Society, 13 (3), 1133-1146, 2025
P-ISSN: 2338-6932 | E-ISSN: 2597-4874
https://societyfisipubb.id

Reformulation of Additional Criminal Sanctions in Law No. 2 of 2025 on Mineral and Coal Mining Based on Green Mining Principles

Dwi Haryadi *, Iskandar Zulkarnain, and Rafiqa Sari
University of Bangka Belitung, Bangka Belitung Islands Province, 33172, Indonesia
* Corresponding Author: dwi83belitong@gmail.com

ARTICLE INFO

Publication Info:
Research Article

How to cite:
Haryadi, D., Zulkarnain, I., & Sari, R. (2025). Reformulation of Additional Criminal Sanctions in Law No. 2 of 2025 on Mineral and Coal Mining Based on Green Mining Principles. Society, 13(3), 1133–1146.

DOI: *10.33019/society.v13i3.958*

Copyright © 2025. Owned by author (s), published by Society.

OPEN ACCESS

This is an open-access article. License: Attribution-NonCommercial-ShareAlike (CC BY-NC-SA)

Received: October 13, 2025;
Accepted: November 23, 2025;
Published: December 26, 2025;

ABSTRACT

One of the principles contained in Law No. 2 of 2025, as the Fourth Amendment to Law No. 4 of 2009 on Mineral and Coal Mining, is sustainability and environmental responsibility as manifestations of green mining. In licensed mining activities, there is an obligation to carry out post-mining management and land reclamation as environmental restoration measures. However, in illegal mining, which clearly causes environmental damage, there is no clarity regarding who bears responsibility. The current criminal sanctions are limited to imprisonment and fines. Imprisonment has no impact on environmental restoration, while fines imposed in court decisions are generally insufficient to cover the costs of environmental recovery. Although additional criminal sanctions exist, they do not explicitly regulate such obligations. This is where the urgency of this study lies: ensuring that there is a legally responsible party for environmental restoration. The purpose of this research is to analyze existing regulations on additional criminal sanctions and to formulate a green-mining-oriented reform. This study employs a normative juridical approach through statutory analysis and case studies based on court decisions, using secondary data comprising primary, secondary, and tertiary legal materials. The findings reveal, first, that the current formulation of criminal acts and additional criminal sanctions has not yet been oriented toward environmental restoration responsibility. Second, it is essential to reformulate the additional criminal sanctions to incorporate obligations for environmental recovery arising from criminal acts. The legal implications are twofold: theoretically, this strengthens the recognition of the environment as a victim that must be protected; practically, it ensures legal certainty for environmental restoration through court decisions, thereby

Copyright © 2025. Owned by Author(s), published by **Society**. This is an open-access article under the CC-BY-NC-SA license.

affirming the existence and effectiveness of environmental law enforcement.

Keywords: *Environmental Restoration; Green Mining Principles; Illegal Mining; Mineral and Coal Mining; Reformulation of Additional Criminal Sanctions*

1. Introduction

Environmental damage from mining activities in Indonesia remains a serious concern, despite the explicit emphasis on environmental sustainability principles and objectives in legislation. Mining activities involving commodities such as coal, gold, and nickel result in physical degradation, including deforestation, soil erosion, and pollution of air, water, and land, as well as a decline in biodiversity. Moreover, socio-economic impacts also manifest in social conflicts, health problems, and changes in the livelihoods of communities surrounding mining areas (Prasetyo et al., 2025). One government policy potentially violating environmental regulations was the enactment of Law No. 11 of 2020 on Job Creation in conjunction with Law No. 6 of 2023 on the Enactment of Government Regulation in Lieu of Law No. 2 of 2022 on Job Creation. This legislation emphasizes regulatory simplification and bureaucratic streamlining, raising concerns about the potential issuance of regulations that reduce the time and effort required to prepare Environmental Impact Assessment (AMDAL) documents. It is well known that environmental protection relies heavily on environmental control instruments, particularly Strategic Environmental Assessment (KLHS) and AMDAL. WALHI's findings show that many AMDAL documents were drafted superficially and inadequately by consultants (Kurniawan et al., 2025).

The Province of Bangka Belitung Islands is one of the largest and highest-quality tin-producing regions in Indonesia. Consequently, environmental impacts and their connection with social conflicts in the mining sector have become strategic issues. Conflicts within the mining sector frequently occur, including challenges related to post-mining reclamation (Haryadi et al., 2025). At the end of last September, President Prabowo stated that 1,000 illegal mining operations had been shut down in Bangka Belitung. This data at least illustrates the massive scale of illegal tin mining in the region. Furthermore, environmental degradation is reflected in the extent of critical land, which in 2024 reached 208,359 hectares, according to Minister of Forestry Decree No. 406 of 2025 (Kementerian Kehutanan Republik Indonesia, 2025).

The environmental impacts of illegal mining include deforestation, loss of wildlife habitats, contamination of water with heavy metals and toxic chemicals, destruction of coral reefs, and topographical changes that lead to erosion and flooding. In regions such as the Bangka Belitung Islands, environmental damage from illegal tin mining has resulted in enormous economic losses, estimated at approximately IDR 271.06 trillion. This damage also triggers natural disasters, such as floods and landslides, due to unstable soil conditions and the loss of vegetation that serves as natural water retention (Anitasari, 2024). Additionally, environmental destruction caused by illegal mining disrupts agricultural and plantation productivity, leading to sedimentation and river pollution that may endanger ecosystems and public health (Mitra Berdaya Optima, 2025). Recent data also indicate that environmental damage caused by illegal mining in Indonesia is severe and widespread, with approximately 2,000 to 2,741 illegal mining sites across the country, according to the Ministry of Energy and Mineral Resources (ESDM).

