

Analysis of Law Enforcement in the Perspective of Law Number 32 of 2009 concerning Illegal Mining and Environmental Damage

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ABSTRACT

This study investigates the enforcement of Law Number 32 of 2009 concerning Environmental Protection and Management, with a specific focus on addressing the phenomenon of illegal mining and its contribution to environmental degradation in Indonesia. Through a normative juridical approach, the research analyzes legal provisions, regulatory structures, and institutional mechanisms that govern environmental law enforcement. The findings reveal that although the law provides comprehensive tools—including administrative, civil, and criminal sanctions—its enforcement is often hindered by institutional fragmentation, weak monitoring systems, limited public participation, and political interference. Illegal mining continues to thrive in various regions, causing severe environmental damage such as deforestation, water pollution, and soil erosion. The study highlights the urgent need for integrated law enforcement, inter-agency coordination, legal reform, and community empowerment. Strengthening these areas is critical to realizing environmental justice and sustainability through effective legal implementation.

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1. INTRODUCTION

Illegal mining has emerged as a serious environmental and legal issue in Indonesia, contributing significantly to environmental degradation, loss of biodiversity, deforestation, and pollution of water sources. Despite the presence of comprehensive legal frameworks such as Law Number 32 of 2009 concerning Environmental Protection and Management, enforcement remains fragmented and ineffective due to systemic weaknesses in legal implementation

and institutional oversight, especially in mineral-rich but environmentally vulnerable regions [1], [2], [3]. The environmental consequences are severe, including habitat destruction and water pollution, which not only threaten Indonesia's biodiversity but also the livelihoods of indigenous communities [1], [3]. In regions like East Kalimantan, ineffective monitoring, poor inter-agency coordination, and lenient sanctions further exacerbate the problem [3]. Addressing these challenges requires strengthening inter-agency collaboration,

improving government coordination, and establishing independent supervisory teams to oversee mining activities and enforce environmental regulations [3], [4], [5]. Additionally, enhancing public awareness and education about environmental laws and the importance of sustainable practices is essential for long-term environmental protection [3].

Law Number 32 of 2009 was enacted as a cornerstone of Indonesia's environmental legal framework, emphasizing sustainable development, environmental protection, and legal accountability through administrative, civil, and criminal sanctions against violators, including those involved in illegal mining. Despite its comprehensive provisions, the law's implementation faces persistent challenges such as overlapping regulations, weak coordination between central and regional governments, limited enforcement capacity, and inadequate public involvement [6], [7], [8]. The presence of conflicting mandates among government bodies often leads to inconsistent legal interpretations and ineffective policy enforcement, while poor intergovernmental coordination further impedes coherent environmental governance [7]. In addition, enforcement agencies frequently struggle with insufficient resources, both in terms of funding and trained personnel, limiting their capacity to monitor and respond to environmental violations effectively [8]. Public awareness and participation—critical elements for law implementation—remain low, and the principle of *in dubio pro natura*, which advocates prioritizing nature in legal interpretation, is undermined by inconsistent policies and limited understanding at the community level [6], [8].

This study aims to conduct a normative legal analysis of the law enforcement process related to illegal mining and its environmental consequences under Law Number 32 of 2009, by examining how legal norms are structured, interpreted, and implemented in practice, as well as identifying gaps or inconsistencies that may hinder their effectiveness. The urgency of this

research stems from the escalating threat illegal mining poses to Indonesia's environmental sustainability, public health, and socio-economic stability. In this context, effective legal enforcement is not merely a procedural obligation but a crucial step toward achieving environmental justice and intergenerational equity. Therefore, this paper endeavors to offer a critical and in-depth legal examination of the existing regulatory framework and put forward recommendations to strengthen legal protection of the environment from the adverse impacts of illegal mining.

