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ARTICLE

Corporate Liability in Environmental Crimes: A Comparative Study of Indonesian and Islamic Criminal Law

Rodiatul Adawiyah Harahap*[1], Ramadani*[2]

*[1]Correspondence
Rodiatul Adawiyah Harahap, Universitas Islam Negeri Sumatera Utara University, Medan, 55281, Indonesia . Email: rodiatulharahap@gmail.com

[2] Universitas Islam Negeri Sumatera Utara 55183, Indonesia

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Abstract

Background: Environmental degradation resulting from corporate and individual actions remains a persistent legal challenge in Indonesia. Despite the existence of regulatory frameworks such as Law No. 32/2009 on Environmental Protection and Management (as amended), enforcement remains weak—particularly in corporate-related crimes, as exemplified by the H_2S gas leak incident in Mandailing Natal..

Purpose: This study investigates criminal liability for environmental crimes from the perspectives of Indonesian positive law and Islamic criminal law..

Methods: Using a normative legal research method supported by comparative and case approaches, the study examines legal texts, jurisprudence, and relevant Islamic legal doctrines within the framework of *maqāṣid al-sharī'ah*.

Results: Findings suggest that while Indonesian law provides sufficient formal basis for corporate prosecution, its implementation lacks consistency. In contrast, Islamic criminal law, through *ta'zīr* principles, offers a moral-ethical framework emphasizing justice, deterrence, and ecological responsibility.

Implication: The study highlights the urgency of integrating ethical-legal principles from Islamic jurisprudence into the existing legal system to ensure more equitable environmental justice.

Originality: This paper's novelty lies in its contextual application of maqāṣid-based reasoning to corporate environmental crimes.

INTRODUCTION

Humans and other living things depend on the environment for survival. However, due to legal and illegal actions undertaken to seek economic gain without considering environmental sustainability and conservation, environmental damage in Indonesia has reached a critical state in recent decades. Environmental crimes frequently occur, resulting in victims and significant ecological, social, and economic losses. Every environment that serves as a habitat for humans, animals, plants, and communities, as well as every living creature that thrives and grows and whose survival depends heavily on it, is considered an environmental victim in this context. This environment has been impacted by deforestation, landslides, floods, and fires caused by erroneous government policies and the careless actions of humans and communities (Waluyo, 2011). Specifically, the environment as a victim of crime can take the form of environmental pollution, animal harm, species extinction, significant climate change and global warming, and ecosystem damage (Ali, 2020). This phenomenon not only impacts ecosystem degradation but also demonstrates the weak law enforcement and accountability of perpetrators of environmental crimes.

The reality shows that excessive and irresponsible environmental exploitation has caused widespread damage in various regions of Indonesia. Although environmental crimes have occurred repeatedly, they have not been fully addressed by existing legal instruments, either preventively or repressively. The many phenomena of environmental damage in Indonesia are a reality of weak law enforcement. For example, forest and land fires (karhutla) in Sumatra and Kalimantan in 2015 caused damage to more than 2 million hectares, resulting in transnational haze and disrupting the health of millions of residents (*Kebakaran Hutan Dan Lahan*, *Menolak Lupa Terhadap Kejahatan Korporasi | WALHI*, n.d.). Pollution of the Citarum River by industrial waste has also been in the spotlight, where the river that was once a major water source is now known as one of the most polluted rivers in the world ((UNEP)., 2013). The case of Buyat Bay pollution by the multinational mining company Newmont in 2004 also reflects the weak legal accountability of corporate actors even though the damage caused was very serious (Down to Earth., 2005).

According to data from the Central Statistics Agency, the regional police region with the highest number of environmental incidents is the North Sumatra Regional Police, with 1,094 incidents (Statistik, 2025). One example is the environmental damage and degradation that occurred in Mandailing Natal Regency, North Sumatra, by PT X's activities. These problems have occurred since 2015. The Sorik Marapi geothermal project managed by PT X covers a concession area of 62,900 hectares, covering 138 villages in 10 sub-districts of Mandailing Natal (Wicaksono, 2024). Since its operation, environmental accidents have occurred repeatedly, especially hydrogen sulfide (H_2S) gas leaks and hot mud eruptions. On January 25, 2021, an H_2S gas leak from the Sorik Marapi PLTP borehole killed five people and hospitalized dozens of other residents (Wicaksono, 2024). Similar incidents have occurred repeatedly: such as the explosion and field fire in May 2021, the gas leak in March 2022 that required dozens of people to seek treatment, and the hot mudflow in April 2022 that exposed hundreds of residents (Wicaksono, 2024). These impacts not only threaten health but also the productivity of agricultural land surrounding the project, which has decreased due to contaminated soil. To date, according to Jatam records, the government has only once temporarily suspended PT X's operations after the 2021 incident, while other repeated leaks have not been followed by meaningful law enforcement. Environmental organizations, such as WALHI North Sumatra, even called this series of H_2S gas leaks "crimes against humanity and environmental crimes" and urged the revocation of PT X's operational permit. JATAM urged law enforcement against PT X for actions that have resulted in the loss of life and environmental damage. In addition, according to the Indonesian Forum for the Environment (Walhi) North Sumatra, it was noted that between 2021 and 2024, PT X experienced a number of hydrogen sulfide (H_2S) gas leaks which resulted in at least five fatalities and hundreds of cases of gas poisoning (*Kebocoran Gas Sorik Marapi Di Mandailing Natal Kembali Terulang - "Ini Bukan Lagi Kelalaian Sistem, Tapi Kejahatan Kemanusiaan,"* 2024)This empirical fact shows a real conflict between the activities of energy corporations and criminal liability for the environmental damage caused. (Wicaksono, 2024).

In fact, Law Number 32 of 2009 concerning Environmental Protection and Management as amended by Law Number 06 of 2023 Stipulating Government Regulation in Lieu of Law Number 2 of 2022 concerning Job Creation into Law (PPLH Law), has expressly regulated criminal liability for any person or corporation that intentionally or due to negligence commits environmental pollution and/or destruction. Article 69 paragraph (1) letter a of the PPLH Law states that everyone is

prohibited from committing acts that result in Environmental Pollution and/or Environmental Damage. Articles 98 to 103 (Article 102 is deleted) contain criminal provisions for such violations, including imprisonment and large fines, and Articles 116 and 117 contain increased penalties if committed by a corporation; (*UU No. 6 Tahun 2023*, 2023).

