

Criminal Sanctions as a Last Resort in Environmental Law Enforcement: A Study of Mining Pollution in Palu and Donggala

Titie Yustisia Lestari¹, Dewi Kemala Sari², Hasnawati³

¹Faculty of Law, Universitas Tadulako, Palu, Indonesia

²Faculty of Law, Universitas Tadulako, Palu, Indonesia

³Faculty of Law, Universitas Tadulako, Palu, Indonesia

✉Corresponding email: dewikemalasari1312@gmail.com

History of Article

Submitted : August 01, 2024

Revised : January 10, 2025

Accepted : March 23, 2025

Published : June 11, 2025

DOI : <https://doi.org/10.37253/jjr.v27i1.9785>

Copyright© 2025 by Author(s). This work is licensed under a Creative Commons Attribution-Non Commercial-Share Alike 4.0 International License. All writings published in this journal are personal views of the authors and do not represent the views of this journal and the author's affiliated institutions.

Abstract

Environmental pollution from mining activities in Indonesia, particularly in Palu City and Donggala Regency, presents complex legal challenges as the country strives to enforce environmental protection laws effectively. The core legal issue addressed in this research is the insufficient implementation of criminal sanctions despite the evident environmental degradation caused by licensed mining operations, which often only receive administrative sanctions without achieving deterrence or restoration. This study aims to examine the enforcement of criminal sanctions as a legal mechanism to strengthen environmental law in Indonesia. Utilizing an empirical legal research method through field observations and direct interviews, the research captures the realities of environmental law enforcement in Palu City and Donggala Regency. The findings reveal that although Indonesia's environmental laws provide clear provisions for imposing criminal sanctions on polluters, the practical application remains limited due to administrative hurdles, lack of coordination between central and local governments, and the prioritization of economic interests over environmental protection. However, imposing criminal sanctions is imperative to ensure corporate accountability, prevent further ecological damage, and encourage compliance with environmental quality standards. This study highlights the urgency of positioning criminal sanctions not merely as ultimum remedium but as an integral part of a proactive enforcement strategy, thereby fostering sustainable development while safeguarding environmental integrity. The insights from this research are intended to guide policymakers, law enforcers, and environmental advocates in improving the effectiveness of environmental criminal law enforcement in Indonesia, ensuring a balanced approach between economic growth and environmental sustainability.

Keywords: Environmental Law; Criminal Sanctions; Pollution; Mining; Law Enforcement

Introduction

Central Sulawesi Province, often known as Central Sulawesi, is a province located in the central region of Sulawesi Island, Indonesia. Palu City serves as the provincial capital. The land area measures 61,841.29 square kilometres, and the population stands at 2,985,734 as of 2020. Central Sulawesi boasts the greatest land area among all provinces on Sulawesi Island and is the second most populous province on the island, following South Sulawesi. Central Sulawesi is situated in the central region of Sulawesi Island, which is part of Indonesia.

The area is considered very strategic, so the Central Sulawesi region, especially Palu City, is one of the areas selected as an Exclusive Economic Zone (ZEE), the first area designated by the Government as an integrated logistics center and processing industry in the Sulawesi economic corridor. Based on these data, it is not wrong if Palu City is the target of investment by domestic or foreign investors to be able to invest and open business opportunities in Palu; this is supported by the increasing number of national companies that obtain business licenses in various economic, business, mining and industrial sectors. One of them that gets attention with business permits is the impact of environmental pollution resulting from different development sectors. Environmental issues such as deforestation, land degradation, ozone layer depletion, global warming, oil spills in the sea, chemical-induced fish mortality in creeks, and species extinction are prevalent (<https://sultengprov.go.id/2023>).

The disparities in environmental issues mentioned above are evident in Law Number 32 of 2009, which pertains to Environmental Protection and Management (UUPPLH). This is elucidated in Article 1, paragraph (14), which provides the definition of environmental contamination.

Environmental pollution is the entry or inclusion of living things, substances, energy, and/or other components into the environment by human activities to exceed established environmental quality standards.

The regulation of environmental devastation is outlined in Article 1, paragraph (16), which provides a knowledge of the matter as stated:

Environmental destruction is the action of people who cause direct or indirect changes to the physical, chemical, and/or biological properties of the environment to exceed the standard criteria for environmental damage.

The living environment encompasses the spatial integration of all entities, such as objects, forces, situations, and organisms, including humans and their actions, that impact the natural world, the preservation of life, and the welfare of both humans and other living beings. (Pasal 1 UUPLH) Environmental degradation and contamination instill dread in humans. It is well acknowledged that environmental contamination can damage nature's potential to sustain human survival.

The recognition of the potential environmental issues that might greatly impact the conservation of nature and human well-being highlights the importance of implementing legal measures to address ecological concerns (Topan, 2018). Central Sulawesi is experiencing multiple instances of pollution. Specifically, there is air and water pollution in mining sites located in Donggala Regency, water pollution in gold mining areas in Petobo, and marine pollution at Morowali.

