

Perspectives of sustainable development vs. law enforcement on damage, pollution and environmental conservation management in Indonesia

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ABSTRACT

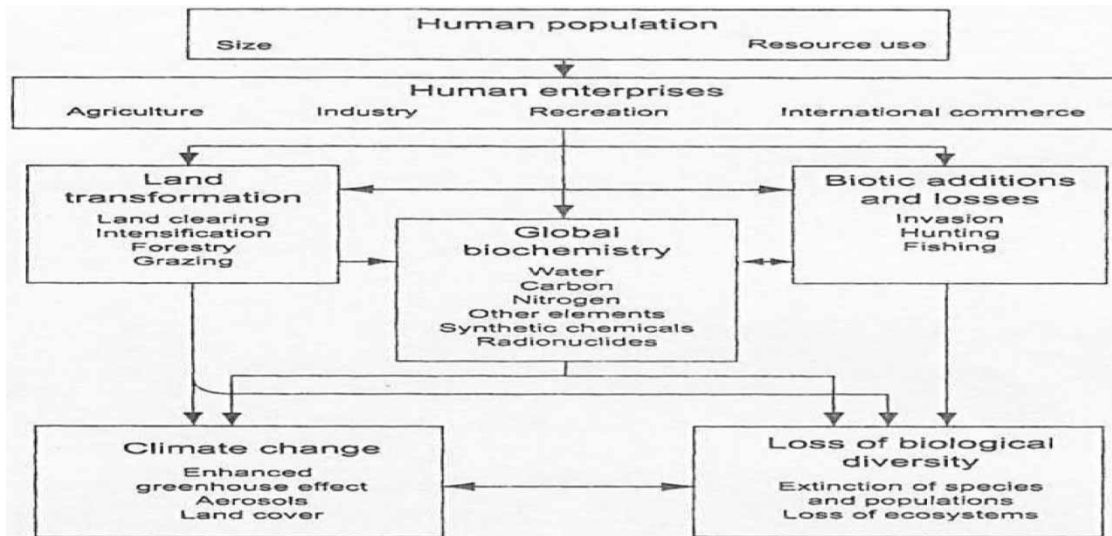
This study uses a normative juridical method based on literature studies to obtain secondary data sourced from primary, secondary, and tertiary legal materials. Specifications of research are analytically descriptive. The data analysis method used is qualitative juridical. The results of the study show that overall government policies on environmentally friendly management have not been able to overcome the conflicts that often arise between the goals of environmental preservation and the goals of economic development. As a solution to overcome these obstacles, it is necessary to enforce criminal law, in addition to imposing material punishments (requiring proof) for crimes which are genetic crimes, it is also necessary to apply formal offenses (no need for proof) for crimes which are specific crimes. The process of enforcing environmental law from the aspect of criminal law will be more successful if it is handled by agencies that technically and institutionally deal with environmental issues. In addition, the concept of sustainable development must be implemented in the legal system for environmental management. In the future, it is necessary to develop coordination between law enforcement officials who are assembled.

Key words: damage, ecosystem, environment, pollution companies, sustainable

HIGHLIGHTS

- The enforcing environmental law from the aspect of criminal law must be handled by institutions dealing with environmental issues.
- The concept of sustainable development must be implemented in a system of laws regarding environmental management.
- To overcome the problems of pollution and environmental destruction, in the future, it is necessary to establish coordination.

GRAPHICAL ABSTRACT



1. INTRODUCTION

Global declarations and persuasive research indicate that there is a relationship between the rule of law and sustainable development. Some parties question the strength and direction of causality in this relationship. However, the correlation between societal compliance with the rule of law and progress toward stability and development need not be questioned any further (Michel 2020). The international community has identified the rule of law as the foundation and safeguard for good governance and associates good governance and the rule of law with sustainable development. This statement serves as a catalyst in this study to measure the extent to which the law enforcement process, one of the pillars of the rule of law, organizes and manages the environment in Indonesia as a developing country in support of sustainable development. Some studies question whether legal reforms have been effectively implemented in developing countries concerning their performance in terms of accountability, fair laws, open governance, and accessible and impartial dispute resolution (Sudaram & Chowdhury 2012).

One of the issues examined in this research is related to environmental law enforcement, including its arrangement, management, and application against those who pollute and damage the environment. Because humans tend to overlook the balance and harmony of the environment while exploiting natural resources, they fail to consider the negative impacts such as acid rain and air pollution. These activities of resource exploitation are not based on sound legal regulations.

One thing that needs to be internalized in environmental management is that 'the environment is a legacy for our grandchildren. Thus, environmental preservation must be maintained. According to Otto Sumarwoto, the science that studies the reciprocal relationship between living beings and their environment is called ecology. In the concept of ecology, it is believed that the components or elements of the environment are related in an interactive relationship that influence each other. This relationship is stable and organized in the form of an ecosystem. Otto Sumarwoto provides a definition of an ecosystem as follows: 'An ecological system formed by the reciprocal relationship between living beings and their environment' (Soemarwoto 1985). If there is a change in the interaction between components, resulting in temporary disturbances, it means these disturbances can be overcome, and the balance in the interaction pattern can be restored. However, environmental problems will arise when the functions within the ecosystem chain are disrupted, and these disruptions exceed the ecosystem's natural ability to recover.

'The idea of justice for future generations has received greater attention after realizing that climate change poses a threat to human civilization in the 21st century. Intergenerational issues are the most critical dimension of ethical problems in climate change issues. *Climate change regulations, have they recognized future generations as one of the subjects in fulfilling human rights. Do existing climate change laws cover the right of future generations to appear as plaintiffs in court...*' (Subekti et al. 2023). The ability of the environment to support development is of great concern, and it is already being felt by the global

community. The United Nations Environment Program (UNEP), a global body responsible for environmental conservation, agreed in 1982, during the 10th anniversary of the environmental movement, to establish the World Commission on Environment and Development (WCED). The WCED's task was to examine the environmental and developmental challenges leading up to the year 2000 and find ways to address them (Development, 188). WCED is the organization that introduced the concept of sustainable development, which is used in this report. In its book 'Our Common Future', WCED defined sustainable development as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'. This wise definition conveys the message that pursuing development through environmental destruction can jeopardize the sustainability of development itself. Therefore, the preservation of the environment in the utilization of natural resources and the environment is necessary for future processes.

This study specifically highlights the extent of environmental protection implementation through regulations and law enforcement regarding pollution and environmental degradation in Indonesia to support sustainable development. Indonesia, being a vast country, faces complex environmental challenges such as deforestation and forest degradation due to illegal logging, forest conversion for mining and plantations (Gunarso *et al.* 2013), and uncontrollable forest fires that negatively impact biodiversity (Rasyid 2014). Additionally, water and air pollution occur due to poor waste management in industries, and the use of hazardous chemicals that disrupt aquatic ecosystems, and adversely affect public health. Several facts indicate that environmental law enforcement in Indonesia still faces serious problems and challenges, resulting in the incomplete effectiveness of its implementation. Some of these problems include weak capacity and resources in law enforcement institutions, leading to a lack of in-depth knowledge about environmental issues, investigation methods, and evidence collection, which hinder the investigation and prosecution processes. Corruption practices can affect the independence and integrity of law enforcement officials. The lack of effective coordination and collaboration between various relevant institutions, both at the national and regional levels, can hinder environmental law enforcement. Technical constraints also exist, as the implementation of environmental criminal law in certain areas of Indonesia is not fully optimal since environmental criminal law serves as a last resort (*ultimum remedium*) in law enforcement against cases of pollution and environmental destruction. The development of environmental crimes in Indonesia poses challenges for the government to create a healthy and clean environment. The weak enforcement of environmental criminal law against polluters and environmental destroyers is due to the lack of a grand design for harmonizing environmental regulations in Indonesia.

The preservation of the carrying capacity and capacity of the environment is the foundation for continued development (Liana Brasida 1996). To support such sustainable development efforts, several tools or instruments for enforcing environmental law are needed, such as an Environmental Impact Analysis (AMDAL) which is the first filter before an activity that has a significant impact on the environment is permitted to be carried out. Law No. 23 of 1997 in conjunction with Law No. 32 of 2009 concerning Environmental Management in conjunction with Law No. 32 of 2009 Articles 97 to 120. The development of modes of environmental crimes in Indonesia that can harm and damage the environment today is a challenge for the government when it comes to creating a healthy and clean environment. One of the obstacles is: Court judges are still not strong/convinced in convicting perpetrators of environmental pollution and destruction. In practice, it turns out that there are still various cases of pollution and environmental damage that cannot be resolved (Atmasasmita 2014).

Based on the recent research regarding sustainable development or green economy, it is fully understood that sustainable development needs the government's role and law enforcement but no elaboration regarding the implementation, therefore this study is important because environmental protection is a crucial component of sustainable development. There is no agreed-upon definition of 'sustainable development'. However, all countries agree that economic development, social development, and environmental protection are interdependent and mutually reinforcing components of sustainable development. It provides a framework for our efforts to achieve a higher quality of life for all people (Magraw 2015). Thus, environmental protection needs to be considered within the legal framework of Indonesia to support sustainable development. This research is conducted to elaborate on how law enforcement regarding the protection of the environment should be carried out. The novelty of this research is to find the new regulation regarding the specific court for the environment. Based on the description above, the main issues of this research are causes of environmental pollution and destruction, government policy in environmental management, law enforcement (legislation, licensing, institutional coordination between related agencies and departments, testimony and evidence issues), environmental dispute settlement legal scheme, obstacles to the execution of environmental dispute resolution, and solutions for overcoming environmental recovery execution constraints.

