

SEVERAL LEGAL ISSUES ON WATER POLLUTION CONTROL IN VIETNAM

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ABSTRACT:

Water is the environmental element that receives the earliest care and protection compared to others since it is one of the most valuable resources and it affects people's lives. After 20 years of implementing the Law on Environmental Protection, environmental protection in general and water pollution control in particular in Vietnam have achieved many positive results. The Law on Environmental Protection which was approved by the National Assembly on November 17, 2020 and took effect from January 1, 2022 continues to improve the legal corridor on protecting the water environment in Vietnam. However, pollution is inevitable and water pollution control continues to face numerous challenges.

Keywords: water pollution, water pollution control, legal issues, Vietnam.

1. Introduction

According to statistics from the Ministry of Natural Resources and Environment, the surface water environment of Vietnam has been contaminated in a variety of ways, and has even tended to increase in terms of area and level of pollution. However, pollution sources and the current state of the surface water environment in each region differ depending on the specific natural conditions as well as the focus of socio-economic development in each region.

2. Research contents

2.1. Water pollution in Vietnam

Vietnam has a dense network of rivers with 2,360 rivers with a length of over 10 km, of which 109 are main rivers. There are 16 river basins nationwide with an area of more than 2,500 square kilometers, 10/16 river basins with an area of over 10,000 square kilometers. Total surface water of river basins is about 830 - 840 billion m³/year, however, only about

37% is endogenous water, the remaining 63% is water flowing from neighboring countries into Vietnam's territory. Due to the geographical location and specific natural conditions, about 60% of the water is concentrated in the Mekong River Basin, 16% in the Red River - Thai Binh Basin, about 4% in the Dong Nai River Basin. In other large river basins, the total amount of water accounts for the remaining part.

In recent years, the surface water environment of Vietnam has been contaminated in a variety of ways, and has even tended to increase in terms of area and level of pollution. However, pollution sources and the current state of the surface water environment in each region differ depending on the specific natural conditions as well as the focus of socio-economic development in each region.

Perhaps many people still have not forgotten the oil contamination of the Da River in 2019, which seriously affected domestic water sources in many

places in Hanoi. Furthermore, the 2008 disaster along Thi Vai River (Dong Nai River) caused a large number of fish and shrimp deaths due to the discharge of the Vedan factory into the water environment.

According to Unicef, water pollution in Vietnam is in the TOP 5 countries with the highest amount of waste dumped into rivers and seas in the world, following China, the Philippines, Indonesia, and Thailand.

In industrial zones, hundreds of large and small production units holding tons of untreated wastewater discharged straight into pipelines, organic pollutants, and metals remaining in water have entered the water source.

Domestic garbage is thrown around in cities, clogging sewers and preventing water from draining. As a result, whenever it rains, people must drain the water through the sewers. Because of waste, the water in the Nhue and To Lich rivers is black and smelly.

In rural areas, due to difficult living conditions and outdated facilities, untreated domestic and livestock wastes seeped into underground water sources. People who drink untreated groundwater are more likely to get diseases caused by contaminated water.

Besides, the overuse of fertilizers and plant protection substances in agricultural production leads to pollution of canals, rivers, lakes and severely affects human health.

According to the Ministry of Health and the Ministry of Natural Resources and Environment, around 9,000 people die in Vietnam each year as a result of poor water supply and sanitation; nearly 200,000 new cancer cases are identified each year, with one of the main reasons being the usage of polluted water.

In addition to surface water pollution, underground water sources in Vietnam are also heavily polluted. In some rural areas, groundwater contaminated with harmful microorganisms has exceeded the permissible limit. According to reports, underground water in some areas, including Bac Ninh, Ha Nam, and Nam Dinh has showed indicators of organic pollution (NO₃⁻, NH₄⁺), heavy metals (Fe, As), and particularly dangerous

microorganisms (Coliform, E, Coli). This is a threat not just to production operations, but also to people's health, because residents in this area use groundwater not only for agricultural production, but also for daily activities.

According to the assessment of the Ministry of Health and Agriculture and Rural Development: Water sources are contaminated with bacteria, viruses, excess amounts of chemicals and heavy metals. If the water is not treated well, it will be a major cause of water-related diseases when people use it for a long time. Malaria is one of the most frequent of these diseases, and it has a negative impact on human health. Cholera, typhoid, dysentery, hepatitis, polymyositis, skin and respiratory illnesses and even cancer are among the diseases that follow.

2.2. The role of the community in water pollution control

Residential communities have a critical role in environmental pollution control in general and water pollution control in particular. People can actively contribute to environmental protection by making optimal use of water resources and preventing waste discharge into ponds, lakes, rivers, and streams. People also play a vital role in monitoring activities that may have an impact on the water environment in their communities. The community is also a driving force in the fight against or condemnation of individuals, groups, and enterprises who pollute the water environment and damage the resources of the country.