From the perspective of Islamic criminal law, crimes against the environment are not only seen as violations of fellow human beings, but also as violations of the mandate of Allah SWT. The Quran emphasizes that all pollution and human greed, which completely exploit the natural environment, are sources of environmental damage. Therefore, from the beginning, Allah has warned humans against such environmental damage in Surah Ar-Rum, verse 41 of the Quran (Haq, 2020).

"Corruption has appeared on land and sea because of what the hands of men have earned; Allah desires that they may taste a part of their deeds, in order that they may return (to the right path)" (QS. Ar-Rum, (30):41).

This verse emphasizes that human actions are the cause of damage (*fasfa fil barri walbahri*) after Allah SWT repairs it. In Islam, the Islamic jurisprudence principle of " *la dharara wa la dhirar* " (not to harm oneself or others) is the foundation for assessing crimes against the environment. This not only threatens a healthy environment but also threatens the *maqāṣid al-shariah* (objectives of sharia) such as preserving religion, life, descendants, intellect, and property. Therefore, damaging the environment is tantamount to threatening the safety of society and the survival of the people (*hifz al-nafs and hifz al-mal*) (Nafisah, 2018)

Although several legal studies have addressed corporate environmental crimes, most of them remain descriptive and positivistic, focusing on normative legal provisions without thoroughly analyzing their implementation gaps or exploring alternative legal paradigms. For example, prior research has tended to emphasize procedural aspects of prosecution under Indonesian law, but rarely address the moral and philosophical underpinnings of environmental justice. In addition, comparative studies between Islamic law and national environmental regulations remain scarce, and when they exist, they often treat Islamic law as supplementary rather than as a critical legal-philosophical framework.

This research identifies a clear scholarly gap: the lack of integrative and comparative analysis between Indonesian environmental criminal law and Islamic criminal legal principles, especially in addressing corporate liability. There is a need for a deeper exploration of how Islamic legal values—such as *ta'zīr*, *maslahah*, and *hisbah*—can inform or enrich the normative structure of environmental criminal accountability in the national context.

Thus, this study positions itself within this gap by offering a normative-juridical and comparative approach that not only analyzes the implementation failures in current Indonesian law, but also reinterprets environmental criminal responsibility through the lens of Islamic legal tradition. This integrative framework is intended to provide a more ethically grounded and theologically rooted perspective, particularly relevant for Indonesia's Muslim-majority population and its ongoing legal reform.

With this context, this study aims to analyze criminal liability for cases of pollution and environmental damage, particularly in Mandailing Natal Regency, within the framework of national criminal law and Islamic criminal law. This study reviews the

legal basis for environmental crime (UUPPLH Law No. 32/2009 in conjunction with Law No. 6/2023) and relevant principles of *maqāṣid al-shariah*. The results are expected to provide a comprehensive picture of how the Indonesian legal system handles environmental crimes and how to harmonize or critique from an Islamic perspective regarding law enforcement in these concrete cases. This is important so that the process of enforcing environmental criminal law is not merely procedural, but also based on the values of substantive justice in accordance with the constitution and *maqāṣid al-shariah*.

This research contributes to the emerging discourse on Islamic environmental jurisprudence and legal pluralism, while also offering critical insights for policy makers, scholars, and practitioners committed to strengthening corporate environmental accountability (Haq, 2020). Thus, Islamic criminal law offers a more substantial value approach and is based on moral and conceptual responsibility. In this case, causing environmental damage can be classified as a criminal act (*jarimah*), the regulations of which can be adjusted as *jarimah ta'zir*, namely a criminal act whose punishment is determined by government authorities to maintain the public interest (Asy-Syatibi, 2000). This benefit is not only for this life but also for eternal life in the afterlife (Marsaid, 2020).

LITERATURE REVIEW

1. Legal Void in Corporate Accountability for Environmental Crimes

The absence of an effective mechanism for corporate criminal liability in Indonesian positive law is a crucial concern in environmental crime enforcement. Yudi Krismen (2019), in his research titled "Analysis of Criminal Liability for Corporations in Environmental Crimes Regarding the Final Settlement of Medical Waste in Hospitals", reveals the structural limitations of the Criminal Code (KUHP), which still fails to explicitly recognize corporations as subjects of criminal law. Despite the progressive intention of Law No. 32/2009 on Environmental Protection and Management (UU PPLH), its implementation remains ineffective. Corporations involved in ecological harm, such as hospitals improperly managing hazardous medical waste, often escape sanctions because enforcement tends to target individual managers rather than institutional entities.

Yudi identifies four models of corporate criminal responsibility: (1) management as the perpetrator and responsible party, (2) the company as the perpetrator but the management bears responsibility, (3) the corporation as both the guilty and responsible party, and (4) both the management and the corporation are jointly liable. This typology is essential in understanding the gaps in national legal policy and emphasizes the urgent need for reform to establish proportional sanctions that are not merely administrative or financial, but also reputational (stigmatization). This legal vacuum becomes especially critical in contexts such as Mandailing Natal, where ecological degradation by corporate actors continues unchecked.

2. Islamic Criminal Law on Environmental Destruction

In contrast to these shortcomings, Islamic legal discourse offers a broader moral and collective framework for holding environmental offenders accountable. Asy'ari, Edwar Ibrahim, and Aris Nandar (2023), in "Criminal Acts of Environmental Destruction from an Islamic Legal Perspective", classify environmental damage as a form of jarimah ta'zir—

crimes not specifically mentioned in the Qur'an and Hadith, but which threaten public interest (maslahah 'ammah). Their study stresses that Islam strongly prohibits fasad fi al-ardh (corruption or damage on earth), framing ecological violations not only as legal wrongs but as spiritual transgressions.

The punishments under ta'zir in this context range from financial sanctions and imprisonment to more serious penalties in extreme cases, depending on the societal harm caused. These punishments are at the discretion of the ruler (ulil amri), and are grounded in the principles of justice, deterrence, and protection of communal welfare. The flexibility and moral force of Islamic criminal law offer a valuable paradigm in addressing modern environmental crimes—especially those involving complex actors such as corporations—by affirming both personal and institutional accountability.

3. Toward Ethical and Legal Integration: Islamic Norms in Environmental Law Reform

The convergence of these two literatures—Yudi's critique of positive law and Asy'ari et al.'s proposition of Islamic principles—reveals a significant research gap that this study seeks to fill: the absence of ethical-spiritual frameworks in the formulation and enforcement of corporate environmental liability. Current positive law tends to be procedural and punitive, lacking a moral dimension that could strengthen ecological justice. Islamic criminal law, in contrast, emphasizes accountability grounded in divine trust (amanah), social responsibility, and moral awareness.