1.1. Literature review

Sometimes dilemmas arise when the government develops an area, on the one hand will burst economic growth for the people in the area, but on another hand may decrease the quality of the environment and become a barrier to sustainable development. According to the recent research conducted by [Kambu *et al.* \(2022\)](#), Trans-Papua which runs through Lorentz National Park is currently in the spotlight due to a study from the International Union for Conservation of Nature putting it on the endangered species list (IUCN). The exploitation of lumber and mining, the extinction of the Nothofagus forest, the falling water level of Lake Habbema as a raw water supply, and the decline of highland peat are among the nine critical indicators that must be monitored. Stakeholders have differing perspectives on the development of the indigenous people of the Papua community and traditional authorities of La Pago. Indigenous people believe that the development of the Trans-Papua Road would result in excessive exploitation, forest degradation, and a reduction in the land's carrying capacity. The entrepreneurs and implementers active in the government believe that it has less influence since environmental issues may be solved as long as maintenance and law enforcement are carried out ([Kambu *et al.* 2022](#)). Based on this research, the tools to minimize the side effects of the development are law enforcement but the research did not elaborate on how law enforcement should be carried out. The Trans-Papua Road is thought to have an impact on indices of natural resource exploitation (timber and mining), harm to the Lorentz National Park's Nothofagus forest, and biodiversity conservation. It is regarded as very relevant for indications of diminishing soil-bearing capacity, growth of built-up land, reduced availability of raw water, and deterioration of peat soil quality. Meanwhile, signs of declining water and air quality are thought to be less important. Overall, it can be stated that the development of the Trans-Papua Road will have a detrimental impact on the ecosystem ([Kambu *et al.* 2022](#)). In general, the construction of the Trans-Papua Road is thought to have a negative impact on environmental aspects, particularly indicators of natural resource exploitation (timber and mining), damage to the Lorentz National Park's Nothofagus forest, biodiversity protection, and a reduction in land carrying capacity (p. 1008. [Kambu *et al.* 2022](#)).

The side effects of development are not only related to damage environmental aspects but also to human health. According to the World Bank report, the cost related to health damage from ambient air pollution is about \$5.7 trillion, accounting for 4.8% of the world GDP. In contrast, the cost associated with premature mortality and morbidity is about 5–14% of its GDP. Therefore, many global and local actors have raised concerns against environmental degradation, especially after the famous Paris climate agreement 2015 ([Khan *et al.* 2022](#)). One of the solutions to maintain the quality of the environment is a green finance system. The developed economies may quickly adopt new financing methods compared to the emerging economies because a significantly larger amount of investment is required for that purpose. However, low-income countries already possess limited financial resources (p. 21. [Khan *et al.* 2022](#)). For countries with massive fossil fuel sectors, providing enough lucrative incentives for sustainable entrepreneurs is more troublesome. In developing markets, the burden for establishing such opportunities also rests with governments who already have weakened bureaucratic capability and poor regulatory structure. Political laws and legislation often hinder green innovation activities due to their strict existence and lack of transparency (p. 21. [Khan *et al.* 2022](#)). At the country level, no proper regulatory system is developed to monitor green practices, so no green finance system is established. The government support system is weak due to political and economic instability, which is also a hurdle in implementing a green finance system. The uniform global standardized system, rules, and regulations for green practices are also required to implement a green finance system (p. 23. [Khan *et al.* 2022](#)). In their research, [Khan *et al.*](#) found that the law has a very important role in the implementation of green finance. In the face of severe consequences from climate change and to limit negative impacts on the environment, many countries worldwide, from developed to developing countries, have been moving toward a 'green economy' for sustainable development ([Hang 2022](#)).

The highest legal document regulating activities to ensure environmental safety is the Law on Environmental Protection, which only focuses on clarifying the responsibilities of production, business, and service enterprises in essential industries. In addition, that the SBV had the financial and banking industry's commitment was not mentioned. Sanctions on pollution treatment prescribed in the Law on Environmental Protection and the Penal Code – the part on environmental crimes – only apply to organizations and individuals that directly pollute (p. 818. [Hang n.d.](#)). In a world that is following the trend of sustainable development, projects that are not environmentally friendly will have to bear a lot of pressure. First, most commercial banks are not aware of the risks of a polluting project if they finance it. It will not be easy for the project's products to enter foreign markets, where there is a strict system of regulations and environmental standards for imported

products. Public opinion will not be silent in the domestic market if the project affects their quality of life. The birth and robust development of consumer protection organizations, environmental action organizations, etc., will be the significant factors that cause the project to be boycotted or suspended. This end is also equivalent to the rise of bad debts at banks, which have provided credit to investors. Inadequate understanding of risk assessment has made many commercial banks uninterested in energy-saving and environmentally friendly projects. Because simply, these are projects using new technology, needing a large amount of investment capital for a long payback period. Of course, with the same amount of collateral, banks will feel safer if they provide credit to projects that require less capital investment and faster payback time. But unfortunately, those are projects that can harm the environment. Secondly, the reason mainly comes from the perspective of state management. It's true that the Law on Environmental Protection has a cross-cutting principle that 'environmental protection must be harmoniously linked with economic development and ensuring social progress'. Besides, 'Environmental protection is the cause of the whole world', society, rights, and responsibilities of state agencies, organizations, households, and individuals have clearly expressed the State's position on environmental issues. However, the content of this law only focuses on clarifying the responsibilities of production, business, and service enterprises, completely forgetting the duties of the financial and banking industry. Sanctions on pollution treatment specified in the Law on Environmental Protection and the Penal Code (the section on environmental crimes) also apply to organizations and individuals who directly pollute (p. 82. [Hang 2022](#)). The sanctions on pollution treatment specified in the Law on Environmental Protection and the Penal Code also apply only to organizations and individuals that directly cause pollution, without regulations or regulations. Financing for sponsors or lenders for projects that cause environmental pollution. Because they are not responsible, the appraisal officers of the banks also ignore environmental impact assessment in the loan appraisal process (p. 82. [Hang 2022](#)). The State needs to have regulations to improve the social responsibility of businesses and the community. Many businesses do not fully understand the critical role and benefits of implementing social (p. 829. [Hang 2022](#)) responsibility, so they have not thoughtfully implemented their social responsibility. That was reflected in business frauds, production of poor-quality goods, and intentional pollution of the environment to maximize profits.

Banking institutions play an important and strategic role to protect and manage the environment. In protecting the environment, the banking institution can do it through the pattern of green banking. Green banking is a financial institution prioritizing sustainability in its business practice. The policy on credit at green banking can increase its competitiveness and own superiority in business strategy. Participation of banking in supporting green banking management is in line with what was stated in Article 8 of Law No. 7/1992 on banking which has been amended into Law No. 10/1998. This regulation is supported by Law No. 32/2009 on the Protection and Management of Environment (UUPPLH). In Indonesia, green banking-oriented financial institutions begin to appear, for example, the application of the Environmental Impact Analysis (AMDAL) has become an important part in the analysis of credit extension and loan documentation. It can be seen in the regulation of Bank Indonesia No. 7/2/PBI/2005 on the Assessment of Asset Quality of Public Bank and Circular Letter of Bank Indonesia No. 7/3/DPNP dated on 31 January 2005, on the Assessment of Asset Quality of Public Bank which among other things regulates the importance of Public Bank to pay attention to attempts made by the debtor to maintain the environment. This is a normative legal study with library research to obtain data from legal regulations, books, and so forth. To support this study, an interview was done with the informants consisting of the security Document Sub-Manager of PT. Bank Danamon Indonesia, Tbk, Medan-Diponegoro Branch. The result of this study showed that bank credit policy toward the Environmental Impact Analysis (AMDAL) as one of the Green Banking products focused more on the requirement for credit application to implement the environment-oriented credit policy as one of the requirements in evaluating the level of bank health ([Sabtia 2010](#)).

Green financing policies encourage the behavior of financial industry players to finance sectors that have a minimal impact on environmental damage. The International Finance Corporation released data on the transition from the use of brown energy or the use of polluting energy sources to green energy which has the potential to bring green investment in Indonesia up to USD 458 billion. As a macroprudential authority, Bank Indonesia encourages environmentally sound financing, among others by providing incentives for financing on environmentally sound properties and motorized vehicles, in the form of easing the loan-to-value ratio policy or financing-to-value credit/property financing, as well as credit advances for battery-based electric motor vehicle financing. To improve mitigation of climate threats it has adopted environmentally sound policies, including: on the monetary policy side through the adoption of Sustainable and Responsible Investment (SRI) in foreign exchange management and the use of environmentally sound instruments of green bonds and green SUKUK in

monetary operations as well as on the payment system policy side by encouraging the acceleration of the digital financial economy that contributes to environmental sustainability (Damayanti 2020).

2. MATERIAL AND METHODS

2.1. Description of the study area

To obtain information regarding the required data, the location of this research was carried out in the territory of the Republic of Indonesia, by selecting several areas that had experienced environmental damage that was quite interesting.

2.2. Data sources and description

The approach method used is: juridical-normative (Soemitro 1990), library research (Library, Desk Research). The collection of data and information is carried out through tracing:

1. Primary legal material, namely legislation (Marzuki 2006), relating to the subject matter of research (Rasjidi 2005);
2. Secondary legal materials, namely book literature, research results, journals, scientific magazines, as well as mass media, both print and electronic, internet (online) (Manan 1999); and
3. Tertiary legal materials consisting of legal dictionaries and encyclopedias (Soekanto 1986). The data collection method used is collected through desk research (method) and literature study (Ibrahim 2006).

2.3. Methods of data analysis

This research used a normative legal approach method, which is legal research conducted by examining library materials or secondary data (Soekanto & Mamudji 1983). The research adopts an empirical approach to environmental law enforcement and examines relevant legal theories related to the environment. A descriptive analytical method is used with a comprehensive perspective. The legal issue being examined is related to environmental protection and sustainable development from the perspective of Indonesia as a legal state. Primary legal materials are obtained directly from authorized sources and published in the form of legislation and jurisprudence (Sonata 2015).

The data analysis technique used is qualitative analysis and compiles research by explaining and analyzing statutory provisions adapted to the latest conditions or phenomena (Sutopo & Arief 2019). After data collection, the next step is to conduct analysis using the method of legal interpretation of the data and information regarding the principles and norms of environmental law, both at the national and international levels. This analysis process considers current environmental issues (*ius constitutum*) and the ideal form expected (*ius constituendum*) for future environmental protection. Problem analysis uses a legal research approach: first, this research analyzes the enforcement of environmental law that contradicts the principles and norms of environmental law.