The participation of the community in environmental protection not only provides more local resources for this work, but also a force to contribute, provide information, and monitor the environment quickly and effectively, assisting in the early resolution of environmental problems, particularly those directly related to the large population and affecting the life of the community.

Promoting the role of residential communities and creating favorable conditions for their participation enhances the efficiency of consultation, criticism, implementation of regulations on environmental impact assessment, environmental licensing as well as environmental incident prevention and response.

However, due to difficulty in getting information, the monitoring role of the community in water environment conservation has remained limited; Responsibilities of competent agencies for community recommendations and initiatives on environmental preservation are not consistent and effective.

Due to such difficulties, the Law on Environmental Protection was approved by the National Assembly on November 17, 2020 and took effect from January 1, 2022 included regulations on environmental protection activities; rights, obligations and responsibilities of agencies, organizations, communities, households and individuals in environmental protection activities.

The Law prescribes 11 State policies on environmental protection, including policies to create favorable conditions for agencies, organizations, population communities, households and individuals to participate in the implementation, evaluation and supervision of environmental protection activities; policies to strengthen scientific research, develop technology for pollution treatment, recycling and waste treatment; and policies to prioritize the transfer and application of advanced, high-tech, environmentally-friendly technology; policies to strengthen training of human resources on environmental protection.

The law also clearly states 14 environmental protection acts that are forbidden, including the discharge of wastewater or waste gas that has not been handled according to environmental technical regulations into the environment.

The Law has established and clearly demonstrated the rights and responsibilities of the residential community, as well as the State's support for community participation in environmental protection, in order to create favorable conditions for the residential community to promote its role. The law also added rules for establishing an online system to receive, process, and respond to feedback, recommendations, and consultations on environmental protection from organizations, individuals, and communities; at the same time, people can participate in monitoring using information technology with smartphone applications.

2.3. Prosecution for criminal liability with violations of the law on water pollution control

Criminal prosecution is the most severe legal measure applied by the court to those who commit criminal acts specified in the Criminal Code.

Recognizing the dangers of environmental law crimes, the Vietnamese government issued the Criminal Code in 1985 based on the 1980 Constitution. For the first time, the legislation of environmental crime was recorded in Article 195: "Those who violate public sanitation, illness prevention and control, or environmental protection regulations and cause serious effects will face non-custodial reform of up to one year or imprisonment for three months to two years. 2- Offenders who commit the crime and cause exceptionally serious consequences shall face a term of one to five years in jail. The provisions of Article 195 indicate that, during this time, criminal liability for violations of environmental law in general, and pollution of the marine environment due to industrial wastewater in particular, is still limited and neglected.

As the country enters a period of innovation, along with economic reform, other sectors such as administration, politics, culture, and education have been gradually improved. If environmental crimes were regulated in the 1985 Criminal Code as part of the economic crimes classification, the 1999 Criminal Code had a complete chapter dedicated to them called Chapter XVII: Environmental Crimes, which comprised ten articles ranging from Article 182 to Article 191.

After nearly 35 years since the Criminal Code went into force in 1985, the provisions on criminal liability for environmental offenses have been continually updated. The introduction of Criminal Code No. 100/2015/QH13 (the 2015 Criminal Code), which went into effect on January 1, 2018, was a major turning point in the battle against environmental crimes. In this Code, environmental crimes are organized into a separate chapter (Chapter XIX) with the crimes specified in the following articles: Crime of "causing environmental pollution" (Article 235), Crime of "Violating the regulations on hazardous waste management" (Article 236), Crime of "Violating the regulations on prevention, response and remedy of environmental

incidents" (Article 237), Crime of "Violating the regulations on safety of irrigation works, dikes and natural disaster prevention and control; Violations against regulations on protection of riverbanks" (Article 238), Crime of "Bringing waste into Vietnamese territory" (Article 239), Crime of "spreading dangerous infectious diseases to humans" (Article 240), Crime of "spreading dangerous diseases to animals and plants" (Article 241), Crime of "Destroying aquatic resources" (Article 242), Crime of "Destroying forests" (Article 243), Crime of "violating regulations on protection of endangered, precious and rare animals" (Article 244), Crime of "violating regulations on management of nature reserves" (Article 244) Article 245), Crime of "Importing and spreading invasive alien species" (Article 246).

With these provisions, it may well be concluded that the current criminal law does not specifically define the crime of violating the law on water pollution management. As a result, criminal prosecutions for violations of the law on control of marine environmental pollution caused by industrial wastewater must be based on environmental crimes listed in Chapter XIX of the 2015 Criminal Code, specifically and directly related to articles such as Article 235 (crime of "causing environmental pollution") and Article 237 (crime of "violating regulations on prevention, response, and remedy of environmental incidents").

