

5-1-2024

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Recommended Citation

Pamuncak, Aristya Windiana; Pujiyono, Pujiyono; and Cahyaningtyas, Irma (2024) "ABANDONED MINE PITS: CRIMINOLOGICAL PERSPECTIVES," *Indonesia Law Review*. Vol. 14: No. 1, Article 7.

Available at: <https://scholarhub.ui.ac.id/ilrev/vol14/iss1/7>

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ABANDONED MINE PITS: CRIMINOLOGICAL PERSPECTIVES

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Article Info

Received : 10 December 2023 | Received in revised form : 14 March 2024 | Accepted : 17 April 2024

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Abstract

The mining industry is inherently risky, so the rule of law, enforcement, and implementation of safety measures are essential. Addressing this problem requires various approaches, including community involvement in addressing abandoned mine pits without reclamation. This study examines the effectiveness of the Minerba Law in overcoming unclaimed mine pits from a criminological perspective. This research is normative legal research using a statutory approach, while the inventory of positive law is carried out by comprehensively identifying, correcting, and organizing norms. The theory of effectiveness is the basis for studying criminology, which causes many violations of reclamation obligations as regulated in the criminal provisions of Law Number 3 of 2020 concerning Minerals and Coal. Law enforcement: Although there are administrative and criminal sanctions for companies that do not carry out reclamation. Based on criminology, this is due to several factors: socio-economic factors, law enforcement factors, and light legal sanctions factors. In addition, no company has been found criminally guilty of not carrying out reclamation. The Minerba Law is considered ineffective because criminal sanctions are considered a last resort so they are rarely enforced, and criminal sanctions are not fully effective.

Keywords: Reclamation, Mine Pits, Criminology, law Enforcement

Abstrak

Industri pertambangan pada hakikatnya mengandung risiko, sehingga penegakan hukum, penegakan hukum, dan penerapan langkah-langkah keselamatan menjadi hal yang mutlak diperlukan. Untuk mengatasi permasalahan tersebut diperlukan berbagai pendekatan, termasuk pelibatan masyarakat dalam penanggulangan lubang tambang yang terbengkalai tanpa adanya reklamasi. Penelitian ini mengkaji efektivitas UU Minerba dalam penanggulangan lubang tambang yang tidak diklaim dari perspektif kriminologi. Penelitian ini merupakan penelitian hukum normatif dengan menggunakan pendekatan perundang-undangan, sedangkan inventarisasi hukum positif dilakukan dengan cara mengidentifikasi, mengoreksi, dan menata norma secara komprehensif. Teori efektivitas menjadi dasar kajian kriminologi yang menyebabkan banyaknya pelanggaran kewajiban reklamasi sebagaimana diatur dalam ketentuan pidana Undang-Undang Nomor 3 Tahun 2020 tentang Mineral dan Batubara. penegakan hukum Meskipun terdapat sanksi administratif dan pidana bagi perusahaan yang tidak melaksanakan reklamasi. Berdasarkan kriminologi, hal tersebut disebabkan oleh beberapa faktor, yaitu faktor sosial ekonomi, faktor penegakan hukum, faktor sanksi hukum yang ringan dan selain itu belum ada perusahaan yang dinyatakan bersalah secara pidana karena tidak melaksanakan reklamasi. UU Minerba dinilai tidak efektif karena sanksi pidana dianggap sebagai jalan terakhir sehingga jarang ditegakkan, dan sanksi pidana tidak sepenuhnya efektif.

Keywords: Reklamasi, Lubang Galian Tambang, Kriminologi, penegakan Hukum

I. INTRODUCTION

Exploiting natural resources is still common in many countries to drive economic growth; in Indonesia, coal is the most commonly exploited resource. The downside is that the mining process often causes environmental disturbances, and large and deep mining pits appear after mining. Post-mining land in coal mining areas, such as on the islands of Sumatra and Kalimantan, needs attention. Several locations in the area show the extent of previous exploitation and illustrate the magnitude of coal exploitation.