Research on these principles is philosophical, containing elements of ideal law; second, research on the systematic nature of law concerning the laws and events related to environmental legislation; third, research on the level of vertical and horizontal synchronization, which involves institutional coordination in environmental management and regulation, aiming to reveal the extent of coordination among relevant institutions in governing, managing, and enforcing environmental protection; fourth, analysis through a comparative law approach (Langbroek *et al.* 2017) to examine the rules and elements of law enforcement practices in other countries.

2.4. Research location

This study was conducted in Indonesia.

3. RESULTS AND DISCUSSION

3.1. Pollution and environmental destruction

In 2022, Indonesia's Environmental Quality Index increased by 0.97 points compared to 2021. From 2018 to 2022, the values continued to increase in a row: 65.14; 66.55; 70.27; 71.45; and this year, it was 72.42 points. *'This increase in value was due to an increase in the value of the Water, Air and Seawater Quality Index, even though the Soil Quality Index was the same as in 2021, it did not significantly affect the value of the Environmental Quality Index in aggregate. Calculations for the 2022*

Environmental Quality Index values were obtained from 7,331 water quality monitoring locations, 3,076 air quality monitoring locations, and 970 seawater quality monitoring locations throughout Indonesia. Meanwhile, 514 data for monitoring the quality of land cover were obtained from all districts/cities in Indonesia. Within the framework of driving factors, pressure, state, impact and response, state variables have been measured through environmental quality indexes. Another variable that is no less important is the response that describes the ability of the region to mitigate push factors, pressures and their impacts...' (Anugrah 2022).

The definition of an environmental dispute is: a dispute involving two or more parties that arise or are suspected of environmental pollution and/or damage. Environmental disputes contain conflicts or controversies in the environmental field. Lexically it means: Dispute a conflict or controversy; a conflict of claims or rights; an assertion of a right, claim, or demand on the one side, met by contrary claims or accusations on the other. Terminology also varies: dispute resolution, conflict management, conflict settlement, and conflict intervention (Yazid 1999). Three categories of environmental disputes, namely: environmental protection; utilization of natural resources; and environmental pollution or damage. The principle of strict liability, in environmental lawsuits, is usually only implemented in types of situations, including extra-hazardous activities. For example: oil pollution in the sea (region) as stipulated in Presidential Decree No. 18 of 1978 concerning Ratification of the International Convention on Civil Liability Oil Pollution Damage – CLC (vide its revision in 1992) in conjunction with Presidential Decree No. 19 of 1978 concerning Ratification of the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (Fund Convention). Measures of large and important impacts are of course very scientific and require careful legal regulation in order to guarantee legal certainty. The purpose of applying this principle is to fulfill a sense of justice; keep pace with the complexity of technological developments, natural resources and the environment; as well as encourage high-risk business entities to internalize the social costs that may arise as a result of their activities (Santosa *et al.* 1997).

According to the Environmental Management Act, 'Environmental pollution is the entry or inclusion of living things, substances, energy, and/or other components into the environment by human activities so that the quality of the environment decreases to a certain level which causes the environment to be unable to function in accordance with its designation'. The criteria used to determine whether the environment has been polluted or damaged is the Environmental Quality Standard. Disturbance to the environment and ecology, the size of the deviation is measured from the set limits in accordance with the carrying capacity of the environmental ecosystem. The limits of carrying capacity or environmental capability are called threshold values (NAV). NAV is the highest (maximum) limit of the content of substances, living things or other components that are allowed in any interactions with the environment, especially those that have the potential to affect the quality of environmental or ecological arrangements. According to Siahaan, from this understanding it can be concluded that an ecosystem has been polluted if it turns out that the environmental conditions have exceeded the NAV based on the determination of Environmental Quality Standards (BML). 'Ecosystem is a reciprocal relationship between living things and their environment in a unit that is arranged regularly. The part of science that studies the interrelationships between organisms and their environment is called ecology, which was first used by a German biologist, Ernst Haeckel in 1869, at which time ecology was made a branch of biology...' (Siahaan 1989).

Even though in the formulation it appears that there is a difference between the notions of pollution and destruction, in fact the two meanings do not contain any difference in juridical terms, because the essential elements of both are the same. According to juridical consequences as stipulated in Article 34.35 of Law No. 32 of 2009 concerning Environmental Preservation, both are either intentional or negligent, subject to the same criminal threat. 'The difference between pollution and environmental destruction lies only in the manifestation of its consequences. In pollution, the result is in the form of a lack or non-functioning of the environment, because the decrease in environmental quality is not immediately visible. The result can only be known based on laboratory tests. Concretization of the new physical consequences will appear after a long period of time (more than 10 years). Meanwhile, the consequences of the destruction will appear immediately, and can even be understood by ordinary people. For example forest destruction, death of animals or plants...' (Husein 1992). The difference between pollution and environmental destruction lies only in the manifestation of the consequences. In pollution, the result is in the form of a lack or non-functioning of the environment, because the decrease in environmental quality is not immediately visible. The result can only be known based on laboratory tests. Concretization of the new physical consequences will appear after a long period of time (more than 10 years). Meanwhile, the consequences of the destruction will appear immediately, and can even be understood by ordinary people. For example, forest destruction, death of animals, or plants.

3.2. Causes of environmental pollution and destruction

From the results of a review of several literature materials, it was concluded that environmental problems such as pollution and destruction are caused by weak enforcement of environmental law itself. Enforcement of environmental law is a link that forms the process, which has its own style that is different from the law enforcement process in general. *'The criminal sanction against the perpetrators of environmental pollution is in the form of ultimum remedium or the last resort, only as a last resort when other efforts have failed, by punishing the perpetrators with imprisonment or fines. While the inhibiting factors in enforcing environmental law, one of which is caused by the not yet optimal understanding of law enforcement officials, such as: Special investigators for civil servants, police, prosecutors, and judges, regarding the substance of environmental legislation, so that various many cases are not resolved in accordance with the will of environmental law. The lack of environmental law enforcement officers in environmental agencies in the regions; as well as the minimum budget accommodated by environmental agencies in the regions, making various environmental management and preservation programs unable to be implemented properly...'* (Wijaya 2014). According to Bambang Prabowo, *'Environmental problems arise because environmental enforcement is not solely because of the orderly laws and regulations that govern it, but more than that because of the understanding, awareness and compliance of all parties to it which is supported by the institutionalization, regulations that have not been satisfactory...'* (Soedarso 1999).

When the World Environment Conference was held in Stockholm in 1972, it successfully presented various ideas to overcome the problem of pollution and environmental destruction. The conference succeeded in forming UNEP, also known as the United Nations Environment Program. However, after the conference, it turned out that the condition of the environment in various parts of the world was not getting better, and even tended to decrease in quality and environmental damage became a global problem. *'The fishing industry is an industry that consumes significant amounts of water, so it is certain that the amount of effluent released will also be large. Cleaner production offers the best solution in reducing environmental impact and efficiency in economic terms (reduction of raw materials, energy and utilities). In its clean production application, it can be run in parallel with the GMP, HACCP and non-waste production programs...'* (Liana Brasida 1996). As previously described, this world body has also formed the WCED which examines issues of economic and environmental development, from which eventually emerged the concept of sustainable development.

According to Otto Soemarwoto, the occurrence of environmental pollution can be caused by 4 (four) factors, namely: The existence of pollution due to the greater speed of production of a substance than the speed of its use or degradation chemically and physically. Is a biological process that forms or concentrates certain pollutant substances – for example, fish concentrate pollutant substances – based on non-biological physiochemical processes. This process can occur without (direct) human influence, such as pollution from volcanoes; accidents occur, such as accidents or leaks in offshore tankers that pollute the environment.

Based on the Draft Academic Paper prepared by the Environmental Impact Control Agency, regarding Environmental Protection and Management Act Amendments, several factors can be put forward for the ineffectiveness of the Environmental Protection and Management Act in anticipating environmental management problems, including... *'The territorial space of the Unitary State of the Republic of Indonesia, both as a unit which includes land, sea and air space, including space inside the earth and its resources, is a gift from God Almighty which must be grateful for, protected and managed in an efficient manner. Sustainable for the greatest prosperity of the people as mandated in article 33 of the 1945 Constitution. Spatial planning policy is an important effort in orderly spatial planning in Indonesia. Spatial use control is carried out systematically through the establishment of zoning laws and regulations, permits, provision of incentives and disincentives, as well as sanctions...'* (Legal Mandate Bapedal 1995).

3.3. Government policy in environmental management

Developments in international aspirations regarding global environmental management are increasingly influencing environmental management efforts, including Indonesia. In this regard, Indonesia has refined Law No. 4/1982 through Law No. 23 of 1997 in conjunction with Law No. 32 of 2009 concerning Environmental Management (UUPLH) which was ratified by the House of Representatives in an open plenary meeting on 22 August 1997, and officially entered into force on 19 September 1997. It seems that the focus of the approach used by the Environmental Protection and Management Act in environmental management is compliance with legal environmental norms while sanctioning is the final measure. Law enforcement based on this compliance is the beginning of the implementation of sustainable development. The formulation of environmental management policies based on sustainable development has also been mandated in the preparation of the 2000–2004

National Development Program (Propenas). *'The consequences of Indonesia as a country that is committed to recognizing the right to a clean, healthy, and sustainable environment as a universal human right, are contained in UN Resolution Number A/76/L75. This commitment cannot stop at the political will of the State to implement it, as in other international environmental law documents...'* (Raseukiy 2023). In the Supplementary appendix, it provides directions in Chapter X concerning the Development of Natural Resources and Environment as follows: *'...in the context of supporting the implementation of the third national development priority, namely accelerating economic recovery and accelerating the basis for sustainable and just economic development based on an economic system. The development of natural resources and the environment in this chapter serves as a reference for the activities of various development sectors to create balance and sustainability of the functions of natural resources and the environment so that the sustainability of development is guaranteed'. 'The concept of restoration of environmental pollution that occurred in various cases that have been decided by courts, shows the need to demand compensation due to environmental pollution in the form of recovery costs in accordance with the principle of strict liability and the polluter pays, which is reinforced by environmental law expert witnesses, based on the regulation of the minister of environment. This is in line with the principle of State responsibility contained in principle 7 and the precautionary principle contained in principle 15 of the Rio Declaration on Environment and Development: An Assessment...'* (Marbun 2021).

