conditions (Article 3 of the Law on Water Resources).
- “**River basin environment-water resource data directory**” means a general database of statistical particularities of a river basin, including geographical position area, total water volume, water quality, water exploitation and use status, wastewater discharge, socio-economic characters and environmental particularities (Article 3 of Government’s Decree No. 120/2008/ND-CP).
- “**Certification of standard conformity**” means certification that objects of activities in the domain of standard conform to relevant standards (Article 3 of the Law on Standards and Technical Regulations).
- “**Certification of technical regulation conformity**” means certification that objects of activities in the domain of technical regulation conform to relevant technical regulations (Article 3 of the Law on Standards and Technical Regulations).
- “**Clean water**” is water meeting the quality requirements for clean water stipulated in the Vietnamese standards (Article 3 of the Law on Water Resources).
- “**COD**” means the chemical oxygen demand for oxidization of chemicals existing in water (Article 2 of the Government’s Decree No. 88/2007/ND-CP).
- “**Collection of solid waste**” means activities of gathering, separation, packing and temporarily storing solid waste from different collection depots to a place or facility recognized by a competent state agency (Article 3 of the Government’s Decree No. 59/2007/ND-CP).
- “**Conformity assessment**” means determination as to whether objects of activities in the domain of standard or objects of activities in the domain of technical regulation are conformable with technical characteristics and management requirements in relevant standards or technical regulations. Conformity assessment covers testing, calibration, inspection and certification of standard or technical regulation conformity; announcement of standard or technical regulation conformity; and accreditation of the capacity of testing laboratories, calibration laboratories, conformity certification organizations and inspection organizations (Article 3 of the Law on Standards and Technical Regulations).
- “**Cooperative organization for water consumption**” is a form of cooperation between people sharing benefits from irrigation works, performing task of exploiting and protecting irrigation works, served the production and people’s life (Article 2 of the Ordinance on Exploitation and Protection of Irrigation Works)

- “Daily-life waste water”** means water discharged from humans' daily-life activities such as eating and drinking, bathing and washing, personal hygiene (Article 2 of the Government's Decree No. 88/2007/ND-CP).
- “Degradation and depletion of water resources”** is the decrease in quality and quantity of a water source (Article 3 of the Law on Water Resources).
- “Domestic water source”** is water source which can be supplied as domestic water of the water which can be economically treated to become clear water (Article 3 of the Law on Water Resources).
- “Domestic water”** is water used for cooking, drinking, and sanitary purposes of the humans (Article 3 of the Law on Water Resources).
- “Environment components”** are physical elements that constitute the environment, including soil, water, air, sound, light, living organisms, ecosystems and other physical forms (Article 2 of the Law on Environmental Protection 2005).
- “Environment”** comprises natural and man-made physical factors that surround human beings and affect life, production, existence and development of human beings and living organisms (Article 2 of Law on Environmental Protection 2005).
- “Environmental degradation”** means qualitative and quantitative deterioration of environmental components, adversely affecting human beings and organisms (Article 2 of the Law on Environmental Protection 2005).
- “Environmental impact assessment”** means analysis and forecast of impacts on the environment to be exerted by specific projects so as to work out measures to protect the environment when such projects are carried out (Article 2 of the Law on Environmental Protection 2005).
- “Environmental incidents”** mean disasters or risks occurring in the process of human activities, or abnormal changes of nature causing serious environmental pollution, degradation or alteration (Article 2 of the Law on Environmental Protection 2005).
- “Environmental information”** means figures and data about environmental components; reserves, ecological value and economic value of natural resources; impacts on the environment; wastes; degree of environmental pollution and degradation; and information about other environmental issues (Article 2 of the Law on Environmental Protection 2005).
- “Environmental monitoring”** means the process of systematic observation of the environment and factors that exert impacts on the environment in order to supply information for the assessment of status and changes in the quality of, and adverse impacts, on the environment (Article 2 of the Law on Environmental Protection 2005).
- “Environmental pollution”** means the status that environmental components have been changed to extend beyond environmental standards and adversely affect human beings and living organisms (Article 2 of the Law on Environmental Protection 2005).
- “Environmental protection activities”** mean activities of keeping the environment sound, clean and beautiful; preventing and restricting adverse impacts on environment, responding to environmental incidents; remedying environmental pollution and degradation, rehabilitating and improving the environment; exploiting and rationally and economically using natural resources; and protecting biodiversity (Article 2 of the Law on Environmental Protection 2005).
- “Environmental standards”** mean allowable limits of parameters of the quality or surrounding environment, the content of pollutants in wastes, set by competent state agencies as a basic for environmental management and protection (Article 2 of the Law on Environmental Protection 2005).
- “Expenses for collection and transportation of solid waste”** means expenses for vehicles and equipment, labor training, management and operation of the facility for the collection and transportation of solid waste, which are calculated according to the duration of capital retrieval and per collected or transported solid waste quantity unit (Article 3 of the Government's Decree No. 59/2007/ND-CP).
- “Expenses for solid waste disposal”** means expenses for ground clearance, construction investment, procurement of vehicles and equipment, labor training, management and operation of a solid waste disposal facility, which are calculated according to the duration of capital retrieval and per disposed solid waste quantity unit (Article 3 of the Government's Decree No. 59/2007/ND-CP).

- “Experimental development”** is the activity of applying the results of scientific research to experiments in order to create new technologies or new products (Article 2 of the Law on Science and Technology No. 21/2000/QH10).
- “Exploitation areas”** means areas where groundwater exploitation projects are located, including areas where the groundwater level is lowered due to the exploitation projects’ water pumping and drainage (Article 1 of the Decision No. 05/2003/QD-BTNMT).
- “Exploitation of aquatic resources”** means the exploitation of aquatic resources in the sea, rivers, lakes, marshes, lagoons and other natural water areas (Article 2 of the Law on Fisheries).
- “Exploitation of water resources”** means activities aiming at bringing benefits from the water resources (Article 3 of the Law on Water Resources).
- “Exploration of groundwater”** means the combined use of various geological survey methods to appraise and determine the deposit and quality of groundwater and to forecast the environment impacts on a given area, which may be caused by water exploitation, aiming to server the designing of water exploitation projects with set outputs (Article 1 of the Decision No. 05/2003/QD-BTNMT).
- “Exploration-cum-exploitation of groundwater”** means the exploration of groundwater whereby, in the exploration process, one or some of drilling holes are structured into and used as exploitation wells (Article 1 of the Decision No. 05/2003/QD-BTNMT).
- “Fishery activities”** mean the exploitation, culture, transportation of exploited aquatic resources; preservation, processing, trading in, export and import of aquatic products; services in fishery activities; survey, protection and development of aquatic resources (Article 2 of the Law on Fisheries)
- “Fishing grounds”** mean sea areas with concentrated aquatic resources, which are identified for exploitation by fishing ships (Article 2 of the Law on Fisheries).
- “Flood diversion, flood retardation”** is the active changing of the flow direction of a part of flood or temporary storage of water in a reservoir to decrease the flood level (Article 3 of the Law on Water Resources).
- “Greenhouse gas quota”** means the volume of greenhouse gas which each country is permitted to emit into the atmosphere in accordance with relevant treaties (Article 2 of the Law on Environmental Protection 2005).
- “Greenhouse gas”** means assorted gases that affect the thermal exchange between the earth and surrounding atmosphere, thereby warming up the air surrounding the earth (Article 2 of the Law on Environmental Protection 2005).
- “Groundwater exploitation projects”** means drilled wells, dug wells, caves or water exploitation corridors or open-air spots of groundwater, which are built or used for groundwater exploitation (Article 1 of the Decision No. 05/2003/QD-BTNMT).
- “Groundwater”** is water occurring in aquifers under the ground (Article 3 of the Law on Water Resources).
- “Hazardous solid waste”** means solid waste containing substances or compounds that exhibit any of the characteristics of radioactivity, ignitability, explosiveness, corrosiveness, infectiousness, toxicity or other hazardous characteristics (Article 3 of the Government’s Decree No. 59/2007/ND-CP).
- “Hazardous wastes”** mean wastes containing elements that are toxic, radioactive, inflammable, explosive, abrasive, contagious, poisonous or otherwise harmful (Article 2 of the Law on Environmental Protection 2005).
- “Hydraulic work”** is a work to exploit beneficial effects of water, to prevent and control adverse effects caused by water and to protect the environment and ecological equilibrium (Article 3 of the Law on Water Resources).
- “Individual water drainage households”** means those that discharge rain water and waste water directly into the environment (Article 2 of the Government’s Decree No. 88/2007/ND-CP).
- “Inland waterway navigation activities”** mean activities of people and vessels participating in inland waterway navigation or transport; planning of the development, building, operation and protection of inland waterway navigation infrastructures and State management over inland waterway navigation (Article 3 of the Law on Inland Waterway Navigation)

- “Integrated use of water resources”** is the appropriate use, development of potential of water source and restriction of adverse effects caused by water for integrated services of various purposes (Article 3 of the Law on Water Resources).
- “International river basin”** means a river basin where exists one or more than one international water sources (Article 3 of Government’s Decree No. 120/2008/ND-CP).
- “International water source”** is water source flowing from territory of Vietnam into that of another country, from the territory of another country into that of Vietnam or occurring on a border between Vietnam and a neighboring country (Article 3 of the Law on Water Resources).
- “Irrigation charge”** means the water service charge collected from organizations and individuals using water or providing services from irrigation works for agricultural production in order to contribute to covering part of expense for management, maintenance and protection of irrigation works (Article 2 of the Ordinance on Exploitation and Protection of Irrigation Works).
- “Irrigation work system”** includes irrigation works which are directly interrelated in terms of exploitation and protection in certain geographical area (Article 2 of the Ordinance on Exploitation and Protection of Irrigation Works).
- “Irrigation works”** mean infrastructure works built to tap the water’s usefulness to prevent and combat harms caused by water, protecting the environment and ecology balance, which include: reservoirs, dams, pumping stations, wells, penstocks, canals, works on canals and embankments of all types (Article 2 of the Ordinance on Exploitation and Protection of Irrigation Works).
- “Land for aquaculture”** means land with inland water surfaces, including ponds, lakes, marshes, lagoons, rivers, canals, ditches and trenches; coastal land with water surfaces, riverside and coastal alluvial land; coastal sand banks and dunes; land used for farm economy; non-agricultural land with water surfaces assigned or leased for aquaculture (Article 2 of the Law on Fisheries).
- “Large-sized exploitation projects”** means projects with exploitation outputs exceeding 5,000m³/day and night (Article 1 of the Decision No. 05/2003/QĐ-BTNMT).
- “Medium-sized exploitation projects”** means projects with exploitation outputs of between 1,000m³/day and night and 5,000m³/day and night (Article 1 of the Decision No. 05/2003/QĐ-BTNMT).
- “Mineral water”** means a type of underground natural water possibly open the ground in some places, which contains a number of biologically active compounds of high concentration in compliance with the Vietnamese standards or international standards permitted by the Vietnamese State for application (Article 1 of the Decision No. 05/2003/QĐ-BTNMT).
- “Minimum flow”** means the flow at the lowest level necessary for maintaining a river or river section, ensuring the normal development of aquatic ecosystems and the minimum level for water resource exploitation and use by water users in the priority order stated in the river basin planning (Article 3 of Government’s Decree No. 120/2008/ND-CP).
- “Natural thermal water”** means underground natural water possibly open on the ground in some places, which is always of a certain temperature in compliance with the Vietnamese standards or international standards permitted by the Vietnamese State for application (Article 1 of the Decision No. 05/2003/QĐ-BTNMT).
- “Place or facility recognized by a competent agency”** means a place of storage, disposal or burial of solid waste approved by a competent state management agency (Article 3 of the Government’s Decree No. 59/2007/ND-CP).
- “Plan for water pollution prevention and combat and rehabilitation of polluted water sources”** covers managerial measures, investment plan and schedule for specific activities to achieve the water quality targets set in water resources protection planning (Article 3 of Government’s Decree No. 120/2008/ND-CP).
- “Pollutant”** means substances or physical factors that cause environmental pollution when they are present in the environment (Article 2 of the Law on Environmental Protection 2005).
- “Pollution of water resources”** is the change in physical, chemical properties and biological composition which breaches the permissible standards (Article 3 of the Law on Water Resources).