By positioning itself within this gap, this research argues that the integration of Islamic legal principles can provide a more holistic approach to environmental enforcement. This is particularly relevant in predominantly Muslim societies like Mandailing Natal, where Islamic ethical norms still influence public perceptions of justice. The research thus contributes to the development of an interdisciplinary framework—merging criminal law, Islamic legal thought, and environmental ethics—that strengthens the legitimacy and effectiveness of legal instruments for corporate environmental accountability

RESEARCH METHODOLOGY

This research uses a Normative Juridical research type, namely to answer the legal issues being studied, this research method examines and studies law as norms, regulations, legal principles, legal doctrines, legal theories, and other literature. (Muhaimin, 2020). This research focuses on environmental criminal liability. The types of research approaches used are the case approach *and* the comparative *approach* . The case approach or *case approach* is several issues that are analyzed to be used as a reference for a legal problem. The cases that will be studied in this research include environmental crimes involving forest fires, namely burning protected peatlands in the Leuser ecosystem to clear land, in Aceh Province and gas leak cases involving PT SMGP, Mandailing Natal Regency, North Sumatra. Meanwhile, the comparative approach is an approach that compares one or several laws and regulations from other countries with laws and regulations in Indonesia. In this study, a comparison of Islamic criminal law with the Indonesian criminal law system is used (Dewata & Achmad, 2020).

The data sources used, Primary data obtained from the Qur'an and Hadith as well as Law Number 32 of 2009 concerning Environmental Protection and Management as amended by

Law Number 06 of 2023 Stipulation of Government Regulation in Lieu of Law Number 2 of 2022 concerning Job Creation into Law (PPLH Law). And secondary data obtained from literature studies of environmental crime cases involving forest fires, land clearing practices by burning in protected peat areas in the Leuser ecosystem, Aceh Province and gas leak cases involving PT SMGP, Mandailing Natal Regency, North Sumatra. As well as law books, law journals containing environmental criminal law, opinions of legal experts (doctrines), and legal research results. Data collection techniques are carried out by literature studies of primary and secondary data. The data analysis method obtained will be through descriptive analysis using a series of procedures. namely Data reduction, filtering information relevant to the essence of the research. Data presentation, compiling data in narrative and thematic arrangements. Drawing conclusions, examining patterns, relationships, and meanings of the analyzed data. This methodology is designed so that the research can produce a complete and contextual picture of the responsibility for environmental crimes that occurred in the research study

RESULTS

1. *Legal Inadequacy in Prosecuting Corporate Environmental Crimes: The Case of PT X*

The case of H_2S gas leakage by PT X in Mandailing Natal exposes the fragility of environmental law enforcement in Indonesia, particularly in addressing corporate accountability. Although Law No. 32 of 2009 on Environmental Protection and Management (amended by Law No. 6 of 2023) has provided a legal basis for prosecuting environmental crimes, its implementation reveals significant gaps. Investigations against PT X failed to produce any binding legal consequences for the corporation as a legal entity. Only mid-level employees were examined, while the corporate body escaped liability. This mirrors the findings of Krismen (2019), where enforcement tends to individualize crimes that are structurally caused by organizational negligence or profit-driven policies.

Furthermore, sanctions imposed are often limited to administrative fines or temporary suspensions, which are insufficient to create deterrence. The lack of clarity in attributing criminal intent (*mens rea*) to corporations, coupled with weak institutional capacity of law enforcement in remote areas such as Mandailing Natal, further undermines justice for environmental victims. Therefore, despite the existence of progressive environmental statutes, the legal system remains largely anthropocentric and fails to address systemic corporate abuse.

2. *Islamic Legal Perspective: Environmental Crime as Jarīmah Ta'zīr*

From the standpoint of Islamic criminal law, the act of polluting the environment—especially when it results in human fatalities and long-term ecological damage—constitutes *jarīmah ta'zīr*. This classification allows discretionary punishment by the government (*ulil amri*) based on the scale of harm, public interest, and moral gravity of the offense. In the case of PT X, the company's negligence can be analogized as *fasād fi al-ardh* (corruption on earth), a concept repeatedly condemned in the Qur'an (e.g., QS Al-Baqarah: 205, Al-A'raf: 56).

The Islamic framework provides stronger moral legitimacy in enforcing corporate accountability, as it is rooted in the protection of *maqāṣid al-sharī'ah* (the higher objectives of Islamic law), particularly *ḥifẓ al-nafs* (protection of life), *ḥifẓ al-bi'ah* (protection of the environment, within contemporary interpretations), and *ḥifẓ al-māl* (protection of property). The failure of PT X to ensure safety mechanisms not only

endangered lives but also damaged natural resources vital to local communities' livelihoods—thus violating all three of these objectives.

Within this framework, punishment can include not only monetary sanctions but also public censure, corporate disbandment, or even state-imposed operational bans—measures that, while underutilized in national law, are justifiable under *ta'zīr*. This highlights the ethical dimension of Islamic criminal law, which combines deterrence (*zajr*), retribution (*kaffārah*), and rehabilitation (*iṣlāḥ*).

3. *Toward a Holistic Reform: Integrating Islamic Norms in Environmental Legal Policy*

This study's most important contribution lies in proposing a synergistic model that bridges national environmental law with Islamic ethical and legal norms. The failure of positive law to prosecute PT X demonstrates the urgent need for an ecological legal reform that is not merely punitive, but also normative and spiritual. Integrating Islamic criminal law offers not only additional normative support but also contextual legitimacy, especially in Muslim-majority regions such as Mandailing Natal.

A hybrid model of enforcement could be developed by embedding maqāṣid-based indicators into regulatory frameworks, allowing legal institutions to assess environmental violations not only in terms of statutory breaches, but also based on harm to life, sustainability, and intergenerational equity. For example, Environmental Impact Assessments (AMDAL) could incorporate *ḥisbah*-based social monitoring, while corporate sanctions could include *ta'zīr*-based penalties that reflect both harm and intent.

Furthermore, this integrative approach encourages cross-sector collaboration between religious scholars, legal professionals, and environmental activists. It situates environmental justice not only in the realm of formal law but also within the ethical and communal fabric of Islamic society—making legal enforcement both more inclusive and morally compelling

DISCUSSION

1. *Criminal liability for environmental crimes in Mandailing Natal*

Criminal liability is a fundamental principle in criminal law that emphasizes the existence of fault (*schuld*) and the perpetrator's ability to assume legal responsibility. Two main approaches underlie the theory of criminal liability: monism and dualism. The monist doctrine, as proposed by Jonkers, Simons, Van Hamel, and Indrianto Seno Adji, views the elements of an unlawful act and a fault as an integral whole. According to this view, if the element of an unlawful act has been proven, criminal liability can be directly imposed without separate proof of the perpetrator's fault (Faisal, 2021).