Thus, the development of the economic sector will still be prioritized in the framework of economic recovery, which means that there will be an increase in the utilization of natural resources and the environment. This means it will be a threat to environmental sustainability. There are factors causing environmental pollution due to industrial waste of hazardous and toxic materials (B3). Declining environmental quality has threatened human survival and increasing global warming has resulted in climate change. Before the environment is damaged and can no longer be renewed, it is important for humans to keep the environment alive and not just disappear due to human activities themselves. The Environmental Impact Analysis (AMDAL) has been carried out, but it has not succeeded in reducing the number of polluting business activities because it seems that the preparation of an AMDAL which takes a lot of time and costs tends to be avoided or shortcuts are sought.

Tools or instruments that are also important for preventing or overcoming environmental pollution or damage are standard settings. The minimum standard as a benchmark for determining the level of environmental pollution/damage is the Environmental Quality Standard which includes the ambient environmental quality standard and waste quality standards in accordance with the Decree of the Minister of Population and Environment number: Kep-02/MENKLH/1/88 concerning Determination of Environmental Quality Standards (BML). Environmental Quality Standards are basically limits on how far pollution elements can be accepted into the environment and BML violations will be juridical evidence for determining whether pollution has occurred or not. If the waste generated and disposed of into the environment exceeds a predetermined limit, that will be a measure of whether or not there is environmental pollution. *'The environment is everything that exists around humans and is reciprocally related. Law of the environment is the built environment, which is influenced by humans. Factors causing environmental pollution due to industrial hazardous and toxic waste (B3). The declining quality of the environment has threatened human survival and increasing global warming has resulted in climate change. So before the environment gets damaged and can't be renewed anymore, it's important for humans to keep the environment alive and not just disappear due to human activities...'* (Hidayat et al. 2021).

Basically, the environmental management system set forth in the Environmental Protection and Management Act is a prohibition against disposing of waste without a permit and a prohibition on carrying out activities or businesses that have important impacts without a permit (Article 14 of the Environmental Protection and Management Act). Sectoral agencies authorized to issue business licenses are basically responsible for supervision in preventing pollution as stipulated in Article 21 of Law No. 5 of 1984. Article 11 of the Environmental Protection and Management Act stipulates a provision which states that: every activity plan that is estimated to have a significant impact on the environment must be accompanied by an Environmental Impact Analysis. In line with these provisions in Article 14 of the Environmental Protection and Management Act, it is stated that: every business activity that has a significant impact on the environment must have a permit to carry out activities or business. With the enactment of these provisions, it can be said that the obligation to prepare an AMDAL is manifested in licensing requirements that must be complied with by permit holders to prevent negative impacts on the environment. When associated with Government regulation No. 51 of 1993 concerning the Environmental Impact Analysis, the licensing requirements are spelled out in the Environmental Management Plan which is a guideline for activity initiators. *'Environmental law concerns the determination of values that are currently in effect and are expected to be enforced in the*

future and can be called the law that regulates environmental order. Regulates reciprocal relations between humans and other living things which if violated can be subject to sanctions...' (Rangkuti 1994).

Furthermore, this obligation is implicitly expected to be accommodated in every regulation regarding activities that have environmental impacts and require permits for their implementation. An example is Article 21 of Law No. 5 of 1984 concerning Industry as follows: 'Industrial companies are obliged to carry out efforts to balance and preserve natural resources and prevent damage and pollution to the environment due to industrial activities carried out'. Every permit for a business sector, both at the planning and operational stages, must always be linked to the Environmental Impact Analysis. Thus, the initiator/person in charge of the company will always be bound by the obligations in accordance with what has been stated in the Environmental Impact Analysis document. In the beginning of 1978, the task of the Minister of Environment was to make policies and coordinate matters regarding environmental management. To assist the Minister of Environment, the Environmental Impact Control Agency was formed in 1990 which was tasked with carrying out environmental impact control, including efforts to prevent damage, mitigate impacts, and restore environmental quality. Even though it has been supported by statutory material that regulates environmental management and the establishment of an Institution that has the authority to regulate it, environmental problems in Indonesia have emerged along with increased development. For example: cases of water, air, and soil pollution by industrial waste, forest fires, and difficulties in overcoming natural resource management that are not based on the concept of sustainable development.

3.4. Law enforcement

3.4.1. Environmental dispute settlement legal scheme

The implementation of Perspectives of Sustainable Development, and economic development, is generally carried out by corporations by exploiting natural resources in large quantities, which can directly or indirectly have an impact on the surrounding community. In various cases of environmental disputes, corporations are the dominant subject causing environmental degradation, which triggers disputes between corporations and communities, so the Law Enforcement on Damage, Pollution and Environmental Conservation Management is needed (Lawyers 2023).

The choice of forum for resolving environmental law disputes can be reached through:

- (1) Outside the court (Arbitration, Mediation, Negotiation, Conciliation, and Fact-Finding) can be carried out voluntarily by the parties to the dispute regarding: the form and amount of compensation; actions to recover due to pollution and/or damage; certain actions to guarantee no repetition of pollution and/or destruction; and/or actions to prevent negative impacts on the environment. This effort may require the assistance of other parties such as a mediator and/or arbitrator (*ad hoc* arbitrator or through the Indonesian National Arbitration Board settlement institution). Dispute resolution through arbitration theoretically can be faster and cheaper, the procedure is simple, resembling a court, decisions can lead to satisfaction from both parties and win-win solutions, or vice versa. This depends on provisional relief, initiating arbitrations, and the law applied by the arbitrator (Rhiti 2006).

Mediation is a private, informal dispute resolution process in which a neutral third person, the mediator, helps disputing parties to reach an agreement. The mediator has no power to impose a decision on the parties (Hendry Campbell Black in Sodikin 2003). Transactional negotiations and dispute negotiations require certain knowledge, strategies, and skills, are informal and unstructured, and have unlimited time. Three aspects in the negotiation process are culture, relieved, and practical. According to Garry Goodpaster, the three basic strategies of negotiation are competitive, compromising, and problem-solving (positive-sum or win-win). Things that influence negotiations are strengths, patterns, and strategies (Goodpaster 1995; Raiffa 1982). Conciliation can be used if mediation fails. The mediator can change the function of being a conciliator, and if an agreement is reached, the conciliator changes to the arbiter Fact-finder, performed by a neutral party, collects information and evaluates it to clarify the dispute, to make a decision (Mubarok 2020b).

- (2) Litigation lawsuits through courts can only be pursued if efforts to resolve disputes outside of court are declared unsuccessful by one of the parties. Lawsuits can be filed through three channels:
 - (a) Civil lawsuits (losses to other people or the environment) can be carried out through conventional civil lawsuits; class action lawsuits; NGO's right to sue (legal standing); anti-slap; citizen law suit (citizens' right to sue); and your responsibility no settlement of disputes through courts, including compensation and environmental restoration (actions to restore environmental functions that have been polluted and/or damaged in accordance with their functions and/

or designations). Guidelines for the implementation of the execution of civil disputes have not been regulated explicitly, resulting in no uniform application, namely: Decree of the Supreme Court of the Republic of Indonesia No. 36/KMA/SK/II/2013. In practice, if the *petitum* of the applicant does not include the form of environmental restoration, then the reference is the Minister of Environment and Forestry Regulation No. 7 of 2014 concerning Environmental Losses due to pollution and/or Environmental Damage.

- (b) Criminal prosecution (crime) in public court.
- (c) State administrative lawsuit at the State Administrative Court (PTUN) related to administrative decisions in the environmental sector issued by officials (State administrative officials issue environmental permits, but are not equipped with AMDAL documents; State administrative officials issue environmental permits to activities who are obliged to seek Environmental Management and Environmental Monitoring Efforts, but are not equipped with documents; State administrative officials issue business and/or activity permits that are not accompanied by environmental permits); so that if a corporation experiences an environmental dispute, it is necessary to understand how the process of solving the problem is taken, so as not to wrongly determine how to solve it (Frisktikawati 2016).

From the results of a review of several literature materials, it was concluded that environmental problems such as pollution and destruction are caused by the weak enforcement of environmental law itself. Enforcement of environmental law is a link that forms the process, which has its own style that is different from the law enforcement process in general. Jaro Madya, in his book: 'The Penal Protection of the Environment' states that: 'criminal sanctions in environmental protection are used as *ultimum remedium*'. 'Environmental law, unlike other areas of law, is a very young branch of legal science, whose development has only taken place in the last decade. As a result, until now the treasury of environmental law books is still very limited, making it difficult for scientists and practitioners to obtain a clear and complete picture of environmental law. Several basic ecological concepts, ecosystem concepts and environmental concepts are very important in the application of Indonesian environmental law, especially regarding their characteristics and institutions, it is also necessary to state them to facilitate the application of Indonesian environmental law...' (Madya n.d.). 'The enforcement of environmental law through non-penal legal remedies meets several weaknesses, including: in general, the process of civil cases takes a relatively long time, because it is likely that the polluter will extend the trial duration or execution time by filing an appeal or cassation, while the pollution continues with all kinds of consequences, the recovery period is difficult to do quickly because it takes quite a long time by not applying criminal sanctions, not ruling out the possibility that the perpetrators of pollution and other potential pollution do not take precautions and apply administrative sanctions, which can result in the closure industrial companies that have an impact on workers, unemployment will increase, can cause crime and socio-economic vulnerability in society....' (Soemartono 1991). According to Bambang Prabowo, several environmental law enforcement issues that must be discussed include legislation; licensing issues; problems with testimony and evidence; problems with institutional coordination of related agencies/ departments; other problems which include not understanding existing regulations, not being aware of the importance of the environment, not complying with existing regulations, incomplete regulations and responsible institutions. To be able to find out the root causes of environmental law enforcement which have resulted in not being successful in overcoming problems of environmental pollution and destruction.