In comparison to the crime of "causing environmental pollution", the crime of "violating regulations on prevention, response and remedy of environmental incidents" specified in the 1999, the 2015 Criminal Code has a substantial change that is more appropriate for the current situation. However, despite the progressive points provided by the 2015 Criminal Code, there are still significant limits in the regulation of environmental crimes in general and the prevention of water pollution in particular.

Crimes are grouped into four categories based on the type and degree of danger to society of the criminal act as stated in Article 9 of the 2015 Criminal Code: less serious crimes, serious crime, very serious crime, and extremely serious crime.

However, for the group of crimes such as: crime of "causing environmental pollution" (Article 235),

crime of "violating regulations on prevention, response and remedy of environmental incidents" (Article 237) related pollution of the marine environment caused by industrial wastewater, the highest penalty is merely 10 years in prison. That is, there are no extremely serious crimes committed by the environmental crime group.

Meanwhile, the consequences of this crime on the environment, human life, health, and property can be enormous. As a result, this penalty framework is not powerful and deterrent enough for those who intentionally violate the law on environmental pollution control.

Furthermore, it is also difficult to control and handle environmental violations due to the challenges in determining the extent of damage and the cause-and-effect relationship between damage and discharge behavior; the lack of guidelines on determining water environmental damage; difficulties in determining the extent to which the ecosystem is degraded; procedures for filing a claim for damage caused by water pollution; regulations on the level of costs for water pollution treatment, costs of restoring the water environment and so on.

3. The fourth industrial revolution: Advanced technology improves the efficiency of water pollution control

If the invention of the steam engine is associated with the first industrial revolution, the invention of electricity is associated with the second industrial revolution, and automation is associated with the third industrial revolution, then the fourth revolution (also known as the industrial revolution 4.0) is associated with digitization.

In terms of natural resources and the environment, the 4.0 revolution has a positive short-term impact and a very positive medium- and long-term impact thanks to the application of technologies to save energy, environmentally friendly materials, and fast-growing environmental monitoring technologies, which are supported by the Internet, allowing for the collection and processing of information 24/7 in real time as well as providing early warning of natural disasters.

In order to protect the environment in the era of industrial revolution 4.0, it is necessary to strengthen the continuous automatic monitoring system, sensor,

camera, and satellite systems; automatically collect, process, and publish monitoring data (ambient air quality, industrial emissions, river water quality, wastewater quality of industrial parks and factories); digitization of data and management figures; and application of AI, big data, blockchain, IOT in pollution control, behavior forecasting and so on.

Hence, in the 4.0 revolution, environmental protection is viewed as "technology innovation toward green economic development." Meanwhile, environmental protection, the development of clean industrial technology, and clean energy are the new driving forces of the green economy. However, technology in environmental waste treatment and environmental monitoring management must be constantly innovated.

Many companies have integrated environmental monitoring technology over time. For example, as one of the environmental hotspots, Vinh Tan Thermal Power Plant has installed an automatic and continuous emission and wastewater monitoring system to handle waste before being discharged into the environment. It can transmit live data 24/7 to the Binh Thuan Department of Natural Resources and Environment for monitoring. Simultaneously, Vinh Tan Thermal Power Plant has also installed a camera system to monitor coal storage and transmitting images to the Binh Thuan Department of Natural Resources and Environment and procedures are being carried out to install an electronic board displaying environmental parameters in front of the factory gate for observation, inspection and supervision.

The factory also invited the People's Committee of Vinh Tan commune and representatives of households in hamlet 7, Vinh Phuc village, Vinh Tan commune (the area neighboring to the green corridor separating the factory from the residential area) to visit, inspect, and supervise the factory's power production and environmental protection on a quarterly basis. Villagers in Vinh Phuc have a greater understanding of modern technology and contentment about the factory's environmental preservation as a result of their visit.

At the same time, inspection and supervision teams from the State, organizations, agencies, and local governments visited and inspected the factory's

operation and environmental management, including its coal receiving port, coal storage, conveyor system, central control room, ash silo, slag yard, wastewater treatment system, exhaust gas, and circulating water cooling channel. The results of environmental protection parameters do not exceed the permissible limits, and the minutes of inspection and monitoring results are transparently provided to the participants.

Many other businesses, in addition to Vinh Tan Thermal Power, are actively using technologies to monitor environmental protection in production and business operations.

As a result, the initiative of the enterprises has contributed to improving the efficiency of environmental protection at the factories. At the same time, it strengthens community supervision of environmental protection. This is a way of helping businesses in publicizing environmental protection measures and gaining community support.