- “Processing of solid waste”** means the process of applying technological and technical solutions to reduce, remove or destroy harmful or useless constituents of solid waste; and to recover, recycle or reuse useful constituents of solid waste (Article 3 of the Government’s Decree No. 59/2007/ND-CP).
- “Products and goods capable of causing unsafety”** (below referred to as group-2 products and goods) mean those products and goods which under rational conditions of transportation, storage, preservation and use of proper purposes, can latently caused harms to humans, animals, plants, assets or the environment (Article 3 of the Law on Products and Goods Quality).
- “Products and goods incapable of causing unsafety”** (hereafter referred to as group-1 products and goods) mean those products and goods which under rational conditions of transportation, storage, preservation and use of proper purposes caused no harm to humans, animals, plants, assets or the environment (Article 3 of the Law on Products and Goods Quality).
- “Products and goods quality”** means the products and goods properties’ extent of satisfaction of requirements under announced applicable standards or relevant technical regulations (Article 3 of the Law on Products and Goods Quality).
- “Rain water drainage systems”** include networks of culverts, rain water-collecting and -conducting, regulating lakes, key works (pump stations, sluice gates) and other support facilities for rain water collection and drainage (Article 2 of the Government’s Decree No. 88/2007/ND-CP).
- “Receiving sources”** means parts of the environment, including sources of constantly or periodically flowing water such as ponds, lakes, rivers, streams, canals, groundwater, sea (Article 2 of the Government’s Decree No. 88/2007/ND-CP).
- “Reproduction of aquatic resources”** means the process of self-reproduction or activities of reproducing and increasing aquatic resources (Article 2 of the Law on Fisheries)
- “River basin group”** means a group of river basins which are geographically close to one other (Article 3 of Government’s Decree No. 120/2008/ND-CP).
- “River basin list”** means a collection of river basins classified on the basic of criteria of their importance, basin area, main river length, administrative and territorial characters and others (Article 3 of Government’s Decree No. 120/2008/ND-CP).
- “River basin planning”** is the planning for protection, exploitation and utilization of water resources, development of water resources, prevention, control and mitigation of adverse effects caused by water in a river basin (Article 3 of the Law on Water Resources).
- “River basin”** is a geographical area within which the surface water and groundwater flow naturally into the river (Article 3 of the Law on Water Resources).
- “Sanitary landfill of solid waste”** means burying solid waste in accordance with requirements of technical standards on sanitary landfills for solid waste.
- “Sanitary protection zone of water intakes”** is the surrounding area of water intake from a water source stipulated to be protected for preventing and controlling pollution of domestic water resources (Article 3 of the Law on Water Resources).
- “Science”** is a system of knowledge about phenomena, things and regulations of the nature, society and thought (Article 2 of the Law on Science and Technology No. 21/2000/QH10).
- “Scientific and technological activities”** include scientific research, technological research and development, scientific and technological services, innovation promotion, technical improvement, production rationalization and other activities aimed to develop science and technology (Article 2 of the Law on Science and Technology No. 21/2000/QH10).
- “Scientific and technological services”** are activities which serve scientific research and technological development; activities related to intellectual property and technology transfer; services on information, consultancy, personnel training and fostering, popularization and application of scientific and technological knowledge as well as practical experiences (Article 2 of the Law on Science and Technology No. 21/2000/QH10).
- “Scientific research”** is the activity of discovering and inquiring into phenomena, things and laws of the nature, society and thought; and creating solutions for practical application. Scientific research

includes basic research and applied research (Article 2 of the Law on Science and Technology No. 21/2000/QH10)

“**Scrap**” means products and materials discarded from production or consumption and recovered for reprocessing or reuse as input materials for the production of other products (Article 3 of the Government’s Decree No. 59/2007/ND-CP).

“**Sea surface for aquaculture**” mean sea areas zoned off for aquaculture (Article 2 of the Law on Fisheries).

“**Small-sized exploitation projects**” means projects with exploitation outputs of less than 1,000m³/day and night (Article 1 of the Decision No. 05/2003/QĐ-BTNMT).

“**Solid waste collector or transporter**” means an organization or individual licensed to conduct the collection or transportation of solid waste (Article 3 of the Government’s Decree No. 59/2007/ND-CP).

“**Solid waste disposal complex**” means a combination of one or more works for disposal, recycle or reuse of solid waste and one or more solid waste landfills (Article 3 of the Government’s Decree No. 59/2007/ND-CP).

“**Solid waste disposal facility owner**” means an organization or individual licensed to dispose of solid waste. A solid waste disposal facility owner may be the investor of a solid waste disposal facility or a professionally qualified organization or individual and hired by the investor to operate the solid waste disposal facility (Article 3 of the Government’s Decree No. 59/2007/ND-CP).

“**Solid waste disposal facility**” means material foundation including land, workshops, technological chain, equipment and auxiliary structures used in activities of disposing of solid waste (Article 3 of the Government’s Decree No. 59/2007/ND-CP).

“**Solid waste management facility investor**” means an organization or individual licensed to invest in activities of collecting, separating, transporting, processing or disposing of solid waste (Article 3 of the Government’s Decree No. 59/2007/ND-CP).

“**Solid waste management facility**” means material foundation, technical chain and equipment used in the collection, separation, transportation, processing and disposal of solid waste.

“**Solid waste management**” means activities of planning, managing, investing in building solid waste management facilities, separating, collecting, storing, transporting, reusing, recycling and disposing of solid waste in order to prevent and minimize adverse impacts on the environment and human health (Article 3 of the Government’s Decree No. 59/2007/ND-CP).

“**Solid waste**” means waste in a solid form, discharged from production, business, service, daily life or other activities. Solid waste includes ordinary solid waste and hazardous solid waste. Solid waste generated in daily-life activities of individuals, households or at public places is collectively referred to as daily-life solid waste. Solid waste generated in industrial production, craft villages, business and service activities or other activities is collectively referred to as industrial solid waste (Article 3 of the Government’s Decree No. 59/2007/ND-CP).

“**Standard**” means regulation on technical characteristics and management requirements used as standard for classifying and appraising products, goods, services, processes, the environment and other objects in socio-economic activities with a view to improving the quality and effectiveness of these objects. Standard shall be published in a written form by an organization for voluntary application (Article 3 of the Law on Standards and Technical Regulations).

“**State examination of products and goods quality**” (below referred to as products and goods quality examination) mean that a state agency reconsiders and reevaluates the quality of products and goods or production or service provision processes which have been evaluated in terms of quality by conformity evaluation organization or to which other quality control measures have been applied by production and business organizations or individuals (Article 3 of the Law on Products and Goods Quality).

“**Storage of solid waste**” means the keeping of solid waste for a given period of time at a place recognized by a competent agency before solid waste is transported to a processing facility (Article 3 of the Government’s Decree No. 59/2007/ND-CP).

- “Strategic environmental assessment”** means analysis and forecast of impacts on the environment to be exerted by draft development strategies, planning and plans before they are approved in order to attain sustainable development (Article 2 of the Law on Environmental Protection 2005).
- “Surface water”** is water occurring on the surface of the mainland or islands (Article 3 of the Law on Water Resources).
- “Surrounding culverts”** mean main culvert lines with wastewater-separating wells to gather the entire wastewater, when there is no rain, and part of wastewater which is mixed, when there is rain, in common water drainage systems from different basins and carried to pump stations or waste water treatment plants (Article 2 of the Government’s Decree No. 88/2007/ND-CP).
- “Sustainable development”** means development that meets the needs of the present generation without harming the capability of meeting those of future generation on the basis of close and harmonious combination of economic growth, assurance of social advancement and environmental protection (Article 2 of the Law on Environmental Protection 2005).
- “Systems of regulating lakes”** include natural or artificial lakes to receive water and regulate water drainage for water drainage systems (Article 2 of the Government’s Decree No. 88/2007/ND-CP).
- “Technical regulation”** means regulation on the limits of technical characteristics and management requirements which products, goods, services, processes, the environment and other objects in socio-economic activities must comply with in order to ensure safety, hygiene and human health; to protect animals, plants and environment; to safeguard national interests and security, consumer interests and other essential requirements. Technical regulation shall be promulgated in a written form by a competent state agency for mandatory application (Article 3 of the Law on Standards and Technical Regulations).
- “Technological development”** is the activity aimed to create and perfect new technologies or new products. Technological development includes experimental development and trial production (Article 2 of the Law on Science and Technology No. 21/2000/QH10).
- “Technology”** is a combination of measures, processes, skills, know-how, implements and means used to turn resources into products (Article 2 of the Law on Science and Technology No. 21/2000/QH10).
- “Transportation of solid waste”** means the process of carrying solid waste from a place of generation, collection, storage or transfer to a place of processing, recycle or reuse or to a final landfill (Article 3 of the Government’s Decree No. 59/2007/ND-CP).
- “Trial production”** is the activity of applying the results of experimental development to small-scale trial production in order to perfect new technologies or new products before putting them into production and life (Article 2 of the Law on Science and Technology No. 21/2000/QH10).
- “Waste generator”** means an organization, individual or household engaged in activities that generate solid waste (Article 3 of the Government’s Decree No. 59/2007/ND-CP).
- “Waste management”** means activities of sorting, collecting, transporting, minimizing, reusing, reprocessing, treating, destroying and discarding wastes (Article 2 of the Law on Environmental Protection 2005).
- “Waste water-discharged fee”** means fee collected from organizations and individuals discharging waste water into irrigation works to cover part of expenditure on protection of water quality (Article 2 of the Ordinance on Exploitation and Protection of Irrigation Works).
- “Wastes”** mean substances in the solid, liquid or gaseous form discharged from production, business, service, daily life or other activities (Article 2 of the Law on Environmental Protection 2005).
- “Wastewater drainage systems”** include networks of culverts, wastewater-collecting and -conducting, regulating lakes, key works (pump stations, treatment plants, sluice gates,) and other support facilities for collection, drainage and treatment of waste water (Article 2 of the Government’s Decree No. 88/2007/ND-CP).
- “Water drainage activities”** are those related to water drainage, including planning, designing consultancy, construction investment, management, operation, exploitation and use of water drainage systems (Article 2 of the Government’s Decree No. 88/2007/ND-CP).

- “Water drainage basins”** mean certain areas where rain water or waste water is collected and carried to one or a number of points for discharge into receiving sources (Article 2 of the Government’s Decree No. 88/2007/ND-CP).
- “Water drainage charges”** means environmental protection charges for waste water applicable to urban centers and industrial parks with concentrated water drainage systems. Water drainage charges are set by People's Committees (provincial level) after they are submitted to People's Councils of the same level for passage with a view to incrementally maintaining and developing water drainage services in localities (Article 2 of the Government’s Decree No. 88/2007/ND-CP).
- “Water drainage households”** cover households, non-business administrative units, establishments providing services on discharge of rain water or wastewater into a water drainage system (Article 2 of the Government’s Decree No. 88/2007/ND-CP).
- “Water drainage service”** means activities of managing and operating according to law water drainage systems in order to satisfy the rain water and wastewater drainage and wastewater-treatment requirements of those that have demands for water drainage (Article 2 of the Government’s Decree No. 88/2007/ND-CP).
- “Water drainage systems”** include networks of culverts, water-collecting and -conducting canals, regulating lakes, key works (pump stations, treatment plants, and sluice gates) and other support facilities, aiming to collect, conduct and drain rain water, waste water and treat waste water. Water drainage systems are classified into the following types: (1) common water drainage systems, which are systems assorted wastewater and rain water are collected into the same systems; (2) separate water drainage systems, which are separate systems for rain water drainage or waste-water drainage; (3) semi-separate water drainage systems, which are common water drainage systems with surrounding culvert lines for separation and carriage of wastewater to treatment plants (Article 2 of the Government’s Decree No. 88/2007/ND-CP).
- “Water drainage units”** means organizations or individuals that provide water drainage services under contracts on management and operation of water drainage systems (Article 2 of the Government’s Decree No. 88/2007/ND-CP).
- “Water resource regulation and distribution plan”** covers managerial measures, investment plan and schedule for specific activities to ensure water resource regulation and allocation according to rates set in the water resource allocation planning in order to meet the water user’s needs (Article 3 of Government’s Decree No. 120/2008/ND-CP).
- “Water resources development”** means measures to increase the possibility of exploitation and sustainable utilization of water resources and the value of water resources (Article 3 of the Law on Water Resources).
- “Water resources permit”** comprises groundwater exploration license, license for exploitation and utilization of water resources, license for discharging waste water into water resources and license for activities requiring an application for license within protection zone of hydraulic works (Article 3 of the Law on Water Resources).
- “Water resources protection”** means measures for preventing and controlling the degradation and depletion of water resources, ensuring safety for water resources and securing the possibility of water resources development (Article 3 of the Law on Water Resources).
- “Water resources”** refers to various forms of natural or man-made water accumulations which can be exploited and used, consisting of rivers, streams, canals, ditches, sea, lakes, lagoons, ponds, aquifers, drains, ice, snow and other forms of water accumulations (Article 3 of the Law on Water Resources).
- “Water-consuming money”** means the sum of money inscribed in water service contracts collected from organizations and individuals consuming water or providing services from irrigation works purposes aside from agricultural production (Article 2 of the Ordinance on Exploitation and Protection of Irrigation Works).

Annex 3: Mekong River Water Quality

According to the Vietnam Environment Monitor 2003 – Water, the water quality in the major rivers of the Mekong River Delta is within the standard classes A-B (Table 1). The only parameter that exceeds standard is BOD₅⁵⁷, and occasionally NH₄. However, in smaller tributaries, especially those found in urban and industrialized areas, water quality has been found to exceed the standards, while groundwater quality in the Mekong River Delta region is variable. An overview of the results of the Mekong Delta's surface water quality monitoring in 2006, conducted by the Fisheries Institute II, the National Monitoring Station for Natural Resources and Environmental in the southern region, and the Mekong River Commission, are provided in Table 2.

Table 15: Mekong River Quality

	Class A	Class B	Out-of-range
COD ⁵⁸ (mg/l)	x		
BOD₅ (mg/l)		x	
NH₄-N (mg/l)	x		
DO ⁵⁹ (mg/l)	x		
Coliform ⁶⁰ (MPN/100ml)		x	
Overall		x	

Source: MONRE61 2003:59.

⁵⁷ **BOD₅**: The amount of dissolved oxygen consumed in five days by biological processes breaking down organic matter (based on United States Environment: Terms of Environment 2009).

⁵⁸ **Chemical Oxygen Demand (COD)**: A measure of the oxygen required to oxidize all compounds, both organic and inorganic, in water (based on United States Environment: Terms of Environment 2009).

⁵⁹ **Dissolved Oxygen (DO)**: The oxygen freely available in water, vital to fish and other aquatic life and for the prevention of odours; DO levels are considered a most important indicator of a water body's ability to support desirable aquatic life. Secondary and advanced waste treatments are generally designed to ensure adequate DO in waste-receiving waters (based on United States Environment: Terms of Environment 2009).

⁶⁰ **Coliform Index**: A rating of the purity of water based on a count of fecal bacteria;

Coliform Organism: Microorganisms found in the intestinal tract of humans and animals. Their presence in water indicates fecal pollution and potentially adverse contamination by pathogens (based on United States Environment: Terms of Environment 2009).