Articles 97-120 of Law Number 32 of 2009 govern the criminal provisions. Based on these provisions, many conclusions can be drawn: Firstly, this statute defines criminal conduct as offenses. Furthermore, the duration of incarceration and the number of fines differ greatly, with the maximum sentence ranging from 1 year to 15 years, and the penalties ranging from Rp.500,000,000.00 to Rp.15,000,000,000.00 (Marlinus, 2021)

Indonesia is facing a significant issue of environmental pollution, particularly pollution generated by human activities, companies, and corporations. However, the lack of effective law enforcement in handling ecological pollution cases is hindering the implementation of appropriate legal measures and sanctions.

The research was taken in the Palu City and Donggala Regency areas, where Palu City and Donggala Regency have natural wealth and strategic areas

that play a very important role in supporting the development of the National Capital Region (IKN) in the East Kalimantan region as suppliers of material needs such as sand, gravel, and stone for the construction of IKN infrastructure. Mining products in the form of excavation are an entry into the Central Sulawesi regional financial budget. These mining products are marketed to the eastern regions of Indonesia, including Kalimantan and Papua.

There are many complaints from the public regarding the presence of mining business permits, especially the C excavations, which stretch around the Watusampu area and enter the Loli, Tipo, and surrounding areas. Companies that have permits can minimize the impacts of pollution. To carry out criminal penalties against corporations or companies, according to UUPLH Article 98,:

- (1) Every person who intentionally commits an act that results in exceeding the ambient air quality standards, water quality standards, seawater quality standards, or environmental damage standard criteria shall be punished by imprisonment for a minimum of 3 (three) years and a maximum of 10 (ten) years and a fine of at least IDR 3,000,000,000.00 (three billion rupiah) and a maximum of IDR 10,000,000,000.00 (ten billion rupiah).
- (2) If the act as intended in paragraph (1) results in injury to a person and/or endangers human health, he shall be punished with imprisonment for a minimum of 4 (four) years and a maximum of 12 (twelve) years and a fine of at least Rp. 4,000,000.00 (four billion rupiah) and a maximum of IDR 12,000,000,000.00 (twelve billion rupiah).
- (3) If the act as referred to in paragraph (1) results in serious injury or death to a person, he shall be punished with imprisonment for a minimum of 5 (five) years and a maximum of 15 (fifteen) years and a fine of at least IDR 5,000,000,000.00 (five billion rupiahs) and a maximum of IDR 15,000,000,000.00 (fifteen billion rupiahs).

Environmental service statement stating that criminal sanctions will be applied if actions occur that can result in injury, health hazards, or death to the community. So far, if pollution occurs, then the responsibility is given to the company, as regulated in Article 54 UUPLH:

- (1) Every person who pollutes and damages the environment is obliged to restore the function of the environment.
- (2) Restoration of environmental functions as intended in paragraph (1) is carried out in stages:
 - A. permitting sources of contamination and cleaning up polluting elements;
 - B. recovery.
 - C. rehabilitation.
 - D. restoration; and/or. other ways that align with developments in science and technology.
- (3) Further provisions regarding procedures for restoring environmental functions as intended in paragraph (2) are regulated in government regulations.

The author believes that the existence of responsibilities given to companies cannot guarantee that these responsibilities will not harm environmental pollution. Therefore, criminal law is expected to become one of Indonesia's most important and prioritized efforts to enforce environmental law.

The author outlines the problem statement as follows: How are criminal sanctions applied to address environmental pollution in the Palu City and Donggala Regency areas, with the aim of enforcing environmental laws in Indonesia?

This research aims to examine the enforcement of criminal penalties for environmental pollution in Palu city and Donggala district. The research conducted by Arum Rindani and Erwin Syahrudin on the Enforcement of Legal Sanctions for Industrial Actors Polluting the Environment (Case of PT. Pertamina Hulu Energi on Oil Spills in Karawang Waters), I Made Della Dwi Angga Saputra, Anak Agung Sagung Laksmi Dewi, and Luh Putu Suryani on Criminal Sanctions for Environmental Pollution by Screen Printing and Dyeing Waste in Denpasar City, and I Komang Agus Edi Suryawan, I Nyoman Gede Sugiarta, and I Nyoman Utama on Criminal Liability for Environmental Pollution in Indonesia, can be used as references to understand how environmental pollution is addressed in the Palu and Donggala regions. This

research seeks to address the existing knowledge gap by investigating the management of environmental pollution in these regions, which have not been previously studied, and assessing the utilization of criminal penalties in instances of environmental pollution. The research findings are deemed innovative and can provide significant insights for other researchers investigating environmental degradation in the Palu and Donggala regions.

Research Method

This research is empirical, meaning it is derived from firsthand experience, observations based on field data, and information gathered from direct interviews with many sources and agencies relevant to this research. The study was carried out in Palu City and Donggala Regency. The researchers selected Palu City and Donggala Regency as the research sites due to their proximity in Central Sulawesi. Palu City serves as the administrative center of the province, whereas Donggala is a region known for its extensive mining operations, particularly in rock excavation. This abundance of mining activity facilitates researchers in gathering data for their study purposes.