Copyright © 2025. Owned by Author(s), published by **Society**. This is an open-access article under the CC-BY-NC-SA license.
https://doi.org/10.33019/society.v13i3.958

Former illegal mining areas are generally left unreclaimed, resulting in open pits and acidic water ponds that contaminate surrounding ecosystems (Setiawan, 2025). In the Bangka Belitung Islands Province itself, tin mining has been ongoing for three centuries, yet reclamation of ex-mining areas remains poorly implemented (Haryadi et al., 2023).

Law No. 4 of 2009 on Mineral and Coal Mining (the Minerba Law) explicitly mandates that mining activities must adhere to environmental sustainability principles, both as a legal doctrine and as an operational objective. Article 2 of Law No. 4 of 2009 states that sustainability and environmental awareness constitute essential principles in mining law. This means that mining management must systematically integrate economic, environmental, and socio-cultural aspects to ensure present and future welfare. The law also affirms that mineral and coal resources are non-renewable natural wealth, controlled by the state, and must be managed responsibly, ensuring economic benefits while maintaining environmental sustainability to support long-term national development (Palempung et al., 2023). In principle, the Minerba Law requires mining operators to carry out reclamation and post-mining activities to restore environmental conditions, enabling former mining areas to regain functional value for both society and the environment (Widyaningrum & Hamidi, 2024).

However, in cases of illegal mining, there is no clear criminal provision assigning explicit responsibility for environmental restoration. Article 158 of Law No. 3 of 2020 (amending Law No. 4 of 2009) stipulates that individuals engaging in mining without a permit are subject to a maximum imprisonment of five years and a fine of up to IDR 100 billion. However, this article focuses solely on imprisonment and fines, without explicitly mandating environmental restoration (Gosal et al., 2021). Meanwhile, Article 164 of the Minerba Law provides additional sanctions in the form of administrative measures, including confiscation of equipment, seizure of illicit gains, and compensation for costs arising from the criminal act. However, this provision also does not explicitly mandate environmental restoration responsibilities for illegal mining offenders (Fachrurozi, 2025).

Thus, in law enforcement practice against illegal mining, despite the existence of criminal sanctions, there remains no explicit obligation for perpetrators to undertake reclamation or environmental rehabilitation, leaving many former illegal mining areas abandoned and severely damaged. This demonstrates a normative gap in Law No. 2 of 2025 regarding additional criminal sanctions that should mandate ecological restoration. This legal vacuum has persisted across legal regimes, from Government Regulation in Lieu of Law No. 37 of 1960, Law No. 11 of 1967, Law No. 4 of 2009, up to the fourth amendment in 2025, none of which clearly regulate additional criminal sanctions requiring environmental restoration. In fact, the "polluter pays principle," introduced by E.J. Mishan in *The Costs of Economic Growth*, asserts that polluters must bear the burden of environmental recovery costs (Muhdar, 2012).

This issue forms the core problem of this study. Therefore, it is crucial to review the current formulation and propose a reformulation to ensure that criminal sanctions effectively contribute to environmental restoration as part of the implementation of environmentally sound mining (green mining). Moreover, the current law only regulates additional sanctions for environmental restoration in legal mining. In contrast, environmental restoration obligations for illegal mining remain insufficiently regulated, unlike those imposed on licensed mining operations (Republik Indonesia, 2009).

2. Research Methodology

This study employs a normative juridical research method focusing on the examination of statutory regulations, particularly those related to additional criminal sanctions (Soekanto &

Copyright © 2025. Owned by Author(s), published by **Society**. This is an open-access article under the CC-BY-NC-SA license.
https://doi.org/10.33019/society.v13i3.958

Mamudji, 2001). The analytical techniques used in this research include: first, examining the criminal provisions concerning illegal mining and additional criminal sanctions under Law No. 2 of 2025; second, analyzing legal cases and court decisions relevant to additional criminal sanctions in the mineral and coal sector; and third, tracing the background and development of additional criminal sanction regulations in the mineral and coal sector, while comparing them with environmental law principles and sustainable development as stipulated in relevant regulations, such as Law No. 32 of 2009 on Environmental Protection and Management (Vico et al., 2025).

This approach also involves collecting primary data in the form of Law No. 2 of 2025 and several court decisions on illegal mining cases at the Tanjung Pandan District Court. The selected cases are those in which the elements of illegal mining offences were established, with decisions taken annually by the Tanjung Pandan District Court, the competent court for illegal mining cases in Belitung Island, covering Belitung and East Belitung Regencies. Secondary data include relevant journals, legal documents, scientific articles, academic studies, and reports from official institutions and NGOs monitoring the implementation of mining and environmental regulations.

At the analytical stage, a grammatical approach is applied to examine the linguistic and interpretative dimensions of additional criminal sanction provisions, and a systematic approach is used to ensure alignment between mineral and coal legislation and environmental protection and management laws. The application of this normative juridical method aims to provide a comprehensive understanding and to formulate recommendations to ensure that the reformulation of additional criminal sanctions in the 2025 Minerba Law incorporates environmental sustainability principles and establishes clearer, stricter provisions regarding environmental restoration responsibilities arising from illegal mining activities (Aprilia et al., 2025).