In contrast, the dualism approach pioneered by Kontorowicz in his work Tat und Schuld (1933) asserts that criminal acts (*actus reus*) and fault (*mens rea*) are two topics that must be proven separately. This approach better guarantees the principle of justice, especially in protecting the rights of the accused. In Indonesia, the dualism approach was developed by figures such as Moeljatno and Roeslan Saleh, who emphasized the principle of *geen straf zonder schuld* (No punishment without fault) as the main foundation of the criminal liability system (Faisal, 2021). In the context of environmental crimes, such as those that occurred in Mandailing Natal Regency by PT X, proving fault is a particular challenge because the main perpetrator is a corporation. Therefore, the application of a monism-based accountability model or

the principle of *strict liability* is more effective in addressing environmental crimes that are systemic and have broad impacts (Ali, 2020).

The substantive justice approach, as developed by Roberto M. Unger, will be more relevant in environmental crime cases. This approach emphasizes that the law must not only be applied formally but also be able to address the substantive justice needs of society, particularly the right to a healthy environment (Nugroho Rahmat Muhajir & Agus Setiadi, 2018). Merely procedural law enforcement often ignores the substance of environmental protection and the interests of the affected communities.

In Indonesia, law enforcement uses an integrated approach to resolve environmental crimes, as regulated in Article 95 paragraph (1) of Law No. 32 of 2009 concerning Environmental Protection and Management (PPLH), which states that investigations can involve civil servant investigators, the police, and the prosecutor's office in a coordinated manner under the Minister of Environment (*UU No. 6 Tahun 2023*, 2023). The Constitutional Court also emphasized in Decision Number 18/PUU-XII/2014 the importance of coordination in environmental law enforcement.

The case of hydrogen sulfide (H_2S) gas leak caused by PT X in Sibanggor Julu and Sibanggor Jae Villages, Mandailing Natal Regency, is a concrete example of environmental crime by a corporation. As a result of this incident, residents experienced respiratory problems and several died due to H_2S gas. H_2S is a very dangerous toxic gas, and is included in hazardous and toxic waste (LB3) (*Hydrogen Sulfide - Overview | Occupational Safety and Health Administration*, n.d.). The threat of sanctions and fines that can harm the good name/business reputation of PT X as well as financial burdens that will impact the smooth running of PT X's business activities. Due to PT X's lack of awareness of the existing legal risks, resulting in casualties. PT X should obediently carry out various LB3 management efforts to limit the occurrence of wider environmental damage. As is the reality, there were casualties due to PT X's activities. This became a record of legal violations by looking at the news regarding PT X's activities, namely when opening the last drill hole in early 2024 (Sentoso, 2023).

Therefore, criminal accountability is crucial. Therefore, the final legal remedy (*ultimum remidium)* is the answer because it aims to punish the perpetrator with imprisonment or a fine. The imposition of criminal penalties for acts of environmental pollution and destruction, from the perspective of the relationship between the state and society, is also a crucial part, aiming to protect society (*social defense*) and the environment from prohibited acts (*verboden*) committed by perpetrators of environmental destruction (Widodo, 2023). Furthermore, Packer argues that one of the most effective solutions to address complex problems and various types of environmental hazards is to implement criminal penalties (Kusuma et al., 2022).

Within the criminal justice framework, a relevant approach to environmental cases is deterrence theory . This theory emphasizes community protection and the prevention of recurring ecological losses. PT X's actions in opening a borehole without adequate risk management resulted in health problems and deaths of residents, as well as significant ecological losses (Ali, 2020). Therefore, the criminal penalties used must reflect the principles of social and environmental responsibility, including environmental restoration and compensation for victims.

Based on the above, Law Number 32 of 2009 concerning Environmental Protection and Management (UU PPLH) in conjunction with Law Number 6 of 2023 has expressly regulated the form of environmental criminal liability, namely regulating the prohibition and sanctions against environmental pollution and destruction. In the

context of the case in Mandailing Natal involving PT X, strong evidence shows that there has been a violation of the provisions of Article 69 paragraph (1) letter a of the PPLH Law, namely the prohibition of carrying out acts that result in environmental pollution and/or destruction.

Article 98 states that any person who intentionally commits an act that results in exceeding ambient air quality standards, water quality standards, sea water quality standards, or environmental damage criteria shall be punished. The consequences of the act in paragraph (1) If, "The perpetrator's actions result in injury and/or harm to human health, then the punishment threatened to the perpetrator is imprisonment for a minimum of 4 years and a maximum of 12 years and a fine of at least IDR 4,000,000,000 and a maximum of IDR 12,000,000,000." Because the consequences in Article 98 paragraph (2) are more serious than the consequences in Article 98 paragraph (1) because they relate to legal protection of human interests, the threat of criminal sanctions in Article 98 paragraph (2) is heavier, from a minimum of 3 years and a maximum of 10 years to a minimum of 4 years and a maximum of 12 years, and a fine of at least Rp. 3,000,000,000 and a maximum of Rp. 10,000,000,000 to a fine of at least Rp. 4,000,000,000 and a maximum of Rp. 12,000,000,000. However, in Article 98 paragraph (3) if the consequences caused by the perpetrator's actions are "people experiencing serious injury or death", the threat of criminal sanctions is also heavier, from a minimum of 4 years and a maximum of 12 years in prison to a maximum of 5 years and a maximum of 15 years in prison, and a maximum fine a minimum of Rp. 4,000,000,000,- and a maximum of Rp. 12,000,000,000,- to a fine of at least Rp. 5,000,000,000,- and a maximum of Rp. 15,000,000,000,-.

Furthermore, Article 99 of the PPLH Law states that any person who due to negligence causes the ambient air quality standards, water quality standards, sea water quality standards, or environmental damage criteria to be exceeded, shall be punished with a minimum of 1 year and a maximum of 3 years in prison and a fine of at least Rp1,000,000,000 and a maximum of Rp3,000,000,000. If the action results in injury and/or harm to human health, then the punishment shall be a minimum of 2 years in prison and a maximum of 6 years and a minimum fine of Rp2,000,000,000, and a maximum of Rp6,000,000,000. If the action causes serious injury or death, then the punishment shall be a minimum of 3 years in prison and a maximum of 9 years and a maximum fine of Rp3,000,000,000, and a maximum of Rp9,000,000,000 (Sood, 2019).