This study is empirical, meaning that it is based on firsthand experience, observations derived from field data, and information gathered through direct interviews with numerous sources and agencies relevant to this study. It employs a qualitative research technique employing the inductive method. The research method is emphasized, and the theoretical foundation is utilized to ensure that the research emphasis aligns with the data in the field. Furthermore, the theoretical foundation is valuable for offering a comprehensive understanding of the research context and serving as content for analysing research findings.

Results and Discussions

Environmental Pollution in Palu City and Donggala Regency

Prosecutors Enter Schools (JMS) is one of the programs implemented by the Prosecutor's Intelligence Section and is programmed directly in schools in the

prosecutor's office area (Maeyangsari et al, 2024). Prosecutors Enter School is one of the programs implemented by the Prosecutor's Office Intelligence Section and is programmed directly in schools in the district attorney's office (Maeyangsari et al, 2024). program implemented based on the Decree of the Attorney General of the Republic of Indonesia Number: KEP-184/A/JA/11/2015 to support the national character revolution in Indonesia. The goal of JMS is to provide legal counseling and information to students. JMS focuses on introducing students to the law so that students can avoid actions that constitute violations of the law. Indicators of legal effectiveness mean the achievement of targets or objectives that have been set, namely a measurement where a target has been achieved in accordance with what was planned.

Mining activities can be seen along the Watusampu road entering the Donggala area, the many activities of mining companies that carry out exploitation and exploration activities of quarry c. This has an impact on air conditions and also roads full of flying dust on company activities, as well as people living around the mining area or residents who cross to the Donggala area.

Currently, the Donggala Regency area has 34 mining business permits that have been issued in recent years. However, only about 27 active companies are still operating in mining activities. Environmental damage occurs mainly in mining and group excavations in the form of sand, stone, and soil. It can cause landslides and floods, and it can damage highways, bridges, dams, and others (Hamzah, 2008)

According to Kartosudjono, the mining process is one of the links in the chain of mining activities that serves to provide raw materials. For these activities to be guaranteed to be sustainable, they must be appropriately handled and systematically because mining excavated materials from the bowels of the earth, both from land and sea, should not damage the environment of the mined area with the aim of enhancing the overall well-being and prosperity of mankind (Hermansyah, 1999)

The government has implemented a policy allowing the utilization of natural resources as capital for development, with the goal of achieving the nation's welfare indefinitely. In reality, our development needs to pay more

attention to the basic concepts mentioned above. Hence, the result is damage to Land Resources (SDL) and natural disasters such as decreased land productivity, floods in the rainy season, drought in the dry season, erosion and sedimentation, landslides, abrasion, salt intrusion, pollution and water enrichment, subsidence, very low acidity, and character challenging to recover (irreversible). From this fact, there is an imbalance between the utilization aspect and the SDL preservation aspect (Haridjaja, 2008)

Derived from the outcomes of the author's interview with Mrs. Nirmala The head of Donggala Environmental Control and Damage stated that mining business permits, especially excavation c in the Donggala area, have met the requirements as stipulated in the UULH, according to the source of damage that occurs to water, air, and land in accordance with the Environmental Quality Index (IKLH) standards as for pollution that often occurs in mining areas, namely air where ash/road dust due to the large number of mining company trucks passing by, causing inconvenience to the community around the mine but also motorists passing through the Palu-Donggala axis road.

The suspected light environmental pollution that occurs in Donggala is estimated to be in 4 (four) river areas; this is due to activities carried out by several agencies such as the agriculture office and health office) According to the source, there are several activities of the agency causing river pollution, namely fertilizer waste and also hospital or health center garbage where the agency makes no garbage collection or waste disposal. However, this can be handled by the environmental agency.

Once the water cycle is disrupted or damaged, the system will not function as a result of industrial waste, forest destruction, or other things that disrupt or damage the system. Industrial waste discharged into the river will cause pollution of the river and environmental pollution. According to article 1 number 14 of Law No. 32 of 2009 on Environmental Protection and Management, environmental pollution refers to the introduction or inclusion of living organisms, substances, energy, or other elements into the environment through human activities, resulting in the violation of predetermined environmental quality standards (Rindani & Syahrudin, 2022).

The Indonesian territory is currently witnessing an abundance of human activities, particularly after regional autonomy. These activities are driven by a fierce competition to gain control over natural resources for personal gain and the collective benefit of certain groups. Unfortunately, little consideration is given to the potential negative consequences that both present and future generations may face as a result. If that is the case, it is crucial to regulate the governing role of the criminal system. The legislation of punishment for environmental crimes seeks to educate the public, enterprises, and the Government about the repercussions of ethical transgressions resulting from banned acts towards the environment. Additionally, it serves to prevent and discourage potential individuals from engaging in reckless and harmful behaviors towards the environment (Agus Edi Suryawan et al., 2021)

