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LEGAL PROTECTION FOR COMMUNITIES AFFECTED BY COAL MINING ACTIVITIES IN MUARA ENIM REGENCY

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Abstract

Coal mining in Muara Enim Regency makes a significant contribution to the national and regional economies; however, it also causes serious environmental, social, and health impacts on the surrounding communities. Although national legal frameworks such as Law No. 32 of 2009 on the Environment and the Mineral and Coal Law have established principles of environmental protection and community rights, their implementation on the ground still faces many challenges. This study aims to analyze the effectiveness of legal protection for communities affected by coal mining in Muara Enim, using a qualitative approach and Philipus M. Hadjon's theoretical framework of legal protection, which encompasses preventive and repressive dimensions. The research findings indicate that although legal mechanisms

such as Environmental Impact Assessments (EIA), land reclamation, and compensation are available in theory, their implementation is often hindered by weak oversight, lack of transparency in information, and limited legal capacity among communities. Furthermore, the reclamation process has not fully succeeded in restoring the ecological functions of the land, while community access to justice remains constrained by bureaucracy and power imbalances. This study recommends strengthening oversight institutions, increasing community participation, ensuring transparency in permitting data, and reforming the compensation system to achieve substantive environmental justice.

Keywords

Legal protection, Coal mining, Environmental impact, Land reclamation, Social justice, Muara Enim

A. Introduction

Coal mining in Indonesia not only serves as a driver of national economic growth but is also closely linked to constitutional principles and Pancasila. Article 33 of the 1945 Constitution stipulates that the management of natural resources must be carried out for the prosperity of the people, and Article 28H of the 1945 Constitution also guarantees "every person's right to a good and healthy environment" as part of human rights. Based on these principles, the state is obligated to protect every citizen from potential harm resulting from the exploitation of natural resources, while simultaneously promoting social justice.¹ According to Philipus M. Hadjon, legal protection is a guarantee provided by the state to safeguard the dignity and worth of individuals as well as human rights. He emphasizes that such protection must be realized through a harmonious relationship between the government and citizens, while maintaining the proper balance of state power and prioritizing the resolution of

¹ B. Rupaidi, "Rekonstruksi Regulasi Penegakan Hukum Tindak Pidana Pertambangan Mineral dan Batubara Berbasis Nilai Keadilan" (Disertasi Doktor, Universitas Islam Sultan Agung, 2023).

disputes through consultation.² In the context of communities affected by mining, Hadjon's concept emphasises the need for full respect for human values and active community participation in the decision-making process, rather than a purely repressive approach.

At the national level, the mineral and coal mining sector has made a very significant economic contribution. Data from the Ministry of Energy and Mineral Resources shows that in 2023 the contribution of the mineral and coal mining sector reached Rp2,198 trillion, or around 10.5% of Indonesia's total GDP.³ The coal industry is also the largest source of state revenue within the mining sector; the Director-General of Mineral and Coal reported that around 70% of non-tax state revenue from the mining sub-sector comes from coal. Furthermore, coal plays a crucial role in the national energy mix (around 30%), whilst also supporting heavy industrial sectors through coal-fired power stations. It is this significant economic contribution that has led the government to promote the growth of the mineral and coal sector, including through downstream processing and large-scale investment..⁴ However, growing awareness of the limitations of natural resources and global environmental issues is beginning to drive energy transition policies. Nevertheless, in the short term, coal remains a strategic commodity and a key source of revenue for the government.

At the local level, Muara Enim Regency is known as one of the largest coal mining areas in South Sumatra. Almost the

² K. Bediona dkk., "Analisis Teori Perlindungan Hukum Menurut Philipus M Hadjon Dalam Kaitannya Dengan Pemberian Hukuman Kebiri Terhadap Pelaku Kejahatan Seksual," *Das Sollen: Jurnal Kajian Kontemporer Hukum Dan Masyarakat* 2, no. 1 (2024).

³ Kementerian ESDM, "Kontribusi Minerba pada PDB 2023 Capai Rp2.198 Triliun," diakses 23 Desember 2025, <https://www.esdm.go.id/id/media-center/arsip-berita/kontribusi-minerba-pada-pdb-2023-capai-rp2198-triliun>.

⁴ Kementerian ESDM, "Komoditas Batubara Pegang Peranan Penting bagi Pertumbuhan Ekonomi Nasional," diakses 23 Desember 2025, <https://www.esdm.go.id/id/media-center/arsip-berita/komoditas-batubara-pegang-peranan-penting-bagi-pertumbuhan-ekonomi-nasional>.

entire coal-rich area of Muara Enim has been designated as a large-scale Mining Business Area (WUP) by the Ministry of Energy and Mineral Resources. This situation reflects just how dominant the coal industry is in Muara Enim Regency. The Muara Enim Central Statistics Agency (BPS) even reported that regional economic growth in 2022 reached 8.39%, the highest in the province, driven primarily by the performance of the mining sector.⁵ According to field data, more than two dozen coal mining companies operate in Muara Enim. Large-scale mining activities are evident in many areas, such as in Lawang Kidul Sub-district. Research findings indicate that coal mining has significantly created jobs, boosted local revenue and supported local infrastructure development. This evidence is consistent with the theoretical expectation that the presence of the mining industry creates economic opportunities for the community.

On the other hand, coal mining has significant negative impacts. Various studies and field reports have highlighted the resulting environmental and social damage. Environmental impacts include deforestation due to the clearing of land for mining, water and air pollution, and damage to ecosystems. For example, residents of Merapi Barat Sub-district report that their clean water sources have been polluted and their farmland covered in mud from muddy floods following heavy rain, caused by mining waste flowing down from upstream. Similar conditions are exacerbated by coal dust carried by lorries along village roads; residents suffer from respiratory problems and damage to buildings caused by the vibrations from the roads traversed by heavy lorries every day.⁶

Legally speaking, residents affected by mining are in fact

⁵ Badan Pusat Statistik Kabupaten Muara Enim, "Batubara Motor Utama Pertumbuhan Ekonomi," diakses 23 Desember 2025, <https://muaraenimkab.bps.go.id/id/news/2023/10/26/171/batubara-motor-utama-pertumbuhan-ekonomi.html>.

⁶ Diki Trianto, "Sumber Air Bersih Warga Merapi Barat Tercemar Limbah Tambang," RMOL, diakses 23 Desember 2025, <https://rmol.id/nusantara/read/2025/03/03/658404/sumber-air-bersih-warga-merapi-barat-tercemar-limbah-tambang>.

protected by a series of legal provisions in Indonesia. Pancasila, as the state ideology, calls for social justice and the protection of people's rights. Article 28H of the 1945 Constitution guarantees that every person has the right to a good and healthy environment, a right further affirmed in Law No. 32 of 2009 on Environmental Protection and Management (PPLH), Article 65(1), which includes the right to a healthy environment, to participate in environmental management, and to lodge complaints regarding pollution.⁷ The Mining Law stipulates that mining companies are obliged to carry out reclamation and post-mining activities, as well as fulfilling social responsibility requirements. Furthermore, the state must explicitly provide guarantees of preventive protection in the form of regulations designed to prevent harm, as well as repressive measures such as law enforcement following violations, for communities living near mining sites.⁸ Hadjon's concept is relevant here; he reminds us that legal protection is not merely a matter of enforcing specific laws, but must be grounded in the ideology of Pancasila, which recognises human rights as the fundamental basis. This means that people living in the vicinity of mining areas are entitled to protection that is not merely procedural, but also substantive, such as access to project information, honest EIA consultations, and conflict resolution through deliberation.

Although these legal provisions are in place, their implementation on the ground is often far from optimal. Irregular practices continue to occur, primarily due to weak oversight and corporate accountability. The latest revision of the Mining Law, passed by the House of Representatives, has even been criticised by environmental activists for reinforcing the dominance of extractive companies and weakening protections for local communities. For instance, the

⁷ I. S. G. Bhakti, "Penerapan Prinsip-prinsip Hukum dalam Sistem Hukum Indonesia," dalam *Pengantar Hukum Indonesia: Teori, Praktik, Dan Transformasi* (2025), 71.

⁸ F. Darongke, D. Rumimpunu, dan S. Roeroe, "Efektivitas Undang-Undang Nomor 3 Tahun 2020 dalam Pemberian Izin Usaha Pertambangan Mineral di Indonesia," *Lex Privatum* 10, no. 3 (2022).

amendments to the Act do not overhaul the framework for mining permits within spatial planning, meaning that many mining permits remain situated within forest areas or overlap with communities' customary territories.⁹ In Muara Enim itself, the entire area with coal potential falls within the WUP, making it difficult for the local community to obtain a Community Mining Permit (IPR). This perceived bureaucratic complexity traps small-scale miners in illegal activities without a legal framework.¹⁰ Meanwhile, jurisdictional conflicts following the Regional Autonomy Law (Law No. 23/2014) have led to a more centralised approach to resolving mining disputes; local governments have lost some of their mining authority, meaning local aspirations are often sidelined in the licensing and oversight processes.

The reality on the ground reveals a gap between regulations and practice, with local communities often being overlooked at various stages of mining operations. Efforts to enforce the law regarding environmental pollution and illegal mining offences also face obstacles. A recent example shows that local communities once blocked PT. Royaltama Mulia Kencana's haulage access to demand the company take responsibility, yet their complaints were not resolved.¹¹ This reflects the state's inability to consistently fulfil its protective role in practice. Yet, according to the principle of equitable mining law, the safety of mining operations should not cause harm to the surrounding community; the law does

⁹ Asep Saefullah, "Dampak Revisi UU Minerba yang Ugal-ugalan terhadap Lingkungan Hidup di Indonesia," *Ekuatorial*, diakses 23 Desember 2025, <https://www.ekuatorial.com/2025/02/dampak-revisi-uu-minerba-yang-ugal-ugalan-terhadap-lingkungan-hidup-di-indonesia/>.

¹⁰ G. N. Ranggalawe, I. Susanti, dan K. Fahmi, "Dilema Penegakan Hukum Penyelesaian Pertambangan Tanpa Izin," *Marwah Hukum* 1, no. 1 (2023): 29-40.

¹¹ Ardani Zuhri, "Mediasi Warga Harapan Jaya & PT RMK tak ada Titik Temu, Pemkab Muara Enim Bentuk Tim Investigasi," *Tribun News*, diakses 23 Desember 2025, <https://palembang.tribunnews.com/muara-enim-untuk-rakyat/1298878/mediasi-warga-harapan-jaya-pt-rmk-tak-ada-titik-temu-pemkab-muara-enim-bentuk-tim-investigasi>.

not permit mining activities to be the cause of 'harm' to any party.