2. LITERATURE REVIEW

2.1 *Environmental Protection in Legal Perspective*

Environmental protection in the legal context is intrinsically linked to the principles of sustainable development, which seek to balance economic growth with environmental preservation. Law Number 32 of 2009 in Indonesia exemplifies this integration by embedding environmental considerations into development planning, mandating environmental impact assessments (AMDAL), and applying strict liability to environmental violators, thus reinforcing key principles such as the precautionary and polluter-pays principles [9], [10], [11]. These principles, which also underpin international environmental governance, aim to prevent ecological degradation, promote intergenerational equity, and encourage public participation in decision-making processes [12]. While the law provides a solid legal foundation for environmental protection and sustainable development, its effective implementation faces ongoing challenges, including limited enforcement capacity and inconsistent public engagement [10], [13]. Strengthening public awareness and participation is therefore critical, as collective societal actions play a pivotal role in realizing environmental goals.

2.2 *Legal Framework Against Illegal Mining*

Illegal mining, or *pertambangan tanpa izin* (PETI), remains a significant issue

in Indonesia despite the existence of legal instruments such as Law Number 4 of 2009 and Law Number 32 of 2009, which regulate mining activities and aim to protect the environment. These laws provide a comprehensive framework for licensing, governance, and sanctions against illegal mining, including requirements for permits such as IUP, IPR, or IUPK, and the imposition of administrative, civil, and criminal penalties for violations [14], [15]. However, enforcement remains suboptimal due to inadequate implementation of sanctions, limited resources among law enforcement agencies, and inconsistent preventive and repressive measures, particularly in forested areas where illegal mining is widespread [16]. In addition to these legal and institutional weaknesses, socio-economic factors significantly contribute to the persistence of PETI, as many individuals and communities rely on illegal mining for income amid limited employment opportunities [15]. Moreover, traditional practices and cultural perceptions that view mining land as a communal or ancestral legacy further encourage unlicensed mining activities, complicating efforts to enforce legal compliance [15].

2.3 Law Enforcement in Environmental Law

Effective law enforcement in environmental law in Indonesia is a multifaceted challenge that requires a comprehensive approach involving legal substance, structure, and culture. The implementation of Law Number 32 of 2009, which forms the foundation for environmental protection and management, includes administrative, civil, and criminal enforcement mechanisms [6], [7]. Preventive measures involve administrative actions such as mandating environmental impact assessments (EIA) for businesses, while repressive efforts include civil and criminal actions to remedy environmental damage [17]. However, in practice, enforcement faces significant obstacles such as weak supervision, inconsistent sanctioning, institutional overlaps—particularly among the Ministry of Environment and Forestry, Ministry of Energy and Mineral Resources,

and regional governments—and low public awareness [6], [18]. These issues complicate coordination and reduce the efficacy of law enforcement. To address these challenges, enhanced inter-agency coordination, greater community involvement, and stricter sanctions focused on achieving substantive environmental justice rather than merely procedural compliance are necessary [18], [19].

3. METHODS

This research adopts a qualitative and normative legal approach, relying solely on legal materials rather than empirical data, and excludes fieldwork activities such as surveys or interviews. The study critically analyzes legal texts, legislation, court decisions, legal theories, and scholarly opinions to assess the effectiveness of the legal framework governing environmental protection and the regulation of illegal mining. The goal is to propose logical and juridical improvements to existing legal mechanisms. Several sub-approaches are applied within the normative method, including the statutory approach—focused on examining key laws such as Law Number 32 of 2009 on Environmental Protection and Management and Law Number 4 of 2009 on Mineral and Coal Mining, as well as associated regulations and decrees. The conceptual approach is used to analyze foundational legal doctrines, including environmental crime, legal responsibility, sustainable development, the precautionary principle, the polluter-pays principle, and strict liability. Additionally, the case approach analyzes relevant judicial decisions to understand how courts have interpreted legal norms, while the comparative approach, when needed, draws on practices from other jurisdictions to provide insight into effective environmental law enforcement.