The management and utilization of rock excavated materials in Donggala Regency, especially in Banawa District, carried out by 27 active companies, has factually produced two impacts, namely: (1) positive impacts and (2) negative impacts. The positive impact is for the Donggala government to get regional revenue in the form of taxes that the company must pay; the negative impact for the Donggala government has been environmental destruction and pollution. The negative impact on the community is the outbreak of several diseases, including, in fact, namely ARI and lung disease. This can be proven if you go to Donggala using a vehicle, and if you don't use a mask, it will cause humans to breathe air or breathe very hard. How about people who live for 24 hours? Why? This is because the dust dredged by heavy equipment is flying around the mining area in question. Hence, it is imperative for the Donggala Regency Government to prioritize sustainable development and embrace the principles of green economic development. Environmental management is vital in a green economy so that humans do not make the environment as free materials and as objects of development, so a conservation approach is needed (Supriadi et al., 2020)

The mining operations in Palu City are situated along the Silae-Watusampu axis road. Comparable circumstances are likewise observed in the Donggala Regency region. In addition to excavation work, there is gold management mining taking place in the Petobo area, currently operated by PT Citra Palu

Minerals (CPM). PT Citra Palu Minerals (PT CPM) is a business with limited liability that was formed in accordance with the laws of the Republic of Indonesia as part of Foreign Direct Investment (PMA). PT CPM holds the Generation VI Contract of Work (KK) for general mining of metallic minerals. This contract was signed by the Minister of Mines and Energy on behalf of the Government of the Republic of Indonesia on April 28, 1997. It was approved by the President of the Republic of Indonesia based on the Presidential Approval Number B.143/Pres/3/1997, dated March 17, 1997 (<https://www.linkedin.com/company/pt-citra-palu-mineral/about/>)

Regarding the implementation of gold mining management in Petobo, the author has yet to receive information regarding the impact of pollution that occurs. Some time ago, the writing team interviewed the Palu City environmental office staff. The team met and stated that PT CPM is suspected of having polluted the Palu City River. However, related to these allegations, the actions the Palu city government has taken regarding the alleged pollution have yet to be conveyed further (Interview with Mr. Amran Isnauna, SE, Head of Sub Personnel and General Affairs of the Environmental Office of Palu City)

The management and utilization of rock excavated materials in Donggala Regency and Palu City are damaging or not to the environment depending entirely on the local Government, which has provided recommendations to the company in conducting its supervision. This supervision issue is significant for the management and utilization of the mining of excavated rock materials because it is related to the safety of the environment and other creatures, including humans. Because of the mining of rock excavated materials, in activities, excavated materials contained in the hill will leave excavated materials in the form of gaping puddles or holes, which is very dangerous to other creatures. Mining laws and regulations have anticipated it by requiring managers and users of rock-excavated mining materials to carry out reclamation. The regulations pertaining to this reclamation are governed by Article 99 of Law Number 4 of 2009 on Mining, which stipulates that:

- (1) Each holder of a mining business license (IUP) and a special mining business license (IUPK) must submit a reclamation plan and post-

mining plan when applying for a production operation IPU or production operation IUPK.

- (2) The implementation of reclamation and post-mining activities is carried out in accordance with the designation of post-mining land.
- (3) The allocation of post-mining land, as referred to in paragraph (2), is included in the land use agreement between IUP or IUPK holders and land rights holders.

The regulations stipulated in Article 99 of Law Number 4 of 2009 pertain to the obligations imposed on holders of mining business licenses to develop reclamation and post-mining plans. Hence, companies that oversee and exploit the mining of these excavated rock resources have a legal duty to develop reclamation plans and carry out post-mining activities. If this requirement is not met, then the permit granted to collect and use rock excavation materials will experience obstacles or not be issued a permit. Thus, if it is related to the mining activities of rock excavation materials in Donggala Regency, especially those in Banawa District, the question is whether this requirement has been evaluated and the attitude of the Donggala Regency government. This reclamation issue, if strictly assessed, will not cause landslides from the top of the hill to the bottom of the sea and close the Palu-Donggala axis road (Supriadi et al., 2020)

In the opinion of Mr. Saprudin, Head of Environmental Management of the Donggala Regency Environmental Office, said that from now on, granting mining business licenses through the Central Government so that the regions do not have any authority in granting mining permits, as well as complementary documents in applying for business licenses which are currently called Business Permits. The local Government only coordinates with the central Government when the business permit approval has been approved; it will be reported to the region to see whether the spatial arrangement of the mining area is appropriate and can be used as a mining area or not.

Rock excavation and mining activities are businesses or activities that are not separated from the environment and have the potential for pollution and destruction of them. The Government must adhere to environmental permit regulations to regulate and oversee firms involved in the management and

exploitation of natural resources under its jurisdiction. Because without an environmental permit given to a person or legal entity, the company or activity concerned is not legal or invalid. Therefore, permits are a determinant of good or bad, a company or activity related to natural resources in the area.

Upon receiving a business license from the Central Government, the region's responsibility is limited to overseeing the progress of mining operations. If there is environmental pollution that occurs in the mining activity, DLH Donggala evaluates and takes samples of water, air, and soil that are suspected of being polluted. A lab test will be carried out to determine whether the sample exceeds the IKLH standard threshold. Suppose based on the laboratory results, it is declared to exceed the legal threshold. In that case, companies that are polluting the environment will be lettered and followed up on the steps that the company must take to handle the pollution.