Based on this review, it is clear that there is an urgent need to evaluate legal norms and their implementation mechanisms. Whilst legislation already provides a framework for protection, governance and enforcement at the local level remain weak and thus fail to reflect the objectives of social justice. In line with Hadjon's theory, the resolution of mining conflicts should prioritise consultation and dialogue between the government, companies and the community. Regulatory improvements need to focus on the enforcement of environmental provisions and increased community participation on the ground. Ultimately, reforms to legal norms and policies are expected to narrow the gap between written rules and their implementation, so that the rights of affected communities are truly protected and the goals of sustainable development can be achieved. This situation raises important questions regarding how the regulatory framework governing mineral and coal mining particularly that applicable in Muara Enim Regency regulates and ensures legal protection for communities affected by coal mining activities? And what factors act as barriers to the implementation of legal protection for communities affected by coal mining in Muara Enim Regency from a social, economic and environmental perspective?

In relation to this issue, several previous studies have sought to highlight the impacts of coal mining and the associated protection measures. One such study was conducted by Tri Wahyu Asmara (2024), which specifically examined legal protection for communities affected by the mining activities of PT Bukit Asam Tbk. The study highlighted the specific losses suffered by communities, such as physical damage to buildings caused by blasting vibrations and acid mine drainage, as well as the nature of the company's responsibility towards communities in the vicinity of the mine site.¹²

¹² Taufiq Wisnu Asmara, "Perlindungan Hukum bagi Masyarakat yang Terkena Dampak Kegiatan Pertambangan Batu Bara di Sekitar Lokasi Penambangan Batu Bara PT Bukit Asam Tbk" (Skripsi

Although previous research has provided a sound foundation regarding the nature of corporate responsibility, the majority of studies have remained focused on normative reviews or on a single specific corporate entity. Consequently, this study aims to address this research gap by adopting a broader and more comprehensive scope in Muara Enim Regency, involving various holders of Mining Business Permits (IUP). The novelty of this article lies in the use of a socio-legal approach that combines Philipus M. Hadjon's theoretical framework of preventive and repressive legal protection with empirical evidence in the form of public health statistical trends (such as cases of acute respiratory infections for the period 2020–2025). Through this approach, the research not only measures procedural compliance but also evaluates the substantive effectiveness of the law in practice. This study employs a socio-legal research paradigm or empirical legal research (sociological-juridical) aimed at analysing the functioning of the law within the social context of society. This approach was chosen because it not only examines the positive legal norms relating to the protection of communities affected by mining, but also critically investigates the gap between *das Sollen* and *das Sein*. The data used in this study are drawn from two types of sources.

Firstly, secondary data comprising primary legal materials, such as the 1945 Constitution, Law No. 32 of 2009 on Environmental Protection and Management and its amendments, Law No. 3 of 2020 in conjunction with Law No. 2 of 2025 on Mineral and Coal Mining, and related implementing regulations. Secondary legal materials include literature, scientific journals, and relevant previous research findings. Second, and this constitutes the core of this empirical study, is primary data obtained directly from the social reality in Muara Enim Regency. Primary data was collected through in-depth interviews with affected communities in the mining vicinity, field observations to directly document environmental conditions and mining activities, as well as documentation and analysis of spatial data (concession maps) and statistical data (health data

sarjana, Universitas Sriwijaya, 2024).

from the Muara Enim Regency Health Office). Statistical health data, such as trends in cases of acute respiratory infections (ARI) and skin diseases from 2020 to 2025, were used as scientific evidence of the health impacts reported by the community.

All the data collected, both primary and secondary, was then analysed qualitatively using the theoretical framework of legal protection proposed by Philipus M. Hadjon. The analysis was conducted by reducing the data, presenting it in the form of systematic descriptions and tables, and then drawing conclusions. Hadjon's theoretical framework was used to dissect the implementation of the law into two main dimensions. The preventive dimension was analysed by evaluating the extent to which legal instruments such as Environmental Impact Assessments (EIA), public participation in permitting processes, and the governance of Work Plans and Budget Estimates (WP&B) have effectively prevented damage before it occurs. Meanwhile, the repressive dimension is analysed by examining the effectiveness of law enforcement mechanisms, such as administrative sanctions, civil lawsuits, and the application of the polluter pays principle in remedying environmental and social harm that has already occurred. Using this method, the research not only describes legal norms but also uncovers the structural and cultural factors that act as barriers to the implementation of legal protection for communities affected by coal mining in Muara Enim Regency.

B. The Ecological and Socio-Health Impacts of Coal Mining Operations

The role of the mineral and coal mining sector (*minerba*) within Indonesia's development landscape has evolved from being merely an extractive sector to becoming a key pillar of fiscal stability and national energy sovereignty. At the national level, the significance of this sector is reflected not only in physical activities on the ground but also through its massive economic contribution; data from the Ministry of Energy and Mineral Resources (ESDM) indicates that in 2023, the *minerba* sector contributed Rp2,198 trillion, equivalent to

approximately 10.5% of Indonesia's total Gross Domestic Product (GDP). This figure indicates that every aspect of national economic growth is heavily dependent on the fluctuations and productivity of mining commodities, particularly coal. The coal industry has also cemented its position as the dominant source of state revenue within the mining sub-sector. A report from the Director General of Mineral and Coal underscores this dominance with the fact that approximately 70% to 85% of the total Non-Tax State Revenue (PNBP) from the mining and quarrying sub-sector is derived directly from royalties and the sale of coal mining products. This macroeconomic significance of Rp2,198 trillion has translated into tangible ecological and social pressures at the local level, particularly in Muara Enim Regency, which serves as the nation's coal basket. As a region contributing a significant share to the national GDP, Muara Enim faces a paradox between the grandeur of fiscal figures and the fragility of legal protection for affected communities.

1. The State of and Analysis of the Mining Situation in Muara Enim Regency

Muara Enim Regency, an administrative entity situated at the heart of South Sumatra Province, has undergone a fundamental transformation in its economic structure and spatial planning over the past few decades. This transformation has been driven by one key determining factor: the presence of massive coal deposits beneath its soil. In the discourse of law and public policy, understanding the factual conditions of mining in this region is not merely an inventory of natural resource assets, but a critical examination of how the state manages its sovereign rights over land and water for the people's prosperity, as mandated by the constitution. The reality on the ground reveals a stark development paradox; on the one hand, Muara Enim Regency has recorded impressive economic growth, reaching 8.39% in 2022 the highest figure in South Sumatra Province an achievement directly correlated with the expansion of the mining sector. However, on the other hand, the 'splendour' of these macroeconomic figures masks a fragile ecological and

sociological reality, where the landscape is undergoing permanent degradation and local communities are squeezed by the negative externalities of the extractive industry.

An in-depth analysis of the mining situation in Muara Enim Regency requires us to unpack the layers of complexity involved. This complexity stems from the geological characteristics forming the coal-bearing formations, extends to land tenure structures through a licensing regime that frequently overlaps with forest areas, and manifests physically as land-use changes measurable via remote sensing technology. This situation is exacerbated by the dominant use of open-pit mining, a method that is inherently destructive as it requires the removal of vast volumes of overburden to access the underlying coal seam. The consequence of this choice of method is the creation of a new anthropogenic landscape dominated by mine voids, slurry ponds and spoil heaps that irreversibly alter the region's hydrology and topography.

From an environmental law perspective, these factual conditions form the substantive basis for assessing the effectiveness of the available legal protection mechanisms. Have the Mining Business Permits (IUPs) issued genuinely taken environmental carrying capacity into account? How are the mechanisms for monitoring reclamation and post-mining obligations implemented across concession areas spanning hundreds of thousands of hectares? The following analysis will comprehensively outline the mining conditions in Muara Enim Regency, ranging from geological reviews, the licensing structure, spatial transformations, to the environmental impacts they cause, as the basis for arguing the urgency of more substantive legal protection for affected communities.

The most crucial aspect in outlining the mining situation in Muara Enim Regency is an analysis of the land tenure structure. Under Indonesia's mining legal regime, this tenure is legitimised through the Mining Business Permit (IUP). Data indicates that the agrarian landscape in Muara Enim has been fragmented into concession areas on a staggering scale. There are at least 29 companies holding IUPs in this area, with the total area of concessions reaching a cumulative figure of 153,481 hectares. When compared to the total

administrative area of Muara Enim Regency, which is approximately 7,300 km² (730,000 hectares), this figure indicates that more than 20% of the regency's territory is under the control of mining corporations. This spatial dominance places immense pressure on the community's living space, restricting the availability of land for agriculture, smallholder plantations, and settlement development.

This land tenure structure is dominated by major players, both state-owned enterprises (SOEs) and the private sector. PT Bukit Asam Tbk (PTBA) stands as the most dominant and long-established entity, holding not only the largest concession but also boasting the longest operational history in Tanjung Enim. However, surrounding this SOE giant are dozens of private companies holding Production Operation IUPs, creating a dense mosaic of concessions that often overlap with the functions of other areas. This situation is further complicated by the "Clean and Clear" (CnC) mechanism, an administrative standard implemented by the Ministry of Energy and Mineral Resources to regulate problematic permits. Although many companies have obtained CnC certificates, the reality on the ground often still leaves boundary disputes and land conflicts with local communities unresolved.

To provide a more detailed and transparent picture of the actors controlling the mining area in Muara Enim Regency, as well as the associated legal status, the following table lists the companies holding IUPs identified based on licensing summary data and relevant study documents. This table is essential for mapping which legal entities bear responsibility for the resulting environmental and social impacts.