3.4.2. Legislation

The concept of environmental management policies has been outlined in the Decision MPR/II/2000 concerning outlines of state policy (GBHN), particularly in the environmental sector policies, which are then translated into Repelita (Five Years Planning). Furthermore, in this reformation era, it was further elaborated in the 2000–2004 Proenas (National Development Program). Legally, environmental management matters are regulated in Law No. 23 of 1997 in conjunction with Law No. 32 of 2009 concerning Environmental Management (UUPLH), replacing Law No. 4 of 1982 concerning Principles of Environmental Management (UULH). The Environmental Protection and Management Act functions as an umbrella act for existing and future environmental provisions. To implement these provisions, the following has been issued:

- (a) Several government regulations such as Government regulations No. 27 of 1999 concerning the Environmental Impact Analysis (AMDAL), Government regulations No. 20 concerning the Water Pollution Control, Law No. 5 of 1990 concerning the Conservation of Natural Resources and Ecosystems, Presidential Decree No. 10 of 2000 concerning the Environmental Impact Management Agency (BAPEDAL) replacing Presidential Decree No. 196 of 1998 concerning the Environmental impact Control Agency, Law No. 5 of 1992 concerning the Protection of Cultural Heritage Objects, Law No. 10 of 1992 concerning the Population Development and Prosperous Family Development, Law No. 24 of 1992

concerning Spatial Planning, Government regulations No. 12 of 1995 concerning Changes, Government regulations No. 19 of 1994 concerning Management of B-3 Waste.

- (b) Several Decrees from the Minister of Environment, as technical guidelines, include: Decree of the Minister of Population and Environment No. 49/1987 concerning Guidelines for Determining Environmental Impacts, Decree of the Minister of Population and Environment No. 2/1988 concerning Guidelines for Setting Environmental Quality Standards, Decree of the Minister of Population and Environment No. 51/1995 concerning Quality Standards for Liquid Waste for Industrial Activities, Decree of the Minister of Population and Environment No. 13/1995 concerning Quality Standards for Emissions from Immovable Sources, Decree of the Minister of Population and Environment No. 42/1994 regarding Environmental Audit.
- (c) Various decrees from sectoral ministers as the implementation of Government regulations (PP) No. 27 of 1999 concerning AMDAL (replacing PP No. 51 of 1993 concerning the Environmental Impact Analysis), as well as regulations at the regional level relating to the implementation of Government regulations (PP) AMDAL, including: the Minister of Health Decree No. 286/1993 concerning Activities in the Health Sector that are required to make an Environmental Impact Analysis, Decision of the Minister of Public Works, No. 45/1990 concerning Water Quality Control at Water Sources and others.

Complying with the various statutory provisions mentioned above, a review of the necessary statutory regulations to be carried out is still needed. There are still many urgent regulations that must be created such as air and marine environment pollution control, procedures for filing Class Action lawsuits and others. It is still necessary to review the existing laws and regulations such as the Nuisance Ordinance (HO).

3.4.3. Licensing

In the environmental management system, permits are the most effective environmental control instrument, because permits must be accompanied by requirements and environmental considerations in an effort to prevent pollution. Licensing in the industrial sector includes industrial business permits, location permits, HO permits, and waste disposal permits. Licensing is an administrative instrument to realize government policies, especially those related to industrial development and growth on the one hand, and maintenance of the carrying capacity of the environment on the other. The minimum standard as a benchmark used to determine the level of pollution and environmental damage has been regulated in the Decree of the Minister of Environment No. 2 of 1988 concerning Environmental Quality Standards. Licensing procedures have been regulated in several regulations, including Decree of the Minister of Industry No. 134 of 1986 concerning the Prevention and Management of Pollution as a Result of Industrial Activities, Decree of the Minister of Industry No. 291 of 1989 concerning Licensing procedures for Industrial Estate Technical standards. This type of permit for activities that have a significant impact on the environment is known as an environmental license (Rangkuti 1994). In relation to the Regulations of Government on Environmental Impact Analysis, in Article 5, it is stated, among other things, that: 'The granting of permits by the competent authority will only be granted after approval of the RKL and RPL which are the results of the preparation of the AMDAL documents. Thus, it can be said that matters relating to Environmental Impact Analysis must be integrated into every permit issued by the competent authority'.

Licensing is handled by various agencies, according to the business sector concerned, such as: the Ministry of Industry issues business licenses, the Ministry of Forestry issues permits for forest control. At the regional government level, the regional government grants the Nuisance Ordinance (*Hinder Ordonantie/HO*) permits, which grant permits based on the fulfillment of the requirements set by the agencies related to the kind of activity. In this way, the initiator/person in charge of the activity will always be bound by their obligations as stated in the EIA approval decision. With the issuance of the Minister of Home Affairs regulations No. 12 of 1984, HO permits issued by the Regional Government, for companies using facilities based on the Foreign Investment Law and Domestic Investment Law, were declared null and void and the granting of the Nuisance Ordinance (HO) permits was delegated to the Regional Investment Coordinating Board. For companies based on the Foreign Investment Law and Domestic Investment Law facilities, the granting of industrial business permits was delegated from the Minister of Industry to the Chairman of the Investment Coordinating Board.

In this regard, the problems that arise in connection with licensing issues include several permits that involve many sectors or agencies, and create the possibility of overlapping authorities. This will make it difficult both for supervision and for enforcement. According to the results of the EMDI-BAPEDAL (Environmental Impact Control Agency) research regarding the study of Pollution Control Permits, it was concluded that permits have not been utilized as a means of controlling

environmental impacts. Even for an activity that must be completed with an Environmental Impact Analysis, a permit has been granted even though the AMDAL has not yet been approved by the responsible agency. *'Environmental issues are very complex issues, and one way to resolve the complexity of environmental issues is environmental law as part of functional law which provides a legal framework for environmental management and aspects of legislation, institutions, instruments, and environmental law enforcement in the context of successful environmental management in Indonesia. From the aspect of environmental law instrumentation, it provides environmental law instruments, environmental impact analysis, environmental permits, economic instruments and environmental audits. The application of this instrument is the main key to successful environmental management...'* (BAPEDAL 1991).

3.4.4. Institutional coordination between related agencies/departments

The coordination of related agencies/departments in environmental management is very important to do. This is because environmental management is not only the duty of the Office of the Minister of Environment, but also of all mankind to protect and preserve the environment. Thus, the law enforcement on environmental pollution and destruction needs to coordinate with related agencies, such as the Indonesian Police Headquarters; Attorney General's Office; Supreme Court; Ministry of Law and Human Rights; Ministry of Industry and Trade; Ministry of Fisheries and Maritime Affairs; Ministry of Forestry; Ministry of Transmigration and Manpower; Ministry of Defense; Ministry of Housing; National Development Planning Agency (BAPPENAS); Ministry of Finance Bank Indonesia; Non-Governmental Organizations (NGOs); Community leaders/leaders; and other related agencies. If the same perception exists between agencies and related parties, the law enforcement on environmental pollution and damage will be easier to do.

The issuance of Presidential Decree No. 77 of 1994 concerning the Environmental Impact Control Agency (*Bapedal*) provides the legal basis for the establishment of Central and Regional *Bapedals*. Finally, it also underwent a change with the issuance of Presidential Decree No. 10 of 2000 concerning the Environmental Impact Control Agency. The problem that arises is, so far *Bapedal* is still considered not to have carried out its role as an environmental impact control institution optimally because this role is legally attached to sectoral agencies (at the Central and Regional levels). Therefore, the Environmental Protection and Management Act seeks to ensure that the Minister of Environment has the authority to issue environmental permits, supervise and order environmental audits if an activity or attempt is suspected of deviating from environmental management. Likewise, with the realization of the formation of Civil Servant Investigators (*Penyidik Pegawai Negeri Sipil/PNS*) within the Central and Regional *Bapedal*, it is hoped that the initial stages of the process of enforcing criminal sanctions will be more successful if handled by agencies that technically and institutionally carry out environmental protection efforts.

3.4.5. Testimony and evidence issues

Any development aimed at increasing the prosperity and welfare of the nation should also be accompanied by efforts to protect environmental sustainability. The terms environment and living environment are often used interchangeably in the same sense. The environment can be defined as the sum of all external influences and forces acting upon an object, usually assumed to be a living being. *'Environmental law problems and new perceptions about how the legal system should be able to respond effectively to problems arising from conflicts of interest due to recent use of the environment. The approach to environmental issues is not solely from a legal perspective, but also must provide basic knowledge of environmental science and ecological principles...'* (Silalahi 1972). In environmental management, humans have a very important role, because the management of the environment itself is ultimately aimed at the continuity of human life on earth.

The definition of the environment based on its contents for practical purposes or analytical needs to be limited to the environment in the sense of the biosphere, namely the earth's surface, water, and atmosphere where living organisms live. The boundaries of the environment in this sense are all objects, power, and life, including humans and their behavior contained in space, which affects the continuity and welfare of humans and other living organisms. The environment provides the necessities of human life. Vice versa, human life is very dependent on the availability of adequate natural resources in the environment. Environmental issues began to become a world topic when humans began to grasp that the earth was no longer friendly and began to feel the increasingly widespread impacts from various human activities.

Science and technology are significantly increasing the exploitation of nature by humans. Nature is no longer able to provide optimal benefits, meeting the needs of the current generation without having to reduce its ability to meet the needs of future generations. This puts pressure on environmental conditions such as the use of modern technology in various industrial

activities, the application of various development policies that ignore environmental sustainability, as well as activities in the economic field that are not aware of the capacity of the environment. Anticipation is needed to prevent the cause of environmental damage. The destruction of coastal and marine areas has occurred with evidence of the increasing extinction of various types of coral reefs or the large amount of illegal encroachment on forests where people cut down forests without permits. Because of their actions the forests become denuded and the state and society are harmed, illegal extraction of sand by the community, mining and others that will eventually cause damage. As a country that has ratified the Paris agreement, Indonesia is required to submit climate change commitments in the form of Nationally Determined Contributions (NDCs). More than that, Indonesia also has an obligation to fulfill the commitments it has made by manifesting public participation in the doctrine of public trust. Even though public participation has a significant role in fulfilling the NDC, it seems that in practice it is still very far from ideal.