Suppose the company defaults from the responsibility of the relevant agency to carry out a written reprimand addressed to the company. In that case, there must be a follow-up of the company's commitment to environmental pollution resulting from mining activities. Companies that do not carry out a letter of reprimand from the service up to 3 (three) times then the steps taken by the agency by suspending mining activities carried out by the company until the handling of pollution is completed correctly.

So far, according to sources, there has been no impact of heavy environmental pollution in the Donggala area, so no mining company has revoked its business license. The objective of environmental initiatives in the region is rooted in the principle of conserving natural resources and enhancing environmental quality. Based on these principles, the goals of initiatives aimed at addressing environmental consequences can be delineated, specifically:

1. The preservation of environmental functions to enhance the ability of ecosystems to support and sustain ecological activities.
2. Control and control of pollution that has been and is expected to occur.
3. Enhance the environmental condition by repairing the harm, enabling it to regain its intended functionality.

4. Enhanced data on the abundance and excellence of natural resources, with the extent of ecological harm and the capacity of nature to sustain life.
5. Enhance the caliber of institutions, human capital, and community engagement(Averus & Pitono, 2013)

Pak Damin, the Secretary of the Donggala Regency Council, has indicated that the regency receives an annual income of Rp. 150,000,000 (one hundred fifty million rupiah) from a 6% (six percent) tax on mining activities. However, given the abundance of mining permits in the Donggala area, additional sources of income are required for the region. This also applies to the regions that have not yet received the benefits and impacts that contribute to the development of the district. The determination of taxes in these areas is based on the decision made by the Council Meeting and is enforced by the Regent.

Regarding the impact of pollution asked by the research team, according to his presentation, for pollution from the council, he has yet to receive information from the relevant agencies or the community who came to the council and took direct action from the Regent as the regional leader. So far, pollution management and environmental enforcement have been handled well by the environmental agency and related agencies.

The constraints that the region feels are that the Central Government issues mining permits, but if there is pollution, the one responsible for handling it is the district or area where the mining permit area is located. While the corporation bears the financial burden of pollution mitigation, the consequences of pollution are experienced directly by the region.

This aligns with the local governments' regulations on environmental governance, which encompass mandatory government matters unrelated to critical services. The Government focuses on managing natural riches, which mostly consists of energy and mineral resources, through various governmental initiatives. According to Article 63 paragraph (3) of Law Number 32 of 2009, district/city local administrations have specific responsibilities and powers concerning the environment which are:

In environmental protection and management, the district/city government has the duty and authority: a. to establish district/city level policies; b. develop and implement district-level Strategic Environmental Assessments (KLHS); c. establish and enforce policies regarding the district/city Environmental Protection and Management Plan (RPPLH); d. develop and implement policies regarding Amdal and Environmental Management Efforts (UKL) and Environmental Monitoring Efforts (UPL); e. conducting an inventory of natural resources and greenhouse gas emissions at the district/city level; f. developing and implementing cooperation and partnerships; g. develop and apply environmental instruments; h. facilitate dispute resolution; i. conduct guidance and supervision of the activities of the person in charge of the business and/or activities against the provisions of environmental regulations and laws and regulations; j. implement minimum service standards; k. carry out obligations regarding procedures for recognizing the existence of indigenous peoples, local wisdom, and customary law community rights related to environmental protection and management at the district/city level; l. managing ecological information at the district/city level; m. develop and implement environmental information system policies at the district/city level; n. provide education, training, coaching, and rewards; o. issue ecological permits at the district/city level; p. Conduct environmental law enforcement at the district/city level.

Application of Criminal Sanctions as an Effort to Enforce Law for Environmental Pollution in Indonesia

Environmental degradation has become an increasingly pressing global concern, prompting many countries to enact stringent laws and regulations aimed at protecting natural resources and safeguarding public health. However, the enforcement of these environmental criminal laws has remained a significant challenge, owing to the complex and transnational nature of environmental crimes.

To promote environmental protection and legislate punishment, many developed and developing countries have included environmental crimes within their criminal justice systems (Dinh & Nguyen, 2020). This is a positive step, as it recognizes the severity of environmental offenses and the need for robust legal mechanisms to address them. However, the enforcement of these laws has been hampered by various obstacles, including a lack of coordination between stakeholders, inconsistent policies, and insufficient resources for effective implementation (Sonjaya et al., 2020).

To address these challenges, a more comprehensive and coordinated approach to environmental law enforcement is urgently needed (Bajrektarević, 2020). This would involve the development of a clear and internationally enforceable definition of environmental crime, as well as the implementation of robust policy instruments and legal frameworks at the supranational, national, and subnational levels (Bajrektarević, 2020).

Furthermore, the enforcement of environmental criminal laws must be integrated with broader sustainable development strategies, ensuring that environmental protection is not viewed in isolation but rather as an integral component of a holistic approach to economic, social, and ecological well-being (Dinh & Nguyen, 2020).