Table 1. List of Companies Holding IUPs in Muara Enim Regency

No .	Name of IUP-holding Company	Type of licence	Stage of activity Location/ Area	IUP Decision Number
1.	PT Bukit Asam Tbk	Production Operating	Tanjung Enim,	389/KPTS/TA MBEN/2010

	(PTBA)	Licence	Muara Enim /3.453,5 Ha.	
2.	PT. Bara Anugrah Sejahtera	Production Operating Licence	Kabupaten Muara Enim / 2164 Ha	1035/KPTS/Tamben/2014
3.	PT. Bara Sumatera Energi	Production Operating Licence	Kabupaten Muara Enim / 4987 Ha	427/KPTS/TAMBEN/2011
4.	PT. Batubara Bukit Kendi	Production Operating Licence	Kabupaten Muara Enim / 881,7 Ha	305/KPTS/DI SPERTAMBE N/2010
5.	PT. Bukit Enim Energi	Production Operating Licence	Kabupaten Muara Enim / 11.130 Ha	256/KPTS/TAMBEN/2011
6.	PT. Bumi Sekandang Enim Energi	Production Operating Licence	Kabupaten Muara Enim / 12.880 Ha	SK Eksploitasi 404/KPTS/TAMBEN/2010
7.	PT. Duta Bara Utama	Production Operating Licence	Kabupaten Muara Enim / 1.967 Ha	721/KPTS/TAMBEN/2011
8.	PT. Cakra Bumi Energi	Production Operating Licence	Kabupaten Muara Enim / 9815 Ha	SK Eksploitasi 1084/KPTS/Tamben/2006

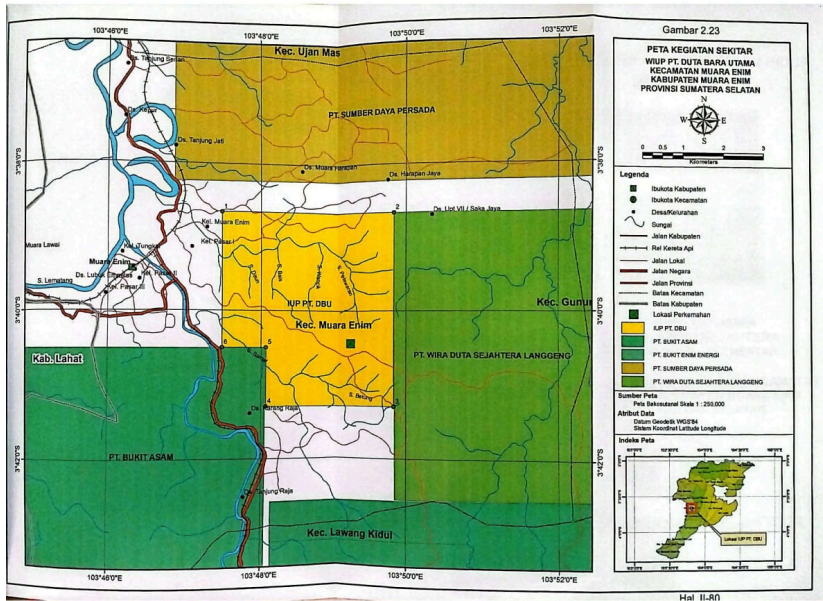
Source : *Summary data from the Muara Enim Regency Environment Agency*

The large number of corporate entities exploiting the same ecological landscape has triggered a cumulative impact of pollution on the landscape of Muara Enim Regency. Consequently, the structure of land tenure in this region can

no longer be interpreted merely as an administrative map or an investment inventory. Rather, this spatial data on permits constitutes a map of potential structural conflicts that demands the state's presence to provide legal protection, particularly for those whose socio-economic and political position is far weaker, namely local communities.

In fact, the vast extent of the concession areas held by dozens of IUP holders is not commensurate with the monitoring capacity of state officials, whether environmental agencies at the local level or the number of mining inspectors from the Ministry of Energy and Mineral Resources. These structural limitations create loopholes for companies to operate outside the compliance framework of Law No. 3 of 2020 on Mineral and Coal Mining, particularly regarding the obligation to minimise negative externalities. Consequently, rather than operating within safe environmental carrying capacities, massive open-pit mining methods have instead triggered environmental degradation across village administrative boundaries, such as coal dust from haulage routes and river water pollution caused by mine waste runoff. Empirical evidence of the massive spatial control exercised by mining corporations in Muara Enim Regency is not limited to a series of figures and lists of administrative permits, but is tangibly manifested in the spatial configuration on the ground.

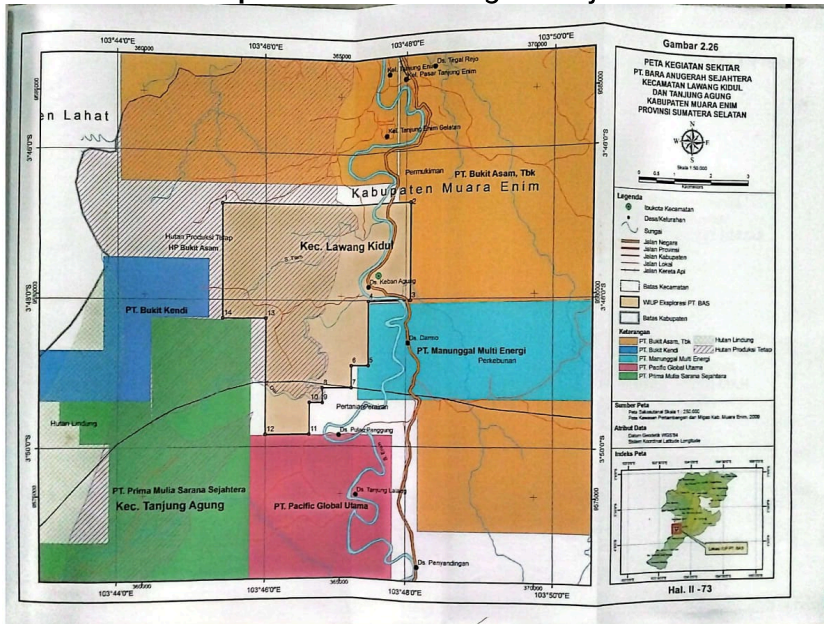
Map 1. PT. Duta Bara Utama



Source : Muara Enim Regency Environment Agency, 2026

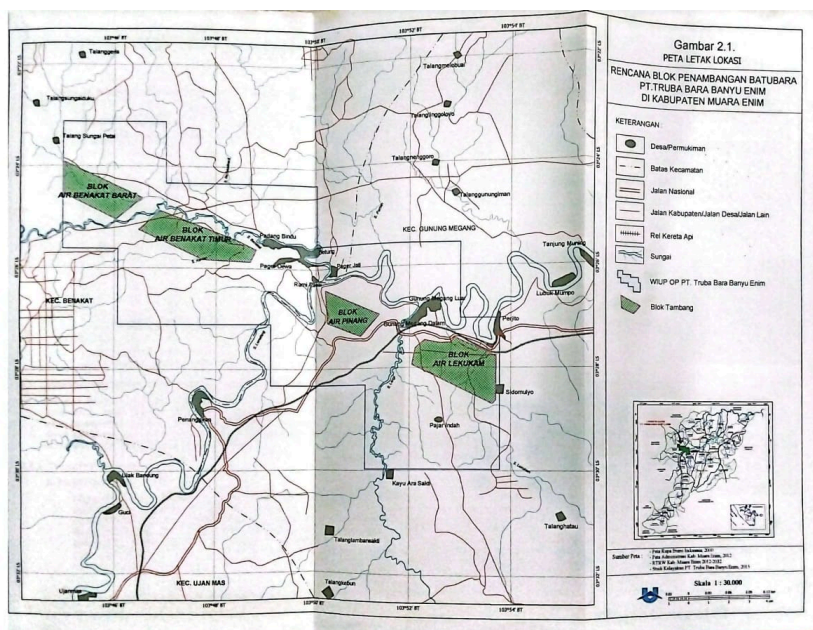
Referring to the Map of Activities around the Mining Business Licence Area (WIUP) of PT Duta Bara Utama (DBU) and the surrounding area (Map 1), it is clearly evident how the boundaries of mining areas (such as those of PT Sumber Daya Persada and PT Bukit Asam) directly border the Lematang River and densely populated areas, including Muara Enim Sub-district, Muara Harapan Village, and Tanjung Jati. From an environmental law perspective, this proximity poses a high risk of surface water pollution, which is the lifeblood of the community. Mine Acid Drainage (MAD) has the potential to directly pollute the Lematang River Basin, which legally infringes upon the community's right to clean water as guaranteed by the constitution and the Water Resources Act.

Map 2. PT. Bara Anugra Sejahtera



Source : Muara Enim Regency Environment Agency, 2026

This is clearly illustrated on the Map of the Tanjung Enim Area and Surroundings (Map 2). The map shows a concentration of IUP holders operating within a very close radius, including PT Bukit Asam Tbk, PT Bukit Kendi, PT Prima Mulia Sarana Sejahtera, and PT Pacific Global Utama. It also shows the direct overlap of the mining area with “Protected Forest” and “Permanent Production Forest” zones. The presence of various corporations within a single, contiguous ecological landscape means that communities in the surrounding areas, such as the villages of Tegal Rejo and Keban Agung, bear a multiplied burden of pollution (multiplier effect), whether from exposure to coal dust, noise, or falling groundwater levels. Unfortunately, EIA documents are often prepared on a piecemeal basis for each corporate entity, without taking into account the cumulative environmental carrying capacity of the region.

Map 3. PT. Truba Banyu Enim

Source : Muara Enim Regency Environment Agency, 2026

The PT Truba Bara Banyu Enim Mining Block Plan Map (Map 3) illustrates how the mining blocks (such as the Air Benakat Barat, Air Benakat Timur, Air Pinang and Air Lekukam blocks) extend across several sub-districts simultaneously (Benakat, Ujan Mas and Gunung Megang sub-districts). This block configuration places dozens of villages and hamlets (such as Talang Beliung, Pagar Dewa, and Perjito Village) in the midst of an extractive zone. Such spatial planning not only restricts communities' access to agricultural land and their subsistence spaces, but also creates spatial isolation that runs counter to the principle of spatial justice.

This factual situation, which stands in stark contrast to the ideal of regulation, provides a strong material basis for critiquing the functioning of mining law in Indonesia. If the preventive dimension fails to protect residents' living spaces amidst the encroachment of massive concessions, then law enforcement must be activated in a more progressive, repressive dimension, to ensure that residents' safety and

constitutional rights are not sacrificed solely in pursuit of macroeconomic growth indicators.