From the two articles above, namely, Articles 98 and 99 of the Environmental Management Law regulate criminal penalties for individuals or corporations that intentionally or through negligence cause environmental pollution resulting in loss of life. In the case of PT X, the H_2S gas leak incident that resulted in death and poisoning of residents can be qualified as an environmental crime because the elements in Article 98 are fulfilled:

a The existence of an act (*acteus reus*): the occurrence of an H_2S gas leak;

b The consequences that arise are: death and environmental damage;

c There is a causal relationship: gas comes from the activities of PT X;

d There is fault (*mens rea*): an element of negligence or even intent (if it has been repeated and there has been no effective mitigation).

Furthermore, Articles 116 and 117 of the Environmental Management Law emphasize that if a criminal act is committed by a corporation, then criminal

responsibility can be imposed on management, administrators, or the party who gave the order to carry out the act. Therefore, the criminal sanctions imposed in the form of imprisonment and fines are increased by one third (Article 117 of Law No. 32 of 2009). In addition, corporations that have committed environmental crimes can also be subject to additional penalties or disciplinary crimes, namely; Confiscation of profits obtained from the crime; Closure of all or part of the business premises and/or repair activities due to the crime; Obligation to carry out what was done without rights, and/or; Placement of the company under guardianship for a maximum of 3 years (Article 119 of Law No. 32 of 2009), (Erwin, 2019). However, in practice, law enforcement against corporations is still very weak. In line with the *Polluter Pays Principle* (PPP) in Principle 16 of the 1992 Rio Declaration, anyone who pollutes the environment is responsible for bearing the costs of the pollution they cause. *The Polluter Pays Principle* promotes a law enforcement system oriented toward distributive justice, where polluters, generally large entities with significant capital, must bear the burden of the losses suffered by the community (Ali, 2020).

For comparison, the Juridical Analysis of Supreme Court Decision No. 1554 K/Pid.Sus/2015 This case highlights the practice of land clearing by burning in protected peat areas in the Leuser ecological area, Aceh Province. The Supreme Court Decision of the Republic of Indonesia Number 1554 K/Pid.Sus/2015 is the main basis for affirming corporate criminal liability for massive environmental damage. PT. Kallista Alam was charged under Article 108 in conjunction with Article 69 paragraph (1) letter h, Article 116 paragraph (1) letter a, Article 118 and Article 119 of Law No. 32 of 2009 concerning Environmental Protection and Management, and Article 64 paragraph (1) of the Criminal Code. These provisions affirm the prohibition on land clearing by burning and provide the foundation for corporate criminal liability. This decision confirms that actions carried out by a legal entity can be held criminally responsible if they fulfill the formal and material elements, namely the existence of an unlawful act carried out for and on behalf of the corporation, and it can be legally and concretely proven that the corporation is represented by a person who has the authority to act.

In its decision, the Panel of Judges emphasized the extent of environmental damage caused by the Tripa Swamp fire. It stated that a peat layer averaging 5–10 cm thick burned completely and did not recover, disrupting the ecosystem's balance (including the loss of orangutan habitat). Furthermore, the fire released significant emissions: approximately 13,500 tons of carbon (equivalent to 4,725 tons of CO_2, 49.14 tons of CH_4, etc.) into the atmosphere. Consequently, environmental quality standards met the pollution threshold, and land rehabilitation costs were estimated at Rp 366,098,669,000 to restore the damaged ecology. Analysis of the Elements of the Crime, based on the decision and the panel of judges' considerations, the elements of the environmental crime that were proven include:

a Act (*actus reus*): Land clearing by burning has been proven to be repeated across various plantation blocks. This is supported by investigative evidence, fire coordinates (*hotspots*), and environmental expert testimony.

b Fault (*mens rea*): There was intent or at least gross negligence (culpa lata) which was evident, as seen from the lack of fire control facilities and infrastructure, the absence of SOPs or risk mitigation systems, and the neglect of the spread of fire.

c Consequences : Ecological damage in the form of loss of vegetation, release of greenhouse gas emissions, erosion of peat layers, and threats to the biodiversity

of the Leuser region are real consequences of this burning .

Corporate Criminal Liability, the application of Article 116 paragraph (1) letter a of Law No. 32 of 2009 confirms that corporations are subject to criminal liability. In this case, PT. Kallista Alam as a legal entity was found guilty of an environmental crime and sentenced to a fine of Rp. 3,000,000,000.00 by the Meulaboh District Court. However, the Supreme Court considered that the obligation to pay compensation of Rp. 366,098,669,000 billion had been decided in a civil case, so that the criminal fine in the criminal case was not imposed again. This shows legal recognition of the principle of *corporate criminal liability* , which prioritizes environmental restoration and substantive law enforcement. This decision is in line with modern criminal law doctrine which opens up space for non-personal (corporate) criminal liability for the sake of effective law enforcement in the environmental sector.

This ruling is crucial for the development of environmental law in Indonesia. In addition to reinforcing the existence and application of corporate criminal law, it serves as an important lesson that environmental restoration is not solely based on administrative and civil approaches, but requires a deterrent effect through criminal mechanisms. This ruling also marks a significant milestone in the strengthening of progressive environmental law and ecosystem protection, particularly in areas with fragile ecosystems such as the Tripa Swamp, Aceh (*Putusan MA No. 1554 K/Pid.Sus/2015*, 2015).

Thus, the criminal accountability approach to environmental crimes, particularly in the case of PT X, requires the application of theories and norms that guarantee ecological and social justice. Law enforcement should not only focus on punishment but also on environmental restoration and protection for future generations.

2. *Accountability for environmental crimes in Mandailing Natal from the perspective of Islamic criminal law*

The mandate of the caliphate in the Islamic view, various kinds of disasters and damage on the face of the earth are entirely caused by human actions. In the Al-Qur'an it is emphasized in surah Ar-Rum verse 41 (Haq, 2020).

"Corruption has appeared on land and sea because of what the hands of men have wrought; Allah desires that they may taste a part of their deeds, in order that they may return (to the right path)." (QS. Ar-Rum, (30):41).

Thus, it is humans who are responsible for and experience the various negative impacts of damage, particularly to the environment. The humans referred to in the above verse are certainly humans in general. However, those who are innocent often experience or become victims of disasters, damage, or calamities. In reality, environmental damage occurs due to the actions of other humans at different times or perhaps in different places. Therefore, Islam responds to the increasingly urgent problem of environmental damage, which requires resolution (Hermanto, 2021).