Developing a clear and internationally enforceable definition of environmental crime is crucial for ensuring consistent and effective enforcement across different jurisdictions. Environmental crimes can take many forms, from illegal logging and poaching to the dumping of hazardous waste and the release of toxic pollutants. By establishing a common understanding of what constitutes an environmental crime, countries can align their laws and regulations, facilitating cross-border cooperation and joint investigations. (Lirëza & Koçi, 2023)

In addition to a clear legal framework, enhancing international cooperation and capacity building are essential for strengthening the enforcement of environmental criminal laws. This may involve the establishment of specialized task forces, the sharing of intelligence and best practices, and the provision of training and resources to law enforcement agencies and judicial systems.

Furthermore, the implementation of robust policy instruments and legal frameworks at multiple levels of governance is essential. At the supranational level, international agreements and treaties can provide a overarching framework for environmental protection, setting the stage for harmonized national and subnational laws. At the national level, comprehensive environmental legislation can empower enforcement agencies with the necessary tools and resources to investigate, prosecute, and punish environmental offenders. At the subnational level, local policies and regulations can address specific environmental challenges and enable community-driven enforcement efforts (Johnson et al., 2023). By adopting a multilayered and collaborative approach to environmental law enforcement, countries can more effectively combat the complex and transnational nature of environmental crimes. The enforcement of environmental criminal laws is a crucial component of global efforts to address the environmental crisis. While significant progress has been made in recent years, much more remains to be done to ensure that environmental protection is prioritized and that offenders are held accountable for their actions.

The expansion of residential, industrial, or plantation regions frequently neglects environmental sustainability and prioritizes solely economic gains. Moreover, ecological mismanagement can arise from diverse variables like educational attainment, financial constraints, lifestyle choices, inadequacies in the legal framework, and insufficient oversight of environmental governance, leading to environmental pollution and degradation. Nevertheless, there is currently a lack of effective legal measures against perpetrators of ecological contamination (Herlina, 2015)

An act is considered to have violated the law and can be subjected to criminal penalties if it satisfies two requirements, namely the presence of *actus reus* or the essential physical element of the crime, and *mens rea*, which refers to the mental state or attitude. Zainal Abidin Farid asserted that *actus reus* is a component of subtlety, whereas *mens rea* encompasses the accountability of the perpetrator (Siswanto, 2005)

According to a statement from Mr. Irfan from the Environment Office of Sul-Teng Province, stated that so many business permits in the mining sector in

the Central Sulawesi region have not had any impact on pollution, especially in the Palu and Donggala City areas, because according to the source, adding that if there is pollution in the district area, the district environmental office that will handle it will then be reported to the Provincial DLH to be said to the central ministry.

The purpose of resolving environmental issues through administrative legal instruments is to compel activities or omissions that breach the law or fail to satisfy the necessary standards to cease or be restored to their previous state prior to the violation. Administrative sanctions primarily target the action itself, whereas criminal punishments primarily target the individual responsible for the action (i.e., the offender). Furthermore, criminal law consequences are not solely directed towards individuals who are already engaged in illegal activities, but also towards those who possess the capacity to become involved in such activities (offenders) (Santoso, 2001)

Administrative law that functions as a norm, the Government or local Government plays a role in making regulations related to the interests of the Government or local Government. The supervisory role is a crucial tool as it pertains to the power of the Government and local authorities to impose administrative penalties on individuals or entities that fail to meet all specified requirements. Therefore, Philipus M. Hadjon et al. say that "the nature of administrative sanctions is repair, meaning restoring to its original state (M. Hadjon, 2016)

Law No. 32 of 2009 provides strict limits on criminal acts or acts that can be criminalized, and criminal acts in this law are referred to as crimes. What acts can be punished are regulated explicitly in Law No. 32 of 2009, making it easier for investigators to carry out their investigative actions. Furthermore, it addresses criminal responsibility, substantive offenses, and procedural offenses, encompassing both negligence and intentionality, as well as the nature and severity of the punishment imposed for violations of ambient air quality standards or criteria for environmental harm. The prior legislation incorporated provisions about the ramifications of pollution and ecological harm. The legal ramifications of these two laws are identical, as both pertain to surpassing quality

standards and standard criteria for ecological harm, which encompasses pollution and environmental damage (Marlinus, 2021)

According to criminal law theory, there is a viewpoint that argues that imposing criminal penalties is the most effective way to punish those who commit environmental crimes. This perspective is grounded in the belief that it is the responsibility of the government to regulate environmental practices by enforcing administrative sanctions. Administrative action refers to the process of granting or denying authorization by an authorized agency or organization. In cases of infringement, administrative sanctions will be enforced. (Danusaputro, 2011) After administrative sanctions, civil sanctions will be imposed in the form of payment of fines or compensation for material violations. Meanwhile, criminal sanctions will only be charged when administrative sanctions and civil sanctions cannot be dealt with effectively (Putu et al., 2018)