2. Environmental Impacts of Coal Mining Activities

The empirical reality revealed by visual observations in Lawang Kidul Sub-district and other affected areas in Muara Enim Regency is, in essence, not merely a case of ordinary ecological degradation, but a direct manifestation of a violation of the constitutional rights of civil society. The phenomenon of thick dust from haulage routes, vibrations damaging residents' buildings, and the intrusion of sludge waste into agricultural land constitute material evidence of the weak implementation of environmental legal protection instruments, both in their preventive and repressive dimensions. Pursuant to the provisions of Article 28H(1) of the 1945 Constitution in conjunction with Article 65(1) of Law No. 32 of 2009 on the Protection and Management of the Environment (Environmental Protection and Management Law), every citizen is guaranteed the absolute right to a good and healthy environment. However, the reality on the ground shows that this fundamental right is being undermined by coal mining practices that disregard the local environment's carrying capacity.

As a legal basis for proving the occurrence of unlawful acts, the pollution of aquatic ecosystems such as the Enim River is no longer assessed solely on the basis of visual turbidity, but has been confirmed through scientific environmental quality testing. The unmanaged discharge of Acid Mine Drainage (AMD) has resulted in water quality standards being exceeded, which constitutes a clear violation of Government Regulation No. 22 of 2021 on the Implementation of Environmental Protection and Management.

The significant breach of environmental quality standards, as demonstrated by the evidence presented above, underscores the urgent need to activate legal protection in its punitive dimension. Given that preventive protection measures have failed to safeguard the community's living environment, the enforcement of environmental law must no longer be reduced to the mere imposition of administrative

warnings. A more progressive and bold legal approach must be pursued through the implementation of the Polluter Pays Principle, which is strictly regulated under the Environmental Protection and Management Act. Based on this principle, those responsible for mining operations proven to have caused damage to residents' buildings, spread corrosive dust particles, and triggered crop failures in agricultural ecosystems bear an absolute obligation to cover the full costs of ecological restoration whilst providing fair material compensation to the affected communities.

The effectiveness of restoring these community rights can be accelerated through the instrument of Strict Liability in accordance with environmental doctrine and national protection regulations. Under this principle, mining corporations holding IUPs that manage hazardous materials (including coal stockpiles and sulphide-containing liquid waste) must immediately assume liability for compensation when environmental disasters occur, without requiring local communities who, by definition, have weaker legal and economic bargaining positions to prove elements of negligence (fault) in court. It is precisely this kind of firm law enforcement, oriented towards restorative justice, that is an absolute prerequisite for ensuring that the rule of law in Muara Enim Regency does not succumb to the hegemony of mining corporations, whilst simultaneously restoring the community's constitutional right to a conducive living environment.

3. The Perspectives of Affected Communities and Health Issues

An interview conducted on 10 March with Mr Delvanoe, a member of the community affected by mining activities in the Muara Enim Regency, revealed a sense of powerlessness amidst large-scale exploitation. Health issues were the most prominent concern raised in the interview. Residents reported that since the intensity of mining activities increased, the prevalence of respiratory illnesses, particularly chronic cough

and shortness of breath (asthma), has risen sharply.¹³ Data from the Muara Enim District Health Office, supported by informants' accounts, indicates that Acute Respiratory Infections (ARIs) are the leading cause of illness in the area surrounding the mine, particularly during the dry season when coal dust is blown freely by the wind. Furthermore, the use of polluted river water for bathing and washing has led to an increase in reports of skin conditions such as itching and rashes among children.¹⁴ Residents feel that they are forced to bear the burden of additional healthcare costs resulting from the negative externalities of the company's operations, for which they have never received adequate compensation.¹⁵

Table 2. Diseases in Muara Enim District by Year

Year	Type of Disease	Number of Cases	Symptom Category	Public Complaints
2025 (Janu- ari- Juni)	Acute Upper Respiratory Tract Infection (AURI)	3.111	Respirator y system	The impact of coal dust carried by the wind during the dry season and as mining activity intensifies.
2025 (Janu- ari-	Asthma	550	Respirator y system	Residents have reported a

¹³ Delvanoe (Masyarakat Terdampak di Kabupaten Muara Enim), wawancara oleh penulis, 10 Maret 2026.

¹⁴ Hardiana (Adminkes Ahli Pertama Dinas Kesehatan Kabupaten Muara Enim), wawancara oleh penulis, 3 Februari 2026.

¹⁵ Farhan (Masyarakat Terdampak di Kabupaten Muara Enim), wawancara oleh penulis, 10 Maret 2026.

	(AURI)			significant skin problems in children.
2022	Acute Upper Respiratory Tract Infection (AURI)	44.711	Respiratory system	The negative externalities in the form of dust have made respiratory tract infections the number one cause of illness.
2022	Penyakit Kulit dan Jaringan Subkutan	21.714	skin condition	The additional healthcare costs resulting from skin problems caused by polluted river water.
2021	Acute Upper Respiratory Tract Infection (AURI)	27.908	Respiratory system	Complaints from the public regarding deteriorating air quality in the vicinity of the mining area.
2021	Allergic Skin Conditions	8.428	skin condition	Complaints from the public

				regarding the deterioration of air quality in the vicinity of the mining area.
2020	Acute Upper Respiratory Tract Infection (AURI)	37.745	Respiratory system	Exposure to coal pollutants causes chronic respiratory diseases.
2020	Allergic Skin Conditions	7.073	skin condition	Sanitation and water issues caused by mining activities

Source: Muara Enim District Health Office, 2025

The data in Table 2 presents comprehensive health statistics detailing morbidity trends in Muara Enim District during the period from 2020 to the first half of 2025. This data, sourced from the Muara Enim Regency Health Office, highlights the prevalence of Acute Upper Respiratory Tract Infections (AURI) and skin diseases within the community. Specifically, the AURI case graph shows highly fluctuating yet consistently high figures, with a peak in 2022 reaching a record 44,711 cases. Although there was a decline in subsequent years, incidence figures remained in the tens of thousands (35,797 cases in 2023 and 30,619 cases in 2024), indicating that environmental risk factors are persistent and have not yet been effectively addressed. Furthermore, the emergence of asthma as a significant condition in the first half of 2025 (550 cases) and the high incidence of skin

diseases in 2023 (35,265 cases) underscore the correlation between declining environmental quality and public health outcomes. Residents' accounts recorded in interviews on 10 March 2026 regarding public complaints consistently linked these symptoms to mining operations, such as dust during the dry season and river water pollution. The predominance of respiratory and skin diseases in public health data around mining areas, particularly in Muara Enim Regency, is no coincidence, but rather a tangible consequence of exposure to pollutants from coal mining activities. This cause-and-effect relationship can be understood through two main pathways: air pollution and water contamination.

Respiratory problems such as acute respiratory infections and asthma stem from the fine dust generated during land excavation, blasting and the transport of coal. These activities release micro-particles (PM_{2.5} and PM₁₀) and harmful gases into the atmosphere, which are easily inhaled into the lungs. Medically speaking, this dust triggers inflammation in the airways and weakens the body's natural defences, making people more susceptible to viral or bacterial infections. For those with a history of asthma, this mining dust is a primary trigger for airway constriction, causing sudden breathlessness.¹⁶ This aligns with various findings showing that residents in mining areas face a significantly higher risk of respiratory disorders compared to those in non-mining regions.

Meanwhile, the high incidence of skin diseases is closely linked to the deterioration in the quality of river water used by residents for daily needs. Mine Acid Water (MAW) flowing into rivers has a very high acidity level and contains hazardous heavy metals. Direct contact with this corrosive water whilst bathing or washing triggers skin irritation, itching, and red rashes. In addition to chemical factors, the murky water caused by mining sludge deposits worsens environmental sanitation. The use of this unclean water

¹⁶ E. Astuty, H. Hasyim, dan E. Sunarsih, "Dampak Paparan PM_{2.5} dan PM₁₀ terhadap Kesehatan Pekerja di PLTU Batubara: Tinjauan Literature Review," PREPOTIF: Jurnal Kesehatan Masyarakat 8, no. 3 (2024).

facilitates bacterial and fungal infections of the skin, particularly among vulnerable groups such as children, as reflected in the high number of reports of skin disorders in the affected areas.

C. The Implementation of Environmental Legal Protection and the Socio-Economic Impacts of Coal Mining in Muara Enim Regency

This section of the discussion examines in depth the implementation of environmental legal protection in coal mining activities in Muara Enim Regency, with a focus on the balance between economic interests, environmental protection and social justice. The analysis is conducted using a normative legal approach enriched with empirical field data, thereby illustrating the gap between legal norms and practice. The discussion is structured around several key dimensions: the preventive dimension, the repressive dimension, and the socio-economic and health impacts. Within this framework, this section aims to demonstrate the extent to which environmental and mining laws have functioned as instruments for protecting the right to a good and healthy environment, whilst identifying structural barriers to their implementation.

To systematically analyse the implementation of environmental legal instruments in coal mining operations, this study adopts the legal protection framework proposed by Philipus M. Hadjon. This theory divides protection mechanisms into two main dimensions preventive and repressive which serve as benchmarks for evaluating the gap between normative regulations and actual practices on the ground. As a conceptual foundation for the in-depth analysis in this section, the following table summarises the main focus, relevant legal instruments, and substantive objectives of legal protection in the mining sector.

Table 3. *Dimensions of Environmental Legal Protection in the Mining Sector*

Dimensions of Protection	Key Focus Areas	Relevant Legal Instruments	Objectives in the Context of Mining
Preventive	Preventing losses before they occur	-EIA (Environmental Impact Assessment) -Environmental Permits & Mining Business Licences (IUP) -Public participation in the permitting process -Work Plan and Budget (RKAB)	Ensuring the public's right to be heard before a final decision is made, preventing environmental damage from the planning stage onwards, and ensuring transparency of information.
Repressive	Enforcing the law after losses have occurred	-Administrative Sanctions (Licence Revocation, Fines) -Civil Lawsuits (Compensation) -Criminal Sanctions (Imprisonment & Fines)	-Administrative sanctions (licence revocation, fines) -Civil claims (compensation) -Criminal sanctions (imprisonment and fines) -The 'polluter

		-Polluter Pays Principle & Strict Liability	pays' principle and strict liability
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Source: Adapted from the theory of Philipus M. Hadjon and Law No. 32 of 2009, as well as the Mining and Energy Law

1. The Preventive Dimension: Protection Before Damage Occurs

One of the main pillars of environmental management is preventive action, namely efforts to protect and safeguard the environment before damage or pollution occurs. The Constitution of the Republic of Indonesia has enshrined the right to a good and healthy environment.¹⁷ Article 28H of the 1945 Constitution states that every person has the right to "prosperity in both material and spiritual terms", "access to healthcare", and, specifically, "a good and healthy environment". This spirit is reaffirmed in the preamble to Law No. 32 of 2009 on the Protection and Management of the Environment (Environmental Protection and Management Law), as amended by Law No. 6 of 2023 on the Enactment of the Job Creation Government Regulation in Lieu of Law (Perppu) into Law, which states that a good and healthy environment is a fundamental right of every citizen as mandated by Article 28H of the 1945 Constitution.¹⁸

As a legal instrument for realising these constitutional rights, the Environmental Protection and Management Act

¹⁷ A. Ma'ruf, "Aspek Hukum Lingkungan Hidup dalam Upaya Mencegah Terjadinya Kerusakan dan Pencemaran Lingkungan Hidup di Indonesia," *Wacana Hukum* 24, no. 1 (2018): 38-51.