⁶¹ For further information, please refer to MONRE (2003): Vietnam Environment Monitor of 2003 – Water [Báo cáo diễn biến môi trường Việt Nam 2003 – Môi trường nước].

Table 16 : Surface Water Quality of the Mekong River (Can Tho City)

No	Monito-ring Station	COD (mg/l)	DO (mg/l)	BOD (mg/l)	NH3 (mg/l)	NO3 (mg/l)	PO4 (mg/l)	SS (mg/l)	Coli-form (MPN/ml)
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Monitoring results of the Fisheries Institute II, 2005 -2006

1.	Can Tho (Hau River)	4.39	3.26	2.3	0.1	0.028	0.166		33.000
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Monitoring results of National Monitoring Station in Southern Region, 2006

2.	Cai Rang Bridge (Can Tho River)	13	2.76	4	0.11	0.34	0.2	49	27.000
3.	Nhi Kieu Bridge (Can Tho River)	15	1.75	7	0.36	0.13	0.19	31	33.000
4.	Rach Ngong Bridge (Can Tho River)	17	1.32	8	1.7	0.1	0.25	33	35.000
5.	Cai Khe Bridge (Can Tho City)	16	2.04	6	1.04	0.16	0.17	29	51.000
6.	Ninh Kieu Mooring Site (Can Tho River)	8	3.79	3	0.17	0.23	0.07	43	81.000

Source: Nguyen Minh Son 2007:35.

It is evident that the river water has not yet been polluted by oil, pesticides or heavy metals⁶² (such as Cu, Cd, As, Pd, etc.). BOD⁶³ levels at Nhi Kieu, Rach Ngong and Cai Khe bridges on the Can Tho River are two to four times higher than the national standards, level B (TCVN 5942: 1995 on Water Quality Standards – Surface Water), but are still much lower than level A of the national standards. NH3 content at the Cai Rang and Nhi Kieu bridges and the Ninh Kieu mooring site all exceed the national standards (level A); and NH3 at the Rach Ngong and Cai Khe bridges exceed the national standards (level B). SS content exceed the national standards (level A) by one to three times, but is still lower than level B. Coliform content at Can Tho River is much higher than the national standards (level B).

Furthermore, salinity intrusion has become a major issue in the Mekong Delta, particularly in the dry season. In addition, high concentrations of nitrogen compounds have been registered in boreholes in Holocene aquifers. Coastal water is deteriorating in most of the quality parameters (Table 3), mainly due to the high intensity of economic activities in the region. One of the reasons for the increase in saline intrusion in the Mekong River system is the change in water flow regime in upstream areas due to the development of structures upstream, particularly those for hydropower generation.

⁶² **Heavy Metals:** Metallic elements with high atomic weights (e.g. mercury, chromium, cadmium, arsenic, and lead), which can damage living things in low concentrations and tend to accumulate in the food chain (based on United States Environment: Terms of Environment 2009).

⁶³ **Biochemical Oxygen Demand (BOD):** A measure of the amount of oxygen consumed in the biological processes that break down organic matter in water. The greater the BOD, the greater the degree of pollution (based on United States Environment: Terms of Environment 2009).

Table 17: Quality of Coastal Water

Year	Phosphate	Nitrate	COD	BOD	Oil	Coliform
1996	9,8	251	19,3	1,63	1,29	3796
1997	10	360	20,5	1,5	0,18	3650
1998	-	-	-	-,	-	4400
1999	-	-	-	-	-	-
2000	-	-	-	-	0,36	-
2001	-	-	-	-	0,12	4500
National Standards	10 µg/l	50 µg/l	30 – 40 mg/l	10 -20 mg/l	0,05 mg/l	1000 (MPN)

Source: MONRE⁶⁴ 2003:53.

⁶⁴ For further information, please refer to MONRE (2003): Vietnam Environment Monitor of 2003 – Water [Báo cáo diễn biến môi trường Việt Nam 2003 – Môi trường nước].

Annex 4: List of Selected Legal Documents on Wastewater Management

A. Basic Regulation

Nr.	Code	Category	Issued by	Issued on	References	Vietnamese Version	Available in English
1.	Constitution 1992	Constitution	National Assembly	15.04.1992	The 1992 Constitution of the Socialist Republic of Vietnam Amended on 25/12/2001. Replaced the Constitution of 1946, 1960, 1980	Hiến pháp nước Cộng hòa xã hội chủ nghĩa Việt Nam năm 1992, đã được sửa đổi bổ sung một số điều theo Nghị quyết số 51/2001/QH10	x

B. Selected Legal Documents on Wastewater Management

Nr.	Code	Category	Issued by	Issued on	References	Vietnamese Version	Available in English
1.	05/1998/PL-UBTVQH10	Ordinance	Standing Committee of National Assembly	10.04.1998	Ordinance on Natural Resource Tax (amended)	Pháp lệnh của Ủy ban Thường vụ Quốc hội số 05/1998/PL-UBTVQH10 ngày 10/4/1998 về Thuế Tài nguyên	x
2.	08/1998/QH10	Law	National Assembly	20.05.1998	Law on Water Resources	Luật số 08/1998/QH10 ngày 20/5/1998 của Quốc hội về Tài Nguyên nước	x
3.	68/1998/NĐ-CP	Decree	Government	03.09.1998	Decree on detailing the implementation of the ordinance on natural resource tax No. 05/1998/PL-UBTVQH10	Nghị định của Chính phủ số 68/1998/NĐ-CP ngày 3/9/1998 quy định chi tiết thi hành Pháp lệnh Thuế Tài nguyên số 05/1998/PL-UBTVQH10	x
4.	09/1998/QH10	Law	National Assembly	02.12.1998	Law on Complaints and Denunciations	Luật Khiếu nại Tố cáo số 09/1998/QH10 ngày 02/12/1998	x
5.	90/2000/QĐ-BTC	Decision	Ministry of Finance	01.06.2000	Decision on promulgating the tables of fee levels for aquatic product quality, safety and hygiene control	Quyết định của Bộ Tài chính số 90/2000/QĐ-BTC ngày 1/6/2000 ban hành biểu mức thu lệ phí về quản lý chất lượng an toàn và vệ sinh thủy sản	x

6.	14/2000/N D-CP	Decree	Government	05.05.2000	Decree on amending and supplementing a number of articles of the decree No. 88/1999/ND-CP concerning the regulations on tendering	Nghị định của Chính phủ số 14/2000/NĐ-CP ngày 5/5/2000 về việc sửa đổi, bổ sung một số điều của nghị định của Chính phủ số 88/1999/NĐ-CP quy định quy chế Đấu thầu	
7.	21/2000/Q H10	Law	National Assembly	09.06.2000	Law on Science and Technology	Luật Khoa học và Công nghệ số 21/2000/QH10 ngày 9/6/2000	x
8.	32/2001/P L- UBTVQH	Ordinance	Standing Committee of National Assembly	04.04.2001	Ordinance on exploitation and protection of irrigation works	Pháp lệnh của Ủy ban Thường vụ Quốc hội số 32/2001/PL-UBTVQH ngày 4/4/2001 về Khai thác và bảo vệ công trình thủy lợi	x
9.	44/2002/P L- UBTVQH 10	Ordinance	Standing Committee of National Assembly	02.07.2002	Ordinance on handling of administrative violations	Pháp lệnh của Ủy ban Thường vụ Quốc hội số 44/2002/PL-UBTVQH10 ngày 2/7/2002 về xử lý vi phạm hành chính	x
10.	35/2002/Q D- BKHCNM T	Decision	Ministry of Science, Technology & Environment	25.06.2002	Decision on publication the List of Vietnamese Environmental Standards for compulsory application	Quyết định của Bộ trưởng Bộ Khoa học, Công Nghệ và Môi trường số 35/2002/QĐ-BKHCNMT ngày 25/6/2008 về việc công bố danh mục Tiêu chuẩn Việt Nam về môi trường bắt buộc áp dụng	x
11.	81/2002/N D-CP	Decree	Government	17.10.2002	Decree on detailing and guiding the implementation of a number of articles of the Law on Science and Technology No. 21/2000/QH10	Nghị định số 81/2002/NĐ-CP ngày 17/10/2002 Quy định chi tiết thi hành một số điều của Luật Khoa học và Công nghệ số 21/2000/QH10	x
12.	67/2003/N D-CP	Decree	Government	13.06.2003	Decree on Environmental Protection Charges for Wastewater	Nghị định của Chính phủ số 67/2003/NĐ-CP ngày 13/06/2003 về phí bảo vệ môi trường đối với nước thải	x
13.	70/2003/N D-CP	Decree	Government	17.06.2003	Decree on stipulating the sanction of administrative violations in the aquatic resource domain	Nghị định của Chính phủ số 70/2003/NĐ-CP ngày 17/6/2003 quy định về xử phạt vi phạm hành chính trong lĩnh vực thủy sản	x
14.	13/2003/Q H11	Law	National Assembly	26.11.2003	Law on Land Replace the 1993 law on land, the 1998 & 2001 amended law on land	Luật Đất đai số 13/2003/QH11 ngày 26/11/2003	x
15.	16/2003/Q H11	Law	National Assembly	26.11.2003	Law on Construction	Luật Xây dựng số 16/2003/QH11 ngày 26/11/2003	x
16.	17/2003/Q H11	Law	National Assembly	26.11.2003	Law on Fisheries	Luật Thủy sản số 17/2003/QH11 ngày 26/11/2003	x

17.	143/2003/ND-CP	Decree	Government	28.11.2003	Decree on detailing and guiding the implementation of a number of articles of the Ordinance on Exploitation and Protection of Irrigation Works	Nghị định của Chính phủ số 143/2003/NĐ-CP quy định chi tiết thi hành một số điều của Pháp lệnh Khai thác và bảo vệ công trình thủy lợi	x
18.	23/2004/QH11	Law	National Assembly	15.06.2004	Law on Inland Waterway Navigation	Luật Đường thủy nội địa số 23/2004/QH11 ngày 15/6/2004	x
19.	26/2004/QH11	Law	National Assembly	15.06.2004	Law on amendment of and addition to a number of articles of the Law on Complaints and Denunciations 1998	Luật của Quốc hội số 26/2004/QH11 ngày 15/6/2004 sửa đổi, bổ sung một số điều của Luật khiếu nại tố cáo 1998	x
20.	149/2004/ND-CP	Decree	Government	27.07.2004	Regulation on licensing of water resources exploitation, extraction and utilization and waste water discharge in water sector	Nghị định số 149/2004/NĐ-CP ngày 27/7/2004 Quy định việc cấp phép thăm dò, khai thác, sử dụng tài nguyên nước, xả thải vào nguồn nước	x
21.	150/2004/ND-CP	Decree	Government	29.07.2004	Decree on Sanction of administrative violations in the mineral domain	Nghị định số 150/2004/NĐ-CP ngày 29/7/2004 quy định xử phạt vi phạm hành chính trong lĩnh vực khoáng sản	x
22.	182/2004/ND-CP	Decree	Government	29.10.2004	Decree on sanction of administrative violations in the land domain	Nghị định số 182/2004/NĐ-CP ngày 29-10-2004 của Chính phủ Quy định xử phạt vi phạm hành chính trong lĩnh vực Đất đai	x
23.	21/2005/NĐ-CP	Decree	Government	01.03.2005	Decree on detailing and guiding the implementation of a number of articles of the Law on Inland Waterway Navigation No. 23/2004/QH11	Nghị định của Chính phủ số 21/2005/NĐ-CP ngày 1/3/2005 quy định chi tiết thi hành một số điều của Luật Đường thủy nội địa số 23/2004/QH11 ngày 15/6/2004.	
24.	09/2005/NĐ-CP	Decree	Government	27.01.2005	Decree on sanction of administrative violations in the field of inland waterway navigation	Nghị định của Chính phủ số 9/2005/NĐ-CP quy định xử lý vi phạm hành chính trong lĩnh vực giao thông đường thủy nội địa	
25.	34/2005/NĐ-CP	Decree	Government	17.03.2005	Sanction against administrative violations of water resources management regulations	Nghị định số 34/2005/NĐ-CP ngày 17/3/2005 về xử phạt vi phạm hành chính trong lĩnh vực tài nguyên nước	x
26.	59/2005/NĐ-CP	Decree	Government	04.05.2005	Decree on condition for a number of aquatic resources production and business lines	Nghị định của Chính phủ số 59/2005/NĐ-CP quy định về điều kiện sản xuất, kinh doanh một số ngành nghề thủy sản	x
27.	46/2005/QH11	Law	National Assembly	14.06.2005	Law on amendment and addition to a number of articles of the Law on Fisheries No. 17/2003/QH11	Luật của Quốc hội số 46/2005/QH11 ngày 14/6/2005 Sửa đổi, bổ sung một số điều của Luật Thủy sản số 17/2003/QH11	x

