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Reconstructing Legal Frameworks for Post-Mining Reclamation Guarantees and Ecological Justice

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Abstract

This study analyzes the effectiveness of post-mining reclamation guarantee fund regulations in achieving environmental restoration and reconstructs a normative framework oriented toward ecological justice. The current reduction of reclamation guarantees to mere administrative requirements demonstrates the failure of the law to provide substantive protection for citizens' constitutional rights to a healthy environment. Using normative juridical research with legislative, conceptual, and historical approaches, this study employs prescriptive–analytical methods to evaluate the gap between legal norms and practice and to formulate a responsive legal model. The findings reveal that reclamation guarantee funds have not effectively functioned as substantive legal instruments due to regulatory disharmony between the Minerba Law and the Environmental Protection and Management Law (UUPPLH), weak supervision, and the absence of strict sanctions. The study proposes a reconstruction of the legal framework through harmonization of environmental and mining regulations, adoption of the polluter pays and strict liability principles, and strengthening of interagency coordination. In addition, the establishment of a transparent and participatory Multi-Stakeholder Monitoring Board and a public e-monitoring system is recommended to ensure accountability and ecological restoration. The novelty of this research lies in integrating constitutional and environmental justice perspectives into a double-track sanction system that combines preventive and repressive functions of reclamation guarantees. This approach advances the eco-constitutional paradigm by linking legal certainty, environmental accountability, and participatory governance in post-mining management.
Keywords: *Ecodemocracy; Environmental Law; Mining Law; Reclamation Fund; Restoration*

1. INTRODUCTION

Article 33 of the 1945 Constitution stipulates that the management of natural resources should be aimed at the greatest possible prosperity for the people. This constitutional norm should be the basis for mining management oriented towards welfare and justice.[1] In practice, however, mining in Indonesia emphasizes economic justice rather than ecological justice.[2] This anthropocentric paradigm encourages excessive exploitation, leaving mining sites damaged without reclamation, thereby often neglecting sustainability and the rights of future generations.[3]

The history of mining law shows the weak position of the state since the New Order, when contracts with foreign capital, such as Freeport, were loosely opened through Law No. 1 of 1967 concerning Foreign Investment, Law No. 5 of 1967 concerning Forestry, and Law No. 11 of

[1] Muhammad Jufri Dewa et al., "Government Legal Policy Against Mining in Forest Areas," *Halu Oleo Legal Research* 5, no. 1 (2023): 157–70, https://doi.org/10.33772/holresch.v5i1.232.
[2] Arief K. Syaifulloh, "Dampak Kerusakan Lingkungan Akibat Penambangan Pasir Merapi Di Klaten," *Jurnal Penegakan Hukum Dan Keadilan* 2, no. 2 (2021): 147–61, https://doi.org/10.18196/jphk.v2i2.9990.
[3] Nur Fadilah Al Idrus, "Dampak Politik Hukum Dan Respon Masyarakat Atas Pembaharuan Undang-Undang Minerba," *Jurnal Penegakan Hukum Dan Keadilan* 3, no. 2 (2022): 114–27, https://doi.org/10.18196/jphk.v3i2.14898.

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1967 concerning Mining.[4] This regulation allows for large-scale exploitation, with consequences including economic losses, environmental degradation, and the loss of state control over natural resources.[5]

Although environmental law has developed in an interdisciplinary manner covering administrative, criminal, and civil aspects, its position appears to be merely normative.[6] Law No. 32 of 2009 concerning Environmental Protection and Management and Law No. 3 of 2020 concerning Mineral and Coal Mining have regulated the obligation to provide reclamation guarantee funds and the criminal penalties for non-compliance. However, its implementation has been problematic, ranging from unclear fund disbursement mechanisms, weak supervision by the Ministry of Energy and Mineral Resources, and differences in perception that have led to legal uncertainty.[7] The decision of the High Court Number 5/PDT/2018/PT.BPR even shows double negligence, both by the company that abandoned the former mine and the government that failed to execute reclamation through guarantee funds.[8] The weakness of regulations and law enforcement has a broad impact. Ecologically, former mining sites are permanently damaged without reclamation. Socially, communities lose their living space, face agrarian conflicts, and suffer health problems. Economically, the costs of restoration are borne by the state while corporations continue to profit.[9] The government's indecisiveness can therefore be categorized as an onrechtmatige overheidsdaad or unlawful act by the authorities.

This situation clearly creates legal uncertainty, increases corporate profits, and imposes ecological, social, and economic losses on the community. Reclamation guarantee funds have been reduced to mere administrative requirements in the mining licensing process. This reduction is clearly misleading, because these instruments were actually designed as legal guarantees to protect the environment and the community from post-mining risks. Although normative guarantees of environmental rights have been affirmed in Article 28H paragraph (1) of the 1945 Constitution and reinforced by Article 65 paragraph (1) of the Environmental Protection and Management Law, their implementation remains mired in administrative reductionism. The state seems satisfied with the existence of reports and fund deposits, even

[4] Barden Alfinurin Aufa Hikam and Hofifah, "Harmonization and Certainty of Regulatory Law as an Effort to Ensure Effective Downstream Mineral Processing in Indonesia," *Jurnal RechtsVinding* 14, no. 1 (2025): 125–42, https://doi.org/10.33331/rechtsvinding.v14i1.2059.

[5] Muhammad Rifqi Hamidi Tuti Widtaningrum, "Pembaruan Hukum Pertambangan Mineral Dan Batubara Menuju Keadilan Dan Kepastian Hukum Yang Berkelanjutan Untuk Masyarakat Indonesia," *Iblam Law Review* 4, no. 3 (2024): 11–22, https://doi.org/10.52249/ilr.v4i3.436.

[6] Hannani Hannani, Indah Fitriani Sukri, and Hasanuddin Hasim, "Analisis Fiqhul Bi`ah Terhadap Kewenangan Otonomi Daerah Dalam Kebijakan Reklamasi Pasca Tambang : Tinjauan Hukum Islam," *DIKTUM: Jurnal Syariah Dan Hukum* 20, no. 2 (2022): 260–77, https://doi.org/10.35905/diktum.v20i2.2921.

[7] Adelia Sherin Kirana Sari and Aulia Dian Hidayati, "Pengaruh Undang-Undang Pertambangan Mineral Dan Batubara Terhadap Lingkungan Sosial Di Masyarakat," *Jurnal Ilmiah Wahana Pendidikan* 10, no. 23 (2024): 1115–25, https://jurnal.peneliti.net/index.php/JIWP/article/view/9525.

[8] Gita Ranjani and Hendi Setiawan, "Green Constitution: Tinjauan Kemanfaatan Dan Pemulihan Lingkungan Hidup Melalui Reklamasi Dan Pascatambang," *Lex Renaissance* 9, no. 1 (2024): 108–33, https://doi.org/10.20885/jlr.vol9.iss1.art6.

[9] Darwance Dwi Haryadi, Ibrahim, "Ecocentric Tin Mining Governance In Bangka Belitung Islands," *Bina Hukum Lingkungan* 8, no. 3 (2024): 235–57, https://doi.org/https://doi.org/10.24970/bhl.v8i3.276.

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though the measure is not administrative formalities, but rather the extent to which these funds can restore environmental damage and ensure ecosystem sustainability. This orientation shows that the state has failed to position reclamation guarantee funds as a substantive legal instrument, thereby failing to fulfill the protection of citizens' constitutional rights to a safe and sustainable environment.