Koesnadi Hardjasoemantri, in his book: 'Environmental Management Law', states that '*legal requirements for environmental disputes and their relation to, for example, the issue of compensation. Regarding the scope of what is called environmental dispute resolution, it really depends on the legal provisions that underlie it. This is because the settlement of environmental disputes is principally based on the principle of civil law, namely seeking peace between the disputing parties. However, in the context of Indonesian people's lives, dispute resolution is generally based on deliberations to reach an agreement between the parties. Settlement of environmental disputes that are carried out in a civil manner is by carrying out a lawsuit by the aggrieved party through the court...*' (Hardjasumantri 2017). In practice in the community, environmental dispute resolution is often carried out not only through the court but also outside the court. Dispute resolution outside the court can be carried out using the services of a third party. In resolving environmental disputes using the services of third parties, this is carried out by means of Alternative Dispute Resolution (ADR) developed abroad, which is increasingly gaining a place in legal life in Indonesia.

In general, the reference for resolving environmental disputes refers to Law No. 23 of 1997 *juncto* Law No. 32 of 2009 entitled 'Environmental Dispute Settlement' Articles 30–39. Specifically, arrangements regarding environmental dispute resolution must be seen from sectoral arrangements that fall within the environmental sector such as mining and forestry. The regulation of forestry issues is found in Law No. 41 of 1999, namely Articles 74–76. These provisions will later be used as a reference in discussing environmental dispute settlement issues and these provisions can be referred to as environmental dispute legal provisions. In the Environmental Law regarding the settlement of environmental disputes, it has been standardized through a definite legal formulation. The formulation of what is meant by environmental disputes is disputes between two or more parties from legal subjects, either individuals or groups of people. The cause of this dispute is environmental pollution and or damage. With this pollution or environmental damage, the persons cause losses to various parties; these losses cover various aspects both moral and material, and can be categorized as an unlawful act, as meant in the provisions of Article 1365 of the Civil Code (KUHPerdata)... '*the act of environmental pollution as an unlawful act in accordance with the provisions of article 1365 of the Civil Code (Burgerlijk Wetboek), is very relevant to be used to hold the perpetrators of environmental pollution accountable in a civil manner. Reciprocal relationship between losses arising from acts of environmental pollution as an unlawful act and its relation to civil responsibility...*' (Wicaksana & Martana 2021).

The difficulty of enforcing Administrative Law in the context of environmental management, when faced with an administrative decision in the form of revocation of a business license which will have an economic sociological impact, has led to pressure from the public/NGOs to submit cases of pollution and destruction to court hearings, such as cases of environmental pollution by factories. As a country that has ratified the Paris Agreement, Indonesia is required to submit climate change commitments in the form of NDCs. More than that, Indonesia also has an obligation to fulfill the commitments by manifesting public participation in the public trust doctrine. Even though public participation has a significant role in fulfilling the NDC, it seems that in practice it is still very far from ideal. Limited Liability Company (PT), Pertamina Hulu Energi (PHE) in Karawang, West Java, Indonesia, caused pollution of water in the environment around the factory and the application of sanctions was only in the form of administrative and civil sanctions. '*Environmental pollution by the Pertamina Hulu Energi Limited Liability Company (PT) factory, based on law number 32 of 2009 concerning environmental protection and management and the application of appropriate sanctions, that waste disposal is carried out by companies in Karawang, Indonesia, has resulted in water pollution in the environment around the factory and the application of administrative and civil sanctions...*' (Pratama 2020). Then the case of Limited liability Company (PT) Inti Indorayon Utama (IIU)/Toba Pulp Lestari (TPL), Limited Liability Company (PT), Freeport, and other cases. '*In recent years, the increase in extreme weather, natural disasters, and damage to ecosystems due to climate change has brought threats to human survival. One of the parties that contributes to this is*

corporate activity which triggers a reaction from certain parties to demand corporate responsibility for climate change in court. Prospects and challenges of climate change litigation against corporations in Indonesia, that the use of lawsuits against corporations for climate change, there is a chance of successful climate change litigation against corporations in Indonesia...' (Mangara *et al.* 2023). This suggests that environmental law enforcement through criminal law must still be carried out. The most difficult aspect of bringing environmental cases to court is the problem of proof and testimony. Evidence is intended to legally prove that an environmental crime has occurred, as stipulated in Articles 183 to 189 of the Criminal Procedure Code. In proving environmental crimes, a comprehensive approach to environmental problems is used; for this reason, the ability to translate facts according to science (science evidence) into legal facts (legal evidence) is required. Because of this, the evidence for environmental crimes is dominated by expert testimony and the results of laboratory analysis, which must also be supported by other evidence. *'The use of scientific evidence in the decisions of environmental criminal cases in Indonesia and the suitability of the use of scientific evidence with the precautionary principle in judges' considerations in deciding environmental criminal cases, is very important. The existence of scientific evidence and its influence on the application of the precautionary principle in examining cases, especially regarding the strength of scientific evidence presented at trial. The facts show that the weakness of scientific evidence is greatly influenced by the legitimacy or legitimacy of each content and form of scientific evidence itself. The use of scientific evidence in consideration of judges in deciding cases is also closely related to the application of the precautionary principle as one of the substantive legal principles in handling environmental criminal cases...'* (Afandi *et al.* 2023).

Problems will arise if the judge doubts the results of the laboratory analysis of samples from polluted environmental elements, thus the judge will order a re-examination which is likely to result in a different outcome. This difference can occur, among others, due to: Natural factors, a polluted river is then hit by rainwater which can cause an increase in the water discharge to neutralize pollutant substances, at least reduce the level of intensity, so the result is that the river is no longer polluted but only contaminated and still within tolerable limits; differences in facilities such as laboratories can also produce different results. In this regard, it is necessary to create a policy regarding standardization or standards that have juridical value in determining sampling procedures or techniques, designating laboratories, and others. Corporate responsibility for causing environmental damage can be carried out with criminal, civil, and administrative sanctions. Environmental law enforcement is very beneficial for maintaining environmental sustainability. For this reason, it is urgent to immediately form a special court to try cases of crimes against the environment, because environmental issues are specific and increasingly complex due to industrial and infrastructure development.

3.4.6. Obstacles to the execution of environmental dispute resolution

Juridical aspects of pollution and environmental damage, related to dispute resolution, are still considered difficult to prove. Based on John Rawls' theory of justice, the settlement of environmental disputes does not meet the criteria of legal justice (Mubarok 2020a). Several reasons for constraints in the execution of decisions on environmental civil cases include the difficulty of obtaining assets for confiscation of execution. It is easier if the assets are already collected, so it is not only to sue, but also the assets have been pocketed. When carrying out an execution seizure, sometimes the assets are spread across various institutions and the process is not easy and needs time. Therefore, regarding the confiscation of assets, law enforcement usually does not get everything right away, but gradually. To make it easier, it is necessary to encourage the establishment of cooperation between agencies. In addition, the obstacle to executing the results of civil cases is how the authority to execute lies with the chairman of the district court, which is carried out by the clerk or bailiff. It should have been carried out by the court, but in practice, it ended up being borne by the petitioner for execution. Another obstacle is that the implementation of the execution must be complete according to the contents of the decision because the decisions of the head of the court differ from one another. Therefore, it is necessary to develop the same perception on how to respond to the completion of the contents of the decision (Utomo 2020).

Professor of the Faculty of Law, University of Indonesia, Andri Gunawan Wibisana, emphasized that even if the execution was successful and a number of fines had been paid, it did not mean the problem was over. An important step that must be taken is to carry out environmental restoration. When the compensation money has been paid and enters the state treasury or KLHK treasury, environmental restoration must be carried out immediately. Therefore, it is proposed: for decisions that are already *inkracht van gewijsde* (permanent legal force), the court must make an environmental restoration plan a part of the conditions for executing the decision. It should be emphasized that the money earned by the government can only be used for environmental restoration. M Tanzil Aziezi, a Researcher at the Institute for the Study and Advocacy of Judicial

Independence (LeIP), said the results of a 2019 LeIP study found that decisions on environmental criminal cases were difficult to execute. Some of the causes are fines included in Non-Tax State Revenue (PNBP), so they cannot be used directly. Another problem is that there are no regulations governing the execution mechanism for imposing environmental remedial actions as a result of criminal acts. What if the perpetrator does not want to comply with the court's decision? Compared to the Corruption Crime Eradication Law, if the convict is charged with paying state losses, but does not carry it out, then his property is confiscated. If the amount is not enough, a replacement prison is imposed, but in the settlement of environmental disputes, there is no coercive mechanism (DA 2021).

The constitution stipulates that every person has the right to live in physical and spiritual prosperity, to have a place to live, to have a good and healthy environment, and to receive health services. For this reason, the execution of environmental restoration is very important because humans are very dependent on the quality of the environment. Environmental restoration can be done, one route to which is through enforcement of environmental law. However, it is not easy to enforce the law for environmental restoration because of the many challenges it faces. In principle, the party that pollutes the environment is the party most responsible for carrying out environmental restoration. Environmental restoration through civil law enforcement can be carried out through demands for legal standing, citizen lawsuits, class action, and government lawsuits. Of the 15 civil cases involving the firing of the forest and logging cases, the total execution value was more than IDR 20 trillion. For criminal cases, additional penalties can be used as regulated in Articles 119 and 120 of Law No. 32 of 2009 concerning the Environmental Protection and Management. However, the implementation of this provision faces obstacles because until now there is no technical regulation governing the implementation of Article 120 of the PPLH Law. Of these several environmental criminal cases, Ray noted that there were demands related to environmental restoration. For example, in the case of harm and danger waste pollution, the verdict for the perpetrator is just to clean and report to the environmental service. For crimes related to forest and land damage, there is a ruling ordering restoration, at a cost of IDR 13 billion. For civil cases, the problems faced include when the defendant is disappearing is no longer known, how to force the defendant to carry out the execution of the recovery, and who has the right to supervise and assess the recovery. For criminal cases, there are obstacles in the implementation of execution in the form of repairs due to environmental crimes, especially if the decision contains certain costs. Then who has the right to supervise and assess the execution of the recovery and what are the consequences if the additional sentence is not carried out. In cases of criminal acts of corruption, when the additional punishment is not carried out, there is a prison sentence instead (substitute punishment). However, for environmental cases, challenges, and opportunities for environmental restoration through the execution of decisions on criminal and civil cases still exist.