In Indonesia, the mining process is mainly carried out in open pit mines.¹ So, the environmental impact is more significant than that of other mines.² The level of environmental damage is related to the complexity and magnitude of the restoration, so the Company's commitment is required to restore ex-mining land resulting from coal mining so that it can be repaired and restored through reclamation.³

Based on Law No. 4 of 2009 concerning Mineral and Coal Mining (Minerba), mining companies must conduct post-mining reclamation. If the company or individual responsible does not carry out this obligation, they may be subject to administrative and criminal sanctions. Criminal sanctions may be applied if the abandonment of the former mining land causes severe environmental damage or violates other regulations. However, criminal cases related to mine abandonment are often more related to environmental damage, such as air pollution, soil pollution, or damage to protected ecosystems, rather than just the "abandonment" itself.⁴

Most mining practices in Indonesia are related to surface mining, where companies often convert forests into mining sites.⁵ Compared to low compliance with reclamation obligations, this is often the cause of deforestation and forest degradation. Mining permits in Indonesia have reached 11 million hectares, of which 4.5 million hectares are forest areas. Indonesia has experienced the most extensive tropical forest destruction due to mining, contributing to 58.2 percent of total deforestation.⁶

Reclamation means giving mining waste a second life as an amendment for soil remediation. This successfully reduces heavy metal mobility, improves soil health, and stimulates plant growth.⁷ The mining industry is inherently risky, so the rule of law, enforcement, and implementation of safety measures are essential. Addressing this problem requires a multifaceted approach, including community involvement in addressing abandoned mine pits without reclamation.

¹ Pratiwi et al., "Managing and Reforesting Degraded Post-Mining Landscape in Indonesia: A Review," *Land* 10, no. 6 (June 21, 2021): 658, <https://doi.org/10.3390/land10060658>.

² Huang Jiayin et al., "Concept and Practice of Open-Pit Mining Area Restoration and Reuse Taking an Open-Pit Coal Mining Area in Datong, Shanxi as an Example," *E3S Web of Conferences*, 2020, <https://doi.org/10.1051/e3sconf/202014502014>.

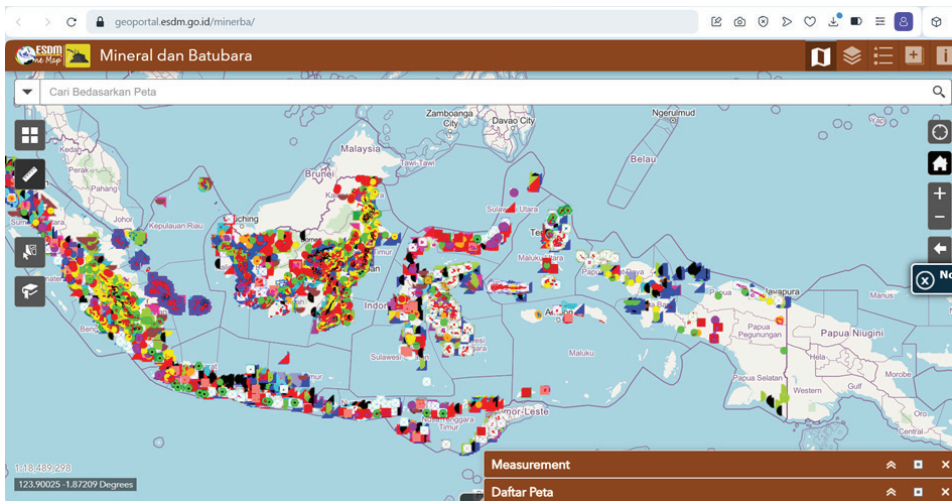
³ Priyaji Agung Pambudi et al., "Etika Tanah Aldo Leopold: Telaah Moral Atas Eksploitasi dan Kewajiban Reklamasi Tambang Batu Bara," *Jurnal Ekologi, Masyarakat dan Sains* 3, no. 2 (November 18, 2022): 37–44, <https://doi.org/10.55448/ems.v3i2.56>.

⁴ Syarif Saddam Rivanie, "HUKUMAN PIDANA AKIBAT KERUSAKAN LINGKUNGAN YANG DILAKUKAN OLEH KORPORASI pada INDUSTRI TAMBANG," *Jurisprudentie: Jurusan Ilmu Hukum Fakultas Syariah dan Hukum* 6, no. 2 (December 27, 2019): 1, <https://doi.org/10.24252/jurisprudentie.v6i2.9612>.

⁵ Haris Retno Susmiyati, "Legal Construction of Post-Mining Reclamation in Indonesia:" (Joint Symposium on Tropical Studies (JSTS-19), Kalimantan Timur, Indonesia, 2021), <https://doi.org/10.2991/absr.k.210408.028>.

⁶ Stefan Giljum et al., "A Pantropical Assessment of Deforestation Caused by Industrial Mining," *Proceedings of the National Academy of Sciences* 119, no. 38 (September 20, 2022): e2118273119, <https://doi.org/10.1073/pnas.2118273119>.