Imposing criminal sanctions is necessary to address environmental issues. Nevertheless, the utilization of punitive measures as the ultimate solution is seen suboptimal when addressing cases of ecological pollution offenses. Typically, the civil litigation procedure is time-consuming. In certain instances, the imposition of administrative penalties can lead to the shutdown of industries, resulting in unemployment among workers and potentially contributing to elevated levels of criminal activity. In order to effectively handle the illegal act of environmental pollution, it is imperative to enforce stringent criminal sanctions. Specifically, criminal activities related to air pollution must be firmly addressed through the implementation of appropriate legal penalties (Marlinus, 2021)

Moh. Fadli argues that in the realm of enforcing environmental criminal law to combat pollution and ecological devastation, the imposition of criminal sanctions serves as a response to environmental crimes. This approach aims to philosophically safeguard ecological quality and promote societal "environmental protection" through legal means (Khaerani Jamal, 2020)

Regarding the application of criminal law, which is the ultimate remedium, de Bunt, as safely quoted by A. Hamzah, defined *ultimum remedium* as 3 kinds of meanings, namely: a. criminal law is exclusively applicable to conduct that are very unethical (*hoog ethische*), b. as the last tool (remedy) applied to

environmental offenses, c. the administrative officer is first responsible (Santoso, 2001)

Environmental crimes are intricately linked to the notions of tangible hurt and actual damage, as well as the potential for harm and impending damage. It is important to recognize that the consequences of environmental crimes, such as loss or damage, may not be immediate or clearly measurable. Hence, there exist several classifications of victims, namely concrete victims and abstract victims. Here is where the discussion frequently overlaps with formal offenses and tangible offenses, as well as specific criminal acts and general felonies. The issue is in the fact that an individual's actions not only result in the deterioration of the natural environment's quality, but also have a high probability of causing such deterioration (Suryani et al., 2015)

Justice Minister De Kuitert advocated for the utilization of criminal law as a final recourse. The application of criminal law as a solution is rendered ineffective due to its detrimental consequences. Criminal law is ultimately employed as a last resort due to its consequential drawbacks. The text contains serious allusions to the convict's private life, including the loss of freedom, the use of coercive tools, and stains. Therefore, it should be approached with caution. De Ross said that although there is no difference between criminal law sanctions and administrative law sanctions, they are relatively severe because the crime of deprivation of liberty is a prominent sanction. Therefore, according to Petri and Dorssen (environmental law scholars), the application of criminal law instruments is only applied if other instruments fail. So, the application of illegal law instruments occupies a place as a subsidiary. If so, according to de Bunt, the adoption of criminal law instruments becomes the reason that is ultimately applied (Supriadi & Sari, 2021)

Indonesia, until now, has implemented the ultimate medium as a final effort to enforce criminal sanctions on environmental pollution actions, which is still considered relevant. However, this pertains to situations where individuals or groups affected by environmental contamination desire that the Indonesian legal system can establish criminal penalties as the main form of punishment for enforcing environmental laws.

Conclusion

The enforcement of criminal sanctions against environmental pollution in Palu and Donggala demonstrates that criminal law instruments have become the last resort (*ultimum remedium*) in addressing environmental violations resulting from mining activities that cause environmental degradation and threaten public health. Although enforcement efforts have predominantly relied on administrative sanctions and restorative measures, effective handling of environmental pollution requires the strict application of criminal sanctions to create a deterrent effect, protect the environment, and compel business actors to fulfill their obligations in environmental restoration. This study also emphasizes the critical importance of coordination between the central and local governments in monitoring mining permits and managing environmental governance to ensure optimal environmental protection.

On the other hand, the application of criminal sanctions for environmental violations must be balanced with the principles of sustainable development and caution in legal enforcement to avoid extensive socio-economic repercussions, such as unemployment resulting from business closures. Therefore, a synergy between criminal law policies, administrative law, and restorative approaches is essential in addressing environmental pollution, accompanied by the enhancement of law enforcement capacities and public participation. Through this approach, environmental law enforcement will not only be repressive but will also support sustainable development while preserving environmental quality for future generations.

References

- Agus E. S., Sugiarta, I. N., & Sutarna, I. N. (2021). Sanksi Pidana Terhadap Perbuatan Pencemaran Lingkungan Hidup Oleh Limbah Sablon Dan Pencelupan Di Kota Denpasar. *Interpretasi Hukum*, 2(1), 59–63. DOI: <https://doi.org/10.22225/juinhum.1.2.2435.57-62>