A study on post-mining reclamation guarantee funds shows differences in research focus. Topani's research focuses on the effectiveness of implementing the polluter pays principle, weak supervision, and uncertainty regarding the use of reclamation funds for environmental restoration. The absence of a proportional mechanism has implications for the neglect of the purpose of reclamation guarantees, namely, ecosystem restoration. Therefore, it is necessary to strengthen regulations and implement more transparent supervision so that the polluter pays principle does not stop at the normative level alone.[10] Meanwhile, Haris emphasized the absence of criminal norms for mining companies that neglect or misuse reclamation guarantee funds. This normative vacuum creates problems in law enforcement because existing accountability mechanisms tend to be weak and do not have a deterrent effect. Therefore, it is necessary to expand criminal norms to ensure legal certainty and provide a deterrent effect for business actors who violate the law.[11] Unlike Pattynama, who highlights problems in the implementation of the Mineral and Coal Mining Law and its derivative regulations, particularly regarding transparency in the management of reclamation guarantee funds. His research finds inconsistencies between legal norms, necessitating stronger oversight, the application of strict sanctions, and the use of technology to ensure that reclamation funds are allocated for post-mining environmental restoration.[12]

Unlike previous studies that only highlighted partial aspects such as the effectiveness of the polluter pays principle, the limitations of criminal norms, or the lack of transparency in reclamation fund management, this study offers something new through the reconstruction of the normative framework of reclamation guarantee funds. Reclamation guarantee funds are positioned not merely as an administrative obligation, but as a legal instrument based on constitutional principles, the precautionary principle, and participatory oversight. The novelty of this research fills a gap in the existing literature. First, this study proposes expanding the subject of law to include not only legal mining companies but also illegal miners who have a significant impact on environmental damage. Second, it introduces the concept of a double-track system, which is a dual accountability system that balances the application of legal sanctions with environmental restoration as a form of ecological responsibility. Third, this study emphasizes the

[10] Alvira Cika Topani and Nazira Al Hijjah Syahara, "Implementasi Prinsip Pencemar Membayar Terhadap Pencemaran Lingkungan Di Pesisir Pantai Batu Ampar Akibat Pertambangan Timah," *Innovative: Journal of Social Science Research* 3, no. 5 (2023): 995–1008.

[11] Oheo Kaimuddin Haris et al., "Criminal Liability for Post-Mining Reclamation Guarantee Funds," *Halu Oleo Legal Research* 6, no. 2 (2024): 417–31, https://doi.org/10.33772/holresch.v6i2.784.

[12] Francis Maryanne Pattynama, "Tanggung Jawab Hukum Perusahaan Pertambangan Dalam Reklamasi Pasca Tambang Di Indonesia," *Journal of Mandalika Literature* 6, no. 1 (2024): 152–63, https://doi.org/10.36312/jml.v6i1.3742.

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importance of strengthening the principle of eco-democracy through transparency and public participation to ensure collective and accountable management of reclamation funds.

Based on this context, this study examines two main issues: the effectiveness of post-mining reclamation fund regulations in environmental restoration, and the reconstruction of a normative framework to achieve ecological justice. The urgency arises because legal uncertainty in reclamation fund regulations has the potential to threaten constitutional rights to a healthy environment. Without strong regulations and implementation mechanisms, reclamation funds risk becoming an administrative obligation without any real contribution to ecosystem restoration. Therefore, this study is relevant to fill the normative void, strengthen constitutional protection, and offer a more responsive and ecologically just reformulation of the law. Its novelty lies in its attempt to address normative issues, weaknesses in sanctions, and implementation problems that have not been thoroughly examined previously.

2. METHOD

This study uses normative legal research (doctrinal legal research) because the issues examined focus on norms, principles, and legal doctrines related to post-mining reclamation guarantee funds. This method is relevant given that the research issues emphasize the effectiveness of legal regulations and the need for the reconstruction of norms that can guarantee legal certainty and environmental protection. This study is reinforced by three approaches. The legislative approach examines applicable norms: the 1945 Constitution, the Mineral and Coal Law, and technical regulations, in order to assess the extent to which legal instruments are capable of guaranteeing environmental restoration. A conceptual approach to explore legal principles and theories, such as the polluter pays principle, the precautionary principle, and eco-democracy, as a basis for developing a legal framework that is more responsive to ecological issues. Meanwhile, a historical approach is used to trace the development of mining law policy in Indonesia, as the weaknesses in reclamation regulations cannot be separated from the history of regulation.

The legal sources in this study include primary sources consisting of the 1945 Constitution, Law Number 3 of 2020 concerning Amendments to Law Number 4 of 2009 concerning Mineral and Coal Mining, Law No. 32 of 2009 concerning Environmental Protection and Management, Government Regulation No. 78 of 2010 concerning Reclamation and Post-Mining, and related court decisions. Secondary materials include literature, journals, theses, dissertations, and academic papers, while tertiary materials include legal dictionaries and encyclopedias. The analysis was conducted prescriptively and analytically through several stages: (1) inventorying positive norms governing reclamation guarantee funds; (2) identifying normative gaps between existing regulations and the needs of environmental protection and constitutional rights of the community; (3) interpreting relevant legal principles and doctrines; and (4) formulating a reconstruction of legal norms (das sollen) so that post-mining environmental restoration is more effective, fair, and guarantees legal certainty.

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The limitation of this study lies in its normative nature. Consequently, this study does not measure the level of compliance of mining companies or the effectiveness of policy implementation in factual terms, but rather emphasizes the reconstruction of legal norms that should apply. The scope of the study is limited to the regulation of post-mining reclamation guarantee funds in Indonesia, without discussing comparisons with the legal systems of other countries.

3. RESULTS AND DISCUSSION

3.1 The Essence of the Law on Post-Mining Reclamation Guarantee Funds

The legal essence of providing post-mining reclamation guarantee funds is essentially based on the principle of preventing and restoring environmental damage caused by mining activities. Mining activities do have economic benefits for the country and society, but they also carry legal consequences in the form of an obligation to ensure the restoration of environmental functions.[13] Therefore, reclamation guarantee funds must be positioned as a preventive legal instrument that ensures these obligations can be carried out in practice.[14] Legally, this mechanism is a manifestation of the polluter pays principle, whereby every business entity that causes environmental damage is obliged to bear the costs of its restoration. Reclamation guarantee funds are not merely financial guarantees, but also instruments of control and legal certainty for post-mining environmental sustainability.

From a sociological perspective, the existence of reclamation guarantee funds stems from the social reality of severe environmental damage caused by mining activities. The existence of unreclaimed mining voids, such as those in Kalimantan between 2011 and 2025, has claimed lives,[15] highlighting the structural failure of environmental law enforcement and the absence of ecological justice in the mining sector, which demonstrates the urgency of reclamation guarantees as an urgent community need. In essence, with guaranteed funds, the public gains certainty that the government has the instruments to restore the environment, thereby maintaining social legitimacy for the sustainability of mining activities.[16] In fact, the reclamation guarantee fund serves a dual purpose, namely as a preventive and repressive instrument. As a preventive instrument, this fund serves to reduce the potential for moral hazard on the part of mining companies, as the funds that have been placed in advance serve as a guarantee of their seriousness in carrying out their reclamation obligations. Meanwhile, as a repressive instrument,

[13] Muskibah Muskibah, Lili Naili Hidayah, and Evalina Alissa, "Perlindungan Hukum Terhadap Masyarakat Terkait Kegiatan Pertambangan Batubara Di Kabupaten Sarolangun," *Jurnal Wawasan Yuridika* 5, no. 1 (2021): 60–80, https://doi.org/10.25072/jwy.v5i1.421.