28.	02/2005/T T- BTNMT	Circular	Ministry of Natural Resources & Environment	24.06.2005	Guiding the implementation of the Government Decree No. 149/2004/ND- CP on licensing of water resources exploration, exploitation, utilization and waster discharge into water resources	Thông tư của BTNMT số 02/2005/TT-BTNMT ngày 24/6/2005 hướng dẫn thực hiện Nghị định số 149/2004/NĐ-CP ngày 27/7/2004 quy định việc cấp phép thăm dò, khai thác, sử dụng tài nguyên nước, xả nước thải vào nguồn nước	x
29.	05/2005/T T - BTNMT	Circular	Ministry of Natural Resources & Environment	22.07.2005	Guiding the implementation of the Government Decree No 34/2005/ND-CP concerning the sanction against administrative violations of water resources management regulations	Thông tư của BTNMT số 05/2005/TT - BTNMT ngày 22/7/2005 hướng dẫn thi hành Nghị định số 34/2005/NĐ-CP quy định về xử phạt vi phạm hành chính trong lĩnh vực tài nguyên nước	
30.	27/2005/N D-CP	Decree	Government	08.03.2005	Decree on detailing and guiding the implementation of a number of articles of the Law on Fisheries	Nghị định của Chính phủ số 27/2005/NĐ-CP Quy định chi tiết thi hành một số điều của Luật Thủy sản	x
31.	137/2005/ ND-CP	Decree	Government	09.11.2005	Decree on environmental protection fee applicable to mineral exploitation	Nghị định của Chính phủ số 137/2005/NĐ-CP ngày 9/11/2005 về phí bảo vệ môi trường với khai thác khoáng sản	
32.	126/2005/ ND-CP	Decree	Government	10.10.2005	Decree on sanction against administrative violations in the field of measurement and product, good quality	Nghị định số 126/2005/NĐ-CP ngày 10/10/2005 quy định về xử phạt vi phạm hành chính trong lĩnh vực đo lường và chất lượng sản phẩm, hàng hóa.	x
33.	128/2005/ ND-CP	Decree	Government	11.10.2005	Decree on sanction against administrative violations in the fisheries field	Nghị định của Chính phủ số 128/2005/NĐ-CP ngày 11/10/2005 quy định về xử lý vi phạm hành chính trong lĩnh vực thủy sản	x
34.	140/2005/ ND-CP	Decree	Government	11.11.2005	Decree on sanction against administrative violations in the exploitation and protection of irrigation works	Nghị định của Chính phủ số 140/2005/NĐ-CP ngày 11/11/2005 quy định về xử lý vi phạm hành chính trong lĩnh vực khai thác và bảo vệ công trình thủy lợi	
35.	52/2005/Q H11	Law	National Assembly	29.11.2005	Law on Environmental Protection	Luật Bảo vệ môi trường số 52/2005/QH11 ngày 29/11/2005	x
36.	58/2005/Q H11	Law	National Assembly	29.11.2005	Law on amendment of and addition to a number of articles of the Law on Complaints and Denunciations 1998, and the Law on amendment and addition of the Law on Complaints and Denunciations No. 26/2004/QH11	Luật của Quốc hội số 58/2005/QH11 ngày 29/11/2005 về sửa đổi, bổ sung một số điều của Luật khiếu nại tố cáo 1998, và Luật sửa đổi bổ sung một số điều của Luật khiếu nại tố cáo số 26/2004/QH11	x
37.	61/2005/Q H11	Law	National Assembly	29.11.2005	Law on Tendering	Luật Đấu thầu số 61/2005/QH11 ngày 29/11/2005	x

38.	160/2005/ ND-CP	Decree	Government	27.12.2005	Decree on detailing and guiding the implementation of the 1996 Law on Minerals and the 2005 Law on amending and supplementing a number of articles of the Law on Minerals Replaced Decree No. 76/2000/ND-CP	Nghị định số 160/2005/NĐ-CP ngày 27 tháng 12 năm 2005 của Chính phủ quy định chi tiết và hướng dẫn thi hành Luật Khoáng sản và Luật sửa đổi, bổ sung một số điều của Luật Khoáng sản Nghị định này thay thế Nghị định số 76/2000/NĐ-CP	
39.	147/2006/ ND-CP	Decree	Government	01.12.2006	Decree on amending and supplementing a number of articles of decree No. 68/1998/ND-CP, which details implementation of the Ordinance on natural resource Tax	Nghị định của Chính phủ số 147/2006/NĐ-CP sửa đổi, bổ sung một số điều của Nghị định số 68/1998/NĐ-CP quy định chi tiết thi hành Pháp lệnh Thuế tài nguyên (sửa đổi)	x
40.	68/2006/Q H11	Law	National Assembly	29.06.2006	Law on Standards and Technical Specifications	Luật Tiêu chuẩn và Quy chuẩn kỹ thuật của Quốc hội nước Cộng hòa xã hội chủ nghĩa Việt Nam số 68/2006/QH11 ngày 29/6/2006	x
41.	08/2006/T T- BTNMT	Circular	Ministry of Natural Resources & Environment	08.09.2006	Circular on guiding the strategic environment assessment, environmental impact assessment and environmental protection commitments	Thông tư hướng dẫn của Bộ Tài nguyên và Môi trường số 08/2006/TT-BTNMT về đánh giá môi trường chiến lược, đánh giá tác động môi trường và cam kết bảo vệ môi trường	
42.	81/2006/N D-CP	Decree	Government	09.08.2006	Decree on sanction of administrative violations in the domain of environmental protection	Nghị định số 81/2006/NĐ-CP quy định về xử phạt vi phạm hành chính trong lĩnh vực bảo vệ môi trường	x
43.	80/2006/N D-CP	Decree	Government	09.08.2006	Decree on detailing and guiding the implementation of a number of articles of the Law on Environmental Protection No. 52/2005/QH11	Nghị định của Chính phủ số 80/2006/NĐ-CP quy định chi tiết và hướng dẫn thi hành một số điều của Luật Bảo vệ môi trường số 52/2005/QH11	x
44.	59/2006/Q D-BTC	Decision	Ministry of Finance	25.10.2006	Providing regime of charge for collecting, remittance, management, use of water resources; discharge of wastewater into water sources and drilling for underground water	Quyết định của BTC số 59/2006/QĐ-BTC ngày 25/10/2006 quy định mức thu, chế độ thu, nộp, quản lý và sử dụng tài nguyên nước, xả thải vào nguồn nước và hành nghề khoan nước dưới đất	
45.	136/2006/ ND-CP	Decree	Government	14.11.2006	Detailing and guiding the implementation of a number of articles of the Law on Complaints and Denunciations 1998, and the Law on amendment and addition of the Law on Complaints and Denunciations	Nghị định của Chính phủ số 136/2006/NĐ-CP ngày 14/11/2006 Quy định chi tiết thi hành một số điều của Luật Khiếu nại tổ cáo 1998, và Luật sửa đổi bổ sung một số điều của Luật khiếu nại tổ cáo	x

46.	79/2006/QH11	Law	National Assembly	29.11.2006	Law on Dykes	Luật Đê điều số 79/2006/QH11 ngày 29/11/2006	
47.	111/2006/ND-CP	Decree	Government	29.11.2006	Decree on providing guidelines for implementation of Law on Tendering, and selection of construction contractors pursuant to Law on Construction	Nghị định của Chính phủ số 111/2006/NĐ-CP ngày 29/11/2006 Hướng dẫn thi hành Luật Đấu thầu và lựa chọn nhà thầu theo Luật Xây dựng	x
48.	80/2006/QH11	Law	National Assembly	29.11.2006	Law on Technology Transfer	Luật Chuyển giao Công nghệ số 80/2006/QH11 ngày 29/11/2006	x
49.	22/2006/QĐ-BTNMT	Decision	Ministry of Natural Resources & Environment	18.12.2006	Decision on compulsory application of Vietnamese environmental standards	Quyết định của Bộ Tài nguyên và Môi trường số 22/2006/QĐ-BTNMT về việc bắt buộc áp dụng Tiêu chuẩn Việt Nam về môi trường	
50.	154/2006/ND-CP	Decree	Government	25.12.2006	Decree on amending and supplementing Article 17 of Decree No. 128/2005/ND-CP on sanction against administrative violations in the fisheries field	Nghị định của Chính phủ số 154/2006/NĐ-CP ngày 25/12/2006 sửa đổi, bổ sung điều 17 nghị định 128/2005/NĐ-CP quy định về xử lý vi phạm hành chính trong lĩnh vực thủy sản	
51.	12/2006/TĐ-BTNMT	Decision	Ministry of Natural Resources & Environment	26.12.2006	Guiding the practice conditions, procedures for compilation of dossiers, registration and licensing of practice and hazardous waste management identification numbers	Thông tư số 12/2006/TT-BTNMT ngày 26/12/2006 Hướng dẫn điều kiện hành nghề và thủ tục lập hồ sơ, đăng ký, cấp phép hành nghề, mã số quản lý chất thải nguy hại	x
52.	23/2006/QĐ-BTNMT	Decision	Ministry of Natural Resources & Environment	26.12.2006	Decision on promulgation of hazardous wastes list	Quyết định của Bộ trưởng BTNMT số 23/2006/QĐ-BTNMT ngày 26/12/2006 ban hành Danh mục chất thải nguy hại	x
53.	127/2007/ND-CP	Decree	Government	01.08.2007	Decree on detailing the implementation of a number of articles of the Law on Standards and Technical Specifications	Nghị định của Chính phủ số 127/2007/NĐ-CP ngày 1/8/2007 quy định chi tiết thi hành một số điều của Luật Tiêu chuẩn và Quy chuẩn kỹ thuật	
54.	129/2007/ND-CP	Decree	Government	02.08.2007	Decree on sanction against administrative violations in the dykes field	Nghị định của Chính phủ số 129/2007/NĐ-CP ngày 2/8/2007 quy định xử phạt vi phạm hành chính về đê điều	
55.	95/2007/NĐ-CP	Decree	Government	04.06.2007	Decree on amending and supplementing a number of articles of Decree No. 126/2005/ND-CP on sanction of administrative violations in the domain of measurement and product and goods quality	Nghị định số 95/2007/NĐ-CP của Chính phủ sửa đổi, bổ sung một số điều của Nghị định số 126/2005/NĐ-CP ngày 10/10/2005 quy định về xử phạt vi phạm hành chính trong lĩnh vực đo lường và chất lượng sản phẩm, hàng hóa	

56.	42/2007/T T-BTC	Circular	Ministry of Finance	27.04.2007	Circular on guiding the implementation of Decree No. 68/1998/ND-CP on detailing the implementation of the ordinance on natural resource tax, Decree No. 147/2006/ND-CP on amending a number of articles of Decree No. 68/1998/ND-CP	Thông tư của Bộ Tài chính số 42/2007/TT-BTC hướng dẫn thi hành Nghị định số 68/1998 quy định chi tiết thi hành Pháp lệnh Thuế Tài nguyên (sửa đổi), và Nghị định số 147/2006/ND-CP sửa đổi, bổ sung một số điều của Nghị định 68/1998/ND-CP	
57.	31/2007/Q D-BTC	Decision	Ministry of Finance	15.05.2007	Decision on collecting, remittance, management and using of charges and fees for exploitation and protection of aquatic resources	Quyết định của Bộ Tài chính số 31/2007/QĐ-BTC ngày 15/5/2007 quy định chế độ thu, nộp, quản lý và sử dụng phí, lệ phí và công tác khai thác và bảo vệ nguồn lợi thủy sản	
58.	88/2007/N D-CP	Decree	Government	28.05.2007	Decree on urban and industrial-park water drainage	Nghị định của Chính phủ số 88/2007/NĐ-CP về thoát nước đô thị và khu công nghiệp	x
59.	113/2007/ ND-CP	Decree	Government	28.06.2007	Decree on detailing and guiding the implementation of a number of articles of the Law on Dykes No. 79/2006/QH11	Nghị định số 113/2007/NĐ-CP ngày 28/06/2007 quy định chi tiết thi hành một số điều của Luật Đê điều số 79/2006/QH11 ngày 29/11/2006	
60.	04/2007/N D-CP	Decree	Government	08.01.2007	Amending and supplementing a number of articles of the Decree No. 67/2003/ND-CP on environmental protection charges applicable to wastewater	Nghị định của Chính phủ số 04/2007/NĐ-CP ngày 8/1/2007 Sửa đổi, bổ sung một số điều của Nghị định số 67/2003/NĐ-CP ngày 13/6/2003 về phí bảo vệ môi trường đối với nước thải	
61.	31/2007/P L- UBTVQH 11	Ordinance	Standing Committee of National Assembly	08.03.2007	Ordinance on amendment and supplement a number of articles of the Ordinance on handling of administrative violations No. 44/2002/PL-UBTVQH	Pháp lệnh của Ủy ban Thường vụ Quốc hội số 31/2007/PL-UBTVQH11 ngày 8/3/2007 Sửa đổi, bổ sung một số điều của Pháp lệnh xử lý vi phạm hành chính số 44/2002/PL-UBTVQH10	
62.	59/2007/N D-CP	Decree	Government	09.04.2007	Decree on Solid Waste Management	Nghị định của Chính phủ số 59/2007/NĐ-CP ngày 9/4/2007 về quản lý chất thải rắn	x
63.	77/2007/N D-CP	Decree	Government	10.05.2007	Decree on amending and supplementing a number of articles of the Decree No. 150/2004/ND-CP on sanctioning of administrative violations in the mineral domain	Nghị định số 77/2007/NĐ-CP ngày 10/5/2007 sửa đổi, bổ sung một số điều của nghị định số 150/2004/NĐ-CP quy định về xử phạt vi phạm hành chính trong lĩnh vực khoáng sản.	
64.	117/2007/ ND-CP	Decree	Government	11.07.2007	Decree on production, supply and consumption of clean water	Nghị định của Chính phủ số 117/2007/NĐ-CP ngày 11/7/2007 về sản xuất, cung cấp và tiêu thụ nước sạch	
65.	05/2007/Q H12	Law	National Assembly	21.11.2007	Law on Quality of Products and Goods	Luật Chất lượng sản phẩm, hàng hóa số 05/2007/QH 12 được Quốc hội ban hành ngày 21/11/2007	x