¹⁸ N. Nurhayati, "Sinkronisasi Yuridis Peraturan Perundangan Di Bidang Lingkungan Hidup Dalam Bingkai Konstitusi Hijau (Green Constitution) Undang-Undang Dasar Negara Republik Indonesia Tahun 1945" (Disertasi Doktor, Universitas Sebelas Maret, 2014).

(UU PPLH) encompasses at least two dimensions of protection: preventive and repressive. The preventive dimension takes precedence, based on the precautionary principle and the obligation to carry out environmental planning before a business commences.¹⁹ Article 2(f) of the Environmental Protection and Management Act states that environmental management shall be carried out in accordance with the precautionary principle; for example, scientific uncertainty is not a reason to delay measures to prevent potential damage.²⁰ Similarly, the 'polluter pays' principle is enshrined in Article 2(j) as part of the fundamental principles of environmental law. The application of these two international principles is reinforced by legal rulings, under which the competent authorities are obliged to assess environmental risks even where scientific evidence is incomplete. Under national law, the ratification of the 1992 Rio Convention ensures that the precautionary principle is an obligation of the competent authorities.

At the legislative level, the preventive dimension of the 2023–2025 post-legal reform is reflected in the integration of Environmental Agreements into Business Licensing. Under Article 22 of the latest Environmental Protection and Management Law (PPLH), every business with the potential for significant impact must possess an Environmental Impact Assessment (EIA) document as the basis for the issuance of an Environmental Feasibility Decision (SKKLH). According to Article 26 of the PPLH, the EIA preparation process must

¹⁹ E. K. Purwendah, "Perlindungan Lingkungan Dalam Perspektif Prinsip Kehati-Hatian (Precautionary Principle)," *Jurnal Media Komunikasi Pendidikan Pancasila dan Kewarganegaraan* 1, no. 2 (2019): 82-94.

²⁰ S. Sulistyono, "Pengaruh Izin Lingkungan Sebagai Upaya Preventif Terhadap Perlindungan Dan Pengelolaan Lingkungan Hidup Untuk Mencegah Kerusakan Lingkungan Hidup," *Swara Patra: Majalah Ilmiah PPSDM Migas* 6, no. 4 (2016).

involve communities directly affected through transparent public announcements. This commitment to transparency is further evident in Article 65(2), which states that every person has the right to access to information, access to participation, and access to justice. Article 65(3) grants the public the right to submit proposals or objections regarding planned activities, whilst Article 68 requires business operators to provide environmental information that is truthful, accurate, open, and timely.²¹

These principles are also reflected in the context of mineral and coal mining through Law No. 2 of 2025 (the Fourth Amendment to the Mining Law), which integrates environmental aspects from the exploration stage through to the post-mining phase. Article 96 of the Minerals and Coal Law requires holders of Mining Business Licences (IUP) to implement environmental management, including reclamation and post-mining activities. The implementing regulation (Government Regulation No. 39 of 2025) emphasises that environmental planning must be integrated into the Work Plan and Budget (RKAB). Pursuant to Ministry of Energy and Mineral Resources Regulation No. 17 of 2025, the duration of the RKAB has now been reverted to 1 (one) year, thereby enabling a more rigorous annual assessment of environmental resilience and sustainability.²²

Normatively, the effectiveness of these preventive instruments does not merely depend on the administrative existence of the documents, but rather rests on the substance of the Environmental Management Plan (RKL) and

²¹ A. Y. Putri, "Tinjauan Hukum terhadap Analisis Dampak Lingkungan (AMDAL) dalam Pengelolaan Lingkungan Hidup di Indonesia" (Disertasi Doktor, Universitas Islam Negeri Sultan Syarif Kasim Riau, 2024).

²² W. Arafah dkk., *Dilema Batu Bara: (Regulasi, Dampak Lingkungan dan Transisi Energi di Indonesia)* (Penerbit Berseri, 2025).

the Environmental Monitoring Plan (RPL) integrated within the EIA. Within the framework of environmental law, the EIA particularly the EMP and EMP represents the state's application of a command-and-control approach (direct regulation and supervision) towards activities. Legally, the RKL-RPL functions as a legally binding technical document, which sets out specific and measurable provisions regarding thresholds for mine wastewater quality standards, technical measures to mitigate dust emissions from hauling operations, and procedures for managing hazardous and toxic waste (B3). It is the operational compliance of mining companies in Muara Enim Regency with the technical limits set out in the RKL-RPL that truly forms the basis and absolute parameter for local government and environmental supervisory agencies to carry out inspections, monitor the actual situation on the ground, and take firm action against any indication of pollution before its impact spreads to the community.²³

In line with this, the Mining Business Permit (IUP) should not be viewed merely as a formal legal licence to exploit natural resources, but rather as the government's primary instrument of control for regulating mining corporations. Normatively, the IUP Decree (SK) contains a series of rigid rights and obligations that are an absolute prerequisite (*conditio sine qua non*) for the company's operations, covering restrictions on the coordinate points of the concession area, the obligation to deposit reclamation guarantee funds, and compliance with technical and environmental reporting requirements. With the issuance of the IUP, the state binds the company within a hierarchical administrative legal relationship. As an instrument of control, the clauses of obligation within the IUP Decision grant

²³ Miswar Anwar, "Analisis Yuridis Penerapan Online Single Submission ((Anwar 2022)) Pada Pengaturan Perizinan Lingkungan" (Dissertation, Universitas Hasanuddin, 2022)

executive authority to the government; if the IUP holder in Muara Enim is found to have neglected environmental management or community protection, the government has a strong legal basis to impose unilateral administrative sanctions (*eenzijdige publiekrechtelijke handeling*), ranging from the suspension of operations to the permanent revocation of the IUP, in order to prevent the occurrence of greater socio-ecological harm.²⁴

Legal theory underpins this preventive approach. Philipus M. Hadjon explains that preventive legal protection affords the public the opportunity to raise objections or express their views before a government decision is issued, thereby preventing disputes at an early stage. In this context, the Environmental Impact Assessment (EIA) and public participation mechanisms constitute forms of preventive law, and the public is given the “opportunity to express their views before government decisions become definitive”, meaning that government actions must take public opinion into account. Consequently, the Environmental Law and the Mining and Energy Law must be applied not merely as administrative procedures, but as a system of protection at the earliest possible stage to ensure that the right to a good and healthy environment is truly fulfilled.²⁵

Empirically, the implementation of preventive measures in Muara Enim Regency has not yet been fully optimised. This region holds 29 coal mining business permits, with a total

²⁴ Eka Titi Yudha, “Pelaksanaan Izin Usaha Pertambangan dalam Konflik antara Kepentingan Investasi dan Perlindungan Masyarakat Adat,” *Mustika Justice* 4, no. 2 (2025) (Yudha 2025)

²⁵ M. Krisnaputra dkk., “Efektivitas Partisipasi Publik dalam Proses Analisis Dampak Lingkungan (AMDAL) Pasca Undang-Undang Cipta Kerja,” *Iuris Studia: Jurnal Kajian Hukum* 6, no. 3 (2025): 651-659.

concession area of 153,481 hectares.²⁶ A number of large-scale mines, both state-run and privately owned, are operating across several sub-districts. Prior to commencing operations, these companies are required to process environmental documents through the Amdalnet system and obtain approval from the relevant authorities. Under Minister of Environment Regulation No. 22 of 2025, the authority to issue Environmental Approvals has now been re-delegated to the Regent/Mayor for activities located within a single regency and not of a national strategic nature, as assessed by the Regional Environmental Feasibility Assessment Team (TUK).

Public engagement and oversight still face challenges. A study by the Muara Enim local government found that although the local government possesses the legal framework to address the socio-environmental impacts of mining, law enforcement remains suboptimal. Research by Manalu et al. in 2014 indicated the need for periodic evaluation and assessment of the impacts of coal mining on the environmental and socio-economic conditions of the population. It is recommended that the previously drafted EIA recommendations form the basis for imposing strict sanctions on companies and illegal miners who breach their obligations. In other words, although companies have an EIA, oversight and implementation such as pollution control, reclamation, or routine reporting are still considered ineffective, and mines with permits that do not fully comply with EIA provisions are still occasionally found.²⁷

²⁶ Teguh Suprayitno, "Kala Tambang Batubara 'Kuasai' Sumsel: Lingkungan Rusak, Hidup Warga Makin Sisah," Mongabay, 2023.

²⁷ Sahat P. Manalu, Bambang Sukana, dan Kenti Friskarini, Kesiapan Pemerintah Kabupaten Muara Enim Dalam Rangka Menanggulangi Pencemaran Batubara (Badan Penelitian Dan Pengembangan Kesehatan, 2014).

Government oversight also faces its own challenges. Local and central governments are obliged to ensure that mining activities comply with Environmental Impact Assessments (EIA) and technical regulations, as well as to control environmental pollution. Nevertheless, in practice, there are still many active mines whose operations exceed the environment's carrying capacity. Indeed, unauthorised mining activities (PETI) remain widespread.²⁸ In response, the Directorate General of Law Enforcement at the Ministry of Energy and Mineral Resources has taken firm action against illegal mining in Muara Enim; for example, it closed three illegal coal storage sites and seized 1,430 tonnes of coal in December 2025. However, these repressive measures should not be the primary focus. The closure of illegal mines alone cannot replace preventive measures implemented from the outset. In this case, Gakkum seized not only coal but also documents serving as evidence of alleged environmental damage. This fact underscores that without strict oversight from the moment a permit is issued, environmental damage remains a constant risk..²⁹

Another key aspect of the preventive dimension is transparency and participatory governance. Under the Mining Law and the Environmental Protection and Management Law, the licensing process must involve local authorities and communities closely. One such local mechanism is the Public Information Forum or the District EIA Committee, where community representatives can provide input.³⁰ The main

²⁸ A. S. Jannah dkk., "Tanggung Jawab Administratif Pemerintah Daerah dalam Pengawasan Izin Lingkungan," *CONSTITUO: Journal of State and Political Law Research* 4, no. 1 (2025): 99-115.