Execution of civil and criminal decisions is not easy to implement, due to the lack of comprehensive technical implementation regulations. There are opportunities, one of which is drafting the Supreme Court Regulation of the Republic of Indonesia concerning the Execution of Environmental Recovery. Criminal provisions in Law No. 32 of 2009 concerning the Environmental Protection and Management (UUPPLH) is an effort to protect the interests of the environment and affected communities. One of the provisions related to this matter is the existence of additional criminal sanctions in the form of repairs (environmental recovery) as a result of environmental crimes. This additional sentence can be imposed by a judge, if an environmental crime is committed by a business entity. Additional criminal forms or disciplinary measures that can be imposed on business entities: (1) Deprivation of profits derived from criminal acts; (2) Closure of all or part of the place of business and/or activity; (3) Improvements due to criminal acts; (4) The obligation to do what is neglected without rights; and (5) Placement of the company under guardianship for a maximum of 3 years.

3.4.7. Solutions for overcoming environmental recovery execution constraints

To strengthen law enforcement for environmental restoration, there are at least 5 (five) opportunities: (1) For criminal cases, it is proposed to create a general standard mechanism related to remedial action through law enforcement, expert groups, and others; (2) Maximizing Joint Decision Letters (SKB) for Integrated Law Enforcement of Forest and/or Land Fire Crimes; (3) Make a general recovery plan or determination of damages either in lawsuits or charges and demands (the panel of judges only needs to clarify the recovery plan in its decision); (4) Optimize existing institutions as trust funds; and (5) Compile the rules of the Supreme Court of the Republic of Indonesia concerning the Execution of Environmental Recovery. The Ministry of Environment and Forestry must also play a role in the execution of civil and criminal decisions. For criminal cases, KLHK coordinates with other agencies, such as the prosecutor's office. For civil decisions, the Ministry of Environment and Forestry can submit a request for execution (*aanmaning*) to the Head of the District Court (PN); attend the request for execution

(*aanmaning*) at the District Court; submit an application for confiscation of execution to the head of the PN; nominate candidate asset appraisers to the Chairman of the PN; submit a request for (forced) execution to the Chairman of the District Court; and receive auction results from the Chairperson of the PN to be deposited into the State Treasury (PNBP). The challenges faced included legal challenges, the financial capability of the defendant, the quality of the lawsuit did not reflect the conditions on the ground, and failure to implement the environmental restoration order. This happens because there are no guidelines as a reference for law enforcement related to environmental restoration in a comprehensive manner (Sembiring 2021).

Any resistance delaying execution should be rejected and execution continued; specific guidelines need to be developed for the implementation of the execution of environmental cases, the plaintiff should apply for confiscation of collateral to facilitate the implementation of the contents of the decision. Many lawsuits filed by the Ministry of Environment and Forestry (KLHK) against companies violating statutory provisions related to the environment, which have permanent legal force (*inkracht van gewijsde*), are not easy to execute. Counting the decisions on environmental cases that were successfully executed, the number is very small (one or two decisions). Types of obstacles in the implementation of this execution, among others: obstacles in general, including the distance of the object of execution that is far away and difficult for vehicles to reach; expensive execution costs, especially security from the police. Other obstacles include: resistance and mass mobilization on the part of the executed party; inadequate security forces; the object being executed is not in the hands of the executed party; the verdict is not clear; the absence of the executed respondent at the warning stage (*aanmaning*) or even at the time the execution was carried out. There are certain barriers to action, which have not been specifically regulated. Environmental restoration requires a long time, and the time frame cannot be estimated, and needs a lot of money. Even though an execution could be carried out, there was no party responsible for supervising the execution. Then, neither party carried out the execution, because the executor of the decision did not understand how to carry out the restoration.

Efforts by the court to speed up execution must continue to be facilitated by various steps to speed up the execution of court decisions that are *inkracht* or have permanent legal force. Law enforcement instruments that can be used are: Administrative sanctions, government coercive sanctions, fines, suspension, and revocation of permits; Settlement of disputes such as compensation and certain actions; and Enforcement of criminal law such as imprisonment, fines, and additional penalties (Sani 2022). According to data from the Ministry of Environment and Forestry for the 2015–2021 period, the Directorate General of Law Enforcement of the Ministry of Environment and Forestry has filed 31 civil lawsuits, 14 of which are *inkracht* (permanent legal force) and have an environmental restoration compensation value of IDR 20.7 trillion (News 2022). In order to unravel the issue of executing environmental restoration decisions that have permanent legal force, several things need to be proposed, namely:

- (1) It is necessary to increase the capability of the chairman of the court, court clerks, as well as bailiffs, and substitute bailiffs, through education and training regarding current legal issues, negotiation skills, asset tracing, communication, and other matters that support the execution of decisions.
- (2) Special guidelines need to be drawn up regarding the execution of decisions on civil cases specifically for the environment, applicants for execution need to involve various relevant agencies and experts, especially in asset search and environmental restoration actions.
- (3) It is necessary to make a concrete, valid recovery plan. There needs to be a legal breakthrough through judicial activism, with a *pro natura* spirit.
- (4) The party that bears the costs of carrying out the execution (security, rental of tools and equipment, etc.) needs to be regulated. The plaintiff should file for collateral confiscation in a civil lawsuit to facilitate the implementation of the contents of the decision (Haryadi 2021).

Based on the explanation above, it can be said that the enforcement of environmental law in Indonesia faces several serious challenges, including imperfect regulations and a lack of coordination among relevant agencies. Some of the main problems related to the enforcement of environmental law in Indonesia are as follows:

- (a) Overlapping regulations: Environmental laws in Indonesia are spread across various laws, government regulations, and presidential decrees. Some of these regulations may be contradictory or overlapping, leading to confusion and difficulties in applying them effectively.

- (b) Lack of consistency: The implementation of environmental law is often inconsistent across different regions. This can lead to companies or individuals committing environmental violations feeling less afraid of sanctions due to uneven and inconsistent law enforcement.
- (c) Limited capacity: Some agencies responsible for enforcing environmental law have limited human resources, technology, and funding. This can affect their ability to effectively investigate and address violations.
- (d) Persistent corruption: Corruption within the legal system can also be a barrier to enforcing environmental law. When law enforcement officials engage in corrupt practices, perpetrators of environmental violations can easily evade legal accountability.

Given the weakness of environmental law enforcement in Indonesia, as stated above, it is certain that it will affect sustainable development, as poor environmental law enforcement can have negative impacts on human life, biodiversity, and ecosystems. Therefore, to support sustainable development as a global issue, the Indonesian government needs to systematically improve environmental regulations that govern inter-agency coordination and establish an effective and efficient law enforcement system. Corrective actions to address weak environmental regulations and law enforcement are crucial to support sustainable development by maintaining the balance of natural ecosystems, and helping to reduce the risks of diseases and health problems caused by exposure to hazardous substances due to environmental pollution. It is also vital to protect natural resources, such as clean water, fertile soil, and biodiversity. If these resources continue to be exploited without considering their impacts, resource scarcity and sustainable development will be difficult to achieve. Improvements to support environmental law enforcement are also closely related to aspects of social justice. Pollution and environmental damage typically have a greater impact on vulnerable communities, such as the poor or minorities. Through environmental law enforcement, the rights of communities to live in a healthy and safe environment can be protected. Lastly, it is essential for the Indonesian government to take concrete and serious steps toward consistent environmental law enforcement to ensure compliance with international agreements and environmental commitments agreed upon, such as climate agreements or biodiversity agreements. Demonstrating commitment and concrete actions toward environmental law enforcement significantly impacts the achievement of sustainable development goals.

4. CONCLUSIONS

The results of the study show that overall government policies on environmentally friendly management have not been able to overcome the conflicts that often arise between the goals of environmental preservation and the goals of economic development. As a solution to overcome these obstacles, it is necessary to enforce criminal law, in addition to imposing material punishments (requiring proof) for crimes which are genetic crimes, it is also necessary to apply formal offenses (no need for proof) for crimes which are specific crimes. The process of enforcing environmental law from the aspect of criminal law will be more successful if it is handled by agencies that technically and institutionally deal with environmental issues. In addition, the concept of sustainable development must be implemented in the legal system for environmental management. In the future, it is necessary to develop coordination between law enforcement officials who are assembled. Environmental law enforcement is very beneficial for maintaining environmental sustainability. For this reason, it is very urgent to immediately form a special court to try cases of crimes against the environment. By forming a special court, we hope that the process of environmental cases will be handled better from the start of the examination until the execution. Environmental issues are increasingly specific and complex due to industrial development and infrastructure development.

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ETHICAL APPROVAL

Ethical clearance to conduct this study was granted by the Research Ethics Commission of Indonesian Institute of Sciences.

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DATA AVAILABILITY STATEMENT

All relevant data are included in the paper or its Supplementary Information.

CONFLICT OF INTEREST

The authors declare there is no conflict.