66.	06/2007/QH12	Law	National Assembly	21.11.2007	Law on Chemical, approved in the 2 nd Session of the 10 th National Assembly dated on 21 November 2007	Luật Hóa chất của Quốc hội khóa XII, kỳ họp thứ 2, số 06/2007/QH12 ngày 21/11/2007	
67.	174/2007/ND-CP	Decree	Government	29.11.2007	Decree on environmental protection charges for solid wastes	Nghị định của Chính phủ số 174/2007/NĐ-CP về phí bảo vệ môi trường đối với chất thải rắn	
68.	70/2008/QĐ-BNN	Decision	Ministry of Agriculture & Rural Development	05.06.2008	Decision on promulgation of regulation on management of Pangasius farming areas and farming Establishments	Quyết định 70/2008/QĐ-BNN của Bộ Nông nghiệp và Phát triển nông thôn về việc ban hành Quy chế Quản lý vùng và cơ sở nuôi cá tra	x
69.	85/2008/QĐ-BNN	Decision	Ministry of Agriculture and Rural Development	06.08.2008	Decision on promulgating the Regulation on management of aquatic breed production and trading	Quyết định của Bộ Nông nghiệp và Phát triển nông thôn số 85/2008/QĐ-BNN ban hành Quy chế quản lý sản xuất, kinh doanh giống thủy sản	x
70.	21/2008/QH12	Law	National Assembly	13.11.2008	Law on High Technologies	Luật Công Nghệ Cao số 21/2008/QH12, được Quốc hội khóa XII, kỳ họp thứ 4 thông qua ngày 13/11/2008	
71.	20/2008/QH12	Law	National Assembly	13.11.2008	Law on Biological Diversity	Luật Đa dạng Sinh học số 20/2008/QH12 ngày 13/11/2008	
72.	115/2008/ND-CP	Decree	Government	14.11.2008	Amendment and addition to a number of articles of the decree No. 143/2003/ND-CP on detailing and guiding the implementation of the Ordinance on exploitation and protection of irrigation works	Nghị định số 115/2008/NĐ-CP ngày 14/11/2008 sửa đổi, bổ sung một số điều của Nghị định của Chính phủ số 143/2003/NĐ-CP quy định chi tiết thi hành một số điều của Pháp lệnh Khai thác và Bảo vệ Công trình thủy lợi	
73.	25/2008/QH12	Law	National Assembly	14.11.2008	Law on Health Insurance	Luật Bảo hiểm Y tế số 25/2008/QH12	
74.	128/2008/ND-CP	Decree	Government	16.12.2008	Detailing the implementation of a number of articles of the 2002 Ordinance on Handling of Administrative Violations and the 2008 Ordinance Amending and Supplementing a Number of Articles of the Ordinance on Handling of Administrative Violations	Nghị định của Chính phủ số 128/2008/NĐ-CP ngày 16/12/2008 Quy định chi tiết thi hành một số điều của Pháp lệnh Xử lý vi phạm hành chính năm 2002 và Pháp lệnh sửa đổi, bổ sung một số điều của Pháp lệnh Xử lý vi phạm hành chính năm 2008	

75.	16/2008/QD-BTNMT	Decision	Ministry of Natural Resources & Environment	31.12.2008	<p>Decision on promulgating the National Technical Specifications on Environment</p> <p>It includes 08 National Technical Regulations, as follow:</p> <ol style="list-style-type: none"> 1. QCVN 08:2008/BTNMT – National Technical Regulation on Surface Water Quality; 2. QCVN 09:2008/BTNMT – National Technical Regulation on Underground Water Quality; 3. QCVN 10:2008/BTNMT - National Technical Regulation on Coastal Water Quality; 4. QCVN 11:2008/BTNMT - National Technical Regulation on the Effluent of Aquatic Products Processing Industry; 5. QCVN 12:2008/BTNMT - National Technical Regulation on the Effluent of Pulp and Paper Mills; 6. QCVN 13:2008/BTNMT - National Technical Regulation on the Effluent of Textile Industry; 7. QCVN 14:2008/BTNMT - National Technical Regulation on Domestic Waste Water 8. QCVN 15:2008/BTNMT - National Technical Regulation on the Pesticide Residues in the Soils 	<p>Quyết định của Bộ Tài nguyên và Môi trường số 16/2008/QĐ-BTNMT ngày 31/12/2008 ban hành Quy chuẩn kỹ thuật quốc gia về môi trường</p> <p>Ban hành kèm theo Quyết định này là 08 Quy chuẩn kỹ thuật quốc gia về môi trường:</p> <ol style="list-style-type: none"> 1. QCVN 08:2008/BTNMT – Quy chuẩn Kỹ thuật quốc gia về chất lượng nước mặt; 2. QCVN 09:2008/BTNMT – Quy chuẩn kỹ thuật quốc gia về chất lượng nước ngầm; 3. QCVN 10:2008/BTNMT – Quy chuẩn kỹ thuật quốc gia về chất lượng nước biển ven bờ; 4. QCVN 11:2008/BTNMT – Quy chuẩn kỹ thuật quốc gia về chất lượng nước thải công nghiệp chế biến thủy sản; 5. QCVN 12:2008/BTNMT – Quy chuẩn kỹ thuật quốc gia về nước thải công nghiệp giấy và bột giấy; 6. QCVN 13:2008/BTNMT – Quy chuẩn kỹ thuật quốc gia về nước thải công nghiệp dệt may; 7. QCVN 14:2008/BTNMT – Quy chuẩn kỹ thuật quốc gia về nước thải sinh hoạt; 8. QCVN 15:2008/BTNMT – Quy chuẩn kỹ thuật quốc gia về dư lượng hóa chất bảo vệ thực vật trong đất. 	
76.	05/2009/NĐ-CP	Decree	Government	19.01.2009	<p>Decree on detailing provisions and providing guidelines for implementing of the Ordinance on Natural Resource Tax (amended), and the Ordinance on amendment of and addition to article 6 of the Ordinance on Natural Resource Tax</p>	<p>Nghị định của Chính phủ số 05/2009/NĐ-CP ngày 19/01/2009 Quy định chi tiết thi hành pháp lệnh Thuế Tài nguyên và Pháp lệnh sửa đổi, bổ sung điều 6 Pháp lệnh Thuế Tài nguyên</p>	

77.	07/2009/N D-CP	Decree	Government	22.01.2009	Decree on amendment of addition to a number of articles of the decree 160/2005/ND-CP on detailing and guiding the implementation of the 1996 Minerals Law and the 2005 Minerals Law (amended)	Nghị định của Chính phủ số 07/2009/NĐ-CP sửa đổi, bổ sung một số điều của Nghị định số 160/2005/NĐ-CP quy định chi tiết và hướng dẫn thi hành Luật Khoáng sản và Luật sửa đổi, bổ sung một số điều của Luật Khoáng sản	
78.	14/2009/N D-CP	Decree	Government	13.02.2009	Revision and supplement of Decree 59/2005/ND-CP dated May 04, 2005 on trade and production conditions of fisheries-related occupations	Nghị định của Chính phủ số 14/2009/ND-CP sửa đổi, bổ sung một số điều của Nghị định 59/2005/NĐ-CP về điều kiện sản xuất, kinh doanh một số ngành nghề thủy sản	
79.	02/2009/T T- BTNMT	Circular	Ministry of Natural Resources & Environment	19.03.2009	Regulation on ability appraisal to receive wastewater of water sources	Quyết định của Bộ Tài nguyên và Môi trường số 03/2009/QĐ-BTNMT ngày 19/03/2009 quy định đánh giá khả năng tiếp nhận nước thải của nguồn nước	
80.	49/2009/N D-CP	Decree	Government	21.05.2009	Regulation on sanctions against administrative violations in the area of technology transfer	Nghị định của Chính phủ số 49/2009/NĐ-CP ngày 21/05/2009 quy định về xử phạt vi phạm hành chính trong hoạt động chuyển giao công nghệ	
81.	05/2009/T T-BYT	Circular	Ministry of Health	17.06.2009	Promulgating the “National technical standards on domestic water quality”	Thông tư của Bộ Y tế số 05/2009/TT_BYT ngày 17/06/2009 ban hành “Quy chuẩn kỹ thuật quốc gia về chất lượng nước sinh hoạt”	
82.	36/2009/T T- BNNPTN T	Circular	Ministry of Agriculture & Rural Development	17.06.2009	Providing regulation on prevention and control of diseases for aquatic animals	Thông tư của Bộ Nông nghiệp và phát triển nông thôn số 36/2009/TT-BNNPTNT quy định về phòng chống dịch bệnh cho động vật thủy sản	
83.	124/2009/ TT-BTC	Circular	Ministry of Finance	17.06.2009	Guiding the Government’s Decree No. 05/2009/ND-CP of January 19, 2009, which details the Ordinance on natural resources tax and the Ordinance Amending and Supplementing Article 6 of the Ordinance on natural resources tax	Thông tư của Bộ Tài chính số 124/2009/TT-BTC ngày 17/06/2009 Hướng dẫn thi hành Nghị định số 05/2009/NĐ-CP ngày 19 tháng 01 năm 2009 của Chính phủ quy định chi tiết thi hành Pháp lệnh Thuế tài nguyên và Pháp lệnh sửa đổi, bổ sung Điều 6 Pháp lệnh Thuế tài nguyên	
84.	34/2009/Q H12	Law	National Assembly	18.06.2009	Amendment to Article 126 of the Law on Residential Housing and Article 121 of the Land Law	Luật số 34/2009/QH12 sửa đổi, bổ sung Điều 126 của Luật Nhà ở và Điều 121 của Luật Đất đai	

85.	37/2009/QH12	Law	National Assembly	19.06.2009	Amendment and addition to a number of articles of the Penal Code 1999	Luật số 37/2009/QH12 sửa đổi, bổ sung một số điều của Bộ Luật Hình sự	
86.	38/2009/QH12	Law	National Assembly	19.06.2009	Modification and supplementation of several articles relating to basic investment and construction of the Construction Law 2003, Law on Tendering 2005, Law on Enterprises 2005, Land Law 2003, and Housing Law 2005	Luật số 38/2009/QH12 sửa đổi, bổ sung một số điều của các Luật liên quan đến đầu tư xây dựng cơ bản của Luật xây dựng số 16/2003/QH11, Luật đấu thầu số 61/2005/QH11, Luật doanh nghiệp số 60/2005/QH11, Luật đất đai số 13/2003/QH11 và Luật nhà ở số 56/2005/QH11	
86.	47/2009/TT-BNNPTN	Circular	Ministry of Agriculture & Rural Development	31.07.2009	Promulgating the National technical regulations on food hygiene and safety conditions on fishery production	Thông tư của Bộ Nông nghiệp và phát triển nông thôn số 47/2009/TT-BNNPTN ngày 31/07/2009 ban hành quy chuẩn kỹ thuật quốc gia về điều kiện an toàn vệ sinh thực phẩm trong sản xuất thủy sản	
88.	82/2009/NĐ-CP	Decree	Government	12.10.2009	Amending and supplementation a number of articles of the Government's Decree No. 63/2008/ND-CP dated May 13, 2008 on environmental protection charges payable by miners tweaked	Nghị định của Chính phủ số 82/2009/NĐ-CP ngày 12/10/2009 sửa đổi, bổ sung một số điều của Nghị định số 63/2008/NĐ-CP ngày 13 tháng 5 năm 2008 của Chính phủ về phí bảo vệ môi trường đối với khai thác khoáng sản	

Annex 5: List of Selected Regulations on Protection of Water Sector in Can Tho City

A. Regulations on State Management in Can Tho City

Nr.	Code	Category	Issued by	Issued on	References	Vietnamese Version
1.	11/2003/QH11	Law	National Assembly	26.11.2003	Law on Organization of People's Councils and People's Committees	Luật Tổ chức Hội đồng Nhân dân và Ủy ban Nhân dân
2.	31/2004/QH11	Law	National Assembly	03.12.2004	Law on the Promulgation of Legal Documents of People's Committees, People's Councils	Luật Ban hành Văn bản Quy phạm pháp luật của Hội đồng Nhân dân, Ủy ban Nhân dân số 31/2004/QH11 ngày 3/12/2004
3.	11/2007/ND-CP	Decree	Government	16.01.2007	Government's Decree on rearrangement of administrative units of communes, wards; establishment of wards, towns of Ninh Kieu urban district, O Mon urban district and Phong Dien suburban district, Vinh Thanh suburban district, Can Tho City	Nghị định của Chính phủ số 11/2007/NĐ-CP ngày 16/01/2007 v/v điều chỉnh địa giới hành chính xã, phường; thành lập phường, thị trấn thuộc các quận Ninh Kiều, Ô Môn và các huyện Phong Điền, Vĩnh Thạnh, thành phố Cần Thơ
4.	13/2008/ND-CP	Decree	Government	04.02.2008	Government's Decree on stipulating on the organization of professional agencies under the people's committees of the provinces and centrally-run cities	Nghị định của Chính phủ số 13/2008/NĐ-CP ngày 4/2/2008 quy định tổ chức các cơ quan chuyên môn trực thuộc Trung ương
5.	14/2008/ND-CP	Decree	Government	04.02.2008	Decree on prescribing the organization of professional agencies of People's Committees of district levels (urban and suburban districts), provincial towns or cities	Nghị định của Chính phủ số 14/2008/NĐ-CP ngày 4/2/2008 quy định tổ chức các cơ quan chuyên môn thuộc Ủy ban nhân dân huyện, quận, thị xã, thành phố thuộc tỉnh
6.	03/2008/TTLT-BYT-BNV	Joint Circular	Ministry of Health – Ministry of Interior Affairs	25.04.2008	Joint circular on guiding the functions, tasks, powers and organizational structures of Departments of Health, Offices of Health subordinated to People's Committees at district level	Thông tư liên tịch số 03/2008/TTLT-BYT-BNV ngày 25 tháng 4 năm 2008 của Bộ Y tế và Bộ Nội vụ hướng dẫn chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Sở Y tế, Phòng Y tế thuộc Ủy ban nhân dân cấp tỉnh, cấp huyện
7.	61/2008/TTLT-BNN-BNV	Joint Circular	Ministry of Agriculture and Rural Development - Ministry of Interior Affairs	15.05.2008	Joint circular on guiding the functions, tasks, powers and organizational structures of agencies specialized in charge of agriculture and rural development subordinated to People's Committees at district level	Thông tư liên tịch của Bộ NN và Bộ Nội vụ số 61/2008/TTLT-BTNMT-BNV hướng dẫn chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của cơ quan chuyên môn thuộc UBND cấp tỉnh, cấp huyện và nhiệm vụ quản lý nhà nước của UBND cấp xã về nông nghiệp và phát triển nông thôn