3. Results and Discussion

3.1. Principles of Sustainability and Environmental Awareness

The regulatory basis for ensuring that mining activities operate within the framework of environmental protection can be found in both the Constitution and in statutory legislation. Article 33, paragraph (4), of the 1945 Constitution stipulates that the national economy shall be organized on the basis of economic democracy and other principles, including togetherness, fair efficiency, sustainability, environmental awareness, independence, and the maintenance of balance and national economic unity. Mining is an economic activity that significantly contributes to state revenue. In line with this constitutional mandate, mining activities must therefore be conducted in accordance with several essential principles, particularly sustainability and environmental awareness.

Law No. 4 of 2009 on Mineral and Coal Mining, as amended for the fourth time by Law No. 2 of 2025, also guarantees environmental protection. First, the law emphasizes that one of the key objectives of mineral and coal mining management is to ensure independence, reliability, transparency, competitiveness, efficiency, and environmental soundness. The explanatory section further clarifies that, to achieve sustainable development, mining activities must be carried out in accordance with environmental principles, transparency, and community participation. Second, Article 2 sets out the fundamental principles of mineral and coal mining, including sustainability and environmental awareness. This principle mandates the planned integration of economic, environmental, and socio-cultural dimensions throughout the entire mining operation to ensure present and future welfare. Third, Article 3 reiterates that the

Copyright © 2025. Owned by Author(s), published by **Society**. This is an open-access article under the CC-BY-NC-SA license.
https://doi.org/10.33019/society.v13i3.958

implementation of mineral and coal mining must be grounded in sustainability and environmental awareness.

Drawing a direct line from the Constitution to statutory legislation clearly shows that mining activities are normatively required to be oriented toward sustainability and environmental protection. These key values and principles must also be reflected in the formulation of criminal provisions and sanctions, especially when mining activities constitute crimes that evidently cause environmental damage. Therefore, legal instruments and criminal sanctions are required to ensure that environmental restoration becomes a mandatory consequence when mining crimes occur and degrade environmental quality.

The practical implications of reformulating additional criminal sanctions in the Minerba Law in accordance with sustainability and environmental awareness principles are highly significant for environmental recovery and the application of sustainable development principles. The law adheres to the concept of sustainable mining, emphasising management practices that minimise environmental impacts and ensure that mining areas can be reclaimed, generating long-term benefits for the environment and surrounding communities (Kementerian Energi dan Sumber Daya Mineral Republik Indonesia, 2009). The sustainability principle is reflected in the obligation to manage mineral and coal resources efficiently, without damaging surrounding ecosystems, to ensure that present and future generations benefit optimally.

The reformulation of additional criminal sanctions also creates opportunities to enforce environmentally friendly mining technologies and sustainable socio-economic practices. Practically, the application of sustainability principles through additional criminal sanctions strengthens monitoring, supervision, and guidance roles of the government and relevant institutions, thereby protecting ecosystem continuity. From this, it can be concluded that effective environmental restoration and the application of sustainability principles should not remain merely normative ideals but must be realized through robust, proportionate legal implementation (bossadmin, 2025).

3.2. Sociological Problems in Illegal Mining

Large-scale, widespread illegal tin mining contributes significantly to environmental degradation and poses serious challenges for the reclamation of former mining areas. From a legal perspective, environmental damage and/or failure to carry out post-mining reclamation result in criminal sanctions against perpetrators. One notable case was that of an illegal miner, identified by the initials RS, who was sentenced by the Tanjung Pandan District Court in 2022 for failing to undertake rehabilitation of critical land damaged by mining activities. Learning from this case, the sociological perspective becomes crucial in analyzing environmental destruction caused by illegal tin mining practices and their implications for sustainability and environmental principles.

Sociologically, the case involving the convicted individual RS can be analyzed through three interrelated aspects. First, illegal tin miners act as rational actors. Their rationality is reflected in economic motives, seeking quick profits with minimal capital. Illegal miners typically excavate soil in pits known as *lubang camui*, using very simple technology, limited labor, shifting locations, and often operating under the radar of law enforcement authorities (Rahayu et al., 2025). The extracted tin is immediately sold to collectors at relatively low prices. The proceeds are partly reinvested in production and partly used to meet daily needs or repay debts to tin collectors. This cycle continues daily, driven by continuous cost–benefit considerations.

Copyright © 2025. Owned by Author(s), published by **Society**. This is an open-access article under the CC-BY-NC-SA license.
https://doi.org/10.33019/society.v13i3.958

Second, perpetrators cannot only control access but also sustain it. Illegal tin miners can negotiate access with other actors while simultaneously expanding their resources and power to maintain open access to mining sites. These abilities serve as social capital, enabling them to obtain, sustain, and even expand illegal access mechanisms. Access to tin mining is considered illegal when it violates laws, customs, or established conventions. Illegal miners operate covertly, employ close acquaintances as workers, exploit reclaimed lands, appear to cooperate with corporations while selling their products to private buyers, and maintain connections with law enforcement officials to avoid raids. Interestingly, illegal miners are often treated as "partners" supporting production schemes while also generating financial benefits for mining companies and smelters (Rahayu et al., 2025).