⁷ Lorena Salgado et al., "A Second Life for Mining Waste as an Amendment for Soil Remediation," *Journal of Material Cycles and Waste Management* 26, no. 5 (September 2024): 2971–79, <https://doi.org/10.1007/s10163-024-02013-6>.



Pict 1. mineral and coal reserves in Indonesia⁸

The Mining Advocacy Network / JATAM found at least 3,033 holes left behind from coal, gold, sand, and tin mines, including 1,754 holes left behind from mining in East Kalimantan, 814 holes left behind from mining in South Kalimantan, and 163 holes left behind from mining in South Sumatra.⁹

Responsibility for post-mining excavation reclamation begins with the reclamation plan's preparation, assessment, and approval as a reference framework for implementing reclamation with the local government as stipulated in Article 44 of Government Regulation Number 7 of 2010 concerning Reclamation and Post-Mining. There is a legal vacuum related to the technical and procedural implementation of reclamation if no reclamation guarantee fund exists. This triggers community mining business actors not to complete their reclamation responsibilities, the sanctions that can be applied in this government regulation are paying fines for those who do not reclamation according to plan. The imposition of fine payment sanctions does not eliminate the obligation of community mining entrepreneurs to reclamation with the local government to restore post-mining environmental damage.¹⁰

Previous research on reclamation policies has been conducted as published in a journal in 2022 entitled Study on the Implementation of the Reclamation Policy for Former Coal Mining Land Based on the Decree of the Minister of Energy and Mineral Resources (ESDM) No. 1827K/30/MEM/2018¹¹ and the IOP Conference

⁸ ESDM, *Konsesi Pertambangan Di Indonesia*, 2024, <https://geoportal.esdm.go.id/minerba/>.

⁹ Grita Anindarini, *Beberapa Kritik Hukum Terhadap Perubahan UU No. 4 Tahun 2009 Tentang Mineral Dan Batubara* (Jakarta, 2020), https://icel.or.id/storage/seri_analisis/1646670165.pdf.

¹⁰ Ade Lutfi Prayogo, "Tanggung Jawab Pelaku Usaha Pertambangan Rakyat dalam Reklamasi Gumuk Setelah Kegiatan Tambang," *Lentera Hukum* 5, no. 3 (December 31, 2018): 424, <https://doi.org/10.19184/ejlh.v5i3.8201>.

¹¹ Ardi Setiawan et al., "KAJIAN IMPLEMENTASI KEBIJAKAN REKLAMASI LAHAN BEKAS PENAMBANGAN BATUBARA BERDASARKAN KEPMEN ESDM 1827K/30/MEM/2018," *Naturalis: Jurnal Penelitian Pengelolaan Sumber Daya Alam dan Lingkungan* 11, no. 1 (April 30, 2022): 76–84, <https://doi.org/10.31186/naturalis.11.1.21161>.

Series journal: Earth and Environmental Science in 2023 entitled Environmental Improvement Policy through Post-Tin Mining Reclamation Obligations in the Bangka Belitung Islands.¹² This Study examines the effectiveness of the Minerba Law in overcoming unreclaimed mine pits from a criminological perspective. However, this research paper brings up a novelty.

II. METHODOLOGY

This research is normative legal research using a statutory approach, while the inventory of positive law is carried out by comprehensively identifying, correcting, and organizing norms.¹³ The theory of effectiveness is the basis for studying criminology, which causes many violations of reclamation obligations as regulated in the criminal provisions of Law Number 3 of 2020 concerning Minerals and Coal.

III. DISCUSSION

A. The Regulation of Reclamation

Environmental regulations related to mining have not shown optimal results in encouraging post-mining and reclamation obligations.¹⁴ Meanwhile, the Administrative Policy of the Mineral and Coal Law Number 4 of 2009 is dominated by the threat of administrative sanctions for mining business permit holders who do not fulfill reclamation obligations. These sanctions can be in the form of written warnings, temporary suspension of some or all exploration activities or production operations, and revocation of Mining Business Permits (IUP), People’s Mining Permits (IPR), or Special Mining Business Permits (IUPK). However, these sanctions have not deterred perpetrators of post-mining reclamation neglect, so criminology is needed to analyze why the neglect of ex-mining land still often occurs even though it has claimed many victims. The following is data on drowning victims at the former mining excavation site in East Kalimantan as of 2021.