8.	07/2008/ TTLT-BCT-BNV	Joint Circular	Ministry of Industry & Trade --- Ministry of Interior Affairs	28.05.2008	Joint circular on guiding the functions, tasks, powers and organizational structures of agencies specialized in charge of industry and trade issues subordinated to People's Committees at district level	Thông tư liên tịch số 07/2008/TTLT-BCT-BNV ngày 28/5/2008 của Bộ Công Thương - Bộ Nội vụ hướng dẫn chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của cơ quan chuyên môn về công thương thuộc UBND cấp tỉnh, cấp huyện
9.	05/2008/ TTLT-BKHCN- BNV	Joint Circular	Ministry of Science & Technology --- Ministry of Interior Affairs	18.06.2008	Joint circular on guiding the functions, tasks, powers and organizational structures of agencies specialized in charge of science and technology issues subordinated to People's Committees at district level	Thông tư liên tịch số 05/2008/TTLT-BKHCN-BNV ngày 18/6/2008 của Bộ Khoa học và Công nghệ, Bộ Nội vụ hướng dẫn chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của cơ quan chuyên môn về khoa học và công nghệ thuộc UBND cấp tỉnh, cấp huyện;
10.	03/2008/ TTLT-BTNMT- BNV	Joint Circular	Ministry of Natural Resources & Environment --- Ministry of Interior Affairs	15.07.2008	Joint circular on guiding the functions, tasks, powers and organizational structures of specialized agencies in charge of natural resources and environment subordinated to People's Committees of all levels.	Thông tư liên tịch của Bộ Tài nguyên và Môi trường và Bộ Nội vụ, số 03/2008/TTLT-BTNMT-BNV ngày 15/7/2008 hướng dẫn chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của cơ quan chuyên môn về tài nguyên và môi trường thuộc UBND các cấp
11.	12/2008/ND-CP	Decree	Government	23.11.2008	Decree on rearrangement of administrative units of communes of Thot Not, Vinh Thanh, Co Do rural districts; establishment of Thot Not urban district and subordinated wards; rearrangement of administrative units of Co Do rural district to establish the Thoi Lai rural district subordinated to Can Tho City.	<i>Nghị định của Chính phủ số 12/ND-CP ngày 23/11/2008 quy định về việc điều chỉnh địa giới hành chính xã, thành lập xã thuộc huyện Thốt Nốt, huyện Vĩnh Thạnh, huyện Cờ Đỏ; thành lập quận Thốt Nốt và các phường trực thuộc; điều chỉnh địa giới hành chính huyện Cờ Đỏ để thành lập huyện Thới Lai thuộc thành phố Cần Thơ</i>
12.	12/2008/ TTLT-BGTVT- BNV	Joint Circular	Ministry of Transport --- Ministry of Interior Affairs	05.12.2008	Joint circular on guiding the functions, tasks, powers and organizational structures of agencies specialized in charge of transport issues subordinated to People's Committees at district level	Thông tư liên tịch số 12/2008/TTLT-BGTVT-BNV ngày 05/12/2008 của Bộ Giao thông vận tải - Bộ Nội vụ hướng dẫn chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của cơ quan chuyên môn về giao thông vận tải thuộc UBND cấp tỉnh, cấp huyện
13.	20/2008/ TTLT-BXD-BNV	Joint Circular	Ministry of Construction --- Ministry of Interior Affairs	16.12.2008	Joint circular on guiding the functions, tasks, powers and organizational structures of agencies specialized in charge of construction issues subordinated to People's Committees at district and communal levels	TTLT số 20/2008/TTLT-BXD-BNV ngày 16/12/2008 của Bộ Xây dựng - Bộ Nội vụ hướng dẫn chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của cơ quan chuyên môn thuộc UBND cấp tỉnh, cấp huyện và nhiệm vụ, quyền hạn của UBND cấp xã về các lĩnh vực quản lý nhà nước thuộc ngành xây dựng

<i>English Version</i> ⁶⁵						
14.	255/2004/QĐ-UBND	Decision	People's Committee of Can Tho City	29.06.2004	Decision on stipulating functions, tasks, powers and organizational structure of the Villages Head, Head of precincts	Quyết định của UBND Tp. Cần Thơ số 255/2004/QĐ-UBND ngày 29/06/2004 v/v ban hành quy định nhiệm vụ, quyền hạn, tổ chức và hoạt động của Trưởng ấp, Trưởng Khu vực
15.	39/2004/QĐ-UBND	Decision	People's Committee of Can Tho City	08.01.2004	Decision on rename of Water Supply Company of Can Tho Province to Water Supply Company of Can Tho City	Quyết định của UBND Tp. Cần Thơ số 39/2004/QĐ-UBND ngày 08/01/2004 v/v đổi tên Công ty Cấp thoát nước tỉnh Cần Thơ thành Công ty Cấp thoát nước thành phố Cần Thơ
16.	295/2004/QĐ-UBND	Decision	People's Committee of Can Tho City	30.09.2004	Decision on establishment of Inter-Station of Aquiculture of O Mon – Co Do, and Inter-Station of Aquiculture of Thot Not – Vinh Thanh subordinated to the Agency of Aquiculture	Quyết định của UBND Tp. Cần Thơ số 295/2004/QĐ-UBND ngày 30/09/2004 v/v thành lập Liên Trạm Thủy sản Ô Môn – Cờ Đỏ và Liên Trạm Thủy sản Thốt Nốt – Vĩnh Thạnh trực thuộc Chi cục Thủy sản
17.	291/2004/QĐ-UBND	Decision	People's Committee of Can Tho City	10.09.2004	Decision on promulgating regulation on organization and operation of the Legal Assistance Centre of Can Tho City (state agency)	Quyết định của UBND Tp. Cần Thơ số 291/2004/QĐ-UBND ngày 10/09/2004 v/v ban hành quy chế về tổ chức và hoạt động của Trung tâm trợ giúp pháp lý của Nhà nước thành phố Cần thơ
18.	71/2006/QĐ-UBND	Decision	People's Committee of Can Tho City	03.10.2006	Decision on coordinative regulation of Departments, Agencies, Sectors in respect to related documents/files/ cases settlement	Quyết định của UBND Tp. Cần Thơ số 71/2006/QĐ-UBND ngày 03/10/2006 v/v ban hành quy chế phối hợp giữa các Sở, Ban, Ngành trong việc giải quyết hồ sơ, công việc có liên quan
19.	68/2006/QĐ-UBND	Decision	People's Committee of Can Tho City	29.08.2006	Decision on working regulation of the People's Committee of Can Tho City	Quyết định của UBND Tp. Cần Thơ số 68/2006/QĐ-UBND v/v ban hành quy chế làm việc của UBND Tp. Cần Thơ
20.	93/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	03.11.2008	Decision on rename the Agency of Co-operative and Rural Development to Agency of Rural Development; and stipulating functions, tasks, powers and organizational structure of the Agency of Rural Development subordinated to the Department of Agriculture and Rural Development	Quyết định của UBND Tp. Cần Thơ số 93/2008/QĐ-UBND ngày 03/11/2008 v/v đổi tên Chi cục Hợp tác xã và phát triển nông thôn thành Chi cục phát triển nông thôn và quy định chức năng, nhiệm vụ, quyền hạn, cơ cấu tổ chức của Chi cục phát triển nông thôn trực thuộc Sở Nông nghiệp và Phát triển nông thôn

⁶⁵ English version of legal documents issued by People's Committee of Can Tho City is not yet available

21.	23/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	29.04.2008	Decision on establishment of Office of the People's Committee of city subordinated to the People's Committee of Can Tho City	Quyết định của UBND Tp. Cần Thơ số 23/2008/QĐ-UBND ngày 29/04/2008 v/v thành lập Văn phòng Ủy ban nhân dân thành phố thuộc UBND Tp. Cần Thơ
22.	24/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	29.04.2008	Decision on establishment of the Department of Finance subordinated to the People's Committee of Can Tho City	Quyết định của UBND Tp. Cần Thơ số 24/2008/QĐ-UBND ngày 29/04/2008 v/v thành lập Sở Tư pháp thuộc UBND Tp. Cần Thơ
23.	25/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	29.04.2008	Decision on establishment of the Department of Planning and Investment subordinated to the People's Committee of Can Tho City	Quyết định của UBND Tp. Cần Thơ số 25/2008/QĐ-UBND ngày 29/04/2008 v/v thành lập Sở Kế hoạch và Đầu tư thuộc UBND Tp. Cần Thơ
24.	26/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	29.04.2008	Decision on establishment of the Department of Industry and Trade subordinated to the People's Committee of Can Tho City	Quyết định của UBND Tp. Cần Thơ số 26/2008/QĐ-UBND ngày 29/04/2008 v/v thành lập Sở Công Thương thuộc UBND Tp. Cần Thơ
25.	27/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	29.04.2008	Decision on establishment of the Inspection of City subordinated to the People's Committee of Can Tho City	Quyết định của UBND Tp. Cần Thơ số 27/2008/QĐ-UBND ngày 29/04/2008 v/v thành lập Thanh tra thành phố thuộc UBND Tp. Cần Thơ
26.	28/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	29.04.2008	Decision on establishment of the Department of Justice subordinated to the People's Committee of Can Tho City	Quyết định của UBND Tp. Cần Thơ số 28/2008/QĐ-UBND ngày 29/04/2008 v/v thành lập Sở Tư pháp thuộc UBND Tp. Cần Thơ
27.	29/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	29.04.2008	Decision on establishment of the Department of Science & Technology subordinated to People's Committee of Can Tho City	Quyết định của UBND Tp. Cần Thơ số 29/2008/QĐ-UBND ngày 29/04/2008 v/v thành lập Sở Khoa học và Công nghệ thuộc UBND Tp. Cần Thơ
28.	30/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	29.04.2008	Decision on establishment of the Department of Natural Resources and Environment subordinated to the People's Committee of Can Tho City	Quyết định của UBND Tp. Cần Thơ số 30/2008/QĐ-UBND ngày 29/04/2008 v/v thành lập Sở Tài nguyên và Môi trường thuộc UBND Tp. Cần Thơ
29.	31/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	29.04.2008	Decision on establishment of the Department of Construction subordinated to the People's Committee of Can Tho City	Quyết định của UBND Tp. Cần Thơ số 31/2008/QĐ-UBND ngày 29/04/2008 v/v thành lập Sở Xây dựng thuộc UBND Tp. Cần Thơ
30.	32/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	29.04.2008	Decision on establishment of the Department of Transport subordinated to the People's Committee of Can Tho City	Quyết định của UBND Tp. Cần Thơ số 32/2008/QĐ-UBND ngày 29/04/2008 v/v thành lập Sở Giao thông vận tải thuộc UBND Tp.

31.	33/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	29.04.2008	Decision on establishment of the Department of Agriculture and Rural Development subordinated to the People's Committee of Can Tho City	Quyết định của UBND Tp. Cần Thơ số 33/2008/QĐ-UBND ngày 29/04/2008 v/v thành lập Sở Nông nghiệp và Phát triển Nông thôn thuộc UBND Tp. Cần Thơ
32.	34/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	29.04.2008	Decision on establishment of the Department of Culture, Sport and Tourism subordinated to the People's Committee of Can Tho City	Quyết định của UBND Tp. Cần Thơ số 34/2008/QĐ-UBND ngày 29/04/2008 v/v thành lập Sở Văn hóa, Thể thao và Du lịch thuộc UBND Tp. Cần Thơ
33.	35/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	29.04.2008	Decision on establishment of the Department of Informatics and Communication subordinated to the People's Committee of Can Tho City	Quyết định của UBND Tp. Cần Thơ số 35/2008/QĐ-UBND ngày 29/04/2008 v/v thành lập Sở Thông tin và Truyền thông thuộc UBND Tp. Cần Thơ
34.	36/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	29.04.2008	Decision on establishment of the Department of Education and Training subordinated to the People's Committee of Can Tho City	Quyết định của UBND Tp. Cần Thơ số 35/2008/QĐ-UBND ngày 29/04/2008 v/v thành lập Sở Giáo dục và Đào tạo thuộc UBND Tp. Cần Thơ
35.	37/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	29.04.2008	Decision on establishment of the Department of Health subordinated to the People's Committee of Can Tho City	Quyết định của UBND Tp. Cần Thơ số 37/2008/QĐ-UBND ngày 29/04/2008 v/v thành lập Sở Y tế thuộc UBND Tp. Cần Thơ
36.	38/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	29.04.2008	Decision on establishment of the Department of Labor-Invalids and Social Affairs subordinated to the People's Committee of Can Tho City	Quyết định của UBND Tp. Cần Thơ số 37/2008/QĐ-UBND ngày 29/04/2008 v/v thành lập Sở Lao động - Thương binh và Xã hội thuộc UBND Tp. Cần Thơ
37.	39/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	29.04.2008	Decision on establishment of specialized agencies subordinated to People's Committee of Ninh Kieu urban district	Quyết định của UBND Tp. Cần Thơ số 39/2008/QĐ-UBND ngày 29/04/2008 v/v thành lập các cơ quan chuyên môn thuộc UBND quận Ninh Kiều
38.	40/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	29.04.2008	Decision on establishment of specialized agencies subordinated to People's Committee of Binh Thuy urban district;	Quyết định của UBND Tp. Cần Thơ số 40/2008/QĐ-UBND ngày 29/04/2008 v/v thành lập các cơ quan chuyên môn thuộc UBND quận Bình Thủy
39.	41/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	29.04.2008	Decision on establishment of specialized agencies subordinated to People's Committee of Cai Rang urban district	Quyết định của UBND Tp. Cần Thơ số 41/2008/QĐ-UBND ngày 29/04/2008 v/v thành lập các cơ quan chuyên môn thuộc Ủy Ban nhân dân quận Cái Răng