Therefore, Allah SWT has stated a prohibition on environmental destruction as stated in the Qur'an in Surah Al-A'raf verse 56 which emphasizes the prohibition on causing damage on earth (Irfan & Masyrofah, 2016).

"*And do not do any harm on the earth after it was (created) well. Pray to Him with fear and hope. Indeed, Allah's mercy is very close to those who do good.*"

Then in Surah Al-Qasas verse 77.

"*And seek (the reward of) the land of the afterlife with what Allah has bestowed upon you, but do not forget your share in this world and do good (to others) as Allah has done good to you, and do not do damage on earth. Indeed, Allah does not like people who do damage.*"

Acts of destroying the environment and causing harm to other people mean that they have violated the prohibition of Allah SWT as in the verses above. Likewise, it is contrary to the rules that have been formulated by the fuqaha (*al-qawaid al-fiqhiyyah*) (you must not do harm to yourself or others). Resisting damage takes priority over hoping for benefit. Therefore, the act of opening a drill hole to produce a conventional power plant carried out by *PT* (Hermanto, 2021). Maintaining environmental sustainability according to Yusuf Qardhawi is a demand, therefore all actions that result in environmental damage are the same as actions that can threaten life, reason, property, family and religion. If it is threatened, this benefit cannot be realized if the five basic elements are not realized and maintained. As *maqasid al syari'ah* stated by Abi Ishaq al Syatibi, says that in fact the syariah aims to realize the benefit or goodness of humans in this world and the hereafter (Wahyuni, 2018).

As in the case of the H_2S gas leak that occurred due to the activities of PT X in Mandailing Natal, it can be categorized as a form of crime against the maqashid sharia which is systemic and multidimensional. The five basic interests that must be protected by humans but in this case are violated are; (Yafie, 2006).

a Protection of life (*hifdh al-nafs*) means that anyone, even oneself, for any purpose is prohibited from taking life, abusing and/or tarnishing human honor. In other words, one's soul, body, and honor/good name must be protected. In this case, the case of the H_2S gas leak that killed and poisoned residents directly demonstrates that corporate actions have violated the principle of protection of life. In Islam, any form of action that endangers human life is forbidden and falls into the category of jarimah. Therefore, Islamic criminal law stipulates that perpetrators must be held accountable for their actions criminally with ta'zir penalties, as a form of protection for the safety of the souls of the people.

b Protection of reason (*hifdh al'aql*) at a certain age, humans will become adults (' *aqil baligh),* at that time the human mind is fully functional (mukallaf) and must be protected. And it is forbidden for anyone, including oneself, to damage someone's mind for any reason. For example, by getting drunk and so on. based on the environmental damage that occurred in Mandailing Natal due to the H_2S gas leak, long-term exposure to toxic substances such as H_2S can disrupt cognitive function and mental health of the affected community. This shows that violations of the environment also threaten the stability and perfection of human reason function, which in Islam must be maintained for the sake of the continuity of morals and knowledge.

c Protection of wealth (*hifdh al-mal*) in ghalibnya, adults must be able to work to accumulate wealth (*al-mal*) so that protection of their wealth must be carried out. This means that anyone for any reason is prohibited from seizing someone's property, or stealing it, and the like. Referring to the impact of pollution and environmental damage from the PT X project, it also resulted in economic losses and damage to agricultural land belonging to the surrounding community.

Within the framework of maqashid sharia, damage to sources of livelihood and property is a form of injustice that is prohibited. Therefore, Islam requires a mechanism for law enforcement and compensation for losses incurred as part of the protection of community property.

d Protection of offspring (*hifdh al-nasab*) is in line with age, it is humans' turn to look for a life partner and form a household life which becomes a means of obtaining offspring (nasab). Therefore, offspring protection must be implemented. Thus, anyone, including himself, for any reason is prohibited from tarnishing someone's lineage. Everyone's reproductive and childbearing rights must be protected. Environmental damage that causes air and land pollution directly or indirectly can disrupt the health of future generations and the quality of life of children. This is related to the principle of preserving human heritage and survival in healthy and decent conditions, which is also the focus of maqashid protection.

e Religious protection (*hifdh al-din*) throughout the entire process of human life requires a religion that must be believed in and practiced as a way of life, a way of life, and a way of life ethics. This means that anyone is prohibited from abandoning their religion and must be protected. Islam stipulates the importance of maintaining the balance of nature as part of obedience to Allah SWT. In Surah Al-A'raf verse 56 and Al-Qasas verse 77, there is an explicit prohibition against acts of destroying the earth. This means that destroying the environment is also a form of disobedience to the teachings of religion, namely Islam. Protecting the environment is thus part of worship and a manifestation of the responsibility of humanity's caliphate on earth. When environmental destruction is carried out in the name of economic interests while ignoring the values of sharia, then the perpetrator has actually violated the religious mandate inherent in every individual Muslim.

Cumulatively, the maqashid principle dictates that criminal responsibility for environmental damage is not merely a matter of technical legal components, but also a matter of upholding justice for the five essential needs of the community. Criminal charges imposed (or conversely, the resulting impunity) on corporations will be assessed as an indicator of the fulfillment or denial of the maqashid. As Farooq (2023) states, environmental destruction implies a "religious violation" because it goes beyond God's mandate to create natural order. (Thoker, 2023).

In the context of protecting and preserving the environment, Yusuf Qardhawi even stated that the application of punishment in the form of imprisonment for perpetrators of environmental destruction determined by the government (*waliy al-amr*), is in line with the punishment contained in the hadith of the Prophet Muhammad (PBUH). (*Perumpamaan Amar Ma'ruf Nahi Munkar - Hidayatullah.Com*, n.d.).

From An-Nu'man bin Bashir ra that the Prophet sallallaahu 'alaihi Wassallam said: "The example of those who uphold the laws of Allah and those who violate them is like a people who are in a ship. So some (passengers) are on top and others below. And the passengers on the bottom when going to get water pass by the passengers on top. And one day said: "If we make a hole in this ship (to get water), maybe it won't bother the people on top. If they just let the person who made the hole in the ship, then everything will be destroyed, but if they are forbidden, then all of them are safe." (Narrated by Bukhari).