City/Region	Total victims who drowned In ex-mining pits	Process of Law
Samarinda	18	Just 2 victims, process of law toward securit of pits with 3 months imprisonment and fine IDR. 1000.-
Kutai Kartanegara	11	No process of law
West Kutai	1	No process of law
Penajam Paser Utara	1	No process of law
Total	31	No process of law

Table 1. the total number of children who died due to drowning at the former mining site¹⁵

¹² D Haryadi, Ibrahim, and Darwance, “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, no. 1 (May 1, 2023): 012021, <https://doi.org/10.1088/1755-1315/1175/1/012021>.

¹³ Salim HS and Erlies Septiana Nurbani, *Penerapan Teori Hukum Pada Penelitian Tesis Dan Disertasi* (Jakarta: Rajawali Pers, 2013).

¹⁴ Agus Triono, *Kajian Akademik Tentang Penyelenggaraan Reklamasi Dan Pasca Tambang* (Lampung: Dewan Perwakilan Rakyat Daerah Provinsi Lampung, 2024), <https://jdih.setwan-dprd.lampungprov.go.id/web/document/attachment/lampiran-1717695756f4fcf27.pdf>.

¹⁵ Susmiyati, “Legal Construction of Post-Mining Reclamation in Indonesia.”

Open pit mining is technically divided into four types, namely: (1) Open Pit Mining, (2) Quarry Mining, (3) Strip Mine, and (4) Alluvial Mining.¹⁶ Open pits are generally giant and filled with rainwater and mine water. Pits are a concern because there are so many of them. The company must reclaim the mine pits in the mining plan based on laws and regulations. However, all mining companies leave the mine pits without reclaiming them.

The most common types of surface mining are open-pit mining, quarrying, strip mining, contour (strip) mining, and mountaintop removal mining. Each has specific variations depending on the minerals extracted and the equipment used for excavation and haulage. However, Surface mining is practiced in many countries and has numerous social, economic, and environmental impacts.¹⁷

Methods	Attributes	Deposits
Open-pit mining (or open-cast or area mining)	Removal of overburden to create access to the deposit, use of conventional digging and hauling equipment or continuous mining systems, dumping of overburden both inside and outside the mining area,	Large, near-surface deposits of metals, Industrial minerals, and coal.
Quarrying	Similar to open pit but with vertical faces and steep slopes.	Dimension stones and aggregates.
Strip mining	Long excavations in the direction of the mine face advance, relatively constant overburden thickness,	Horizontally bedded and relatively thin deposits, usually coal.
Contour (strip) mining	Progressive excavation of the slope of a hill until the stripping ratio reaches its marginal value.	Deposits located in mountainous areas.
Mountaintop removal mining	Removal of the top of a hill, dumping of overburden in waste bankment outside the mining area.	Deposits located in mountainous areas.

Table 2. Surface mining methods¹⁸

Despite a growth in renewable energy and a decrease in coal consumption, coal (28%) remains the world’s primary energy source after oil.¹⁹ The coal industry has positively impacted Indonesia’s economic growth and infrastructure development. Open-pit or surface mining methods such as in coal mining can harm the environment, including forest degradation, biodiversity loss,²⁰ landslides, soil erosion, soil pollution from mining wastes, and tailing dust,²¹ which can cause social conflict.²²

Reclamation obligations are regulated in mining laws and regulations because mining activities can be said to almost entirely cause environmental damage. Therefore, the company must be responsible for reclaiming the environment that has

¹⁶ Sudrajat N, *Teori Dan Praktik Pertambangan Indonesia* (Jakarta: Pustaka Yustitia, 2013).

¹⁷ Chrysoula Pagouni et al., “Transitional and Post-Mining Land Uses: A Global Review of Regulatory Frameworks, Decision-Making Criteria, and Methods,” *Land* 13, no. 7 (July 13, 2024): 1051, <https://doi.org/10.3390/land13071051>.

¹⁸ Pagouni et al.