40.	42/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	29.04.2008	Decision on establishment of specialized agencies subordinated to People's Committee of O Mon urban district	Quyết định của UBND Tp. Cần Thơ số 42/2008/QĐ-UBND ngày 29/04/2008 v/v thành lập các cơ quan chuyên môn thuộc Ủy Ban nhân dân quận Ô Môn
41.	43/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	29.04.2008	Decision on establishment of specialized agencies subordinated to People's Committee of Thot Not suburban district	Quyết định của UBND Tp. Cần Thơ số 43/2008/QĐ-UBND ngày 29/04/2008 v/v thành lập các cơ quan chuyên môn thuộc Ủy Ban nhân dân huyện Thốt Nốt
42.	44/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	29.04.2008	Decision on establishment of specialized agencies subordinated to People's Committee of Vinh Thanh suburban district	Quyết định của UBND Tp. Cần Thơ số 44/2008/QĐ-UBND ngày 29/04/2008 v/v thành lập các cơ quan chuyên môn thuộc UBND huyện Vĩnh Thạnh
43.	45/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	29.04.2008	Decision on establishment of specialized agencies subordinated to People's Committee of Co Do suburban district	Quyết định của UBND Tp. Cần Thơ số 45/2008/QĐ-UBND ngày 29/04/2008 v/v thành lập các cơ quan chuyên môn thuộc Ủy Ban nhân dân huyện Cờ Đỏ
44.	46/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	29.04.2008	Decision on establishment of specialized agencies subordinated to People's Committee of Phong Dien suburban district	Quyết định của UBND Tp. Cần Thơ số 46/2008/QĐ-UBND ngày 29/04/2008 v/v thành lập các cơ quan chuyên môn thuộc UBND Phong Điền
45.	50/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	15.05.2008	Decision on establishment of the National Committee of city subordinated to the People's Committee of Can Tho City; It's replaced the decision No. 25/2005/QĐ-UBND dated April 05, 2005	Quyết định của UBND Tp. Cần Thơ số 50/2008/QĐ-UBND ngày 15/05/2008 v/v thành lập Ban Dân tộc thành phố thuộc UBND thành phố Cần Thơ. Quyết định này thay thế quyết định số 25/2005/QĐ-UBND ngày 05/04/2005
46.	51/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	15.05.2008	Decision on establishment of the Department of Foreign Affairs subordinated to the People's Committee of Can Tho City; It replaced the decision No. 40/2005/QĐ-UBND dated June 20, 2005	Quyết định của UBND Tp. Cần Thơ số 51/2008/QĐ-UBND ngày 15/05/2008 v/v thành lập Sở Ngoại vụ thuộc UBND Tp. Cần Thơ; Quyết định này thay thế quyết định số 40/2005/QĐ-UBND ngày 20/06/2005
47.	52/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	15.05.2008	Decision on establishment of the Department of Interior Affairs subordinated to the People's Committee of Can Tho City; It replaced the decision No. 22/2008/QĐ-UBND dated April 28, 2008	Quyết định của UBND Tp. Cần Thơ số 52/2008/QĐ-UBND ngày 15/05/2008 v/v thành lập Sở Nội vụ thuộc UBND Tp. Cần Thơ; Quyết định này thay thế quyết định số 22/2008/QĐ-UBND ngày 28/04/2008

48.	80/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	08.09.2008	Decision on stipulating functions, tasks, powers and organizational structure of the Department of Culture, Sport, and Tourism	Quyết định của UBND Tp. Cần Thơ số 80/2008/QĐ-UBND ngày 08/09/2008 v/v quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Sở Văn hóa, Thể thao và Du lịch
49.	81/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	08.09.2008	Decision on stipulating functions, tasks, powers and organizational structure of the Department of Industry and Trade	Quyết định của UBND Tp. Cần Thơ số 81/2008/QĐ-UBND ngày 08/09/2008 v/v quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Sở Công Thương
50.	71/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	25.08.2008	Decision on stipulating functions, tasks, powers and organizational structure of the National Committee of city	Quyết định của UBND Tp. Cần Thơ số 71/2008/QĐ-UBND ngày 25/08/2008 v/v quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Ban Dân tộc thành phố
51.	72/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	26.08.2008	Decision on stipulating functions, tasks, powers and organizational structure of the Department of Agriculture and Rural Development;	Quyết định của UBND Tp. Cần Thơ số 72/2008/QĐ-UBND ngày 26/08/2008 v/v quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Sở Nông nghiệp và Phát triển Nông thôn
52.	87/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	19.09.2008	Decision on stipulating functions, tasks, powers and organizational structure of the Agency of Market Management subordinated to the Department of Industry and Trade	Quyết định của UBND Tp. Cần Thơ số 87/2008/QĐ-UBND ngày 19/09/2008 v/v quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Chi cục Quản lý thị trường trực thuộc Sở Công Thương
53.	88/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	19.09.2008	Decision on stipulating functions, tasks, powers and organizational structure of the Department of Informatics and Communication	Quyết định của UBND Tp. Cần Thơ số 88/2008/QĐ-UBND ngày 19/09/2008 v/v quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Sở Thông tin và Truyền thông
54.	89/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	22.09.2008	Decision on stipulating functions, tasks, powers and organizational structure of the Department of Labor-Invalids, and Social Affairs	Quyết định của UBND Tp. Cần Thơ số 89/2008/QĐ-UBND ngày 22/09/2008 v/v quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Sở Lao động - Thương binh và Xã hội
55.	97/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	25.11.2008	Decision on stipulating functions, tasks, powers and organizational structure of the Department of Science and Technology	Quyết định của UBND Tp. Cần Thơ số 97/2008/QĐ-UBND ngày 25/11/2008 v/v quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Sở Khoa học và Công nghệ

56.	98/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	25.11.2008	Decision on stipulating functions, tasks, powers and organizational structure of the Agency of Plants Protection subordinated to the Department of Agriculture and Rural Development	Quyết định của UBND Tp. Cần Thơ số 98/2008/QĐ-UBND ngày 25/11/2008 v/v quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Chi cục Bảo vệ thực vật trực thuộc Sở Nông nghiệp và Phát triển nông thôn
57.	84/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	12.09.2008	Decision on stipulating functions, tasks, powers and organizational structure of the Department of Interior Affairs	Quyết định của UBND Tp. Cần Thơ số 84/2008/QĐ-UBND ngày 12/09/2008 v/v quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Sở Nội vụ
58.	100/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	18.12.2008	Decision on stipulating functions, tasks, powers and organizational structure of the Agency of Irrigation subordinated to the Department of Agriculture and Rural Development	Quyết định của UBND Tp. Cần Thơ số 100/2008/QĐ-UBND ngày 18/12/2008 v/v quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Chi cục Thủy lợi trực thuộc Sở Nông nghiệp và Phát triển nông thôn
59.	08/2009/QĐ-UBND	Decision	People's Committee of Can Tho City	23.01.2009	Decision on stipulating functions, tasks, powers and organizational structure of the Department of Natural Resources and Environment; It replaced the decision No. 95/2008/QĐ-UBND dated November 13, 2008	Quyết định của UBND Tp. Cần Thơ số 08/2009/QĐ-UBND ngày 23/01/2009 v/v quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Sở Tài nguyên và Môi trường; Quyết định này thay thế quyết định số 95/2008/QĐ-UBND ngày 13/11/2008
60.	09/2009/QĐ-UBND	Decision	People's Committee of Can Tho City	23.01.2009	Decision on stipulating functions, tasks, powers and organizational structure of the Agency of Veterinary subordinated to the Department of Agriculture and Rural Development;	Quyết định của UBND Tp. Cần Thơ số 09/2009/QĐ-UBND ngày 23/01/2009 v/v quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Chi cục Thú Y trực thuộc Sở Nông nghiệp và Phát triển nông thôn;
61.	16/2009/QĐ-UBND	Decision	People's Committee of Can Tho City	13.02.2009	Decision on stipulating functions, tasks, powers and organizational structure of the Department of Education and Training subordinated to the People's Committee of Can Tho City; It replaced the decision No. 308/2004/QĐ-UBND dated October 27, 2004 and decision No.69/2005/QĐ-UBND dated October 26, 2005	Quyết định của UBND Tp. Cần Thơ số 16/2009/QĐ-UBND ngày 13/02/2009 v/v quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Sở Giáo dục và Đào tạo; Quyết định này thay thế quyết định số 308/2004/QĐ-UBND ngày 27/10/2004 và quyết định số 69/2005/QĐ-UBND ngày 26/20/2005

62.	21/2009/QĐ-UBND	Decision	People's Committee of Can Tho City	24.02.2009	Decision on stipulating functions, tasks, powers and organizational structure of the Department of Transport; It replaced the decision No. 285/2004/QĐ-UBND dated August 31, 2004	Quyết định của UBND Tp. Cần Thơ số 21/2009/QĐ-UBND ngày 24/02/2009 v/v quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Sở Giao thông vận tải; Quyết định này thay thế quyết định số 285/2004/QĐ-UBND ngày 31/08/2004
63.	28/2009/QĐ-UBND	Decision	People's Committee of Can Tho City	14.04.2009	Decision on amending point d. para.2 of Article 3 of the Decision No. 09/2009/QĐ-UBND dated January 23, 2009 on stipulating functions, tasks, powers and organizational structure of the Agency of Veterinary subordinated to the Department of Agriculture and Rural Development	Quyết định của UBND Tp. Cần Thơ số 28/2009/QĐ-UBND ngày 14/04/2009 v/v sửa đổi điểm d khoản 2 Điều 3 Quyết định số 09/2009/QĐ-UBND ngày 23/01/2009 v/v quy định chức năng, nhiệm vụ và cơ cấu tổ chức của Chi cục Thú Y trực thuộc Sở Nông nghiệp và Phát triển nông thôn
64.	29/2009/QĐ-UBND	Decision	People's Committee of Can Tho City	15.04.2009	Decision on amending point d. para.2 of Article 3 of the Decision No. 98/2008/QĐ-UBND dated November 25, 2008 on stipulating functions, tasks, powers and organizational structure of the Agency of Plants Protection subordinated to the Department of Agriculture and Rural Development	Quyết định của UBND Tp. Cần Thơ số 29/2009/QĐ-UBND ngày 15/04/2009 v/v sửa đổi điểm d khoản 2 Điều 3 Quyết định số 98/2008/QĐ-UBND ngày 25/11/2008 v/v quy định chức năng, nhiệm vụ và cơ cấu tổ chức của Chi cục Bảo vệ thực vật trực thuộc Sở Nông nghiệp và Phát triển nông thôn
65.	30/2009/QĐ-UBND	Decision	People's Committee of Can Tho City	23.04.2009	Decision on working regulation of the People's Committee of Can Tho City	Quyết định của UBND Tp. Cần Thơ số 30/2009/QĐ-UBND ngày 23/04/2009 ban hành Quy chế làm việc của Ủy ban Nhân dân thành phố Cần Thơ
66.	23/2009/QĐ-UBND	Decision	People's Committee of Can Tho City	06.03.2009	Decision on stipulating functions, tasks, powers and organizational structure of the Department of Construction; It was supplemented by the Decision No. 48/2009/QĐ-UBND of September 01, 2009. It replaced the decision No. 281/2004/QĐ-UBND dated August 12, 2004	Quyết định của UBND Tp. Cần Thơ số 23/2009/QĐ-UBND ngày 06/03/2009 v/v quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Sở Xây dựng; Quyết định này được bổ sung bởi Quyết định số 48/2009/QĐ-UBND ngày 01/09/2009. Quyết định này thay thế quyết định số 281/2004/QĐ-UBND ngày 12/08/2004