Furthermore, the introduction of innovative examples of environmental protection, including water environment protection, will elicit a response from the residential community. They will contribute to the development of practical solutions for efficiently protecting the water environment, therefore enhancing the community's responsibility in water pollution prevention.

If determining the extent of damage and the causal relationship between the damage and the act of discharge makes applying penalties for administrative violations and handle criminal violations with offenses of causing water pollution difficult, the use of monitoring solutions will aid in the timely monitoring and capture of environmental problems. Afterwards, the authorities would have a basis for determining the degree of crimes that cause environmental pollution and issuing environmental pollution sanctions.

Due to such development, the opportunity for environmental protection in Vietnam in the digital age relies on data collection and processing so that the vision of green rivers and unpolluted groundwater can become a reality.

4. Conclusion

The rapid speed of industrialization, urbanization, and population increase nowadays is

putting heavy pressure on the water resources of the country. Wastewater, pollutants, and solid waste are increasingly polluting the aquatic environment in many urban areas, industrial zones, and artisan villages. However, there are numerous obstacles in the criminal prosecution of environmental law violations.

The Industrial Revolution 4.0, which is developing strongly globally and directly affecting Vietnam, has been helping to provide solutions to help protect the environment in general and protect the water environment in particular. However, before the fourth industrial revolution has a more comprehensive and widespread impact, it is time to have new approaches and raise awareness to perfect the legal framework on environmental protection in general, protection of water environment in particular as well as supervision of law enforcement on water environment protection in Vietnam.

First and foremost, the State and authorities at all levels must continue to increase communication and education efforts in the community on environmental protection of water sources. Each person must comprehend and be aware of the importance of protecting the clean water environment when taking action. This is a campaign that involves not only individuals, but also families, organizations, countries, and the entire planet. The first step in protecting clean water is to raise public awareness and encourage people to preserve water when using it.

Secondly, policies and regulations to govern the execution of the Law on Environmental Protection 2020 must continue to be promulgated. Simultaneously, environmental legal mechanisms and policies in the direction of increasing the degree of sanctions for behaviors that have serious consequences on water pollution need to be developed. Furthermore, it is necessary to improve the system of state management organizations for

environmental protection from the central to local levels; strengthen inspection work for local production, business, and service establishments; strengthen inspection as well as control of investment and construction of concentrated domestic and industrial wastewater treatment stations. In order to achieve these goals, there needs to be a collaboration of 3 parties: the State-investors, enterprises-constructors and people-direct users.

Thirdly, in order to determine and address violations quickly, the inspection and supervision of waste discharge activities in industrial parks must be strengthened. Instead of discharging wastewater directly into the environment, factories and businesses must construct tanks to treat wastewater. It is important to enhance the use of monitoring technology so that individuals, businesses, and government agencies can track environmental protection efforts at organizations. As a result, the monitoring effectiveness will be improved, and the good acts will be propagated.

Moreover, rural residents should be encouraged to use methods to tackle water pollution, such as building septic tanks, using upgraded biogas for wastewater treatment and avoiding direct livestock waste discharge to the environment. Limiting harm to water sources by utilizing ecologically friendly fertilizers and pesticides is a crucial step toward clean agriculture.

In addition, the work of comprehending the situation, inspecting, and monitoring the environment must be enhanced. It is also important to improve knowledge of the environmental workforce and equip them with modern technical tools.

Furthermore, implementing measures to reduce water pollution by utilizing clean energy sources such as solar energy, wind energy and integrating them into industrial production is a safe way to limit hazardous waste and wastewater ■

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MỘT SỐ VẤN ĐỀ PHÁP LÝ VỀ KIỂM SOÁT Ô NHIỄM NƯỚC TẠI VIỆT NAM

● **HỒ ANH TUẤN**

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TÓM TẮT:

Nước là nhân tố môi trường được quan tâm và bảo vệ sớm nhất so với các nhân tố khác, vì nó là một trong những tài nguyên vô cùng quý giá và ảnh hưởng đến cuộc sống của con người. Sau 20 năm thi hành Luật Bảo vệ môi trường, công tác bảo vệ môi trường nói chung và kiểm soát ô nhiễm môi trường nước nói riêng tại Việt Nam đã đạt được nhiều kết quả tích cực. Luật Bảo vệ môi trường được Quốc hội thông qua ngày 17/11/2020, có hiệu lực thi hành từ ngày 01/01/2022 tiếp tục hoàn thiện hành lang pháp lý về bảo vệ môi trường nước ở Việt Nam. Tuy nhiên, ô nhiễm môi trường là điều không thể tránh khỏi và các nỗ lực kiểm soát ô nhiễm nước tiếp tục gặp phải nhiều thách thức.

Từ khóa: ô nhiễm nước, kiểm soát ô nhiễm nước, các vấn đề pháp lý, Việt Nam.