[14] Redha Nagara Hanis, Waterman Sulistyana Bargawa, and Rika Ernawati, "Biaya Reklamasi Dan Revegetasi Lahan Bekas Tambang Batubara Di Kalimantan Timur," in *Prosiding Seminar Nasional Lahan Basah*, vol. 16, 2021, 324–29.

[15] Admin Jatam Kaltim, "Samarinda Kota Korban Tambang: Korban Ke-49 Lubang Tambang Di Kaltim," jatamkaltim.com, 2025, https://jatamkaltim.org/siaran-pers/samarinda-kota-korban-tambang-korban-ke-49-lubang-tambang-di-kaltim.

[16] Akhmad Zikri Azmi, Sinta Ningrum, and Didin Muhafidin, "Efektivitas Kebijakan Reklamasi Di Kabupaten Tanah Bumbu Provinsi Kalimantan Selatan," *Jurnal Administrasi Negara* 14, no. 1 (2022): 131–39, https://doi.org/10.24198/jane.v14i1.41276.

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these funds can be immediately disbursed by the government if the company is negligent, so that restoration can still be carried out through a third party. Therefore, reclamation guarantee funds are not only an administrative tool but also a legal instrument that functions strategically in protecting the environment, providing legal certainty, and ecological justice in mining operations.

The essence of post-mining reclamation guarantee funds cannot be separated from the legal obligations attached to every holder of a Mining Business License (IUP) or Special Mining Business License (IUPK). This is explicitly stated in Law Number 4 of 2009 concerning Mineral and Coal Mining as amended by Law Number 3 of 2020. Articles 96 and 99 of the Minerba Law mandate companies to prepare reclamation and post-mining plans and provide guarantee funds before entering the production operation stage.[17] The placement of these funds is not an administrative formality, but rather an instrument that ensures the certainty of environmental restoration financing. In fact, the law gives the Minister the authority to appoint a third party to carry out reclamation if the company is negligent, so that the nature of the guarantee fund is both obligatory (a non-negotiable legal obligation) and punitive (enforceable through the disbursement of funds).

This obligation is further reinforced by Article 100, which stipulates that reclamation and post-mining activities must be 100% successful before the permit area is returned or the permit expires. Furthermore, Article 123A emphasizes that reclamation responsibilities remain in effect even after the permit has expired. This means that the expiration of a permit never removes a company's legal obligations, leaving no loophole for corporations to avoid responsibility. To encourage compliance, Article 151 gives the Minister the authority to impose administrative sanctions, ranging from written warnings, fines, suspension of activities, to revocation of permits. Not stopping at the administrative level, Article 161A emphasizes the threat of criminal sanctions in the form of a maximum imprisonment of five years and a fine of up to one hundred billion rupiah for companies that do not carry out reclamation or neglect to place guarantee funds.

From a legal perspective, the obligation to deposit reclamation guarantee funds is essentially an implementation of the principles of state responsibility, prudence, and the polluter pays principle, so that parties benefiting from mining are obliged to bear the burden of environmental restoration so that the burden of ecological damage is not transferred to the community or the state. Thus, reclamation guarantee funds clearly have administrative obligations and legally binding instruments that are normatively binding to ensure post-mining environmental sustainability and the protection of the right to a healthy environment.

[17] Dara Quthni Effida Putri Kemalasari, Nila Trisna, "Tanggung Jawab Pelaksanaan Reklamasi Dan Pasca Tambang Perusahaan Pemegang Iup Operasi Produksi Batubara Berdasarkan Prinsip Good Mining Practice," *Jurnal Hukum Samudra Keadilan* 18, no. 1 (2023): 108–20, https://doi.org/10.33059/jhsk.v18i1.7382.

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However, even though the essence of the reclamation guarantee fund law is clear and has a strong normative basis, in reality, there are still fundamental weaknesses. First, from a normative perspective, the applicable regulations tend to emphasize administrative aspects and are not yet fully equipped with effective criminal sanctions for negligent companies. This creates a gap between normative obligations and the effectiveness of law enforcement. Second, from an implementation perspective, government oversight of the placement and use of guarantee funds is still weak and lacks transparency, creating the potential for misuse or unclear allocation. This weakness is exacerbated by the limited resources of the supervisory apparatus, which are not commensurate with the vastness of the mining area. Third, from the perspective of community protection, the reclamation guarantee fund mechanism does not yet fully reflect the principle of ecological justice because the affected communities are often not involved in the supervision and evaluation processes.

In addressing the above issues, strengthening public participation mechanisms is absolutely necessary to ensure the accountability of the state and corporations in the management and restoration of the post-mining environment. As a manifestation of eco-democracy, the community is not only affected by the impact but also plays an active role as a supervisor and controller of environmental policy.[18] Within the framework of the Green Constitution, community involvement must be viewed as a guarantee of constitutional rights to a healthy environment while preserving natural resources for future generations.[19] Community collaboration with the government in monitoring reclamation is crucial so that legal obligations do not end in administrative formalities, but truly realize environmental sustainability.[20] This is even more urgent considering the large number of abandoned and unreclaimed mining pits, so that the community must be positioned as active supervisors, not merely affected parties.[21] However, the principle of public participation requires transparency of information, consultation forums, and independent oversight to ensure that the guarantee fund is actually used for environmental restoration and functions as a legal-democratic instrument capable of balancing the interests of the state and corporations..[22]

When examined using Soerjono Soekanto's theory of legal effectiveness, legal effectiveness is determined by the extent to which legal norms are able to guide public behavior in line with the

[18] Zulfatah Zulfatah, Hidayati Hidayati, and Andi Nur Hidayah, "Application of Eco-Democracy to Environmental Legal Protection Post-Mining Reclamation in Indonesia," *Jurnal Impresi Indonesia* 3, no. 3 (2024): 224–34, https://doi.org/10.58344/jii.v3i3.4753.

[19] Ranjani and Hendi Setiawan, "Green Constitution: Tinjauan Kemanfaatan Dan Pemulihan Lingkungan Hidup Melalui Reklamasi Dan Pascatambang."

[20] I G A Gangga, Santi Dewi, and Bambang E K O Turisno, "Manifestations Of Ecological Justice In Post Tin Mining Reclamation; An Indonesia-China Comparative Study," *Russian Law Journal* 13, no. 1 (2025): 1254–63.

[21] Ida Kurniasih, "Telaah Terhadap Aktivitas Pertambangan Yang Berdampak Pada Lingkungan Hidup Di Indonesia Dilihat Dari Sudut Pandang Analysis Economic of Law," *Jurnal Ilmu Hukum The Juris* 7, no. 1 (2023): 7–16, https://doi.org/10.56301/juris.v7i1.801.

[22] Zico Junius Fernando et al., "Advancing Ecological Justice through The Integration of Eco-Religion in Criminal Law Reform," *Journal of Law, Environmental and Justice* 3, no. 2 (2025): 160–200, https://doi.org/10.62264/jlej.v3i2.133.