67.	24/2009/QĐ-UBND	Decision	People's Committee of Can Tho City	06.03.2009	Decision on stipulating functions, tasks, powers and organizational structure of the Department of Health; It's replaced the decision No. 09/2006/QĐ-UBND dated January 23, 2006	Quyết định số 24/2009/QĐ-UBND ngày 06/03/2009 v/v quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Sở Y Tế; Quyết định này thay thế quyết định số 09/2006/QĐ-UBND ngày 23/01/2006
68.	27/2009/QĐ-UBND	Decision	People's Committee of Can Tho City	10.04.2009	Decision on amending Article 1 of the Decision No. 28/2008/QĐ-UBND dated April 29, 2008 on establishment of the Department of Justice subordinated to People's Committee of Can Tho City	Quyết định của UBND Tp. Cần Thơ số 27/2009/QĐ-UBND ngày 10/04/2009 sửa đổi, bổ sung Điều 1 Quyết định số 28/2008/QĐ-UBND ngày 29/4/2008 của UBND v/v thành lập Sở Tư pháp thuộc UBND Tp. Cần Thơ
69.	56/2009/QĐ-UBND	Decision	People's Committee of Can Tho City	19.10.2009	Decision on stipulating functions, tasks, powers and organizational structure of the Agency of Quality Management of Aquacultural and Aquatic Products subordinated to the Department of Agriculture and Rural Development	Quyết định của UBND Tp. Cần Thơ số 56/2009/QĐ-UBND ngày 19/10/2009 v/v quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Chi Cục Quản lý Chất lượng Nông lâm sản và Thủy sản trực thuộc Sở Nông nghiệp và Phát triển nông thôn
70.	57/2009/QĐ-UBND	Decision	People's Committee of Can Tho City	20.10.2009	Decision on stipulating functions, tasks, powers and organizational structure of the Inspector of the City	Quyết định của UBND Tp. Cần Thơ số 57/2009/QĐ-UBND ngày 20/10/2009 v/v quy định chức năng, nhiệm vụ và cơ cấu tổ chức của Thanh tra thành phố
71.	60/2009/QĐ-UBND	Decision	People's Committee of Can Tho City	09.11.2009	Decision on stipulating functions, tasks, powers and organizational structure of the Department of Justice	Quyết định của UBND Tp. Cần Thơ số 60/2009/QĐ-UBND ngày 09/11/2009 v/v quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Sở Tư Pháp
72.	63/2009/QĐ-UBND	Decision	People's Committee of Can Tho City	11.11.2009	Decision on stipulating functions, tasks, powers and organizational structure of the Agency of Food Safety and Hygiene subordinated to the Department of Health	Quyết định của UBND Tp. Cần Thơ số 63/2009/QĐ-UBND ngày 11/11/2009 v/v quy định chức năng, nhiệm vụ và cơ cấu tổ chức của Chi cục An toàn Vệ sinh thực phẩm trực thuộc Sở Y Tế

B. Regulations on Water Sector Protection in Can Tho City

Nr.	Code	Category	Issued by	Issued on	References	Vietnamese Version
1.	18/2000/CT-UBND	Directive	People's Committee of Can Tho City	26.07.2000	Directive on prevention of collapse of rivers and canals	Chỉ thị của UBND Tp. Cần Thơ số 18/2000/CT-UBND ngày 26/07/2000 v/v phòng, chống sạt lở sông, kênh rạch
2.	12/2002/CT-UBND	Directive	People's Committee of Can Tho City	14.06.2002	Directive on strengthening operation of legal clubs in Can Tho City	Chỉ thị của UBND Tp. Cần Thơ số 12/2002/CT-UBND ngày 14/06/2002 v/v nâng cao hiệu quả hoạt động của các Câu lạc bộ pháp luật
3.	66/2003/QĐ-UBND	Decision	People's Committee of Can Tho City	31.10.2003	Decision on promulgating regulation on setting up, managing and developing of legal bookcases	Quyết định của UBND Tp. Cần Thơ số 66/2003/QĐ-UBND ngày 31/10/2003 v/v ban hành quy chế xây dựng, quản lý và khai thác tủ sách pháp luật
4.	08/2004/CT-UBND	Directive	People's Committee of Can Tho City	23.04.2004	Directive on implementation of examination and handling of legal documents on city scale	Chỉ thị của UBND Tp. Cần Thơ số 08/2004/CT-UBND ngày 23/04/2004 v/v thực hiện công tác kiểm tra và xử lý văn bản quy phạm pháp luật trên địa bàn thành phố
5.	283/2004/QĐ-UBND	Decision	People's Committee of Can Tho City	18.08.2004	Decision on promulgating regulation on exploitation and protection of irrigation works on Can Tho City scale	Quyết định của UBND Tp. Cần Thơ số 283/2004/QĐ-UBND ngày 18/08/2004 v/v ban hành quy định về khai thác và bảo vệ công trình thủy lợi trong phạm vi thành phố Cần Thơ
6.	22/2005/CT-UBND	Directive	People's Committee of Can Tho City	02.12.2005	Directive on strengthening of organization and operation of Justice Organizations at communal level	Chỉ thị của UBND Tp. Cần Thơ số 22/2005/CT-UBND ngày 02/12/2005 v/v tăng cường tổ chức và hoạt động của cơ quan tư pháp cấp huyện và xã
7.	10/2005/CT-UBND	Directive	People's Committee of Can Tho City	15.03.2005	Directive on setting up and consolidation legal agencies at specialized organizations subordinated to People's Committee of Can Tho City and State enterprises	Chỉ thị của UBND Tp. Cần Thơ số 10/2005/CT-UBND ngày 15/03/2005 v/v xây dựng, củng cố tổ chức pháp chế ở các cơ quan chuyên môn thuộc UBND Tp. Cần Thơ và các doanh nghiệp Nhà nước
8.	11/2005/CT-UBND	Directive	People's Committee of Can Tho City	28.03.2005	Directive on restoration of orders, rules of urban civil construction and environmental sanitation	Chỉ thị của UBND Tp. Cần Thơ số 11/2005/CT-UBND ngày 28/03/2005 về công tác lập lại trật tự kỷ cương trong lĩnh vực trật tự xây dựng dân dụng đô thị và vệ sinh môi trường
9.	20/2005/CT-UBND	Directive	People's Committee of Can Tho City	19.10.2005	Directive on intensify implementation of the Law on Fisheries in Can Tho City	Chỉ thị của UBND Tp. Cần Thơ số 20/2005/CT-UBND v/v tăng cường công tác triển khai thực hiện Luật Thủy sản
10.	105/2005/QĐ-UBND	Decision	People's Committee of Can Tho City	28.12.2005	Decision on promulgating regulation on procedure of complaint and denunciation settlement in Can Tho City	Quyết định của UBND Tp. Cần Thơ số 105/2005/QĐ-UBND ngày 28/12/2005 v/v ban hành quy định về trình tự, thủ tục giải quyết khiếu nại, tố cáo trên địa bàn thành phố Cần Thơ
11.	73/2006/QĐ-UBND	Decision	People's Committee of Can Tho City	03.11.2006	Decision on promulgating regulation on division of responsibilities and cooperation of sectors, levels in state managing of products and goods quality	Quyết định của UBND Tp. Cần Thơ số 73/2006/QĐ-UBND ngày 03/11/2006 v/v ban hành quy định về phân công trách nhiệm và quan hệ phối hợp giữa các ngành, các cấp trong quản lý nhà nước về chất lượng sản phẩm, hàng hóa trên địa bàn thành phố Cần Thơ

12.	59/2006/QĐ-UBND	Decision	People's Committee of Can Tho City	13.06.2006	Decision on promulgating regulation on procedure of drafting, appraisal and issue legal documents of People's Committees at all levels subordinated to Can Tho City; It's replaced the Decision No. 66/2002/QĐ-UBND dated 14 May, 2002	Quyết định của UBND Tp. Cần Thơ số 59/2006/QĐ-UBND ngày 13/06/2006 v/v ban hành quy chế về trình tự, thủ tục soạn thảo, thẩm định và ban hành văn bản quy phạm pháp luật của UBND các cấp thuộc thành phố Cần thơ Quyết định này thay thế quyết định số 66/2002/QĐ-UBND ngày 14/05/2002
13.	19/2007/QĐ-UBND	Decision	People's Committee of Can Tho City	13.06.2007	Decision on promulgating regulation on charge rates for issuing of building permission	Quyết định của UBND Tp. Cần Thơ số 19/2007/QĐ-UBND ngày 13/06/2008 v/v quy định mức thu lệ phí cấp phép xây dựng
14.	11/2007/QĐ-UBND	Decision	People's Committee of Can Tho City	07.03.2007	Decision on promulgating regulation on inland waterway traffic safety and order in city areas	Quyết định của UBND Tp. Cần Thơ số 11/2007/QĐ-UBND ngày 07/03/2007 v/v ban hành quy định bảo đảm trật tự, an toàn giao thông đường thủy nội địa trên địa bàn thành phố
15.	16/2007/CT-UBND	Directive	People's Committee of Can Tho City	27.08.2007	Directive on intensify task of legal propaganda and awareness in Can Tho City	Chỉ thị của UBND Tp. Cần Thơ số 16/2007/CT-UBND ngày 27/08/2000 v/v tăng cường công tác tuyên truyền, phổ biến, giáo dục pháp luật trên địa bàn thành phố Cần Thơ
16.	48/2007/QĐ-UBND	Decision	People's Committee of Can Tho City	28.12.2007	Decision on promulgating regulation on management of aquaculture exploitation and transport in Can Tho city	Quyết định của UBND Tp. Cần Thơ số 48/2007/QĐ-UBND v/v ban hành quy chế hoạt động quản lý khai thác, vận chuyển thủy sản trên địa bàn thành phố Cần Thơ
17.	08/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	25.01.2008	Decision on providing charges for projects, reports of exploration, exploitation, and use of ground water; exploitation and use of surface water; discharge of waste water into water resources; hydraulic work	Quyết định của UBND Tp. Cần Thơ số 08/2008/QĐ-UBND ngày 25/01/2008 v/v phí thẩm định đề án, báo cáo thăm dò, khai thác, sử dụng nước dưới đất; khai thác sử dụng nước mặt, xả thải vào nguồn nước, công trình thủy lợi
18.	10/2008/CT-UBND	Directive	People's Committee of Can Tho City	03.07.2008	Directive on intensify management of aquaculture hatching aim at protecting environment in Can Tho City	Chỉ thị của UBND Tp. Cần Thơ số 10/2008/CT-UBND ngày 03/07/2008 v/v tăng cường quản lý nuôi thủy sản bảo vệ môi trường trên địa bàn thành phố Cần Thơ
19.	06/2008/CT-UBND	Directive	People's Committee of Can Tho City	27.03.2008	Directive on management of incomings and outgoings of budget 2008	Chỉ thị của UBND Tp. Cần Thơ số 06/2008/CT-UBND ngày 27/03/2008 v/v điều hành thu, chi ngân sách năm 2008
20.	48/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	13.05.2008	Decision on promulgating regulation on aquaculture hatching in Can Tho City	Quyết định của UBND Tp. Cần Thơ số 48/2008/QĐ-UBND ngày 13/05/2006 v/v ban hành quy định về hoạt động nuôi thủy sản trên địa bàn thành phố Cần Thơ
21.	09/2008/CT-UBND	Directive	People's Committee of Can Tho City	07.05.2008	Directive on intensify activity of prevention, control of flood and storms and seeking and rescuing, lightening of damages caused by natural calamity in 2008	Chỉ thị của UBND Tp. Cần Thơ số 09/2008/CT-UBND ngày 07/05/2008 v/v tăng cường công tác phòng, chống lụt, bão và tìm kiếm cứu nạn, giảm nhẹ thiệt hại do thiên tai gây ra 2008

22.	62/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	18.07.2008	Decision on promulgating regulation on management of minerals operation in Can Tho City	Quyết định của UBND Tp. Cần Thơ số 62/2008/QĐ-UBND ngày 18/07/2008 v/v ban hành quy định quản lý hoạt động khoáng sản trên địa bàn thành phố Cần thơ
23.	66/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	14.08.2008	Decision on promulgating regulation on form and technique of presenting legal documents; It's replaced the decision No. 56/2006/QĐ-UBND on regulation on form, technique of presenting legal documents, administrative documents, and copy pf documents issued by administrative state agencies at all levels in Can Tho city	Quyết định của UBND Tp. Cần Thơ số 66/2008/QĐ-UBND ngày 14/08/2008 v/v ban hành quy định về thể thức và kỹ thuật trình bày văn bản; Quyết định này thay thế quyết định số 56/2005/QĐ-UBND ngày 23/08/2005 v/v ban hành quy chế về thể thức, kỹ thuật trình bày văn bản quy phạm pháp luật, văn bản hành chính và bản sao văn bản của cơ quan quản lý hành chính nhà nước các cấp thuộc thành phố Cần thơ
24.	67/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	15.08.2008	Decision on making budget estimation, management and drawing expenditure balance-sheet of building, examination of legal documents issued by the People's Council and People's Committee at all levels subordinated to Can Tho City. It's replaced the decision No. 18/2006/QĐ-UBND promulgating regulation on supportive expenditure of building, examination and doing surveys of legal document drafts	Quyết định của UBND Tp. Cần Thơ số 67/2008/QĐ-UBND ngày 15/08/2008 v/v lập dự toán, quản lý và quyết toán kinh phí xây dựng, kiểm tra văn bản quy phạm pháp luật của HĐND và UBND các cấp thuộc thành phố Cần Thơ Quyết định này thay thế quyết định số 18/2006/QĐ-UBND ngày 4/4/2006 v/v quy định kinh phí hỗ trợ công tác xây dựng, kiểm tra và lấy ý kiến đóng góp cho dự thảo văn bản quy phạm pháp luật
25.	86/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	15.09.2008	Decision on promulgating regulation on procedure of mediation at grassroots' level	Quyết định của UBND Tp. Cần Thơ số 86/2008/QĐ-UBND ngày 15/09/2008 v/v ban hành quy định về trình tự, thủ tục hòa giải ở cơ sở
26.	13/2008/CT-UBND	Directive	People's Committee of Can Tho City	22.09.2008	Directive on continuous implementation of the Land Law of 2003 in Can Tho City	Chỉ thị của UBND Tp. Cần thơ số 13/2008/CT-UBND ngày 22/09/2008 v/v tiếp tục tổ chức thực hiện Luật Đất Đai năm 2003 trên địa bàn thành phố Cần Thơ
27.	96/2008/QĐ-UBND	Decision	People's Committee of Can Tho City	18.11.2008	Decision on promulgating regulation on organization and management of the landing stage crossing river	Quyết định của UBND Tp. Cần Thơ số 96/2008/QĐ-UBND v/v ban hành quy chế về tổ chức và quản lý bến khách ngang sông
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