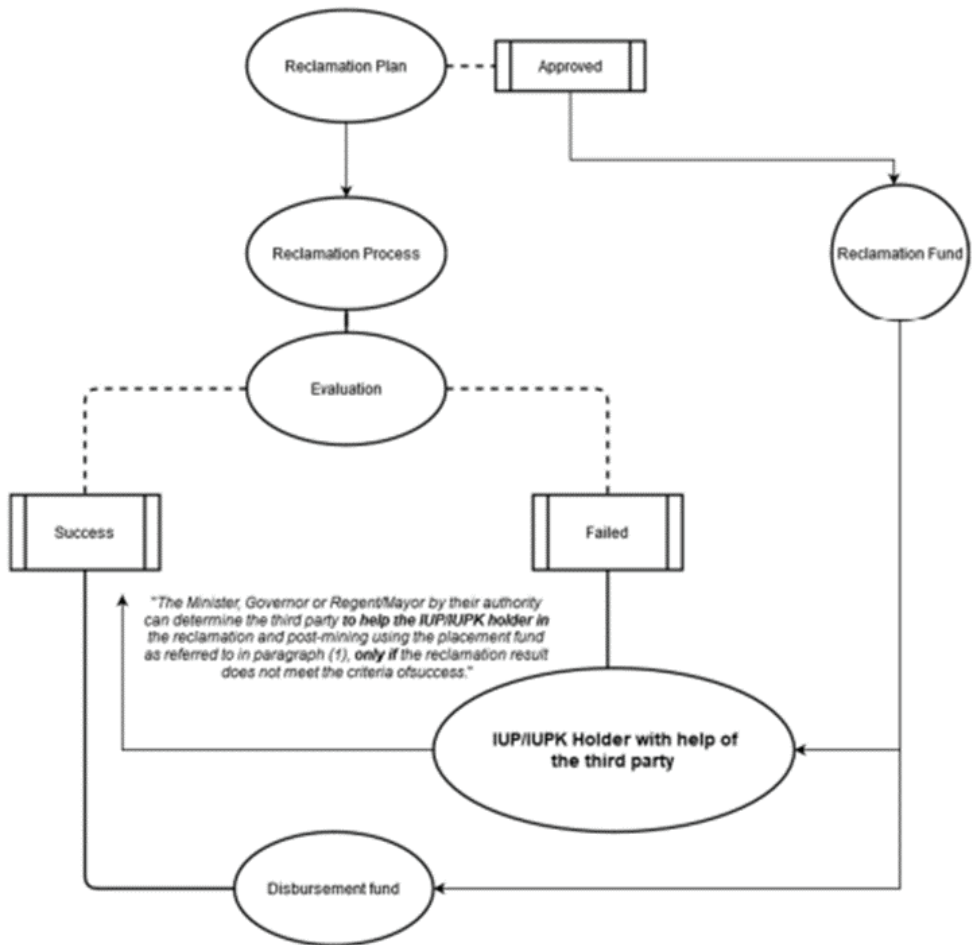
¹⁹ “Bp Energy Outlook 2024,” 2024.

²⁰ R Kristanti et al., “INSTITUTIONAL PERFORMANCE OF MINING RECLAMATION IN FOREST AREAS OF EAST KALIMANTAN,” *Jurnal Manajemen Hutan Tropika (Journal of Tropical Forest Management)* 25, no. 2 (August 20, 2019): 69–81, <https://doi.org/10.7226/jtfm.25.2.69>.

²¹ Jonghoon Park et al., “Environmental Sustainability of Open-Pit Coal Mining Practices at Baganuur, Mongolia,” *Sustainability* 12, no. 1 (December 27, 2019): 248, <https://doi.org/10.3390/su12010248>.

²² Vesna Popović et al., “Sustainable Land Management in Mining Areas in Serbia and Romania,” *Sustainability* 7, no. 9 (August 26, 2015): 11857–77, <https://doi.org/10.3390/su70911857>.

been damaged in its mining activities.²³



Pict 2. Reclamation Obligation²⁴

There are weaknesses in the legal regulation of mining reclamation triggered by legal products made by the central government, both through the Regulation of the Director General of Mineral and Coal and Government Regulation Number 78 of 2010 concerning Reclamation and Post-Mining along with the Regulation of the Minister of Energy and Mineral Resources Number 7 of 2014 concerning the Implementation of Reclamation and Coal which is very weak in forcing mining companies to carry out

²³ T Haryati, *Era Baru Hukum Pertambangan Di Bawah Rezim UU Number 4 Tahun 2009* (Jakarta: Yayasan Pustaka Obor Indonesia, 2015).

²⁴ Nurul Listiyani, M. Yasir Said, and Afif Khalid, "Strengthening Reclamation Obligation through Mining Law Reform: Indonesian Experience," *Resources* 12, no. 5 (April 28, 2023): 56, <https://doi.org/10.3390/resources12050056>.

reclamation, moreover the sanctions given are less effective because they are only administrative. Mining companies are generally allowed to refrain from advertising under the law. Legal provisions place reclamation guarantees as a dead end if the company does not do so. Additionally, the amount of funds is also not transparent since the provision of reclamation guarantee funds does not satisfy the requirement for reclamation.