The study utilizes three categories of legal materials to support its analysis. Primary legal materials include binding instruments such as statutes, government regulations, presidential decrees, ministerial

regulations, and court decisions—most notably Law No. 32 of 2009 and Law No. 4 of 2009, as well as relevant constitutional provisions and articles of the Criminal Code. Secondary legal materials encompass scholarly resources such as textbooks, journal articles, legal commentaries, and academic research reports on environmental law, mining regulation, and law enforcement. Tertiary legal materials, such as legal dictionaries and encyclopedias, are also used to assist in interpreting primary and secondary sources. The analysis combines deductive and interpretative techniques: deductively applying general legal norms to specific cases and interpretatively analyzing the intent, scope, and limitations of legal provisions. The analytical process involves identifying legal issues concerning the enforcement of environmental law against illegal mining, examining related statutes and their interrelation, evaluating the application of legal norms by institutions, assessing consistency through judicial decisions and expert commentary, and ultimately formulating conclusions and recommendations to improve legal clarity, institutional coordination, and community engagement in environmental protection.

4. RESULTS AND DISCUSSION

4.1 Legal Analysis of Law Number 32 of 2009 Concerning Illegal Mining

Law Number 32 of 2009 on Environmental Protection and Management provides a comprehensive legal framework for preventing, controlling, and prosecuting environmental damage, including those caused by illegal mining activities. Key provisions include Article 69 paragraph (1), which prohibits activities resulting in environmental pollution or damage, including unauthorized natural resource extraction [7]; Articles 76–82, which authorize administrative sanctions such as written warnings, coercive measures, suspension of operations, and revocation of permits [18]; and Article 87, which introduces the principle of strict liability, allowing affected parties to

file civil lawsuits without the need to prove negligence [20]. Furthermore, Articles 97–120 define criminal offenses and stipulate penalties such as imprisonment and fines for actions that cause significant environmental harm [21]. While these provisions establish a strong legal foundation for holding illegal miners accountable through both civil and criminal means, enforcement in practice remains weak and inconsistent due to limited institutional resources, poor inter-agency coordination, and low public awareness [7], [22]. The application of the *ultimum remedium* principle, which treats criminal sanctions as a last resort, often delays decisive punitive action [21], and corporate accountability remains difficult to enforce because the requirement to prove fault (error) still applies in prosecuting environmental violations by business entities [20].

4.2 Patterns of Illegal Mining and Environmental Damage

Illegal mining (*Pertambangan Tanpa Izin* or PETI) in Indonesia predominantly occurs in mineral-rich yet remote regions such as Kalimantan, Sulawesi, and Sumatra, where operations are carried out without the required environmental permits, reclamation plans, or regulatory oversight, and often involve the use of hazardous substances like mercury and cyanide. These activities result in severe environmental degradation, including deforestation and biodiversity loss due to unregulated land clearing [26], water pollution and sedimentation from tailing waste that contaminate rivers and aquatic ecosystems [23], air pollution from open burning and dust exposure, soil degradation, and significant health risks to local communities from toxic chemical exposure [24]. Studies have revealed mercury levels in miners' hair exceeding safety standards, and mercury accumulation in fish—a dietary staple—poses further risks to human health [23]. These consequences not only violate the provisions of Law Number 32 of 2009 but also threaten ecological stability and long-term sustainability. While Indonesia has ratified the Minamata Convention to control mercury use [25], and established legal sanctions for

illegal mining, enforcement remains weak, highlighting the need for stronger institutional measures and inter-agency coordination to address environmental and health hazards effectively [24], [26].