²⁹ Kementerian ESDM, "Tindak Tambang Liar di Muara Enim: Tutup Tiga Titik, Sita Batubara," diakses 1 Februari 2026, <https://www.esdm.go.id/id/media-center/arsip-berita/tindak-tambang-liar-di-muara-enim-tutup-tiga-titik-sita-batubara>.

³⁰ Putri Rahmayani Samad, "Urgensi Partisipasi Masyarakat

challenge lies in the socio-legal implementation and public understanding of the right of access to information, such as water quality data and post-mining monitoring as mandated by Article 68 of the Environmental Protection and Management Act. On the government's part, oversight must be carried out proactively through the strengthening of the technical capacity of the Environmental Agency and regular environmental audits.

On the government side, oversight must be carried out proactively. By strengthening the technical capacity of the Environmental Agency, environmental audits and company performance evaluations must be conducted on a regular basis. Law enforcement officials, including Civil Servant Investigators (PPNS) from the Ministry of Energy and Mineral Resources and the environmental police, need to promptly investigate any indications of permit violations or pollution. Reclamation guarantee funds must also be utilised to encourage companies to fulfil their obligations; for example, they should be released for land restoration if a company fails to comply. By applying the principle of *ultimum remedium*, criminal prosecution should be a last resort after administrative measures and environmental remediation have been undertaken.³¹

Overall, strengthening the preventive dimension requires collaboration from all parties. The government must consistently enforce the latest regulations, such as the 2025 Mining Law and the Job Creation Law, whilst the public is

terhadap Perizinan dan Pengawasan Pertambangan Pasir di Kabupaten Sidenreng Rappang" (Disertasi Doktor, Universitas Hasanuddin, 2021).

³¹ Cicilia Olga, "Pertanggungjawaban Kerugian Negara Oleh Pegawai Negeri Non-Bendahara Sebagai Instrumen Penegakan Hukum di Lingkungan Kementerian dalam Negeri" (Disertasi Doktor, Universitas Kristen Indonesia, 2023).

encouraged to participate actively in monitoring the environmental damage standards now strictly regulated under Ministry of Environment Regulation No. 20 of 2025. Only then will the principle that “prevention is better than cure” be truly internalised in the management of coal mines in Muara Enim.

2. The Repressive Dimension; Recovery Following a Loss

Various Indonesian legal instruments regulate liability for environmental damage caused by mining. Law No. 32 of 2009, as amended by Law No. 6 of 2023, and Law No. 2 of 2025 (the Fourth Amendment to the Mining Law) have established a regime of sanctions comprising administrative and criminal penalties, alongside restoration obligations. For example, Article 78 of the Environmental Protection and Management Act (UU PPLH) states that “administrative sanctions do not exempt the responsible party from restoration and criminal liability”.³² In other words, polluters are not only subject to fines or the revocation of licences, but are also obliged to compensate for damages and restore the environment. This legal framework is underpinned by environmental principles such as the ‘polluter pays’ principle and strict liability. Article 2(j) of the Environmental Protection and Management Law (UU PPLH), for example, codifies the ‘polluter pays’ principle by stating that any business causing pollution “shall bear the costs of environmental restoration”. Similarly, Article 88 of the Environmental Protection and Management Law establishes the principle of strict liability for hazardous materials such as B3 waste. Although in Law No. 6 of 2023, the phrase “without the need to prove fault” was removed

³² A. D. Aryanda dkk., “Sanksi Korporasi Pencemar Lingkungan Dan Perlindungan Pejuang Lingkungan Hidup Di Indonesia,” dalam Bookchapter Hukum dan Politik dalam Berbagai Perspektif, vol. 3 (2024), 25-75. (Annisa 2024) (Sangki 2024) (Cholidin 2025) (Hermawan 2025)

from Article 88, legal doctrine continues to interpret that high-risk activities bear strict liability for the damages caused.³³

This obligation is now set out in greater technical detail in Government Regulation (GR) No. 39 of 2025 and Minister of Energy and Mineral Resources Decree No. 344 of 2025 on Technical Guidelines for the Implementation of Land Reclamation and Post-Mining Activities. These regulations require the deposit of a reclamation guarantee fund prior to the commencement of operations, in accordance with the standards set by the government in Article 91B of GR No. 39 of 2025. The Mining Law also imposes severe penalties for licensing and environmental violations. The revised Mining Law of 2025 further imposes more specific severe penalties. In addition to the administrative sanctions under Article 151, Article 161B of Law No. 3 of 2020 revolutionarily establishes criminal sanctions for licence holders whose licences have expired but who have not carried out reclamation or post-mining activities; the penalty is imprisonment for a maximum of 5 years and a fine of Rp100 billion. Meanwhile, Article 158 continues to punish unauthorised mining (PETI) with a prison sentence of 5 years and a fine of Rp100 billion. Furthermore, Article 164 establishes additional penalties in the form of forfeiture of profits and the obligation to pay environmental restoration costs resulting from the criminal offence.³⁴

In enforcing the repressive dimension, several environmental principles serve as the moral and legal foundation. The 'Polluter Pays' principle requires that the

³³ J. A. Maulana dan F. N. Annisa, "Analisa Yuridis Perubahan Makna Strict Liability dalam Undang-Undang Lingkungan Hidup Pasca Pengesahan Undang-Undang Cipta Kerja," *Amnesti: Jurnal Hukum* 6, no. 2 (2024): 298-314.

³⁴ C. A. A. T. Sangki, "Tinjauan Yuridis Mengenai Pencabutan Izin Usaha Pertambangan Pada Perusahaan Tambang," *Lex Privatum* 13, no. 2 (2024).

costs of remedying damage be borne by the polluter, rather than by the state or the general public. This principle is recognised in international environmental law and codified in Article 2(j) of the Environmental Protection and Management Act.³⁵ In the mining sector, this concept is reinforced by Article 164 of Law No. 3 of 2020, which enables the state to claim the actual costs of remediation from the responsible party. The principle of strict liability (Article 88 of the Environmental Protection and Management Law) remains a key instrument; however, following the enactment of the Job Creation Law, the burden of proof for the public has become more complex due to amendments to the wording of that article, which require plaintiffs to be more meticulous in proving the causality of pollution.

Ecological justice is a paradigm that goes beyond conventional environmental justice. In the context of law enforcement, this principle promotes a punitive approach that genuinely restores the condition of the ecosystem. The concept of restorative justice in the environmental field now has a stronger legal foundation through Supreme Court Regulation (Perma) No. 1 of 2024. This regulation allows for the resolution of certain criminal cases by emphasising the restoration of damage to its original state (*restitutio in integrum*) as a consideration for mitigating the sentence.³⁶ The concept of restorative justice in the environmental sphere is closely linked to ecological justice. Rather than merely imposing punishment, restorative justice places

³⁵ Achmad Cholidin, *Hukum Lingkungan: Prinsip, Regulasi, dan Penegakan untuk Keadilan Ekologis* (Prenada Media: Jakarta, 2025).

³⁶ M. P. Jawak dan M. I. Hermawan, "Efektivitas Penerapan Restorative Justice Dalam Penegakan Hukum Terhadap Tindak Pidana Lingkungan Yang Menyebabkan Kerugian Keuangan Negara Di Indonesia," *NUSANTARA: Jurnal Ilmu Pengetahuan Sosial* 12, no. 12 (2025): 4562-4571.

greater emphasis on redressing harm and fostering social reconciliation. When it comes to handling environmental cases, this approach focuses on remedying damage and involves all affected parties in finding a joint solution.³⁷

Remedies following environmental damage may be sought through civil, criminal and administrative channels. Civil law allows victims or the public to claim compensation and seek remedial measures from the perpetrators of environmental pollution. Article 87 of the Environmental Protection and Management Law explicitly stipulates that any business operator responsible for environmental pollution or damage that causes harm to others "is obliged to pay compensation and/or take specific remedial action". For example, the community may sue a mining company under Article 1365 of the Civil Code (unlawful acts) in conjunction with Article 87 of the Environmental Protection and Management Law to demand the reclamation of former mining land or compensation for damage to livelihoods. Furthermore, local or central government may exercise coercive powers (*bestuursdwang*).³⁸

Criminal law also serves as both a deterrent and a means of redress. The Environmental Protection and Management Act (UU PPLH) contains numerous criminal provisions for environmental quality violations such as air pollution, hazardous waste (B3), and land burning. For example, Article 100 of the UU PPLH imposes a penalty of up to three years' imprisonment and a fine of Rp3 billion on those who breach environmental quality standards. Article 108 imposes a prison

³⁷Huni Susanti dan Misi Nufninu, "Restorative Justice pada Perkara Lingkungan Hidup dalam Perspektif Penuntutan Jaksa," *Jurnal Ilmu Hukum dan Sosial (HAKIM)* (2025).

³⁸I. Sari, "Sengketa Lingkungan Hidup dalam Perspektif Hukum Perdata Lingkungan," *Jurnal Ilmiah Hukum Dirgantara* 7, no. 1 (2016).

sentence of three to ten years for land burning. Specifically, under Law No. 3 of 2020, Article 164 introduces an additional penalty: the obligation to pay for environmental restoration costs resulting from mining-related criminal offences. Consequently, law enforcement authorities may order suspects or defendants involved in illegal mining to fund the reclamation and restoration of damaged ecosystems.³⁹

Administrative law provides a swift avenue for redress through the principle of *primum remedium*. The Government, through the Ministry of Energy and Mineral Resources, may suspend the licences of companies that fail to provide reclamation guarantees. Under Government Regulation No. 39 of 2025, administrative sanctions have been strengthened to include licence revocation and the blacklisting of company directors. The Government, through the Ministry of Energy and Mineral Resources (ESDM) and the Ministry of Environment and Forestry (KLHK), may impose severe administrative sanctions on mining licences. For example, the Minister of ESDM suspended the licences of 190 coal companies that failed to provide reclamation guarantee funds. A temporary suspension order was issued following repeated warnings, and the suspension was lifted once the companies submitted a reclamation plan and fulfilled the guarantee funds by 2025.⁴⁰ In the administrative courts, lawsuits brought by citizens or NGO's can invalidate mining permits, but follow-up legal action is often required to ensure that reclamation obligations are fulfilled. Administrative Court rulings generally only declare the permit decision invalid,

³⁹ K. T. Pratiwi, S. Kotijah, dan R. Apriyani, "Penerapan Asas *Primum Remedium* Tindak Pidana Lingkungan Hidup," *Sasi* 27, no. 3 (2021): 363-375.