In the view of Islamic criminal law, the act of causing environmental damage is considered a crime. The crime of environmental damage is a crime that must be

punished for the perpetrator. Environmental damage or pollution is said to be an unjust act that harms others in the context of the discussion above, in other words, it is an act that is prohibited by Allah SWT. However, the uqubah or punishment for environmental damage or pollution is not mentioned in the text. Therefore, the appropriate punishment for the crime of environmental damage or pollution when viewed from Islamic criminal law is determined by ta'zir punishment. Ta'zir punishment is left entirely to the walliyul amri or judge to apply the punishment according to the severity of the crime committed (Haq, 2020). The Qur'an and al-Sunnah do not specify the form or type of ta'zir, punishment for criminal acts, the government has the authority to decide based on the values of justice and public interest. This definition makes ta'zir have a broad scope, allowing for ijtihad to develop the number and quality of punishments beyond qishash and ḥad punishments (Marsaid, 2020).

The general rule of Islamic criminal law states that only sinful acts, i.e., behavior that is fundamentally prohibited, are subject to punishment or uqubah ta'zir. Contrary to this basic principle, Islamic criminal law permits the use of ta'zir punishment for acts that are not sinful, i.e., acts that are not expressly prohibited if they are for the public good. Because ta'zir punishment is based on certain characteristics, it is impossible to predict in advance which acts and circumstances fall into this category. When these characteristics are present in an act, it is prohibited; when these characteristics are absent, the act is still permitted and is no longer prohibited. Characteristics that harm the public interest or order, as occurred in Mandailing Natal Regency, are used as justification (*illat*) for assessing uqubah. There are two requirements that must be met to demonstrate this characteristic: First, the person has done something that is contrary to the public interest and order. Second, the person is in a condition that endangers public order and interest. The court may not release the perpetrator from punishment if one of these two conditions can be proven, but must impose a ta'zir punishment appropriate to the violation. (Marsaid, 2020).

Uqubah ta'zir is related to Jarimah ta'zir which includes three types, namely as follows; (Irfan & Masyrofah, 2016).

a Hudud or qisas crimes which are confirmed by the Qur'an and hadith, but do not meet the requirements for being sentenced to had or qisas, such as attempted theft, attempted robbery, attempted adultery or attempted murder.

b Crimes that are established by the Qur'an and Hadith, but whose legal basis is not mentioned, are left to the discretion of the authorities (ulil amri), such as fraud, false testimony, gambling, insults, and so on.

c Crimes determined by the government for the benefit of its people, such as traffic regulations, forest protection and so on.

Based on the classification of the above crimes, the act of causing environmental damage is included in the third category of *ta'zir* crimes, namely crimes decided by the government for the benefit and to achieve the goals of Islamic law *(maqasid al shariah)*. In addition, Malikiyah also allows the death penalty as ta'zir for certain crimes, such as espionage and causing damage on earth. This opinion was also put forward by some Hanabilah jurists, such as Imam ibn Uqail (Irfan & Masyrofah, 2016). In the practice of implementing ta'zir, various forms of punishment can be imposed according to the weight of the damage related to it as happened in the case of the H2S

gas leak caused by PT X. A comparative study by Khabib (2023) indicates that perpetrators of pollution in Islam can be subject to ta'zir punishment in the form of imprisonment, flogging, fines, even the death penalty or stoning depending on the level of impact. This means that theoretically, Islam provides severe sanctions to create a deterrent effect for environmental criminals, similar to or even stricter than positive criminal sanctions (Khabib, 2023).

H_2S gas leak caused by PT X, related to corporate actors, the fiqh literature shows fundamental differences with the positive legal system. Ashour & Wahab (2016) assert that " *Islamic jurisprudence* does not explicitly recognize corporate bodies or their criminal responsibility" because it classically only targets humans as criminals. Two opinions have emerged: one side states that because corporations do not have reason (*'aql*) or will (*irâdah*), they cannot be punished personally; responsibility must be imposed on the individual who controls or founded the body. The second view asserts that Islam fundamentally does not recognize corporations as subjects of criminal law, so the concept of responsibility as "property rights" (*al-tamlik*) is used and corporations are treated as extensions of the individuals within them (Ashour & Wahab, 2016). In essence, normatively only people (insan) can be made subjects of criminal punishment. This differs from Indonesian law which allows corporations (legal entities) to be subject to criminal penalties.

Thus, the principle of maqâṣid places environmental care as a means of achieving *hifz al-nafs, hifz al-mal* , and *hifz al-'aql* , so that environmental damage is tantamount to disrupting the survival of the soul, property, and reason of the people (Thoker, 2023). Therefore, the environmental crime that occurred in Mandailing Natal Regency due to the H2S gas leak is not only a matter of violating sharia, but also a threat to the objectives of sharia (general maṣlaḥah) that must be prevented. On this basis, Islam demands criminal sanctions (ta'zīr) to uphold ecological justice, although the interpretation of the details is given to ulil amri (rulers) (Nurdin, 2010)..

CONCLUSION

Based on the research results, it can be concluded that criminal liability for environmental crimes in Mandailing Natal Regency committed by PT X indicates weak law enforcement against perpetrators of environmental crimes, especially corporations. Although the national legal framework such as Law No. 32 of 2009 in conjunction with Law No. 6 of 2023 has regulated prohibitions and criminal threats and fines for environmental damage and pollution, its implementation in this case has not been optimal. Even though the elements of the crime as regulated in Articles 98 and 99 of the PPLH Law have been fulfilled, including the consequences of death and environmental pollution. Law enforcement against corporations as subjects of criminal law still faces structural and normative obstacles that result in impunity and ongoing harm to society and the environment.

From the perspective of Islamic criminal law, environmental destruction such as the case of PT X is categorized as ta'zir crime, which is a serious crime because it violates the principles of maqāṣid al-syarī'ah, especially the protection of life (*ḥifẓ al-nafs*), property (*ḥifẓ al-māl*), reason (*ḥifẓ al-'aql*), and descendants (*ḥifẓ al-nasab*). Islam strictly prohibits environmental destruction as stated in QS. Ar-Rum verse 41, and gives the authority to the authorities to determine appropriate ta'zir punishment. The Islamic legal approach places environmental crimes not only as a violation of the law,

but also as a sin and a heavy moral responsibility before Allah SWT. as well as a form of injustice that endangers the public welfare. Therefore, ta'zir punishment can be imposed on perpetrators of environmental destruction by state authorities in the form of proportional sanctions, including fines, imprisonment, or even severe punishment if the impact is very widespread. Thus, synergy between national criminal law and Islamic criminal law can strengthen efforts to protect the environment more justly and sustainably.