Third, reclaimed land has become a strategic target for miners. Why has reclaimed land owned by PT Timah Tbk become a contested area for illegal miners? Research conducted in Parit Tiga, West Bangka, found that illegal miners tend to target PT Timah's reclaimed land because it still contains abundant tin reserves, is easily accessible, and is relatively safe from law enforcement actions (Rahayu et al., 2025). Illegal miners are not the primary target of law enforcement; instead, authorities focus more on tin collectors. These collectors "ensure" the security of miners by paying certain law enforcement officers in exchange for information protection, immunity from raids, and reduced risk of criminal prosecution. The central position of tin collectors determines the continuity of mining activities, enabling illegal mining to persist despite unfavorable prices.

What are the sociological consequences of illegal mining practices on sustainability and environmental principles? According to Ulrich Beck's concept of a risk society, large-scale illegal tin mining poses environmental, social, and psychological risks (Sahputra et al., 2023). Environmental risks manifest in forest destruction in both reclaimed and non-reclaimed PT Timah Tbk mining areas. Reclaimed lands become damaged again, often in more severe conditions. Forest destruction is accompanied by water pollution from mining activities that use water jets, which create sediment that flows into rivers and even the sea. Sedimentation causes river and marine shallowing, threatening mangrove ecosystems. Flooding, coastal abrasion, and coral reef destruction represent clear manifestations of environmental risk.

Environmental risks then develop into social risks. Unreclaimed mining pits pose a danger to nearby communities. When pits are reopened, landslides may occur, causing fatalities. Victims leave behind families with uncertain livelihoods, and children risk neglect. Disease outbreaks originating from abandoned pits aggravate socio-environmental vulnerability, threatening public health, disrupting livelihoods, and potentially triggering social conflict. Ultimately, social risks perpetuate the individualisation of risk, leaving communities to bear impacts without clear accountability.

The accumulation of unresolved environmental and social risks leads to psychological risks. These refer to the psychological distress of affected communities, reflected in uncertainty over problem resolution, lack of preventive measures, and unclear future solutions. This condition reinforces the individualisation of risk, characterised by increased stress, pressure, and deviant behaviour in society. A risk society emerges as modernisation and industrialisation drive exploitative, greedy, and destructive human behaviour, conditions that contradict the principles of sustainability and environmental protection.

Social conflict becomes increasingly likely due to disparities between protecting local community rights and the economic interests of mining corporations. This contributes to broader injustice and social uncertainty. A reformulation of additional criminal sanctions

Copyright © 2025. Owned by Author(s), published by **Society**. This is an open-access article under the CC-BY-NC-SA license.
https://doi.org/10.33019/society.v13i3.958

grounded in sustainability principles must therefore accommodate social rights protection and reinforce corporate obligations to uphold principles of social justice in mining practices.

3.3. Formulation of Criminal Sanctions for Illegal Mining

The formulation of criminal sanctions for illegal mining in Law No. 3 of 2020 (amending Law No. 4 of 2009 on Mineral and Coal Mining) is primarily reflected in Articles 158 and 164. Article 158 regulates criminal sanctions for illegal mining offenders, stipulating a maximum imprisonment of five years and a maximum fine of IDR 100 billion, whereas previously the maximum penalty was ten years' imprisonment and a fine of IDR 10 billion. This provision focuses on law enforcement through imprisonment and financial penalties to deter illegal mining activities. In addition, Article 164 provides for additional administrative sanctions, including the confiscation of equipment used in the crime, the seizure of proceeds of crime, and an obligation to pay costs arising from violations. However, the main weakness of these sanction formulations lies in the absence of explicit provisions requiring illegal mining offenders to undertake environmental recovery or reclamation of damaged areas (Amalia & Sulistyanta, 2025).

Table 1. Comparison of Criminal Sanction Formulations and Additional Sanctions in Mining Law

Law	Content of Article 158	Content of Article 164
Law No. 4/2009	"Any person conducting mining activities without IUP, IPR, or IUPK shall be punished with imprisonment of up to 10 years and a maximum fine of IDR 10,000,000,000."	(a) confiscation of equipment used in the crime; (b) confiscation of proceeds obtained from the crime; and/or (c) obligation to pay costs arising from the crime.
Law No. 3/2020	"Any person conducting mining activities without a permit as referred to in Article 35 shall be punished with imprisonment of up to five (5) years and a maximum fine of IDR 100,000,000,000."	No change
Law No. 6/2023	No change	No change
Law No. 2/2025	No change	No change

The absence of a mandatory environmental restoration provision creates a serious gap in illegal mining law enforcement, because even after primary and additional sanctions are imposed, offenders are not legally required to repair the environmental damage they cause. As a result, former illegal mining areas are often left abandoned and damaged, without rehabilitation, resulting in serious environmental consequences, including water and soil pollution, erosion, and loss of ecosystem function (Amalia & Sulistyanta, 2025). Thus, the sanction formulations in Articles 158 and 164 do not yet reflect the application of sustainability and environmental protection principles mandated within the broader legal framework of mining regulation.

A reformulation is therefore necessary so that additional sanctions explicitly impose a concrete obligation to restore the environment. Criminal sanctions should not merely serve as

Copyright © 2025. Owned by Author(s), published by **Society**. This is an open-access article under the CC-BY-NC-SA license.
https://doi.org/10.33019/society.v13i3.958

OPEN ACCESS

deterrents but should also enforce ecological responsibility on illegal mining offenders. In practice, former illegal mining sites are left unreclaimed, resulting in severe environmental impacts, including river and soil contamination, erosion, and long-term ecological and social risks (Amalia & Sulistyanta, 2025). This situation contradicts environmentally sound mining principles and sustainability doctrines that should underpin Indonesia's mining law. Therefore, it is essential to reformulate criminal sanctions for illegal mining so that additional sanctions go beyond imprisonment and fines and clearly mandate environmental restoration responsibilities. Through such reformulation, mining law enforcement can more effectively ensure environmental sustainability while delivering ecological justice for affected communities.