4.3 Law Enforcement Mechanisms and Challenges

While Indonesia possesses a robust legal framework for environmental protection and mining regulation, its implementation is hindered by a range of structural, institutional, and cultural challenges. Institutional overlap and fragmentation between the Ministry of Environment and Forestry (KLHK), the Ministry of Energy and Mineral Resources (ESDM), and local governments result in uncoordinated efforts, jurisdictional disputes, and delayed responses due to overlapping authority over licensing, monitoring, and enforcement [1], [27]. Local governments, while having enforcement responsibilities, often lack alignment with national policies, further complicating the regulatory landscape [28]. Supervision and monitoring are also weak, especially in remote areas where resources are limited, allowing illegal mining operations to persist undetected. Environmental impact assessments (AMDAL) are frequently falsified or absent, undermining the accountability mechanisms embedded in the regulatory framework [1].

In addition, inconsistent sanctions and widespread corruption severely undermine enforcement efforts. Although legal provisions prescribe criminal, civil, and administrative sanctions, many violators evade prosecution or receive only minimal penalties, which fail to act as effective deterrents [29]. Systemic corruption, including collusion between local officials, law enforcement, and mining operators, fosters a culture of impunity, enabling illegal activities to continue unchecked. Public participation and legal awareness also remain low, limiting community engagement in environmental protection. In many cases, residents near illegal mining sites tolerate or even join such operations due to economic necessity and a lack of legal empowerment

[30]. These intertwined challenges highlight the urgent need for institutional reform, increased transparency, and community-based strategies to strengthen the enforcement of environmental and mining laws in Indonesia.

4.4 Strengthening Legal Enforcement

To address the persistent challenges in enforcing Law Number 32 of 2009, a series of legal and policy recommendations are proposed to strengthen institutional effectiveness and promote environmental justice. First, strengthening inter-institutional coordination is essential through the establishment of a centralized environmental law enforcement task force that integrates the roles of KLHK, ESDM, the police, and local governments. This task force would enable a unified and rapid response to illegal mining cases. Second, legal harmonization is needed by amending sectoral laws such as Law Number 4 of 2009 on Mineral and Coal Mining to align more closely with the environmental protection mandates of Law Number 32 of 2009. Clear jurisdictional boundaries and enforcement protocols must be established to avoid overlaps and legal ambiguities that currently hinder enforcement.

In addition, enhancing community participation is critical. This can be achieved by empowering local communities through environmental education, legal aid, and participatory monitoring initiatives. Citizen-based reporting mechanisms should also be incorporated into official enforcement systems to increase responsiveness and grassroots vigilance. Transparency and accountability should be promoted through the implementation of digital licensing systems and real-time public access to environmental compliance data, thereby reducing the risk of permit fraud and facilitating independent oversight. Finally, improving criminal prosecution is necessary by ensuring that law enforcement personnel are trained in environmental law and equipped to investigate complex environmental crimes. Heavier penalties and consistent prosecution of offenders are

essential to establish a credible deterrent and reinforce the rule of law in environmental governance.

5. CONCLUSION

Law Number 32 of 2009 serves as a vital legal instrument for the protection and management of Indonesia's environment; however, its enforcement, particularly in addressing illegal mining, remains largely ineffective due to a range of legal, institutional, and socio-political barriers. Although the law provides administrative, civil, and criminal mechanisms to hold violators accountable, implementation is often weak and inconsistent, allowing illegal mining to continue causing substantial environmental harm. This is exacerbated by poor supervision, legal loopholes, overlapping institutional authority, and, in

some cases, corrupt practices, while local communities—who are most affected by environmental degradation—are seldom involved in enforcement efforts. To strengthen environmental law enforcement, this study recommends: (1) enhancing inter-agency coordination through joint enforcement bodies; (2) harmonizing environmental and mining laws to eliminate ambiguities; (3) promoting grassroots public participation and legal awareness; (4) leveraging technology to improve transparency in licensing and monitoring; and (5) ensuring firm and consistent prosecution of environmental crimes. In conclusion, achieving environmental sustainability and justice in Indonesia requires not only robust legislation but also coherent, transparent, and committed enforcement supported by all stakeholders.