Legal Substance	Legal Construction	Regulations
Characteristic	Reclamation must be done by the company	Article 96 (c) Regulations Number 4 Year 2009 Regulations of Mineral and Coal Directorate
Time of Reclamation Implementation	Reclamation is done in 30 days of calendar after there is no activity	Article 20 of Government Regulations Number 77 Year 2010
Businessman Obligation	To submit reclamation plan proposal	Article 99 (1) Regulations Number 4 Year 2009 Regulations of Mineral arid Coal Directorate; Article 6 Government Regulations Number 78 Year 2010
	The amount of reclamation security proposal	Article 6 Government Regulations Number 78 2010
	To provide Reclamation Security fund	Article 100 (2) Regulations of Mineral and Coal, Article 29 of Government Regulations Number 78 Year 2010
Government Obligation	To agree Or reject Reclamation Plan which is proposed by company	Article 13 of Govement Regulations Number 78 Year 2010
	To agree the amount of Reclamation Security Fund	Article 13 of Government Regulations Number 78 Year 2010
	Reclamation supervision	Article 22-23 of Government Regulations Number 78 Year 2010
	To choose third party to do reclamation if company does not do it	Article 33 of Government Regulations Number 78 Year 2010
Punishment	There is no imprisonment, just administrative punishment	Article 151 of Regulations Number 4 Year of Mineral and Coal Directorate; Article 50-51 of Government Regulations 78 Year 2010
Reclamation Form	Not must to close the pits but they just need to show the post-mining allocation	Article 99 (2) of Regulations Number 4 Year 2009; Regulations of Energy and Mineral Resources Number 7 Year 2014 Article 12

Table 3. Reclamation Regulations in Indonesia²⁵

Despite revising the Minerba Law, Indonesia still faces previous legal issues due to blind spots in the regulatory framework. They are starting from ongoing conflicts between mining companies and local communities to cases of non-compliance with reclamation policies that result in untreated mining pits being left untreated, which have caused victims for years.²⁶ Therefore, two more significant reforms are needed to strengthen reclamation obligations. First is the need to strengthen the nature of the “obligation” for IUP and IUPK holders to conduct reclamation and post-mining under supervision, as in the Environmental Law. By implementing this formulation,

²⁵ Susmiyati, “Legal Construction of Post-Mining Reclamation in Indonesia.”

²⁶ Koalisi Advokasi Kasus Lubang Tambang Kalimantan Timur, JATAM, and Komnas HAM, *Pelanggaran Hak Asasi Manusia Dalam Kasus Eks Lubang Tambang Batu Bara Di Kaliaantan Timur* (Jakarta: KOMNAS HAM RI, 2016).

the placement of reclamation funds by companies does not eliminate the company's obligation to carry out reclamation.

The community is vulnerable to unsafe situations because the approval process for reclamation plans and the amount of reclamation funds is carried out unilaterally by the government, even though the central and regional governments have the authority to approve or disapprove the reclamation plans submitted by the company, including the authority to determine the amount of reclamation guarantee funds provided by the company, however. The government does not provide space for community participation.²⁷

B. Neglect of reclamation obligations reviewed from criminology .

Soedjono Dirdjosisworo said that criminology's mission is: 1. What is formulated as a crime and phenomena that occur in people's lives, what crimes, and who the criminals are are research materials for criminology experts. 2. What factors cause the emergence or commission of crimes?²⁸

Reclamation can improve the environment and create a situation much better than post-mining conditions. Although the reclamation obligation policy is a good way to introduce an environmental recovery approach, the main problem is mining companies' non-compliance with their reclamation obligations.

Factors that cause the reclamation process not to be carried out by Mining Companies

1. Socio-Economic Factors

Many mining operations prioritize short-term profitability over long-term reclamation planning, resulting in inadequate post-mining hole closure strategies.²⁹

2. Law enforcement factors

Although reclamation is legally mandated, the law's enforcement is weak, resulting in poor compliance and continued land degradation.³⁰

3. Light legal sanctions

Post-mining reclamation is regulated in Government Regulation Number 78 of 2010 concerning Reclamation and Post-Mining. Article 2 states that companies with a Mining Business Permit must carry out reclamation. Unfortunately, the sanctions are very light if a mining company does not fulfill its obligations.

4. Lack of apparent regulations Factor: If regulations related to reclamation are unclear or full of legal loopholes, companies can exploit this to avoid their obligations.³¹

5. The absence of accountability mechanisms Factor

They can avoid responsibility if there is no solid legal mechanism to sue companies

²⁷ Listiyani, Said, and Khalid, "Strengthening Reclamation Obligation through Mining Law Reform."

²⁸ Anang Priyanto, *Kriminologi* (Yogyakarta: Penerbit Ombak, 2012).