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desired objectives.[23] When examined using Soerjono Soekanto's theory of legal effectiveness, legal effectiveness is determined by the extent to which legal norms are able to guide public behavior in line with the desired objectives. The obligation to set aside funds for post-mining reclamation can be effective if it encourages mining companies to carry out comprehensive and sustainable reclamation. This effectiveness is not only measured by the existence or absence of legal provisions in the Minerba Law, but also by the extent to which these provisions function in changing corporate behavior to comply with the principle of environmental responsibility. In fact, the effectiveness of the law on reclamation guarantee funds depends heavily on several factors. First, the substance of the law, namely the clarity of the norms in the Minerba Law and its derivative regulations. The more explicit and detailed the regulations, the greater the chance that the law will function effectively. Second, law enforcement agencies, in this case, the Ministry of Energy and Mineral Resources, local governments, and law enforcement officials, must consistently monitor and take action against any violations.

Third, a transparent administration system for managing guarantee funds and an accountable monitoring mechanism. Fourth, the community plays a role as social control in monitoring the implementation of reclamation and as a critical actor capable of pressuring the state and corporations to consistently carry out their legal obligations. Fifth, legal culture, to the extent that companies have legal awareness to make reclamation a moral responsibility, not just an administrative burden. If the five factors of legal effectiveness above function optimally, then reclamation guarantee funds can become an effective legal instrument to ensure post-mining environmental restoration. However, when supervision and law enforcement are weak, these obligations risk becoming mere rules on paper without any coercive power. This situation clearly prevents the main objective of reclamation from being achieved and shifts the burden of environmental damage to the community and the state. Therefore, reformulating regulations is no longer just an option, but an urgent necessity to close the gaps in weak law implementation.

Meanwhile, from the perspective of progressive legal theory, law should not stop at procedural formalities and normative texts, but must move towards substantive justice that favors humanity and the environment.[24] Progressive law departs from the view that law is not an autonomous and closed institution, but a living organism that is bound to the social context.[25] Therefore, in the context of reclamation guarantee funds, law enforcement officials and the government should not merely enforce the law textually, but must interpret and apply it contextually, empathetically, and with ecological justice. This approach requires the courage to break the rules, that is, to go beyond administrative procedures when those procedures actually hinder the realization of justice for the environment and affected communities. Finally, regulations must be designed not only to add norms, but also to ensure their applicability through three key aspects. First, strengthening the force of law with effective sanctions so that reclamation obligations do not stop

[23] Soerjono Soekanto, *Efektivitas Hukum Dan Peranan Saksi* (Bandung: Remaja Karya, 1985). 7
[24] Satjipto Rahardjo, *Hukum Progresif: Sebuah Sintesa Hukum Indonesia* (Yogyakarta: Genta Publishing, 2009). 45
[25] Suteki, *Masa Depan Hukum Progresif* (Yogjakarta: Thafa Media, 2015). 75

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at the administrative level. Second, ensuring transparency and accountability in the management of reclamation guarantee funds so that the public can assess the extent to which companies are fulfilling their responsibilities. Third, opening up space for public participation in the supervision and monitoring of reclamation, because community involvement helps to create independent control mechanisms that can prevent corporate impunity and ensure the realization of ecological justice.

3.2 Legal Issues Arising in Connection with the Regulation and Implementation of the Reclamation Guarantee Fund

The polluter pays principle is an environmental law principle that stipulates that parties causing environmental damage are obliged to bear the costs of restoration.[26] In mining law, this principle is normatively embodied in Article 96 and Article 99 paragraph (1) of the Minerba Law. These articles require every holder of a mining business license (IUP) and special mining business license (IUPK) to prepare a reclamation and post-mining plan and to provide reclamation and post-mining guarantee funds before conducting production operations. Furthermore, Article 99 paragraph (2) of the Minerba Law authorizes the Minister to appoint a third party to carry out reclamation using the guarantee funds if the company fails to fulfill its obligations. This shows that the legal mechanism must be enforceable, not merely declarative, so that it can ensure that the costs of environmental restoration are borne entirely by the business actors.[27] This principle is important to prevent the burden of environmental damage from being shifted to the community or the state, and to affirm the role of law as a substantive instrument of ecological accountability.

Ecological justice emphasizes the utilization of natural resources not only for short-term economic interests, but also to protect the rights of current and future generations to a healthy environment.[28] This is in line with Article 33, paragraph (3) of the 1945 Constitution, which states that the earth, water, and natural resources contained therein are controlled by the state and used to the greatest extent possible for the prosperity of the people. This principle is adopted in the Mineral and Coal Mining Law, specifically Article 100, which requires IUP/IUPK holders to carry out reclamation and post-mining activities with a 100% success rate before their permits are returned or expire. Article 123A even emphasizes that this obligation remains in effect even after the mining permit has expired. Ecological justice at this point is realized through the guarantee that the former mining environment is restored for the benefit of the wider community, not merely to fulfill administrative formalities.

[26] Muhammad Jufri Dewa et al., "Law Enforcement In Environmentally Inspected Sustainable Mining Governance," *Halu Oleo Legal Research* 5, no. 1 (2023): 62–75, https://doi.org/10.33772/holresch.v5i1.220.

[27] Dewi Tuti Muryati, Dharu Triasih, and Tri Mulyani, "Implikasi Kebijakan Izin Lingkungan Terhadap Lingkungan Hidup Di Indonesia," *Jurnal USM Law Review* 5, no. 2 (2022): 693–707, https://doi.org/10.26623/julr.v5i2.5773.

[28] Sangga Buana, Siraj Fawwaz Fikri Madani, and Renaldy Sundara Salim, "Peran Hukum Lingkungan Dalam Mewujudkan Tata Kelola Pertambangan Berkelanjutan Yang Ramah Lingkungan," *Ijtihad* 19, no. 1 (2025): 161–82, https://doi.org/10.21111/ijtihad.v19i1.14546.

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Under the Minerba Law, mining companies' legal responsibilities cover administrative and criminal aspects. Administratively, Article 151 gives the Minister the authority to impose sanctions in the form of written warnings, fines, temporary suspension of activities, and even revocation of permits if companies fail to carry out their reclamation obligations.[29] Meanwhile, from a criminal law perspective, Article 161A stipulates that any individual or business entity that fails to carry out reclamation and post-mining activities or fails to set aside funds for reclamation and post-mining activities shall be punished with imprisonment of up to five years and a fine of up to Rp100,000,000,000.00 (one hundred billion rupiah). This provision emphasizes that mining law is not limited to regulating the exploitation of resources, but also requires environmental restoration with mandatory sanctions.

The mining legal framework has established administrative obligations for mining companies that carry criminal implications if ignored. The application of the polluter pays principle ensures that the burden of environmental restoration is borne entirely by the business, not the state or the community.[30] Reclamation from an ecological justice perspective must be understood as a substantive mandate to ensure ecosystem sustainability, not merely an administrative formality. Meanwhile, the enforcement of legal responsibility through Articles 96, 99, 100, 123A, 151, and 161A of Law No. 3 of 2020 demonstrates the orientation of Indonesian mining law, namely that the exploitation of resources must be balanced with the obligation to restore the environment. This norm clearly states that mining activities without a restoration mechanism constitute a violation of the law, as well as a denial of ecological justice and the constitutional rights of the community to a healthy environment.