REFERENCES

- [1] K. N. Harinda, A. Purnawan, and A. Witasari, "The Law Enforcement of Environmental Law against Illegal Mining," *Law Dev. J.*, vol. 3, no. 4, pp. 693–699, 2021.
- [2] A. Rohman, Hartiwiningsih, and M. Rustamaji, "Illegal mining in Indonesia: need for robust legislation and enforcement," *Cogent Soc. Sci.*, vol. 10, no. 1, p. 2358158, 2024.
- [3] I. Hasibuan and M. Japri, "Implementation Of Environmental Law In Sustainable Natural Resource Management," *Awang Long Law Rev.*, vol. 7, no. 1, pp. 140–146, 2024.
- [4] A. Syafi'i, A. Brawijaya, and A. R. Hakim, "Strategi Inovatif Manajemen Dan Bisnis Di Era Digital: Analisis Pengaruh Teknologi Terkini Terhadap Keberlanjutan Dan Kinerja Organisasi," *J. Visionida*, vol. 9, no. 2, pp. 191–198, 2023, doi: 10.30997/jvs.v9i2.11069.
- [5] L. Syamsumardian, "Legal Enforcement on Environment Pollution in Elegant Gold Mining Activities," in *2018 International Conference on Energy and Mining Law (ICEML 2018)*, Atlantis Press, 2018, pp. 181–183.
- [6] V. P. Ningrum, "Environmental Law Enforcement In Law Number 32 of 2009 Concerning Environmental Protection and Management," *Asian J. Soc. Humanit.*, vol. 1, no. 08, pp. 351–356, 2023.
- [7] R. Sara and B. Purnama, "Environmental issues and environmental law enforcement in Indonesia in the perspective of law number 32 of 2009," *J. Indones. Sos. Sains*, vol. 5, no. 1, p. 1337, 2024.
- [8] A. Ramli, T. I. Putra, N. F. Dewanti, S. W. Kinasih, R. Arifin, and S. H. Idris, "Applying In Dubio Pro Natura In Environmental Crime Cases: Legal Perspectives In Indonesia," *Indones. J. Int. Clin. Leg. Educ.*, vol. 5, no. 4, pp. 409–444, 2023.
- [9] M. Kowalczyk, "Environmental Protection Programmes in selected Polish communities as the first step towards sustainable development," *Zesz. Teoretyczne Rachun.*, vol. 46, no. 2, pp. 137–155, 2022.
- [10] C. S. T. Kansil and D. B. Malkan, "The Role of Environmental Law in Preventing Environmental Degradation and Pollution," *QISTINA J. Multidisiplin Indones.*, vol. 3, no. 2, pp. 1647–1654, 2024.
- [11] J. Crawford, "The constitution and the environment," *Sydney L. Rev.*, vol. 13, p. 11, 1991.
- [12] R. Ramlogan, *Sustainable development: Towards a judicial interpretation*, vol. 9. Martinus Nijhoff Publishers, 2010.
- [13] A. Kipāne and A. Vilks, "Legal framework for environmental protection in the context of sustainable development," *Eur. J. Sustain. Dev.*, vol. 11, no. 4, p. 169, 2022.
- [14] J. L. Chandra, "Tindak Pidana Illegal Mining Bagi Perusahaan Yang Melakukan Pertambangan Tanpa Izin," *Univ. Muhammadiyah Sumatera Utara*, 2020.
- [15] A. Sarumaha, "A State Steps in the Market of Sovereign Mining on the Problem of Without Permission (PETI)," in *2018 International Conference on Energy and Mining Law (ICEML 2018)*, Atlantis Press, 2018, pp. 22–25.
- [16] M. R. Maulana and A. Firmansyah, "Penegakan Hukum Terhadap Pelaku Usaha yang Menambang di Kawasan Hutan Tanpa Izin," *J. Ris. Ilmu Huk.*, pp. 11–16, 2023.
- [17] Z. Harahap, "Penegakan Hukum Lingkungan Menurut UUPLH," *J. Huk. Ius Quia Iustum*, vol. 11, no. 27, pp. 7–22, 2004.
- [18] S. Yunita *et al.*, "Effectiveness of Environmental Law in Indonesia: Study on the Implementation of Law Enforcement in Cases of Environmental Damage," *QISTINA J. Multidisiplin Indones.*, vol. 3, no. 2, pp. 1882–1887, 2024.
- [19] A. P. Sari, S. Nurbadaliah, W. S. Wibawa, S. Solikhin, and M. Noordiansyah, "The Implementation of Law Enforcement