REFERENCES

- Afandi, F., Adiando, D., Listiningrum, P. & Lovina, M. W. 2023 Use of scientific evidence and application of the precautionary principle in decisions on material environmental criminal cases in Indonesia in 2009-2020. *Indonesian Journal of Environmental Law* 9 (1), 72–120.
- Anugrah, N. 2022 Head of Public Relations Bureau, Ministry of Environment: The Quality of Indonesia's Environment Has Improved in the Last Five Years. Available from: www.ppid.menlhk.go.id.
- Atmasasmita, R. 2014 *Business Crime Law Theory & Practice in the Globalization Era*. Prenadamedia Group, Jakarta.
- BAPEDAL 1991 *Research Report on Environmental Pollution Control Licensing Studies*. Jakarta.
- DA, A. T. 2021 *Unraveling the Tangled Threads for Post-Court Decision Environmental Recovery*.
- Damayanti, D. 2020 Analisis Kausalitas Stunting, Pertumbuhan Ekonomi dan Kemiskinan di Indonesia. *Jurnal Kajian Ekonomi dan Pembangunan* 2 (2), 45–48.
- Frisktikawati, Y. 2016 Kendala penyelesaian sengketa lingkungan hidup diluar pengadilan. *Bina Hukum Lingkungan* 1, 1–10. Available from: <https://bplawyers.co.id/2017/06/22/bagaimana-penyelesaian-sengketa-lingkungan-hidup-dalam-hukum-indonesia/>.
- Goodpaster, G. 1995 *Tinjauan Terhadap Penyelesaian Sengketa*. Seri Dasar, Jakarta.
- Gunarso, P., Hartoyo, M. E. & Nugroho, Y. 2013 Analisis Penutupan Lahan Dan Perubahannya Menjadi Kelapa Sawit Di Indonesia (Studi Kasus Di 5 Pulau Besar Di Indonesia Periode 1990s.d 2010). *Jurnal Green Growth dan Manajemen Lingkungan I Edis*, 10–11.
- Hang, N. P. T. 2022 Policy implications for the green bank development in the context of global climate change. *Emerging Science Journal* 6 (4), 817.
- Hardjasumantri, K. 2017 *Environmental Management Law*, VIII edn. Gajah Mada University Press, Yogyakarta. Abstract.
- Haryadi, P. 2021 *Online Discussion with the Theme Unraveling the Tangled Threads of Environmental Recovery after Court Decisions*.
- Hidayat, A., Kholiq, A. & Suryadi, A. 2021 Report on research results: law enforcement against environmental pollution due to industrial hazardous and toxic (B3) waste, connected with law number 32 of 2009 concerning environmental protection and management (Case study of Barugbug Dam, Karawang Re). *RECHTSCIENTIA: Journal of Law Students* 1 (1), 1–22. ubpkarawang.ac.id.

- Husein, H. M. 1992 *Environmental*. Bumi Aksara, Jakarta.
- Ibrahim, J. 2006 *Normative Law Research Theory and Methodology*. Bayumedia Publishing, Malang.
- Kambu, Z., Jinca, Y., Pallu, M. S. & Ramli, M. I. 2022 *Perspectives of the local communities on the development of Trans-Papua road infrastructure*. *Civil Engineering Journal* 8 (5), 1007.
- Khan, K. I., Mata, M. N., Martins, J. M., Nasir, A., Dantas, R. M., Correia, A. B. & Saghir, M. U. 2022 *Impediments of green finance adoption system: linking economy and environment*. *Emerging Science Journal* 6 (2), 217–218.
- Langbroek, P., Kees, B., Thomas, M. S., Milo, M. & van Rossum, W. 2017 *Methodology of legal research: challenges and opportunities*. *Utrecht Law Review*. <https://doi.org/10.18352/ulr.411>.
- Lawyers, BP. 2023 *Penyelesaian Sengketa Lingkungan Hidup Di Tahun 2023*. Available from: <https://bplawyers.co.id/2023/02/07/penyelesaian-sengketa-lingkungan-hidup-di-tahun-2023/>.
- Legal Mandate Bapedal 1995 *Environmental Management*.
- Liana Brasida, M. S. 1996 *Potential Development of Clean Production Programs in Indonesia*.
- Madya, J. 1978 The penal protection of the environment. *The American Journal of Comparative Law* 26 (1), 1978.
- Magraw, D. B. 2015 Rule of law, environment and sustainable development. *Southwestern Journal of International Law* 21, 278.
- Manan, B. 1999 Research in the field of law. *Journal of Law Puslitbangkum Number 1-1999 (Legal Development Research Center, Padjadjaran University Research Institute Bandung)* 1, 3–6.
- Mangara, G., Nathan, M. & Katlea, V. 2023 Opportunities and challenges of replicating climate lawsuits against corporations with human rights arguments in Indonesia. *Indonesian Journal of Environmental Law* 9 (1), 53–76.
- Marbun, B. 2021 *The concept of recovery in environmental pollution (Study on the decision of the North Jakarta District Court, Number 735/PDT/GLH/2018/PN.JKT.UTR)*. *LITRA: Journal of Environmental, Spatial and Agrarian Law, Department of Environmental Law, Spatial Planning and Agrarian Affairs, Faculty of Law, Padjadjaran University, Bandung* 1 (1), 92–100.
- Marzuki, P. M. 2006 *Legal Research*. Kencana, Jakarta.
- Michel, J. 2020 *The Rule of Law and Sustainable Development, a Report of the CSIS Program on Prosperity and Development*.
- Mubarok, N. 2020a *Keadilan Hukum Dalam Penyelesaian Sengketa Lingkungan Hidup Di Indonesia*. *Al-Daulah Jurnal Hukum dan Perundangan Islam* 10 (2). Available from: <https://jurnalfsh.uinsby.ac.id/index.php/aldaulah/article/view/932>.
- Mubarok, N. 2020b Legal justice in resolving environmental disputes in Indonesia. *Law Journal of UIN Sunan Ampel Surabaya* 10, 932.
- News, Antara 2022 KLHK Upayakan Percepatan Eksekusi Putusan Kasus Lingkungan Hidup. *Antara News*. Available from: <https://www.antaranews.com/berita/2980897/klhk-upayakan-percepatan-eksekusi-putusan-kasus-lingkungan-hidup>.
- Pratama, A. 2020 Law enforcement against industrial waste environmental pollution in Krawang Waters, West Java, Indonesia. *Logic: Journal of Multidisciplinary Studies* 11 (1), 24–31.
- Raiffa, H. 1982 *The Art and Science of Negotiation*. Harvard University Press, Cambridge, Massachusetts, pp. 48–50.
- Rangkuti, S. S. 1994 *Administrative Environmental Law: PERMIT*. UNAIR, Surabaya.
- Raseukiy, S. A. G. 2023 Legal policy in fulfilling the right to a clean, healthy and sustainable environment as a universal human right. *Indonesian Journal of Environmental Law* 9 (1), 1–24.
- Rasjidi, L. 2005 Legal Research Methods, in Philosophy of Science. *Research Methods, and Legal Scientific Papers, Bandung* (Monograph). p. 7.
- Rasyid, F. 2014 Permasalahan Dan Dampak Kebakaran Hutan. *Jurnal Lingkar Widayaiswara Edisi 1 No*, 47–59. Available from: www.juliwi.com
- Rhiti, H. 2006 *Environmental Dispute Settlement Law*. Atma Jaya University Yogyakarta, p. 123.
- Sabtia 2010 *Institutional Repository of the University of North Sumatra (RI-USU), University of North Sumatra 'Green Banking in Banking Credit Policy in Indonesia'*. Available from: <http://repositori.usu.ac.id/handle/123456789/39349>.
- Sani, R. R. 2022 *Efforts to Accelerate the Execution of Decisions on Environmental Cases, Hearings with the Working Committee of Commission IV of the Indonesian House of Representatives, Jakarta*.
- Santosa, M. A. 1997 Application of strict liability in the environmental sector. *ICEL* 59, 1–26.
- Sembiring, R. G. 2021 *Opportunities to Overcome Constraints in Executing Environmental*. Available from: <https://www.hukumonline.com/berita/a/ada-peluang-metatasi-kendala-execution-pemulihan-environmental-lt60ba156e58252?page=all>.
- Siahaan, N. H. T. 1989 *Development Ecology and Environmental Law*. Erlangga, Jakarta.
- Silalahi, D. 1972 *Environmental Law in the Indonesian Environmental Law Enforcement System*. Alumni Publisher, Bandung.
- Sodikin 2003 *Penegakan Hukum Lingkungan Tinjauan Atas UU No. 23 Tahun 1997*. Djambatan, Jakarta.
- Soedarso, B. P. 1999 *Collection of Law Lecture Materials*. Environmental Law Lecture Material, Faculty of Law, University of Indonesia, Jakarta.
- Soekanto, S. 1986 *Pengantar Penelitian Hukum*. UI-Press, Jakarta.
- Soekanto, S. & Mamudji, S. 1983 *Penelitian Hukum Normatif: Suatu Tinjauan Singkat*. Rajawali Pers, Jakarta.
- Soemartono, G. P. 1991 *Knowing Indonesian Environmental Law*. Sinar Graphic, Jakarta.
- Soemarwoto 1985 *Ekologi, Lingkungan Hidup dan Pembangunan*. Djambatan, Jakarta.
- Soemitro, R. H. 1990 *Legal Research Methodology and Jurimetry*. Ghalia Indonesia, Jakarta.
- Sonata, D. L. 2015 *Metode Penelitian Hukum Normatif Dan Empiris: Karakteristik Khas Dari Metode Meneliti Hukum*. *Fiat Justisia: Jurnal Ilmu Hukum* 8 (1), 21. <https://doi.org/10.25041/fiatjustisia.v8no1.283.%0A%0A>.
- Subekti, R., Sulistiyono, A., Widayarsi, R., Ananda, R. & Muqtadir, G. P. 2023 *Environmental Law*. Widina Bhakti Persada Bandung (Group CV. Widina Media Utama), Bandung.

- Sudaram, J. K. & Chowdhury, A. 2012 *Is Good Governance Good for Development?* Bloomsbury Academic, London and New York.
- Sutopo, A. H. & Arief, A. 2019 *Skilled in Processing Qualitative Data*. Kencana, Jakarta.
- Utomo, J. R. 2020 *WALHI Riau's Virtual Discussion Regarding Law Enforcement on Environmental Cases Was Monitored From Jakarta*. ANTARA/Prisca Triferina. Available from: <https://www.antaranews.com/berita/1870540/klhk-details-kendala-eksekusi-kejuangan-cases-environmental-life>.
- Wicaksana, M. K. & Martana, P. A. H. 2021 Environmental pollution as an act against the law. *E-Journal of Legal Studies KERTHA WICARA, Faculty of Law, UDAYANA University, Bali, Indonesia* 10 (3), 208–217. Available from: <https://ojs.unud.ac.id/index.php/kerthawicara/article/view/66375>.
- Wijaya, T. 2014 *Criminal Sanctions Against Environmental Pollution Perpetrators Based on Law No. 32 of 2009*. Palembang.
- Yazid, T. L. 1999 *Environmental Dispute Resolution*. Airlangga University Press-IKAPI Foundation-Ford Foundation, Surabaya.

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