In Belitung Island, several court decisions of the Tanjung Pandan District Court concerning illegal mining under Article 158 of the Minerba Law show that sanctions imposed were limited to imprisonment and fines, without additional sanctions requiring environmental restoration. In several cases, judges imposed sentences of several months' imprisonment and fines on convicted illegal miners, but did not impose reclamation obligations for environmental damage resulting from their activities. This occurs because primary sanctions are limited to imprisonment and fines, while additional sanctions do not regulate environmental restoration. The following table illustrates several judicial decisions on illegal mining cases in the Tanjung Pandan District Court (Pengadilan Negeri Tanjung Pandan, 2025):

Table 2. Court Decisions on Illegal Mining Cases

No.	Decision Number	Criminal Provision	Criminal Sanction	Additional Sanction
1	16/Pid.Sus/2018/PN Tdn	Article 158	2 months, 15 days imprisonment and IDR 10 million fine	–
2	104/Pid.Sus/2019/PN Tdn	Article 158	7 months imprisonment and IDR 2 million fine	–
3	75/Pid.Sus/2020/PN Tdn	Article 158	3 months imprisonment and IDR 3 million fine	–
4	80/Pid.Sus/2021/PN Tdn	Article 158	3 months imprisonment and IDR 2 million fine	–
5	45/Pid.Sus/2022/PN Tdn	Article 158	5 months imprisonment and IDR 3 million fine	–

The absence of additional sanctions mandating environmental restoration results in former illegal mining areas being left damaged without rehabilitation. Consequently, environmental damage such as pollution, erosion, and loss of ecosystem function persists as an unresolved problem within the legal process. This confirms that although primary criminal sanctions exist in the form of imprisonment and fines, the lack of environmental restoration provisions in additional sanctions results in court decisions that fail to impose ecological responsibility on illegal mining offenders, as evidenced in several rulings of the Tanjung Pandan District Court. This situation arises because the law itself does not regulate additional criminal sanctions for environmental restoration.

Copyright © 2025. Owned by Author(s), published by **Society**. This is an open-access article under the CC-BY-NC-SA license.
https://doi.org/10.33019/society.v13i3.958

3.4. Reformulation of Additional Criminal Sanctions

Article 33 of the 1945 Constitution serves as one of the fundamental bases for mining governance in Indonesia and has predominantly been interpreted from the perspective of economic justice rather than ecological justice. Economic management in the form of land utilization and natural resource exploitation often sidelines environmental considerations. Environmental factors tend to be the last criterion in determining economic policies and production processes at both the macro and micro levels in the mining sector. In principle, every form of natural resource utilization must demonstrably enhance public prosperity and welfare. The state is obliged to guarantee the people's rights over natural wealth located on and beneath the earth that may be utilized for public benefit. These considerations should guide the government in determining mining policy directions while simultaneously strengthening preventive environmental law enforcement through effective oversight by competent authorities (Prianto et al., 2020).

Illegal mining is an unlawful activity. The existence of mining permits provides benefits not only for the state but also for local communities. Licensing legalizes mining activities for miners and contributes to regional revenue. However, illegal mining results in environmental damage and disrupts ecological balance, particularly because such activities often occur on highly productive agricultural and plantation lands (Arjuna et al., 2024). Unfortunately, despite various prohibitions and criminal sanctions stipulated in mining legislation, law enforcement remains ineffective and appears weak due to several factors, including inadequate supervision, delayed enforcement actions, and alleged collusion involving mining-related criminal networks (Shant, 2011).

The reformulation of additional criminal sanctions may take the form of environmental recovery obligations arising from criminal acts, which may include: first, reclamation of damaged post-mining land to restore ecological function; second, restoration of affected environmental functions, for instance through vegetation planting and application of organic materials to improve soil quality; third, improvement of water quality and pollution control, including handling hazardous waste to prevent contamination of water sources; fourth, addressing socio-ecological impacts on communities and ecosystems surrounding illegal mining areas; and fifth, imposing obligations on offenders to finance and implement environmental restoration measures for damage caused by illegal mining. Fundamentally, in environmental crime, the true victim is the environment itself; therefore, the environment must receive justice through additional sanctions mandating environmental restoration (Achmad, 2021).

Additional criminal sanctions form an integral part of the criminal justice system. They function as punitive instruments intended not only to enhance deterrence but also to restore conditions to their original state prior to the commission of the crime. In the context of illegal mining, such sanctions may include compensation and obligations to restore the environment. Thus, in addition to primary sanctions such as imprisonment and fines, judges should impose additional sanctions to ensure legal certainty regarding environmental recovery. Accordingly, reformulation is necessary through the revision of Article 164 of the Minerba Law, expressly incorporating environmental restoration as an additional criminal sanction and providing judges with a clear legal basis for imposing such obligations.