Based on these findings, it is recommended that the government and law enforcement officials strengthen the implementation of environmental criminal law, particularly regarding corporate criminal liability. Legal mechanisms must be enforced firmly and transparently to create a deterrent effect and restore the rights of affected communities. Furthermore, the value approach in Islamic law should serve as a reference in building collective awareness of the importance of preserving the environment as a divine mandate. Harmonization between positive law and Islamic law needs to be continuously developed so that the law enforcement process is not merely formalistic but also based on the principles of substantial justice and the welfare of the community

BIBLIOGRAPHY

Ali, M. (2020). *Hukum Pidana Lingkungan*. RajaGrafindo Persada.

Ashour, A. J., & Wahab, H. A. (2016). Criminal Liability of Corporate Bodies for Polluting the Environment: Sharia and Law Perspectives. *International Journal of Management and Applied Science*, *2*(9), 222–227.

Asy-Syatibi, I. (2000). *Al-Muwafaqat fi Usul al-Syari'ah*. Dar Ibn 'Affan.

Dewata, M. F. N., & Achmad, Y. (2020). *Dualisme Penelitian Hukum Normatif & Empiris*. Pustaka Pelajar.

Down to Earth. (2005). *Buyat Bay: The Struggle for Justice Continues.* https://www.downtoearth-indonesia.org/

Erwin, M. (2019). *Hukum Lingkungan Sistem Kebijaksanaan Lingkungan Hidup (Edisi Revisi)*. Refika Aditama.

Faisal. (2021). *Hukum Pidana dalam Dinamika Asas, Teori, dan Pendapat Ahli Pidana* (Toni, Ed.). Kencana.

Haq, I. (2020). *Fiqh Jinayah*. IAIAN Parepare Nusantara Press.

Hermanto, A. (2021). *Fikih Ekologi*. Literasi Nusantara Abadi.

Hydrogen Sulfide - Overview | Occupational Safety and Health Administration. (n.d.). Retrieved April 30, 2025, from https://www.osha.gov/hydrogen-sulfide

Irfan, N., & Masyrofah. (2016). Fiqih Jinayah. In *Amzah* (Vol. 5, Issue 1).

Kebakaran Hutan dan Lahan, Menolak Lupa terhadap Kejahatan Korporasi | WALHI. (n.d.). Retrieved May 23, 2025, from https://www.walhi.or.id/kebakaran-hutan-dan-lahan-menolak-lupa-terhadap-kejahatan-korporasi

Kebocoran gas Sorik Marapi di Mandailing Natal kembali terulang - "Ini bukan lagi kelalaian sistem, tapi kejahatan kemanusiaan." (2024). BBC News Indonesia. https://www.bbc.com/indonesia/articles/c2l7wnjk2pqo

Khabib, M. (2023). *Sanksi Pelaku Pencemaran Lingkungan Hidup (Studi Komparatif Menurut UU No.32/2009 dan Fiqh Islam)*.

Kusuma, D. P. R. W., Yanuari, F. S., & Pratama, R. I. F. (2022). Urgensi Integrasi Biaya Pemulihan Lingkungan Dalam Tindak Pidana Lingkungan Hidup Melalui Sanksi Pidana Denda. *Jurnal Hukum Lingkungan Indonesia*, *8*(2), 287–309. https://doi.org/10.38011/jhli.v8i2.413

Marsaid. (2020). Al-Fiqh Al-Jinayah (Hukum Pidana Islam) Memahami Tindak Pidana Dalam Hukum Islam. In *Rafah Press*.

Muhaimin. (2020). Pemahaman Metode Penelitian Hukum. In *Mataram University Press*.

Nafisah, M. (2018). Alquran Dan Konservasi Lingkungan (Suatu Pendekatan Maqashid al-Shari'ah). *AL QUDS : Jurnal Studi Alquran Dan Hadis*, *2*(1), 1. https://doi.org/10.29240/alquds.v2i1.405

Nugroho Rahmat Muhajir & Agus Setiadi. (2018). *Paradigma Keadilan Substantif dalam Perumusan Norma Baru* (A. C, Ed.; Issue 1). CV. Global Press.

Nurdin. (2010). *Kajian tentang Pencemaran Lingkungan dalam Fiqih Jinayah*.

Perumpamaan Amar Ma'ruf Nahi Munkar - Hidayatullah.com. (n.d.). Retrieved April 27, 2025, from https://hidayatullah.com/kajian/hadits-harian/2016/01/02/86636/perumpamaan-amar-maruf-nahi-munkar.html

Putusan MA No. 1554 K/Pid.Sus/2015 (2015).

Sentoso, G. G. (2023). Problematika Pemenuhan Kepatuhan Hukum Pengelolaan Limbah B3 pada Industri Kabel Listrik (Studi Industri PT "X" di Kota Bandung) Problems In Hazardous Waste Management Law Compliance On Electric Wire Industry (Pt "X" Industry Study In Bandung). *Bina Hukum Lingkungan*, *8, Nomor 1*, 53–67. https://doi.org/https://doi.org/10.24970/bhl.v8i1.241

Sood, M. (2019). *Hukum Lingkungan Indonesia*. Sinar Grafika.

Statistik, D. K. S. (2025). *Laporan Statistik Kriminal - 2024 - Report | Indonesia Data*. Badan Pusat Statistik. https://indonesiadata.id/reports/laporan-statistik-kriminal---2024

Thoker, I. F. (2023). Environmental Ethics from the Perspective of Maqasid al-Shariah. *International Journal of Emerging Technologies and Innovative Research*, *10*(8), 362–367.

(UNEP)., U. N. E. P. (2013). *Citarum River: Case Study in Industrial Pollution.*

UU No. 6 Tahun 2023. (2023, March). 2023. https://peraturan.bpk.go.id/Details/246523/uu-no-6-tahun-2023

Wahyuni, F. (2018). *Hukum Pidana Islam Aktualisasi Nilai-Nilai Hukum Pidana Islam dalam Pembaharuan Hukum Pidana Indonesia*. PT Persada Utama.

Waluyo, B. (2011). *Viktimologi Perlindungan Korban dan Saksi*. Sinar Grafika.

Wicaksono, R. A. (2024). *Betahita | H2S Bocor Lagi, NGO: Setop Operasi Geothermal PT SMGP*. BETAHITA.ID. https://betahita.id/news/detail/9940/h2s-bocor-lagi-ngo-setop-operasi-geothermal-pt-smgp.html?v=1708734169.

Widodo, W. (2023). *Hukum Lingkungan*. Damera Press.

Yafie, A. (2006). *Merintis Fiqh Lingkungan Hidup*. Yayasan Amanah.