Unfortunately, the management of post-mining reclamation funds in Indonesia faces a number of complex legal issues. This is because, normatively, the obligation to deposit reclamation guarantee funds has been stipulated in the Minerba Law, which requires holders of Mining Business Permits (IUP) to submit reclamation and post-mining plans, as well as stipulating the obligation to carry out reclamation of the mined area.[31] Meanwhile, Government Regulation No. 78 of 2010 concerning Reclamation and Post-Mining requires every holder of an IUP and IUPK to deposit reclamation guarantee funds and post-mining guarantee funds prior to production operations. However, the implementation of these provisions is often ineffective. Companies neglect to set aside reclamation guarantee funds in accordance with the regulations or carry out reclamation as a mere administrative formality, due to weak supervision by the government, resulting in uncertainty regarding the implementation of this obligation.

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[29] Rufinus Hotmaulana Hutauruk Verensia, Shelvi Rusdiana, "Perbandingan Pengaturan Pengelolaan Ekosistem Pascatambang Di Kepulauan Riau Dan Jambi Mana Yang Lebih Baik," *Jurnal Komunikasi Hukum* 10, no. 2 (2024): 215–28, https://doi.org/10.23887/jkh.v10i2.93268.

[30] Muhamad Nur et al., "Problems in the Enforcement of Article 98 of Law No . 32 of 2009 On Environmental Crimes," *Jurnal USM Law Review* 8, no. 3 (2025): 1584–99, https://doi.org/10.26623/julr.v8i3.12694.

[31] Feby Ivalerina Kartikasari, "Regulatory Strategies to Promote Environmentally Sustainable Mining Downstream," *Jurnal Rechts Vinding: Media Pembinaan Hukum Nasional* 14, no. 1 (2025): 159–77, https://doi.org/10.33331/rechtsvinding.v14i1.2053.

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Reclamation guarantee funds appear to have been reduced to mere administrative requirements in the mining licensing process. This reduction is clearly misleading, as these instruments were actually designed as legal guarantees to protect the environment and communities from post-mining risks. The Green Constitution emphasizes that reclamation guarantees are part of the principle of sustainable mining, but the absence of derivative regulations from Law No. 3 of 2020 and the weak implementation mechanisms have caused it to lose its substantive function. As a result, it no longer functions as a constitutional shield for citizens' rights to a good and healthy environment, but merely as an administrative formality without any coercive power. Although Article 28H paragraph (1) of the 1945 Constitution and Article 65 paragraph (1) of the Environmental Protection and Management Law explicitly affirm the right to a good and healthy environment as a constitutional right of citizens, the reality of its implementation is trapped in administrative reduction. Meanwhile, the state tends to be satisfied with the existence of reclamation reports or fund deposits, even though the substantive measure should lie in the extent to which these funds are actually used to restore environmental damage and ensure ecosystem sustainability. The continued maintenance of an administrative orientation will only demonstrate the state's failure to position reclamation funds as a substantive legal instrument. Consequently, the main function of reclamation funds as protectors of citizens' constitutional rights to a safe, healthy, and sustainable environment is not fulfilled.

This issue cannot be viewed merely as an administrative violation or a technical weakness in governance, but rather as a form of denial of the constitutional mandate and the principles of the Green Constitution. From the perspective of legal effectiveness as defined by Soerjono Soekanto, this issue demonstrates failure in several elements. The substance of the law is not comprehensive because the technical regulations on reclamation costs do not cover the closure of mine pits, opening a legal loophole for companies to escape their responsibilities. The legal structure is also weak because oversight is inconsistent, sanctions are limited to administrative measures, and there is overlap between the authorities of the central and regional governments. The legal culture of the community and corporations is also problematic, with companies interpreting the deposit of funds as a transfer of responsibility to the government, while the surrounding community bears the ecological burden.

Moreover, the weakness of regulations becomes even more apparent when linked to the theory of ecological justice. Reclamation, understood only as an administrative procedure, perpetuates injustice to the damaged environment, destroyed ecosystems, and communities around mines who lose their right to a healthy environment.[32] According to findings by the Supreme Audit Agency (BPK) and provincial government reports, there are more than 2,700 mine pits in East Kalimantan that have not been reclaimed as of 2024.[33] Although the Ministry of Energy and

[32] Benadito Rompas and Tri Hayati, “Implikasi Kebijakan Sektor Hilir Pertambangan: Ancaman Dan Perlindungan Terhadap Lingkungan Hidup,” *Jurnal Ius Constituendum* 7, no. 1 (2022): 177–91, https://doi.org/10.26623/jic.v7i1.4908.

[33] Shafira Cendra Arini, “2.700 Lubang Bekas Tambang Sekitar IKN Belum Direklamasi,” detikFinance, 2025, https://finance.detik.com/energi/d-8126935/2-700-lubang-bekas-tambang-sekitar-ikn-belum-direklamasi.

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Mineral Resources (ESDM) has imposed administrative sanctions on 190 mineral and coal companies for failing to deposit reclamation guarantees,[34] these sanctions appear to be merely procedural and do not address the root of the structural problem, which is weak supervision, the absence of criminal sanctions, and the weak effectiveness of legal norms in enforcing environmental obligations. This reality proves that the reclamation fund instrument has lost its preventive and corrective functions. The preventive function, which requires companies to prepare funds before operating, is not working because many companies are in arrears with their deposits. The corrective function, which provides the government with a source of funds to restore damage if companies are negligent, is also ineffective due to weak implementation. Thus, there is a gap between ideal legal norms and regressive practices.

This situation clearly raises issues regarding the principle of legal certainty, because even though the rules are clear and binding, their implementation is inconsistent. From the perspective of the principle of justice, the failure to implement reclamation means that the communities surrounding the mines must bear the burden of environmental damage, loss of livelihoods, and the threat of ecological disasters, while companies often ignore their legal responsibilities. This inequality violates the principle of justice, which should provide equal protection for the community and the environment. Meanwhile, from the principle of legal benefit, the existence of a reclamation guarantee fund should provide tangible benefits through the restoration of the ecological function of post-mining land. However, due to weak management, this legal instrument has lost its effectiveness, thereby failing to achieve the goal of environmental protection. This situation shows that the problem with reclamation guarantee funds is not only a matter of technical administration, but also concerns the essence of environmental law enforcement. Without strong supervision and a commitment to upholding the principles of certainty, justice, and legal benefit, the reclamation guarantee fund instrument has the potential to become merely a norm on paper without providing real protection..

The management of reclamation funds in Indonesia continues to face various legal problems that hinder its effectiveness as an instrument of environmental protection. First, there is a lack of criminal norms. Both the Minerba Law and Government Regulation No. 78 of 2010 only stipulate administrative sanctions for violations of reclamation obligations, such as written warnings, fines, temporary suspension of activities, and revocation. There are no regulations that explicitly criminalize negligence or misuse of reclamation funds. In fact, the Environmental Protection and Management Law (PPLH) has opened the door to criminal liability for environmental pollution or damage. This gap has resulted in the misuse of reclamation funds being treated more often as an administrative violation rather than a criminal offense, thereby weakening the deterrent effect. Second, the monitoring and accountability mechanisms have not been effective. Article 140 paragraph (1) of the Minerba Law does indeed affirm the central

[34] Admin Jatam Kaltim, "Surat Edaran ESDM: 190 Perusahaan Batubara Dihentikan Sementara, Rakyat Tetap Jadi Korban," jatamkaltim.com, 2025, https://jatamkaltim.org/siaran-pers/surat-edaran-esdm-190-perusahaan-batubara-dihentikan-sementara-rakyat-tetap-jadi-korban#detail.