Corporate liability in the Minerba Law is regulated under Article 165, which states that when a crime under this chapter is committed by a legal entity, in addition to imprisonment and fines imposed on its management, the corporation may be subjected to fines with an additional penalty of one-third of the maximum fine. This provision relates only to primary

Copyright © 2025. Owned by Author(s), published by **Society**. This is an open-access article under the CC-BY-NC-SA license.
https://doi.org/10.33019/society.v13i3.958

sanctions in the form of fines. Meanwhile, additional sanctions remain limited to the three existing types and do not regulate environmental restoration obligations, reflecting the weakness of corporate accountability in environmental repair.

Article 164 of Law No. 3 of 2020, amending Law No. 4 of 2009 on Mineral and Coal Mining, imposes additional sanctions on illegal mining offenders, including the confiscation of equipment and the proceeds of crime (Republik Indonesia, 2020). However, it does not explicitly require perpetrators to restore environmental damage caused by their activities. The current Minerba Law has yet to adequately respond to legal developments, emerging challenges, and regulatory needs in the mining sector (Tura Consulting Indonesia, 2020). The absence of environmental restoration obligations in Article 164 creates a legal vacuum, leaving offenders to be punished with imprisonment and fines without being compelled to repair environmental damage. Consequently, former illegal mining sites are often abandoned without reclamation, causing prolonged negative ecological and social impacts. Therefore, Article 164 should be amended to introduce additional sanctions in including mandatory environmental restoration. Through such reformulation, offenders would not only face imprisonment and fines but also bear legal responsibility for reclamation and environmental recovery, thereby reinforcing sustainability and environmental protection principles. This would enhance the effectiveness and comprehensiveness of law enforcement (Sekretariat Jenderal Dewan Perwakilan Rakyat Republik Indonesia, 2022), while ensuring that environmental damage from illegal mining is properly addressed in accordance with environmentally sound and sustainability principles.

While the reformulation of additional sanctions remains at the regulatory level, technical implementation is also required. When judges impose environmental restoration as an additional sanction, implementation should be supported by expert assessments presented by prosecutors in court to calculate restoration costs and determine appropriate recovery measures in accordance with the extent of environmental damage. Current reclamation models are not limited to reforestation but may incorporate alternative approaches that are both economically feasible and ecologically beneficial. The author also proposes that environmental restoration could be implemented as a community service sanction, whereby offenders themselves conduct environmental rehabilitation under supervision. This approach not only restores the environment but also builds environmental awareness among offenders. However, such sanctions should be applied selectively, for example, in first-time offenses, limited-scale damage, or where offenders have a feasible restoration capacity. In addition to prosecutors serving as executors, relevant agencies, such as environmental, energy, and mineral resources authorities, must be involved to ensure optimal implementation of these additional criminal sanctions.

4. Conclusion

The principles of sustainability and environmental awareness, or green mining, contained in the Mineral and Coal Law should serve as the guiding framework for all of its provisions, including criminal sanctions. However, the findings of this study indicate that the criminal provisions for illegal mining under Article 158 only stipulate imprisonment and fines. Consequently, court decisions in illegal mining cases generally impose only these two forms of punishment, without including sanctions for environmental restoration, even though the environment is the primary victim of such crimes. Similarly, Article 164, which regulates additional criminal sanctions, has not been optimally utilised as a legal instrument to mandate

Copyright © 2025. Owned by Author(s), published by **Society**. This is an open-access article under the CC-BY-NC-SA license.
https://doi.org/10.33019/society.v13i3.958

environmental restoration following illegal mining activities. This demonstrates that the current regulatory framework is not yet consistent with sustainability and environmental principles.

Therefore, reformulating additional criminal sanctions in the form of mandatory environmental restoration is essential. The legal implications of such reformulation include: first, aligning criminal provisions, particularly additional sanctions, with sustainability and environmental principles; second, providing judges with clear and binding legal grounds to impose environmental restoration sanctions, thereby ensuring ecological justice rather than treating such sanctions as optional; and third, encouraging offenders to take responsibility for environmental damage caused by their actions, fostering deterrence, and preventing the recurrence of illegal mining activities. The findings of this study support the need to amend Law No. 2 of 2025 to incorporate reformulated additional criminal sanctions as an integral component in realising green mining.

5. Acknowledgment

The authors would like to express their sincere gratitude to Universitas Bangka Belitung, through the Institute for Research and Community Service, for funding this research under the University-Level Lecturer Research Scheme for the 2025 fiscal year, as stated in Contract No. 2164N/UN50/M/PP/2025. The authors also extend their appreciation to the Tanjung Pandan District Court for its support of this research.

6. Declaration of Conflicting Interests

The authors declare that they have no financial or personal affiliations that could have influenced the research or findings presented in this article.

References

Achmad, A. T. D. (2021). *Eksekusi Pidana Tambahan Pemulihan Lingkungan Hidup Berpotensi Sulit Dilaksanakan*. HukumOnline.Com. https://www.hukumonline.com/berita/a/eksekusi-pidana-tambahan-pemulihan-lingkungan-hidup-berpotensi-sulit-dilaksanakan-lt600964c616337/

Amalia, K. A. N., & Sulistyanta, S. (2025). Kajian Yuridis Penegakan Hukum terhadap Penambangan Ilegal di Kawasan IUP PT Antam Berdasarkan Perspektif Lingkungan Hidup. *Jembatan Hukum : Kajian Ilmu Hukum, Sosial Dan Administrasi Negara*, *2*(2), 305–314. https://doi.org/10.62383/jembatan.v2i2.1751