²⁹ Cherie McCullough, "Key Mine Closure Lessons Still to Be Learned," 2016, 325-38, https://doi.org/10.36487/ACG_rep/1608_23_mccullough.

³⁰ Martin J. Haigh, "Problems in the Reclamation of Coal-Mine Disturbed Lands in Wales," *International Journal of Surface Mining, Reclamation and Environment* 6, no. 1 (1992): 31-37, <https://doi.org/doi:10.1080/09208119208944313>.

³¹ Farisatul Amanah and Tedi Yunanto, "Mine Reclamation Period to Successfully Meet Criteria in Indonesia," 2019, 1303-14, https://doi.org/10.36487/ACG_rep/1915_103_Amanah.

for their negligence.³²

6. No Company has been convicted for not carrying out reclamation

As seen in the criminal law verdict directory, in particular environmental and mining criminal decisions, no Company has been found guilty of not reclaiming former mining pits.³³

7. Local economic interest factors

In some areas, mining activities provide short-term economic benefits to local communities, so reclamation demands may not be as great as the pressure to maintain mining operations.³⁴

8. Factor of Environmental Indifference

Companies that do not have a strong culture of environmental awareness or corporate ethics tend to ignore the long-term impacts of their operations. Companies that focus only on profits often ignore environmental obligations such as reclamation.³⁵

9. Contradictory Factors of Regulations

In Indonesian legal regulations, there is an obligation to carry out reclamation, however, certain regulations allow for the alternative use of former mining pits, this creates a legal grey area.³⁶

10. Cost Factors

Reclamation requires enormous costs, including land restoration, vegetation restoration, and environmental monitoring. Some companies, especially those experiencing financial problems, may be tempted to ignore these obligations to reduce operational costs.³⁷

C. Theory of legal effectiveness

The theory of legal effectiveness is a theory that studies and analyzes the success, failure and factors that influence the implementation and application of law. Soerjono Soekanto, Bronislaw Malinowski, Lawrence M Friedman, Clearence J Dias, Howard and Mummers put forward the effectiveness theory.³⁸

Hans Kelsen said that the effectiveness of law is:

³² Akhmad Fajar Adi Nugroho and R.B. Sularto, "The Urgency of Corporate Criminal Liability in Criminal Law in Indonesia," *Melaynesia Law* 4, no. 2 (December 16, 2020): 130, <https://doi.org/10.30652/ml.v4i2.7776>.

³³ kepaniteraan Mahkamah Agung, "Direktori Putusan Mahkamah Agung Indonesia," 2024, https://putusan3.mahkamahagung.go.id/search.html?q=reklamasi%20tambang&cat=9a49acde4116f41729db232e7979515b&t_reg=2020.

³⁴ Agung Dwi Sutrisno et al., "Evaluating Factors Influencing Community Readiness for Post-Mining Environmental Development Strategies," *Journal of Environmental Management* 366 (2024), <https://doi.org/10.1016/j.jenvman.2024.121823>.

³⁵ Kilvia Cristina Amaral Da Luz and Nayane Thais Krespi Musial, "Can Organizational Culture Encourage Corporate Social Responsibility and Improve Environmental Performance in [B]³ Companies?," *Journal of Management and Sustainability* 13, no. 1 (May 23, 2023): 215, <https://doi.org/10.5539/jms.v13n1p215>.

³⁶ Wartiningsih and Nunuk Nuswardani, "Reclamation Obligations for Permit Holders in the Mining Sector," *Technium Social Sciences Journal* 50 (November 1, 2023): 388–91, <https://doi.org/10.47577/tssj.v50i1.9916>.

³⁷ Antonio Nesticò et al., "Environmental Reclamation of Limestone Mining Sites in Italy: Financial Evaluation, Challenges and Proposals for Sustainable Development," *Resources Policy* 89 (February 2024): 104534, <https://doi.org/10.1016/j.resourpol.2023.104534>.

³⁸ HS and Nurbani, *Penerapan Teori Hukum Pada Penelitian Tesis Dan Disertasi*.

“Whether people act in a way to avoid the sanctions threatened by legal norms or not, and whether these sanctions are implemented when the conditions are met or not.”³⁹

In the context of effectiveness theory, reclamation success is determined by the extent to which the reclamation objectives are achieved; the implementation process is efficient, compliance with regulations, positive long-term impacts, and community satisfaction and participation. Successful reclamation not only restores the physical condition of the land but also creates sustainable ecological and social benefits and involves stakeholders in every stage of the process.