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government's authority to foster and supervise the implementation of mining operations, but in practice this mechanism has often failed. The case of PT Riau Bara Harum (Pekanbaru District Court Decision No. 5/Pdt/2018/PT.PBR) shows the negligence of the Ministry of Energy and Mineral Resources in disbursing the reclamation bank guarantee, so that reclamation could not be carried out by a third party. This shows the weakness of institutional responsibility and the lack of certainty in the implementation of reclamation obligations.

Third, the problem of minimal participation by affected communities. The right to a good and healthy environment is actually guaranteed by the constitution, but opportunities for community participation in monitoring reclamation funds are mostly available in the form of legal standing mechanisms by NGOs or community groups, rather than through institutionalized preventive mechanisms. As a result, community control is reactive and occurs after damage has been done, rather than at the prevention stage. This condition demonstrates the weak application of the principle of justice, because affected communities are not given a proportional position to ensure that their environmental rights are protected from the outset. Fourth, there is an inconsistency between legal norms and field practices. Article 2 of Government Regulation No. 78 of 2010 explicitly requires IUP holders to carry out reclamation and post-mining activities with a 100% success rate. However, the reality is contrary to this provision.

Table 1. Issues in Reclamation Fund Management in Indonesia

Problems	**Description**	**Legal Basis**	**Impact**
Criminal law vacuum	The Minerba Law and Government Regulation No. 78/2010 only provide for administrative sanctions (written warnings, fines, suspension of activities, revocation of mining permits). There are no criminal provisions that criminalize the misuse or misappropriation of reclamation funds.	Articles 151–153 of Law No. 3/2020; Articles 98–103 of Law No. 32/2009 (PPLH) actually allow for criminal penalties for pollution.	Misuse of reclamation funds is considered an administrative violation, thereby weakening the deterrent effect.
Weak oversight and accountability	The central government has the authority to develop and supervise mining operations, but implementation often fails.	Article 140 paragraph (1) of the Mineral and Coal Law; The case of PT Riau Bara Harum (Pekanbaru District Court Decision No. 5/Pdt/2018/PT.PBR) demonstrates the	Institutional accountability is weak, and certainty of reclamation implementation is low.

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		negligence of the Ministry of Energy and Mineral Resources in liquidating the reclamation bank guarantee.	
Low community participation	The right to a healthy environment is guaranteed by the constitution, but public participation is only available through litigation (legal standing), not through preventive mechanisms.	Article 28H paragraph (1) of the 1945 Constitution; Article 65 paragraph (1) of Law No. 32/2009 (PPLH).	Community control is reactive, emerging after damage has occurred..
Inconsistency between norms and practices	Regulations require 100% reclamation and post-mining success, but practices fall far short of the target.	Article 2 of Government Regulation No. 78/2010, the Ministry of Energy and Mineral Resources imposed administrative sanctions on 190 companies for failing to deposit reclamation guarantees.	It has been proven that more than 2,700 mining pits have not been reclaimed.

Source: Primary data, 2025(Edited)

This fact indicates a gap between the normative ideal of legal norms and the reality of their implementation, ultimately reducing the law on reclamation obligations to an administrative formality without substantive enforcement power. In addition, this gap confirms the fragility of the principle of legal certainty, because strict rules cannot be consistently enforced. At the same time, the principle of legal utility is also reduced because the goal of post-mining environmental restoration has not been optimally achieved. Minimal community participation and weak implementation of regulations have caused reclamation funds to lose their substantive function. Instead of being a legal instrument that guarantees environmental sustainability and ecological justice, it has been reduced to an administrative obligation without any coercive power. This also shows that the level of compliance among mining companies is still low. Companies prefer to fulfill their administrative obligations by depositing funds, but ignore their reclamation obligations for environmental restoration. Furthermore, the state, through its supervisory apparatus, has neglected to execute the disbursement of reclamation funds when companies ignore their legal obligations, allowing environmental damage to continue unchecked.

In Soerjono Soekanto's theory of legal effectiveness, the functioning of law is determined by the level of public compliance with legal norms, including the consistency of law enforcement

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officials. A high level of compliance is an indicator that the law is functioning effectively and achieving its main objective, which is to protect and maintain order in society.[35] The fact that reclamation obligations are often ignored shows how ineffective reclamation laws are. So, the idea that reclamation funds are just an administrative obligation needs to be challenged. The point is that it's a legal tool based on the polluter pays principle in environmental law, which says that every business has to cover the costs of fixing the damage they cause. By positioning it as a substantive legal instrument, the state can ensure ecosystem restoration, protect the public's right to a healthy environment, and achieve ecological justice. Without this paradigm shift, the law will continue to fail in its function as a protector of ecological and social interests. In addition, it is necessary to strengthen criminal sanctions, not just administrative ones, as well as participatory monitoring mechanisms that involve the community from the planning stage to supervision. Consistent law enforcement is absolutely necessary so that reclamation funds truly function as substantive legal instruments in environmental restoration and do not stop at the normative level.

3.3 Normative Solutions to Strengthen the Effectiveness of Reclamation Guarantee Funds in Environmental Restoration in Indonesia

The right to a good and healthy environment, as guaranteed in Article 28H paragraph (1) of the 1945 Constitution, is a constitutional right of every citizen. Furthermore, Article 33, paragraph (4) of the 1945 Constitution emphasizes that natural resource management must be based on the principles of sustainability and environmental awareness.[36] In this framework, reclamation guarantee funds cannot be reduced to an administrative obligation, but must be viewed as a constitutional instrument and a means of ecological justice. Therefore, it is important to shift the paradigm from viewing reclamation guarantee funds as an “administrative obligation” to understanding them as a “substantive legal protection instrument.” The legal substance lies in its preventive and corrective functions: preventive because it requires companies to provide funds before production operations; corrective because it ensures that the government continues to have funding sources to restore the environment if companies neglect their obligations. If administrative logic alone continues to be upheld, then the legal function of protecting ecological and community interests will never be achieved.

In essence, reclamation guarantee funds are designed to ensure the implementation of post-mining environmental restoration. Its presenc In essence, reclamation guarantee funds are de e is intended to ensure that no mining activity leaves behind damage without restoration efforts.[37] While mining companies appear to be negligent or deliberately avoiding their reclamation

[35] Soekanto, *Efektivitas Hukum Dan Peranan Saksi*. 7

[36] Kurdi Kurdi, Joko Cahyono, and Cut Zulfahnur Syafitri, “Potential Violations of the Right to a Good and Healthy Environment: The Impact of Granting Special Mining Permits on Religious Community Organizations,” *Jurnal Ius Constituendum* 10, no. 2 (2025): 282–95, https://doi.org/10.26623/jic.v10i2.11847.

[37] Endah Widyastuti Deity Yuningsih, Ruliah, Siti Muslimah Suciati, Sukring, “Improving Legal Recognition of Land Rights Transfer Without Deeds From,” *Halu Oleo Law Review* 8, no. 1 (2024): 62–73, https://doi.org/https://doi.org/10.33561/holrev.v8i1.108.

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obligations, the government has also been inconsistent in its supervision and execution of fund disbursement, posing a serious risk to environmental sustainability and the safety of communities around the mine. Normatively, strengthening the effectiveness of reclamation guarantee funds must begin with improving the legal basis, as the regulations are scattered across the Minerba Law, the PPLH Law, PP No. 78/2010, and various ministerial regulations, which cause regulatory disharmony and weaken the force of law.