⁴⁰ Ilham Balindra, "ESDM Tangguhkan 190 IUP karena Tak Bayar Jaminan Reklamasi," *Tempo*, diakses 1 Februari 2026, <https://www.tempo.co/ekonomi/esdm-tangguhkan-190-iup-karena-tak-bayar-jaminan-reklamasi-2073329>

without directly ordering reclamation. This constitutes a weakness in achieving full ecological restoration.

In summary, environmental remediation mechanisms in Indonesia involve the collaboration of legal instruments. The civil route focuses on material compensation and environmental restoration, whilst the criminal route places greater emphasis on prison sentences or fines whilst also compelling the perpetrator to fund the restoration. The administrative route can also empower the government to compel companies to carry out reclamation processes through the suspension or revocation of permits and the provision of reclamation guarantees. These three mechanisms complement one another, and it is hoped that they will work together in post-mining ecosystem rehabilitation efforts.

Although the legal framework is comprehensive, its implementation on the ground faces serious obstacles. Firstly, access to environmental justice for affected communities remains limited. Factors such as costs, the complexity of cases, and a lack of education regarding legal protection continue to hinder residents from bringing legal action. In Muara Enim itself, many residents lack the legal knowledge or financial means to sue large companies. Secondly, the lack of scientific evidence is often a problem. Proving the link between mining activities and ecological damage requires environmental data and rigorous monitoring, whilst the technical resources of the community and some officials remain inadequate. Judges and law enforcement officials are not yet fully equipped with the necessary scientific expertise, so evidence of damage is sometimes deemed unconvincing. Thirdly, the limited capacity of law enforcement is often cited as a barrier. Many regions lack trained environmental investigators, technical supervisors and judges who

understand environmental issues. Local governments sometimes fail to allocate sufficient human resources to the environmental sector; certain political and economic forces can also weaken the will to take action against violations.

The case in Muara Enim, South Sumatra, provides a stark illustration of the challenges of post-mining rehabilitation. A conflict arises between economic benefits and environmental damage. Residents of Tanjung Enim have complained about the drastic changes to the landscape, with ancestral plantations now reduced to open-cast mine pits and pools of acid mine drainage, without adequate rehabilitation.⁴¹ A land dispute case brought by residents of Darmo seeks an interim injunction to halt mining on the disputed land, whilst highlighting issues of delayed land reclamation and compensation. The plaintiffs emphasise the need for "reclamation of former mining land that impacts the ecosystem and public health" as part of their claims. In this case, the root of the problem lies in the slow pace of reclamation on land that has long been left neglected. The course of the case illustrates the obstacles faced by residents, who must pursue a civil lawsuit to seek a resolution, yet the legal process requires proof of ownership and damages, which is no simple matter. They assert that justice can never be achieved without the restoration of the natural environment (vegetation rehabilitation, filling of mine pits) and the recognition of the rights of the local indigenous community.⁴²

⁴¹ I. H. Syafaat dkk., "Analisis Efektivitas Program Rehabilitasi Lingkungan dalam Pemulihan Ekosistem di Kawasan Pascatambang PT Bukit Asam Tbk, Tanjung Enim," *Botani: Publikasi Ilmu Tanaman dan Agribisnis* 2, no. 3 (2025): 35-51.

⁴² Gurindam.id, "Tanjung Enim Bangkit Menuntut, Dari Pengadilan ke DPRD, Warga Perjuangkan Hak dan Mimpi Putra Daerah Pimpin PTBA," diakses 1 Februari 2026,

Another example in South Sumatra also underscores the importance of enforcing reclamation regulations. In January 2024, the Lahat District Court partially upheld a lawsuit brought by the NGO Lestari against PTBA regarding environmental damage in Merapi Village (Lahat). The Lahat District Court ordered PTBA to backfill mining pits covering a total area of 13.6 hectares and to carry out reforestation until the site is restored to its "original condition". The judge also imposed a daily penalty of Rp10 million should the ruling be disregarded, and instructed the Ministry of Energy and Mineral Resources to oversee the implementation of the ruling. In its reasoning, the bench emphasised that the company should have carried out reclamation in accordance with its permit, but had neglected to do so for nearly 10 years. This ruling sets an important precedent, as the civil court not only imposed a financial penalty on the company but also specifically ordered the reclamation of the mining land.⁴³

In Muara Enim, social conflict stems from the public's lack of confidence in the enforcement of the law. The Lahat case serves as a reminder that even the largest state-owned mining companies can face legal challenges if they neglect their reclamation obligations. The result is a deterrent effect and a clear signal to other companies. However, legal proceedings of this nature can take years; reclamation, which should be carried out routinely during operations, can only be enforced through litigation following an extremely lengthy process. This underscores the need to accelerate the establishment of ecological restoration mechanisms and strengthen oversight of reclamation guarantee funds before

<https://gurindam.id/2025/06/02/tanjung-enim-bangkit-menuntut/>.

⁴³ Eko Prasetyo, "PT Bukit Asam Divonis Perkara Kerusakan Lingkungan," *RMOL Sumsel*, diakses 1 Februari 2026, <https://www.rmolsumsel.id/pt-bukit-asam-divonis-perkara-kerusakan-lingkungan>.

environmental damage becomes more severe.⁴⁴

Finally, the repressive nature of post-environmental damage in Indonesia's mining regions has shown that environmental law has emphasised restoration responsibilities (*the polluter pays principle, strict liability, restorative justice*); however, the implementation and on-the-ground practice of these principles remain suboptimal to date. To overcome these obstacles, an integrated approach is required, such as truly consistent law enforcement and participatory transparency so that affected communities can be immediately involved in the restoration process, as well as strengthened law enforcement capacity. Thus, restoration following damage is no longer mere empty rhetoric, but a tangible process to restore ecosystem balance and social justice for affected communities.

In an effort to synchronise theoretical discourse on the repressive dimension with the reality of environmental degradation occurring on the ground, a mapping is required that links the manifestations of physical impacts with the relevant legal accountability instruments. This matrix is designed to operationalise legal protection principles particularly the 'polluter pays' principle and strict liability within the context of the specific cases suffered by the community of Muara Enim Regency. Through this approach, law enforcement is no longer viewed as a rigid administrative procedure, but rather as a mechanism for the restoration of citizens' constitutional rights that is measurable and applicable to every form of ecological damage caused by mining activities. The following is a matrix detailing the

⁴⁴ N. Z. Mufidah dan M. R. Habibi, "Konsep Ecocracy Sebagai Perlindungan Hukum Lingkungan Terhadap Pelanggaran Reklamasi Paska Penambangan," *Simposium Hukum Indonesia* 1, no. 1 (2019): 574-586.

correlation between environmental impacts, legal principles, and the corresponding forms of liability.

Table 4. Matrix of Environmental Impacts and Legal Responsibilities in Muara Enim Regency

Types of Impact	Physical/Social Impacts	Legal Basis for Violations	Relevant Law Enforcement Instruments
Air Pollution	Coal dust, respiratory tract infections, asthma, respiratory disorders.	-Law No. 32 of 2009 (Air Quality Standards) -Minerals and Coal Law (Environmental Management)	- Administrative Sanctions (Suspension of Licences) -Civil Claims (Compensation for Health Damage) -Strict Liability
Water Pollution	Mine acid drainage (MAD), skin diseases, damage to river ecosystems.	-Law No. 32 of 2009 (Water Quality Standards) -Government Regulation No. 22 of 2021	-Polluter Pays Principle -Watershed Restoration -Environmental Offences
Land Degradation	Mine pits, loss of agricultural land, erosion.	-Minerals and Coal Law (Obligations Regarding Reclamation and Post-Mining Activities)	-Release of Reclamation Guarantee Funds -Administrative Coercion (Government Compulsion)

ecological carrying capacity but also deconstructs the local socio-economic order, leading to systemic marginalisation.

The most fundamental socio-economic impacts stem from shifts in land ownership structures and the transformation of livelihoods. Coal mining, particularly using open-pit mining methods, is a highly land-intensive industry. The expansion of concession areas often conflicts and spatially overlaps with productive agricultural land, smallholder rubber plantations, and customary lands that serve as the primary source of livelihood for local communities. In the dynamics of these land disputes, communities often find themselves in a position of extreme asymmetry vis-à-vis giant corporations. Limited knowledge of agrarian law, the absence of formal land title certification where many residents rely solely on Land Certificates (SKT) or customary law recognition that is vulnerable to legal challenge and the lack of impartial mediation by local government officials have resulted in many farming families losing their most vital productive assets.⁴⁶

This loss of agricultural land has triggered a domino effect in the form of sociological structural transformation. Agrarian communities, which previously enjoyed food sovereignty and economic self-sufficiency through farming, are now forced to face proletarianisation. This squeeze on living space ultimately traps communities in a cycle of structural poverty, which stems directly from the inequality in land ownership as the primary source of prosperity.⁴⁷ They have scattered across the country to work as unskilled labourers in mining subcontractors' companies, with precarious employment security. The narrative that mining creates local jobs is often an illusion of prosperity, given that the mismatch between academic qualifications and technical skills means that managerial, technical and strategic

⁴⁶ F. Wiryani dan S. H. Febriansyah Ramadhan, *Keadilan Agraria: Relasi Konstitusi, Hak Menguasai Negara, dan Konflik Struktural* (Setara Press, 2025).