- as an Important Note in Environmental Legal Issues," *Proceeding Islam. Univ. Kalimantan*, 2024.
- [20] D. Irawansah, "Criminal Responsibility Of Business Operators For Iron Sand Mining Caused Environmental Damage," *Awang Long Law Rev.*, vol. 5, no. 2, pp. 567–573, 2023.
- [21] H. Kurnia, "Legal Arrangements for Criminal Acts of Environmental Pollution in Indonesia," *JILPR J. Indones. Law Policy Rev.*, vol. 3, no. 3, pp. 86–99, 2022.
- [22] N. Chaidir, "Juridical Analysis of Criminal Acts in Environmental Pollution in Accordance to The 32 Law of 2009 Concerning Protection and Management Environment," *Int. J. Law, Environ. Nat. Resour.*, vol. 4, no. 1, pp. 55–67, 2024.
- [23] E. Rasul and M. Musafira, "Analisis Kandungan Merkuri (Hg) pada Badan Air, Sedimen dan Biota yang Terdampak Aktivitas Pertambangan Emas di Kabupaten Parigi Moutong," *KOVALEN J. Ris. Kim.*, vol. 8, no. 1, pp. 39–44, 2022.
- [24] R. Rohendi, D. Gunawan, P. Purjoko, A. N. S. Noor, and R. W. Fitri, "Juridical Review of The Impact of Unlicensed Mining (PETI) on Environmental Damage in South Kalimantan Province," *Proceeding Islam. Univ. Kalimantan*, 2024.
- [25] M. Farisi, A. K. Putra, and N. Novianti, "Penggunaan Merkuri pada Tambang Emas Ilegal: Diaturkah Dalam Minamata Convention?," *Uti Possidetis J. Int. Law*, vol. 3, no. 3, pp. 320–344, 2022.
- [26] A. L. Ungawali, "Pertanggung Jawaban Pidana Pelaku Penambangan Tanpa Izin di Dalam Kawasan Hutan Dikaitkan dengan Undang-undang Nomor 18 Tahun 2013 tentang Pencegahan dan Pemberantasan Perusakan Hutan.," in *Bandung Conference Series: Law Studies*, 2022, pp. 317–322.
- [27] M. J. Dewa, L. Sensus, G. Tatawu, O. K. Haris, M. S. Sinapoy, and N. Jufri, "Penegakan Hukum dalam Tata Kelola Pertambangan Berkelanjutan Berwawasan Lingkungan," *Halu Oleo Leg. Res.*, vol. 5, no. 1, pp. 62–75, 2023.
- [28] U. W. Soelistijo, C. Valentina, and M. Puspita, "Outstanding Issues in Mineral Resource Economics: The Case of Indonesia," *Int. J. Eng. Res. Sci.*, vol. 2, no. 7, pp. 38–56, 2016.
- [29] J. C. G. Mahoro and F. X. A. Samekto, "Barriers to the enforcement of environmental law: An effect of free market domination and regional autonomy in Indonesia," *Hasanuddin Law Rev.*, pp. 31–45, 2021.
- [30] S. Ramlan and Y. Fristikawati, "Environmental Law of Indonesia," *Comp. Environ. Law Regul. (Thomson Reuters 2018)*, 2018.