Anitasari, S. D. (2024). *Menelisik Kerusakan Lingkungan Akibat Tambang Timah*. Detiknews. https://news.detik.com/kolom/d-7304555/menelisik-kerusakan-lingkungan-akibat-tambang-timah

Aprilia, Mohede, N., & Gerungan, carlo A. (2025). Tinjauan Hukum Pengelolaan Pertambangan Mineral Dan Batubara Oleh Organisasi Kemasyarakatan Keagamaan Menurut Peraturan Pemerintah Nomor 25 Tahun 2024. *Lex Privatum*, *15*(4). https://ejournal.unsrat.ac.id/v3/index.php/lexprivatum/article/view/61652

Arjuna, A., Syahrin, A., Yunara, E., & Marlina, M. (2024). Penegakan Hukum Pidana Terhadap Pelaku Penambangan Galian C Di Daerah Aliran Sungai Bingai. *UNES Law Review*, *6*(4), 12560–12573. https://doi.org/10.31933/UNESREV.V6I4.2222

bossadmin. (2025). *UU Minerba Mengawal Upaya Sustainable Mining*. Indmira. https://indmira.com/2025/09/21/uu-minerba-mengawal-upaya-sustainable-mining/

Copyright © 2025. Owned by Author(s), published by **Society**. This is an open-access article under the CC-BY-NC-SA license.

Fachrurozi, Y. (2025). *Sanksi pidana pertambangan ilegal*. HukumOnline..Com. https://www.hukumonline.com/klinik/a/sanksi-pidana-pertambangan-ilegal-lt67d3b8f04519b/

Gosal, R., Mawuntu, R. J., & Lumintang, D. (2021). Tinjauan Yuridis Terhadap Pertambangan Ilegal Ditinjau Dari Pasal 158 Undang-Undang Nomor 3 Tahun 2020 Tentang Perubahan Atas Undang-Undang Nomor 4 Tahun 2009 Tentang. *LEX ADMINISTRATUM*, *12*(3), 1–11.

Haryadi, D., Ibrahim, & Darwance. (2023). Environmental Improvement Policy through the obligation of post-tin mining reclamation in the islands of Bangka Belitung. *IOP Conference Series: Earth and Environmental Science*, *1175*(1), 012021. https://doi.org/10.1088/1755-1315/1175/1/012021

Haryadi, D., Ibrahim, I., & Darwance, D. (2025). Dinamika Migrasi dan Tantangan Reklamasi: Studi Kasus pada Komunitas Tambang Timah di Bangka Belitung. *Jurnal Ilmu Lingkungan*, *23*(1), 218–227. https://doi.org/10.14710/jil.23.1.218-227

Kementerian Energi dan Sumber Daya Mineral Republik Indonesia. (2009). *Warta Mineral, Batubara & Panas Bumi*. Warta Mineral, Batubara & Panas Bumi.

Kementerian Kehutanan Republik Indonesia. (2025). *Keputusan Menteri Kehutanan Republik Indonesia Nomor 406 Tahun 2025 tentang Penetapan Lahan Kritis Nasional [Decree of the Minister of Forestry of the Republic of Indonesia Number 406 of 2025 concerning National Critical Land Designation]*.

Kurniawan, A., Christanto, F. T. J., Widodo, F., Friatna, M., Harahap, M., Manggala, S., Ahmadi, T. S., & Siagian, U. A. (2025). *Melanjutkan Tersesat, atau Kembali ke Jalan yang Benar*. Wahana Lingkungan Hidup Indonesia (WALHI). https://www.walhi.or.id/melanjutkan-tersesat-atau-kembali-ke-jalan-yang-benar

Mitra Berdaya Optima. (2025). *Tambang Ilegal & Peran ISO 14001 dalam Kendali Lingkungan*. Mitra Berdaya Optima. https://mitraberdaya.id/id/news-information/perkembangan-tambang-ilegal-dan iso-14001-untuk-memperbaiki-lingkungan

Muhdar, M. (2012). Eksistensi Polluter Pays Principle dalam Pengaturan Hukum Lingkungan di Indonesia. *Mimbar Hukum - Fakultas Hukum Universitas Gadjah Mada*, *21*(1), 67. https://doi.org/10.22146/jmh.16247

Palempung, F. J., Anis, F. H., & Setlight, M. M. M. (2023). Kajian Yuridis Penerapan Asas Berkelanjutan dan Berwawasan Lingkungan Dalam Kegiatan Investasi di Bidang Pertambangan Minerba. *Jurnal Tana Mana*, *4*(2), 24–36. https://doi.org/10.33648/JTM.V4I2.365

Pengadilan Negeri Tanjung Pandan. (2025). *Sistem informasi penelusuran perkara (SIPP)*. Pengadilan Negeri Tanjung Pandan. http://sipp.pn-tanjungpandan.go.id/

Prasetyo, M. H., Baderan, D. W. K., & Hamidu, M. S. (2025). Dampak Kerusakan Lingkungan Akibat Eksploitasi Sumber Daya Mineral dari Kegiatan Pertambangan. *Hidroponik : Jurnal Ilmu Pertanian Dan Teknologi Dalam Ilmu Tanaman*, *2*(2), 01–11. https://doi.org/10.62951/hidroponik.v2i2.328

Prianto, Y., Rasji, R., Djaja, B., & Gazali, N. B. (2020). Reformulasi Kebijakan Pertambangan Atas Kewenangan Daerah. *Litigasi*, *21*(21), 1–29. https://doi.org/10.23969/litigasi.v21i1.1789

Rahayu, D. P., Reniati, I. Z., & Akhmad Elvian, F. (2025). *Senja Kala Tata Kelola Timah di Bangka Belitung*. Yayasan Pustaka Obor.