Reclamation of ex-mining areas is mandated in government regulation PP No. 78 of 2010 and Regulation of the Ministry of Energy and Mineral Resources No. 7 of 2014. This regulation requires mining business permit holders to restore land disturbed by mining activities.⁴⁰

Despite criminal sanctions, many companies fail to carry out post-mining reclamation activities. This problem is rooted in several factors, including the ineffectiveness of the current legal framework, the priority of economic activities over environmental responsibilities, and challenges in law enforcement:

1. Criminal sanctions related to reclamation are seen as a last resort and are not effectively enforced. Current law treats reclamation obligations as negligent violations, which are passive and formal, resulting in differences in enforcement.⁴¹
2. Criminal sanctions are not entirely effective in forcing companies to comply with reclamation obligations. This ineffectiveness is partly due to the lack of strict enforcement mechanisms and the prioritization of economic activities over post-mining restoration.⁴²

Way Forward: Alternate Solutions

1. Simultaneous restoration of tailings dumps, waste dumps, and mining land as extraction operations progress, rather than waiting until mining closure⁴³
2. Strengthening the obligation for IUP and IUPK holders to conduct reclamation and post-mining under supervision, as in the Environmental Law. Furthermore, Article 100 (2) needs to be amended as follows: “The Minister, governor, or regent/mayor, according to their authority may appoint a third party to assist IUP/IUPK holders in reclamation and post-mining by using placement funds.” In essence, the placement of reclamation funds by the company does not eliminate the company’s obligation to carry out reclamation and post-mining activities⁴⁴

³⁹ Hans Kelsen, *Teori Umum Tentang Hukum Dan Negara* (Bandung: Nusa Media, 2014).

⁴⁰ Muhammad Mulya Prasetya, Noor Fauzi Isnarno, and Solihin, “Rencana Teknis dan Biaya Reklamasi Tambang Batubara di PT Bhadra Pinggala Sejahtera Kecamatan Tabang Kabupaten Kutai Kartanegara Provinsi Kalimantan Timur,” *Bandung Conference Series: Mining Engineering* 3, no. 2 (July 28, 2023): 463–70, <https://doi.org/10.29313/bcsme.v3i2.8684>.

⁴¹ 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 (June 7, 2022): 11–30, <https://doi.org/10.25041/fiatjustisia.v16no1.2222>.

⁴² Ika Handayani Paturu and Aullia Vivi Yulianingrum, “Penerapan Sanksi Pidana dan Perlindungan Hukum Korban Tindak Pidana Lingkungan Hidup Oleh Korporasi,” *ISIHUMOR: Jurnal Ilmu Sosial dan Humaniora* 1, no. 2 (April 2023): 135–57.

⁴³ Liang Tang and Tim T. Werner, “Global Mining Footprint Mapped from High-Resolution Satellite Imagery,” *Communications Earth & Environment* 4, no. 1 (April 22, 2023): 134, <https://doi.org/10.1038/s43247-023-00805-6>.

⁴⁴ Nurul Listiyani, “KONSEP PERIZINAN TERPADU SEBAGAI UPAYA PENCEGAHAN TINDAK PIDANA

3. Making reclamation fund deposits a prerequisite for the issuance of mining plan and budget approval
4. making reclamation fund deposits to obtain CnC / Clean n Clear certificates as a sign that the company meets all legal requirements to continue the mining process
5. Involve community opinion in determining the amount of reclamation fund deposits.
6. Aligning reclamation regulations with the Sustainable Development Goals (SDGs) is very important, especially for local communities.⁴⁵
7. Collaborative partnerships between companies, local communities and government agencies are critical to the success of reclamation.⁴⁶

IV. CONCLUSION

Mining locations are widely spread throughout Indonesia. Neglect of unreclaimed mining pits is often found in mining concession areas. However, there are administrative and criminal sanctions for companies that do not carry out reclamation. Based on criminology, this is due to several factors: socio-economic factors, law enforcement factors, and light legal sanctions factors. In addition, no company has been found criminally guilty for not carrying out reclamation. The Minerba Law is ineffective because criminal sanctions are considered a last resort, rarely enforced, and are not fully effective.

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⁴⁵ 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 (April 23, 2022): 131–46, <https://doi.org/10.22219/ljih.v30i1.20764>.

⁴⁶ Priyaji Agung Pambudi et al., "Coal Mining Reclamation as an Environmental Recovery Effort: A Review," *Journal of Degraded and Mining Lands Management* 10, no. 4 (July 1, 2023): 4811, <https://doi.org/10.15243/jdmlm.2023.104.4811>.

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