The effectiveness of reclamation guarantee funds depends on the application of the polluter pays principle and strict liability. The polluter pays principle asserts that the costs of remediation must be borne by the business, not the state or society, while strict liability ensures that the obligation to remediate remains in force regardless of fault.[38] On this basis, reclamation funds provide legal certainty that any damage will be remedied, even if the company goes bankrupt or abandons its obligations.[39] To ensure effectiveness, it is necessary to strengthen oversight and executive authority for central and regional governments so that funds can be disbursed immediately in the event of negligence. Periodic environmental audits integrated with fund status are also important to ensure transparency at every stage of reclamation. Without strict and transparent oversight, reclamation funds risk becoming a formality without ecological utility.

Legal norms must emphasize that the disbursement of reclamation funds does not absolve companies of civil and criminal liability. Reclamation funds are only a minimum guarantee, while broader ecological losses can still be claimed through the Environmental Protection and Management Law (PPLH). Thus, companies cannot hide behind reclamation funds and remain obliged to fully restore the environment. Public participation must also be guaranteed through direct oversight mechanisms, citizen lawsuits, and class actions, so that fund management is more transparent and accountable. Therefore, the normative solutions required include regulatory harmonization, the application of the polluter pays and strict liability principles, strengthened oversight and enforcement, and community empowerment.

In addition, the implementation of post-mining reclamation in Indonesia still shows weaknesses. Mine pits are left open without any restoration measures, creating a serious threat to human safety and exacerbating ecological degradation.[40] This fact reveals two issues: first, there is a regulatory loophole, because the reclamation obligation is only imposed on official permit holders, while illegal mines are not subject to regulation. Second, mining companies often avoid their obligations, either by not depositing the required guarantee funds or by neglecting to carry

[38] Ashyfa Prasasti, Wahyu Nugroho, and Hartinie Abd Aziz, "Corporate Responsibility For Hazardous Waste Pollution Based On Environmental Regulations," *Walisongo Law Review* 7, no. 1 (2025): 21–35, https://doi.org/10.21580/walrev.2024.6.2.25865.

[39] Feri Andriawan, Muhammad Akib, and Agus Triono, "Environmental Damage Control Due to Mining Activities in Pasir Sakti District," *Jurnal Ilmiah Hukum Dan Hak Asasi Manusia* 1, no. 1 (2021): 1–10, https://doi.org/10.29303/jtsw.v38i2.524.

[40] Abdul Kadir Jaelani, Reza Octavia Kusumaningtyas, and Asron Orsantinutsakul, "The Model of Mining Environment Restoration Regulation Based on Sustainable Development Goals," *Legality : Jurnal Ilmiah Hukum* 30, no. 1 (2022): 131–46, https://doi.org/10.22219/ljih.v30i1.20764.

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out reclamation even though the funds have been deposited.[41] This situation indicates a normative deficit and policy weaknesses. On the one hand, regulations on mine reclamation are still scattered across the Minerba Law, the PPLH Law, PP 78/2010, and their derivative regulations, which are not entirely harmonious. On the other hand, law enforcement stops at administrative sanctions, while environmental criminal aspects are often ignored. As a result, companies can hide behind administrative obligations without carrying out environmental restoration.

In fact, the environmental damage caused is permanent and has a direct impact on public safety and ecosystem sustainability. The minimal use of criminal instruments gives the impression that violations of reclamation obligations are not serious crimes, but merely administrative violations. As a result, the deterrent effect on business actors is not achieved, and neglect of reclamation obligations continues to recur.[42] Normatively, the existence of reclamation guarantee funds should be interpreted as an instrument of environmental accountability that realizes the polluter pays principle. This means that any damage caused by mining activities must be fully borne by the business operator, not transferred to the state or the community. The existing administrative, civil, and criminal legal instruments should be able to serve as a firm basis for ensuring compliance. Therefore, there is a need to strengthen institutions, ensure transparency in the management of guarantee funds, and impose effective sanctions for any violations.

To strengthen the effectiveness of reclamation guarantee funds, comprehensive normative solutions are needed to not only technically reorganize regulations, but also ensure legal enforcement. Reformulating legal instruments is a must so that they are no longer reduced to administrative requirements and function as substantive legal instruments in guaranteeing the constitutional rights of citizens to a healthy and sustainable environment. (i) Normative-Theoretical Level: In this context, a legal basis is formulated that is capable of closing regulatory loopholes, reinforcing the obligations of business actors, and ensuring mechanisms for environmental damage restoration. There are three main pillars that must be laid as a foundation: first, the harmonization of the Minerba Law and the UUPPLH. The Minerba Law places reclamation obligations under an administrative regime, where violations more often result in administrative sanctions in the form of warnings, fines, and even license revocation. Meanwhile, the UUPPLH regulates criminal sanctions for any actions that cause pollution or environmental damage. This difference in orientation creates disharmony and opens up room for “forum shopping” by business actors, namely, choosing the rules that are more favorable to them. Therefore, regulatory harmonization is an absolute prerequisite so that reclamation obligations are no longer viewed as mere permit requirements, but rather as substantive environmental legal

[41] Ira Fadila Rohmadanti et al., “Reclamation Responsibility for Illegal Mining in Indonesia: How Should It Be?,” *Indonesia Law Reform Journal* 3, no. 3 (2023): 255–73, https://doi.org/10.22219/ilrej.v3i3.29669.

[42] Faisal Faisal, Derita Prapti Rahayu, and Yokotani Yokotani, “Criminal Sanctions’ Reformulation in the Reclamation of the Mining Community,” *Fiat Justisia: Jurnal Ilmu Hukum* 16, no. 1 (2022): 11–30, https://doi.org/10.25041/fiatjustisia.v16no1.2222.

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obligations, complete with criminal and civil consequences. This will enable the state to avoid a criminal law vacuum in the Minerba Law and prevent overlapping authorities in law enforcement.

Second, a double-track system is needed in law enforcement. Law enforcement in the field of the environment requires a double track system that combines administrative sanctions (*maatregel*) and criminal sanctions (*straf*). Administrative sanctions in the form of reclamation obligations must be prioritized because the main objective of environmental law is ecological restoration. However, to prevent businesses from ignoring these obligations, criminal sanctions are also needed as a last resort. Imprisonment or fines serve to deter and strengthen legal compliance. Therefore, this system creates a balance between corrective (restoration) and repressive (punishment) aspects. This model will be more effective if combined with strict monitoring mechanisms and transparency in the management of reclamation guarantee funds. Third, internalization of global environmental law principles into the national legal system. The polluter pays principle stipulates that all costs of environmental damage restoration must be borne entirely by mining companies, so that the burden is not shifted to the state or the community. The principle of strict liability ensures that the obligation to restore remains even if subjective fault is not proven, which is important because environmental damage often cannot be directly linked to intent. Meanwhile, the precautionary principle serves as a preventive instrument: the state and business actors are obliged to take early preventive measures, even if the ecological impact cannot yet be fully confirmed scientifically.