⁴⁷ Asmarani Ramli, "Telaah Atas Reforma Agraria Untuk Keadilan dan Kesejahteraan Dalam Tataran Teori Kebenaran," *Jurnal Ilmu Hukum Amanna Gappa* 20, no. 1 (2012): 49.

positions in mining corporations are more often filled by migrant workers from outside the region.⁴⁸ This imbalance in employment opportunities breeds social frustration, which in turn drives some members of the local community to seek shortcuts to survive by engaging in unauthorised mining (PETI) or illegal mining. Residents' involvement in PETI places them in a position of double vulnerability : they face a high risk of fatal workplace accidents due to the lack of Occupational Health and Safety (OHS) standards, as well as the threat of criminalisation by law enforcement agencies, whilst the root cause of the problem the seizure of their communal living space has never been resolved by the state.⁴⁹

The large-scale injection of capital and rapid turnover of money in the areas surrounding the mines have also triggered local inflation. Prices of basic necessities, housing rents and land values have risen exponentially. For a small minority of people who have capital and are able to adapt by setting up Micro, Small and Medium Enterprises (MSMEs) such as accommodation services, catering, or heavy machinery workshops, the presence of the mine does indeed provide a beneficial multiplier effect. However, for the majority of the indigenous population who have lost their land and are not absorbed into the mining sector, this inflation is an economic disaster that drastically reduces purchasing power and pushes them below the poverty line. This widening income gap accelerates the process of social disintegration.⁵⁰

From a sociological perspective, the influx of migrant

⁴⁸ Asniati dkk., "Kehidupan Ekonomi Masyarakat Lokal Di Sekitar Industri Tambang Morosi," *Jurnal Neo Societal* (2022).

⁴⁹ R. P. Nanggala dkk., "Tindak Pidana Kasus Pertambangan Batu Bara Ilegal Provinsi Kalimantan Timur Berdasarkan Undang-Undang Minerba Nomor 3 Tahun 2020 Berdampak Bagi Negara dan Lingkungan Hidup," *JICN: Jurnal Intelek dan Cendekiawan Nusantara* 2, no. 1 (2025): 9100–9115.

⁵⁰ M. H. Sukri dan A. Wirayanti, "Dari Ladang ke Lahan Tambang: Transformasi Sosial Masyarakat di Tengah Ekspansi Industri Batu Kapur di Desa Wawatu Kecamatan Moramo Utara Kabupaten Konawe Selatan," *Sorume: Jurnal Penelitian Sejarah dan Budaya* 3, no. 1 (2025): 19-25.

workers and the shift in the economic base from a communal -agrarian to a capitalist-extractive model have transformed the patterns of interaction within local communities, making them far more individualistic and transactional. Traditional social institutions that prioritised the principles of mutual aid and deliberation have begun to lose their functionality, replaced by rigid social stratification based on access to the economic spoils of mining. The loss of communal spaces due to land privatisation by corporations has also eliminated the medium for cultural assimilation, triggering sharp class segregation, and increasing the potential for horizontal friction among residents as well as vertical conflict between communities and companies. These conflicts often manifest in the form of demonstrations, blockades of mining haulage routes, and operational sabotage as a form of subaltern resistance against the distributive injustice they experience.

More destructive than economic marginalisation, persistent exposure to pollution resulting from coal exploitation has undermined the constitutional right of the people of Muara Enim Regency to an optimal standard of health. In accordance with the provisions of Article 65(1) of the Environmental Protection and Management Law, every citizen has an absolute right to a good and healthy environment as a fundamental component of human rights. However, the epidemiological landscape around the mining concessions provides irrefutable empirical evidence that this right has been forcibly stripped away by pollutants from the extractive industry. Activities such as clearing mining sites, dynamite blasting, stripping topsoil (overburden), and the movement of massive trucks hauling coal along public roads produce toxic dust emissions on a massive scale without adequate mitigation mechanisms.

The air quality crisis in the vicinity of the mine is primarily caused by emissions of Total Suspended Particulates (TSP) and particulate matter with very small diameters (PM10 and PM2.5). These microscopic coal dust particles are not merely ordinary dirt, but material containing crystalline silica, sulphur, and heavy metals that are carcinogenic and corrosive to the epithelial tissue of the respiratory tract. This pollution knows no bounds; it drifts freely, invading public spaces, schools and

residential areas, and worsens particularly when production intensifies during the dry season.⁵¹

The clinical impact of this particulate pollution is reflected in a sharp rise in respiratory morbidity at local community health centres. Acute respiratory infections (ARIs), chronic bronchitis and asthma dominate the list of major illnesses affecting people across all age groups, from infants with immature immune systems to the elderly. It is not just acute illnesses; a more deadly danger looms in the long term. Informal mine workers and residents living within the immediate vicinity of coal stockpiles are the groups with the highest exposure to lethal risks.⁵²

The health risks do not stop at the air; rather, they escalate through the contamination of the hydrological system. Coal mining methods inherently expose sulphide-bearing rocks to air and water, triggering complex chemical reactions that produce Acid Mine Drainage (AMD). This liquid waste, with its extremely low pH, frequently escapes from settling ponds, is deliberately discharged, or overflows during heavy rainfall, contaminating vital watercourses such as the Kiah River and the tributaries of the Enim River, which serve as the lifeblood of the community's sanitation system. AMD acts as a reactive solvent that releases hazardous heavy metals such as mercury, lead, chromium, arsenic and cadmium from rock formations, carrying them into aquatic ecosystems and the food chain.⁵³

The use of river water whose physical and chemical quality has deteriorated for daily bathing, washing and toilet use directly damages the community's skin barrier. The high

⁵¹ R. Ningsih dan E. P. Rahayu, "Dampak Kesehatan Masyarakat dari Kegiatan Pertambangan Batubara di Desa Bintang Ara Barito Selatan, Kalimantan Tengah," *Jurnal Kesmas Untika Luwuk* 16, no. 1 (2025).

⁵² P. R. Dia dkk., "Faktor Risiko Kejadian ISPA pada Pekerja Tambang Batubara," *Journal of Innovative and Creativity* 5, no. 3 (2025): 25908–25917.

⁵³ Triyanchy Afaz dkk., "Analysis of the Impact of Coal Mine Acid Water on River Water Quality and Its Implications for River Water User Communities," *Jurnal Penelitian Pendidikan IPA* 11, no. 2 (2025): 334

prevalence of irritant dermatitis, maculopapular rashes and cutaneous fungal infections has become a daily occurrence in villages surrounding the mine.⁵⁴ A far more alarming implication is the potential for chronic toxicity resulting from the bioaccumulation of heavy metals in the human body through the consumption of fish or agricultural produce contaminated by mine runoff, which can clinically lead to kidney damage (nephropathy), central nervous system disorders in children (lead neurotoxicity), and even carcinogenic genetic mutations.⁵⁵

All this burden of morbidity amounts to a financial loss that must be borne entirely by civil society, which has, in fact, been impoverished by land grabbing. The concept of health economic valuation highlights the phenomenon of the shifting of cost burdens, or 'external health costs', resulting from industrial pollution. The neglect of these material losses constitutes a clear violation of the Polluter Pays Principle adopted by the Environmental Protection and Management Act (UU PPLH), which imperatively requires mining corporations to internalise the costs of environmental degradation into their production cost structures, rather than shifting them onto the shoulders of the local community.

Based on the in-depth analysis of the implementation of legal protection outlined above, it is clear that there is a significant disconnect between the regulatory framework and the reality faced by communities in Muara Enim Regency. The ineffectiveness of legal instruments, both in their preventive and repressive dimensions, has resulted in citizens' constitutional rights to a clean and healthy environment often being subordinated to extractive economic interests. To provide a comprehensive synthesis of the findings of this research, the following table presents a comparative analysis

⁵⁴ T. Afaz dkk., "Analysis of the Impact of Coal Mine Acid Water on River Water Quality, Biota, and Human Health Around Mining," *Science and Environmental Journals for Postgraduate (SENJOP)* 6, no. 1 (2023): 277-283.

⁵⁵ I. Kalkya, "Kajian Kapasitas Asimilasi Perairan Sungai Enim Penerima Buangan Air Acid Tambang" (Skripsi sarjana, Institut Teknologi Sumatera, 2024).

between the ideal norms (das sollen) and empirical reality (das sein), covering various crucial aspects of coal mining governance.

Table 5. Analysis of the Gap Between Legal Standards and Reality in Legal Protection in Muara Enim

Protection Aspects	Legal Expectations (Das Sollen)	On the Ground Reality (Das Sein)	Barriers
Permits & Environmental Impact Assessment	Transparent, participatory, and mindful of environmental carrying capacity.	Often characterised by red tape, minimal community participation and land overlaps.	Weak oversight, lack of data transparency, and corporate dominance.
Land Reclamation	Restoration of the ecological functions of post-mining land in accordance with the plan.	Much post-mining land has not been reclaimed, resulting in mine pits.	Management of reclamation guarantee funds is not yet optimal; law enforcement is weak.
Access to Justice	The public has easy access to legal redress and compensation mechanisms.	Communities face obstacles such as costs, bureaucracy and power imbalances.	Limited legal capacity among the public; the complexity of scientific evidence.
Environmental	Guarantees of	High	Limited legal

Health	a good and healthy environment (Article 28H of the 1945 Constitution).	incidence of respiratory infections and skin diseases due to dust and contaminate d water.	capacity among the public; the complexity of scientific evidence.
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Source : Synthesis of primary data and qualitative analysis, 2026

D. Conclusion

This study concludes that the national legal framework, including the 1945 Constitution, the Environmental Protection and Management Act, and the Mining and Energy Resources Act, has, in theory, provided legal safeguards for communities affected by mining, both in a preventative capacity through Environmental Impact Assessment (EIA) instruments and public participation, and in a punitive capacity through mechanisms such as administrative sanctions, civil litigation, and reclamation obligations. However, the implementation of such protection in Muara Enim Regency remains far from ideal, with a significant gap between what ought to be and what actually is. The main constraints are structural in nature, including weak oversight and law enforcement due to limited capacity of officials, overlapping permits that create an accumulation of environmental burdens, the community's weak bargaining position due to limited access to information and high legal costs, and the suboptimal management of

reclamation guarantee funds to ensure post-mining land restoration. Consequently, the development paradox persists, and high economic growth comes at a high cost: ecological degradation, health crises, and the socio-economic marginalisation of local residents who lose access to land and their means of livelihood.

Therefore, to achieve substantive legal protection and ecological justice, policy reforms are required that focus not only on improving regulations but also on strengthening local-level supervisory institutions, enhancing community capacity and legal literacy to enable active participation, and ensuring consistent law enforcement by progressively applying the 'polluter pays' principle and strict liability. Local governments, together with the Regional People's Representative Council (DPRD), need to promote transparency in licensing data and regular environmental audits, whilst the central government must ensure that the reclamation guarantee fund mechanism truly functions as an instrument to enforce corporate compliance. Only through an integrated approach that combines legal, ecological and social justice aspects can the public's constitutional right to a good and healthy environment be restored, and the goals of sustainable development in mining areas such as Muara Enim be achieved.

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