Republik Indonesia. (2009). *Undang-Undang Republik Indonesia Nomor 4 Tahun 2009 tentang Pertambangan Mineral dan Batubara [Law of the Republic of Indonesia Number 4 of 2009 on Mineral and Coal Mining]*.

Copyright © 2025. Owned by Author(s), published by **Society**. This is an open-access article under the CC-BY-NC-SA license.
https://doi.org/10.33019/society.v13i3.958

Republik Indonesia. (2020). *Undang-Undang Republik Indonesia Nomor 3 Tahun 2020 tentang Perubahan atas Undang-Undang Nomor 4 Tahun 2009 tentang Pertambangan Mineral dan Batubara [Law of the Republic of Indonesia Number 3 of 2020 concerning the Amendment to Law Number 4 of 2009 on Mi*.

Sahputra, A., Elsera, M., & Rahmawati, N. (2023). Kondisi Masyarakat Risiko Pasca Tambang Bauksit Di Kelurahan Tembeling-Tanjung Kecamatan Teluk Bintan Kabupaten Bintan. *Jurnal Neo Societal*, *8*(2), 146–158. https://doi.org/10.52423/jns.v8i2.7

Sekretariat Jenderal Dewan Perwakilan Rakyat Republik Indonesia. (2022). *Kajian akademik pelaksanaan Undang-Undang Nomor 4 Tahun 2009 tentang Pertambangan Mineral dan Batubara sebagaimana telah diubah dengan Undang-Undang Nomor 11 Tahun 2020 tentang Cipta Kerja [Academic study on the implementation of Law Number 4 of 2009 on M*. https://berkas.dpr.go.id/puspanlakuu/kajian/kajian-public-198.pdf

Setiawan, V. N. (2025). *Tambang Ilegal Merajalela, Dampak Ngeri Ini Mengintai RI*. CNBC Indonesia. https://www.cnbcindonesia.com/news/20250728181840-4-652932/tambang-ilegal-merajalela-dampak-ngeri-ini-mengintai-ri

Shant, D. (2011). *Konsep Penegakan Hukum*. Liberty.

Soekanto, S., & Mamudji, S. (2001). *Penelitian hukum normatif: Suatu tinjauan singkat*. RajaGrafindo Persada.

Tura Consulting Indonesia. (2020). *Brief summary of Undang-Undang Minerba Nomor 3 Tahun 2020*. Tura Consulting Indonesia. https://tura.consulting/insight/brief-summary-of-undang-undang-minerba-nomor-3-tahun-2020/

Vico, N., Ayu Anggraini, S., Himawan Saputra, A., Caesar Premadani, A., Simanjuntak, P. H., Imamah, Q., Firdaus Sam, B. A., & Heri, M. (2025). Eskalasi Hukum dan Politik dalam Revisi Undang-Undang Mineral dan Batu Bara. *Ranah Research : Journal of Multidisciplinary Research and Development*, *7*(3), 1495–1512. https://doi.org/10.38035/rrj.v7i3.1295

Widyaningrum, T., & Hamidi, M. R. (2024). Pembaruan Hukum Pertambangan Mineral Dan Batubara Menuju Keadilan Dan Kepastian Hukum Yang Berkelanjutan Untuk Masyarakat Indonesia. *Iblam Law Review*, *4*(3), 11–22. https://doi.org/10.52249/ilr.v4i3.436

About the Authors

1. **Dwi Haryadi** is a Professor at the Faculty of Law, University of Bangka Belitung, Indonesia. He earned his Doctor in Law degree from Diponegoro University in 2015. He teaches courses in criminal law, environmental law, mining law, penology, and cyber law. His academic work and community engagement predominantly focus on mining governance, environmental protection, criminal justice policy, and socio-legal studies.
   Email: dwi83belitong@gmail.com

2. **Iskandar Zulkarnain** is an Associate Professor in the Political Science Study Program, University of Bangka Belitung, Indonesia. He earned his Doctoral degree in Social Sciences from the University of Bangka Belitung in 2021. His teaching focuses on political science and sociology, including social movements, civil society, the sociology of mining communities, rural and coastal societies, social transformation, and critical social theory.

Copyright © 2025. Owned by Author(s), published by **Society**. This is an open-access article under the CC-BY-NC-SA license.
https://doi.org/10.33019/society.v13i3.958

His research interests encompass indigenous community recognition, local wisdom, social conflict, environmental sociology, agrarian politics, community empowerment, and socio-political dynamics.
Email: iskandarzubb@gmail.com

3. **Rafiqa Sari is** a Senior Lecturer at the Faculty of Law, University of Bangka Belitung, Indonesia. She earned her Master of Law degree from Andalas University in 2017. She teaches various courses in civil law and business law, including Contract Law, Commercial Law, Bankruptcy Law, Labor Law, Civil Procedure, and Intellectual Property Law. Her academic interests focus on civil law, business law, consumer protection, contract law, and legal issues related to local economic development.
Email: rafiqasari01@gmail.com

Copyright © 2025. Owned by Author(s), published by **Society**. This is an open-access article under the CC-BY-NC-SA license.
https://doi.org/10.33019/society.v13i3.958