(ii) Policy-Applicative Level. At the implementation level, the effectiveness of reclamation guarantee funds can only be realized if supported by concrete, transparent, and participatory institutional design and governance. First, a Multi-Stakeholder Monitoring Board needs to be formed, involving the government (Ministry of Environment and Forestry, Ministry of Energy and Mineral Resources, and local governments), mining companies, academics, environmental NGOs, and representatives of affected communities. This institution will serve as a cross-actor supervisor to ensure transparency, accountability, and effectiveness in the implementation of reclamation through fund management, environmental audits, and the provision of open data to the public. The existence of this institution serves as a means of checks and balances that prevents the domination of the state or corporations in determining the direction of reclamation. Second, the application of digital transparency through an E-Monitoring System. This system allows the public to directly access data related to reclamation fund deposits, land recovery progress, and environmental audit results. With data openness, the potential for moral hazard, such as companies only depositing funds without actually carrying out reclamation, can be significantly reduced.

Third, reclamation funds must be managed in a special account that is jointly supervised with a phased disbursement mechanism based on independent environmental audits. Meanwhile, the government has the executive authority to immediately disburse funds if a company is proven to

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be negligent, without being hampered by protracted bureaucracy. This design closes the space for manipulation and ensures that funds can be used for environmental restoration. Fourth, ecological justice and public participation must be guaranteed in a substantive manner. Local communities are positioned as both objects and subjects of oversight. Community forums, citizen lawsuit mechanisms, and class actions need to be strengthened as legal channels that enable communities to hold companies or governments accountable for failing to fulfill their reclamation obligations. In this way, oversight does not stop at administrative formalities, but becomes a substantive mechanism to protect citizens' constitutional rights to a healthy and sustainable environment.

The reconstruction design is based on the constitutional framework and oriented towards the principle of ecological justice. The constitution affirms the state's obligation to guarantee citizens' rights to a good and healthy environment and sustainable management of natural resources. Meanwhile, ecological justice affirms that the current generation should not pass on the burden of ecological damage to future generations. At the normative level, legal reconstruction requires the harmonization of the Minerba Law with the UUPPLH, so that reclamation obligations do not stop at the administrative regime, but are integrated into the environmental law regime, which has criminal and civil consequences. In addition, it is reinforced by international environmental law principles: the polluter pays principle to ensure that the burden of restoration is fully borne by the business actor; strict liability to guarantee absolute responsibility without proof of fault; and the precautionary principle to prioritize caution from the outset of exploitation. All of this must be bound in a double-track system approach, where sanctions in the form of reclamation and restoration are placed as a priority, while criminal sanctions are present as an ultimum remedium to provide a deterrent effect.

At the policy-application level, the effectiveness of reclamation guarantee funds can be realized through concrete institutional design. The establishment of a Multi-Stakeholder Monitoring Board involving the government, business actors, academics, civil society, and local communities to ensure independent and participatory oversight. Fund transparency can be ensured with a digital e-monitoring system, so that the public can access information about fund deposits, reclamation progress, and environmental audits. Furthermore, the government's executive authority must be strengthened so that funds can be disbursed immediately when companies default, without being hampered by complicated bureaucracy. Public participation must also be positioned substantively through community forums, citizen lawsuit mechanisms, and class actions, so that the community is not merely an object of policy, but an active actor in oversight. With this two-level design, reclamation guarantee funds can be transformed from a fragile administrative instrument into a substantive, accountable, and constitutional legal instrument. It should not stop at being a formality of permission, but should become a real guarantee for environmental restoration and the protection of citizens' constitutional rights.

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Normatively, reclamation guarantee funds have a dual function as a preventive and repressive legal instrument within the framework of environmental protection and management. Its preventive function is reflected in the obligation to provide funds before mining activities commence, in order to guarantee the availability of restoration costs without burdening the state in the event of environmental damage. Meanwhile, its repressive function is evident when the fund becomes the basis for imposing legal sanctions on business actors who neglect their reclamation obligations. In this position, the reclamation guarantee fund is no longer merely an administrative requirement for licensing, but a substantive legal instrument inherent in the environmental protection regime and the application of the principle of good mining practice.

However, the effectiveness of these dual functions can only be realized if the normative and institutional frameworks are comprehensive and consistent. First, legal norms must cover all forms of mining activities, including illegal mining, so that there is no normative exclusion that weakens the principle of equality in law enforcement. Second, law enforcement must not stop at the administrative level, but must ensure the actual implementation of reclamation and environmental restoration obligations. Third, the management of reclamation guarantee funds must be carried out in a transparent, accountable, and publicly monitored manner to prevent misuse of funds and conflicts of interest between the government and companies. Fourth, the application of the precautionary principle and public participation must be used as the main guidelines in every stage of mining management, so that policies are not only legal and formal, but also rooted in social legitimacy and ecological justice. Therefore, strengthening the effectiveness of reclamation guarantee funds cannot be done solely through regulatory revisions, but must be accompanied by the strengthening of multi-layered sanction mechanisms, transparent and integrity-based fund management, and a participatory monitoring system based on citizens' constitutional rights to a good and healthy environment.

Finally, the normative reconstruction of reclamation guarantee funds must depart from a constitutional foundation as the state's responsibility to guarantee every citizen's right to a healthy environment. Article 33 of the 1945 Constitution contains a strong mandate for the government to abandon the liberalistic and exploitative paradigm of natural resource management and shift towards a sustainable development model that balances economic, social, and ecological interests. In this context, the precautionary principle serves as a preventive legal instrument, ensuring that all mining activities comply with environmental protection standards. This principle not only prevents ecological risks early on but also reinforces the legal responsibility of the state and business actors towards ecosystem sustainability. From an ecodemocracy perspective, the effectiveness of reclamation guarantee funds can only be achieved if there is integration of environmental justice, consistent application of the precautionary principle, and meaningful public participation in every stage of policy-making. Thus, reclamation guarantee funds are not merely administrative instruments, but must function as corrective and distributive tools for ecological justice, in line with the mandate of the

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constitution and the principles of a state based on the rule of law that is oriented towards environmental sustainability.

4. CONCLUSION

This study concludes that the effectiveness of reclamation guarantee funds has not been achieved and is instead trapped in administrative formalities due to regulatory disharmony, weak supervision, and the absence of strict sanctions, thereby failing to protect citizens' constitutional rights to a good and healthy environment. There is a need to reconstruct the normative framework of reclamation guarantee funds through two levels of analysis. At the normative level, it requires harmonization between the Minerba Law and the UUPPLH as the basis for integrating reclamation obligations into the environmental legal regime with criminal and civil implications, reinforced by the polluter pays principle, strict liability, and the precautionary principle as the foundation of ecological responsibility. All of this must be operationalized within the framework of a double-track system, in which sanctions in the form of reclamation and environmental restoration are a priority, while criminal sanctions are used as a last resort to enforce deterrence and ecological legal certainty. At the policy level, its effectiveness requires a transparent, participatory, and responsive institutional design through the establishment of a Multi-Stakeholder Monitoring Board, a public e-monitoring system, and the strengthening of the government's executive authority to ensure the disbursement of funds without bureaucratic obstacles. Community participation must be institutionalized substantively through community forums, citizen lawsuits, and class actions. Academically, this research expands environmental law theory towards an eco-constitutional framework that links law, ecology, and democracy. Practically, it provides direction for regulatory reform, enforcement of sanctions, and transparent public oversight. The implications are, for the government, as a basis for mining regulatory reform oriented towards ecological justice; for law enforcement, guidelines for the application of double sanctions and the affirmation of corporate responsibility; and for the community, the strengthening of public control and participation rights over a healthy and sustainable environment.

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