- Arsyad, S., & Rustiadi, E. (Eds.). (2008). *Penyelamatan tanah, air, dan lingkungan*. Jakarta: Crestpent Press dan Yayasan Obor Indonesia.
- Averus, A., & Pitono, A. (2013). Pengaruh Implementasi Kebijakan Pertambangan Tentang Efektivitas Penanganan Kualitas Lingkungan Hidup Pada Dinas Pekerjaan Umum, Energi, dan Sumber Daya Mineral Kota Palu. *Sosiohumaniora*, 15(2), 167–177. DOI: <https://doi.org/10.24198/sosiohumaniora.v15i2.5738>
- Danusaputro, S. M. (2011). *Hukum Pidana Horizon Baru Pasca Reformasi*. PT Raja Grafindo Persada.
- Hamzah, A. (2008). *Penegakkan Hukum Lingkungan*. Sinar Grafika.
- Herlina, N. (2015). Permasalahan Lingkungan Hidup dan Penegakan Hukum Lingkungan di Indonesia. *Ilmiah Galuh Justisia*, 3(2), 1–16. DOI: <http://dx.doi.org/10.25157/jigj.v3i2.93>
- Hermansyah. (1999). Karakteristik Tanah Bekas Tambang di Wilayah Pertambangan Cikotok Kabupaten Lebak Jabar. In *Skripsi S-1 Jurusan Tanah*. Faperta, IPB. <https://repository.ipb.ac.id/handle/123456789/23729>
- Khaerani Jamal, R. (2020). *Penegakan Hukum Pidana Lingkungan Terhadap Pelaku Pencemaran Lingkungan Hidup* (Vol. 2). <http://ejurnal.bppt.go.id/index.php/JTL/article/view/1437>
- M. Hadjon, P. dkk. (2016). *Pengantar Hukum Administrasi* (Cetakan Kedua). Gajah Mada University.
- Marlinus. (2021). Sanksi Pidana Terhadap Tindak Pidana Pencemaran Udara Ditinjau Dari Undang-Undang Nomor 32 Tahun 2009 Tentang Perlindungan dan Pengelolaan Lingkungan Hidup. *Administrasi Nusantara (JAN)*, 4(2), 51–62. <https://lppmstianusa.com/ejurnal/index.php/jurnal/article/download/493/286/1348>
- Putu, O. N., Daryani, R., Putu, A., Danyathi, L., Made, I., & Putra, W. (2018). *Pertanggungjawaban Tindak Pidana Lingkungan Hidup Ditinjau Dari Perspektif Hukum Pidana Di Indonesia*. Jurnal Hukum, 2(2). <https://ojs.unud.ac.id/index.php/kerthawicara/article/download/43516/26513>
- Rindani, A., & Syahrudin, E. (2022). Penerapan Sanksi Hukum Bagi Pelaku Industri (Kasus PT Pertamina Hulu Energi Atas Tumpahan Minyak di Perairan Karawang). *Kewarganegaraan*, 6(3), 6441–6448.

<https://journal.upy.ac.id/index.php/pkn/article/download/4150/2624/10201>

- Santoso, M. A. (2001). *Good Governance Hukum Lingkungan*. ICEL.
- Siswanto, S. (2005). *Hukum Pidana Lingkungan Hidup dan Strategi Penyelesaian Sengketa*. Rineka Cipta.
- Supriadi, & Sari, K. D. (2021). *Hukum Perlindungan dan Pengelolaan Lingkungan Hidup di Indonesia*. Graha Ilmu.
- Supriadi, Weri, A., & Sari, K. D. (2020). Prinsip Hukum Pengelolaan dan Pemanfaatan Pertambangan Bahan Galian Batuan di Kabupaten Donggala. In *Laporan Hasil Penelitian*. Fakultas Hukum, Universitas Tadulako. <http://mrtg.untad.ac.id/index.php/TMLJ/article/download/140/90/>
- Suryani, L., Peneliti, W., Bidang, M., Pada, H., & Pengkajian, P. (2015). *Ultimum Remedium dalam Bidang Lingkungan Hidup*. Jurnal Hukum IUS QUIA IUSTUM, 22(1). <https://law.uui.ac.id/wp-content/uploads/2012/05/ultimum-remedium-dalam-bidang-lingkungan-hidup-lidya-suryani-widayati.pdf>
- Dinh, T M., & Nguyen, D L. (2020). Criminal law policy on environmental crimes in context of sustainable development in Vietnam. EDP Sciences, 175, 14004-14004. <https://doi.org/10.1051/e3sconf/202017514004>
- Sonjaya, T., Heryanto, B., Mulyana, A., & Aridhayandi, M R. (2020, October 30). Kebijakan Hukum Pidana dalam Upaya Penegakan Hukum Lingkungan berdasarkan Prinsip Pembangunan. Lambung Mangkurat University, 5(2). <https://doi.org/10.32801/lamlaj.v5i2.162>
- Bajrektarević, A H. (2020, January 30). Defining the environmental crime – why is the global legal and political action urgently needed. , 6(1), 69-83. <https://doi.org/10.37353/aei-insights.vol6.issue1.5>
- Lirëza, L., & Koçi, G. (2023, May 20). Environmental Crimes: Their Nature, Scope, and Problems in Identification. , 10(1 S1), 237-237. <https://doi.org/10.56345/ijrdv10n1s135>
- Johnson, E W., Schwartz, J., & Inlow, A R. (2023, November 9). The criminalization of environmental harm: a study of the most serious environmental offenses prosecuted by the U.S. federal government, 1985-2010. <https://www.tandfonline.com/doi/full/10.1080/23251042.2020.1748269>

Acknowledgments

Gratitude is extended to all parties involved in the execution of this research, as well as the complete team of research members who made substantial contributions to it—the entirety of the academic community of the Faculty of Law at Tadulako University.

Competing Interest

The authors declare that there are no competing interests.

This page intentionally left blank