Journal *of* Law, Environmental *and* Justice
Vol. 3 No. 2. July 2025. pp. 446-475
E-ISSN: 3031-7045 | P-ISSN: 3031-7215
Original Article
DOI: https://doi.org/10.62264/jlej.v3i2.172

Asset Recovery from Mining Corruption: Rationality, Urgency, and Challenges for Environmental Restoration

La Ode Ghondohi[a *], H.M. Said Karim [a], Muhadar [a], Ali Rahman [b], Yessentemirova Aigul Maratovna [c]
[a] Faculty of Law, Universitas Hasanuddin, Makassar, Indonesia
[b] Faculty of Law, Universitas Sawerigading, Makassar, Indonesia
[c] Postdoctoral Researcher, L.N. Gumilyov Eurasian National University, Astana, Kazakhstan
* corresponding author: laodeghondohi097@gmail.com

A B S T R A C T

The state is entitled to demand asset recovery against mining corruption and/or illegal mining for alleged abuse of power, but the Corruption Crime Law only focuses on the confiscation of assets as an economic exchange value, so standardization of allocations for ecological recovery is needed as an effort to restructure post-mining land. This research aims to clarify the concept of ecological based asset recovery related to corruption cases in the mining sector, specifically within the context of Indonesia's Asset Confiscation Law. This type of research is normative, employing a statutory approach to rationalize facts and establish a legal basis for recovering assets derived from criminal acts of corruption in vital natural resources. This research shows, *first,* the results of the rationality research in the form of arguments that manipulative actions in the mining sector with indications of gaining profits are corruption, corruption in the mining sector is an act that is detrimental to state finances, and the mining sector is an exploitative activity that requires allocation of ecological recovery. *Second,* the Draft Law on Asset Confiscation is recommended to regulate the systematic confiscation of mining corruption proceeds, aiming not only to support economic recovery but also to facilitate ecological recovery. This regulation encompasses asset management, the allocation of ecological loss costs, the allocation of economic losses, and the allocation of ecological recovery costs.

KEYWORDS: ***Asset Recovery; Corruption; Ecological; Environmental Restoration; Mining.***

1. I N T R O D U C T I O N

Illegal mining and manipulative actions in order to enrich certain parties, accompanied by abuse of authority is a criminal act that is detrimental to state finances and has the

Received 25 May 2025; Receive in revised from 29 July 2025 and 20 August 2025; Accepted 07 September 2025; Available online 09 September 2025

potential to create environmental damage and/or pollution. Logically, wealth is the key to supporting criminal activity for perpetrators, so the most effective way to eradicate economic crimes is to impoverish convicts by seizing the proceeds and instruments of their crimes.[1] Therefore, it is crucial to discuss and ratify the Asset Confiscation Bill, which in article by article is recommended to regulate accountability for corruption in the exploitation of vital natural resources, considering the right to utilize them to the greatest possible extent for the prosperity of the people.[2] This perspective emerged based on the urgency of asset recovery to offset state financial losses, which is not only oriented towards economic value but also ensures ecological recovery in cases of illegal exploitation in Indonesia's mineral and coal mining sectors. There are two fundamental aspects of asset recovery: determining which assets must be accounted for in confiscation and establishing the basis for confiscation.[3]

In fact, the proposal for legislation on the Criminal Asset Confiscation Law was evident from the moment the bill was approved for inclusion in the 2009–2014 National Legislation Program. However, during that time, there was no further effort by legislators to discuss the draft, leading to its re-inclusion in the 2014-2019 National Legislation Program. Based on this legislative inconsistency, the public again urged its inclusion in the 2025-2029 National Legislation Program.[4] This means, that the public is aware of the urgency of this regulation to provide legal certainty for the eradication of corruption and optimal recovery of state financial losses.[5] In addition, it is important to know the extent to which criminal law enforcement in the environment also covers the management and exploitation of natural resources, both biological and non-biological, as follows:

---

[1] Zico Junius Fernando and others, *Deep Anti-Corruption Blueprint Mining, Mineral, and Coal Sector in Indonesia*, in *Cogent Social Sciences*, no. 1 (2023), IX, doi:10.1080/23311886.2023.2187737.

[2] Ji Yeon Hong and Wenhui Yang, 'How Natural Resources Affect Corruption in China', *World Development*, 175 (2024), p. 106471, doi:https://doi.org/10.1016/j.worlddev.2023.106471.

[3] Hilaire Tegnan and others, 'Mining Corruption and Environmental Degradation in Indonesia: Critical Legal Issues', *Bestuur*, 9.2 (2021), pp. 90–100, doi:10.20961/bestuur.v9i2.55219.

[4] Sugeng Wahyudi, 'Penal Policy on Assets Recovery on Corruption Cases in Indonesia', *JOURNAL of INDONESIAN LEGAL STUDIES*, 4.1 (2019), pp. 104–15, doi:10.15294/jils.v4i01.28224.

[5] Ponco Hartanto, Subagio Gigih, and Riami Chancy, 'Discourse of Ecological Damage as a State Financial Loss : Evidence from Indonesia', *Journal of Law, Environmental and Justice*, 2.3 (2024), pp. 307–31, doi:10.62264/jlej.v2i3.110.

Table 1 Environmental Criminal Law Enforcement Activities 2020-2024

Target	Performance Indicators	2020	2021	2022	2023	2024
Increasing number of environmental crime cases resolved up to P21	The number of environmental criminal cases completed up to P21/case files is declared complete.	220	130	110	300	350
	The number of Environmental officers whose capacity has been increased.	570	200	182	200	260
	Number of files for resolving forest area use issues.	0	0	50	60	70

Source: Ministry of Environment and Forestry, 2023

Table 1 illustrates the enforcement of environmental criminal law, where the Ministry of Environment and Forestry confirms that environmental and forestry crimes are classified as extraordinary crimes. Their broad scope categorizes them as transnational and organized crimes, as they often involve international networks and are linked to other crimes such as corruption, embezzlement, money laundering, and tax evasion. Data shows a significant spike in P21 cases in 2023–2024, reflecting the effectiveness of law enforcement. Although officer capacity declined after 2020, a commitment to recovery and improvement has been evident since 2023, as evidenced by an increase in resolved cases. Furthermore, handling of forest area use issues only began in 2022, with a continuing positive upward trend. Thus, the relationship between strengthening officer capacity and the increasing number of resolved cases underscores the importance of institutional and human resource strengthening for the successful enforcement of crimes in the natural resource management sector.

As in the table above, criminal acts of corruption in the natural resource management sector are characterized by economic motives to accumulate as much wealth as possible. For criminals, wealth is the key to sustaining criminal acts, therefore the most effective way to eradicate such acts with economic motives is to confiscate the proceeds and instruments of the crime.[6] This argument certainly does not diminish the importance of corporal punishment for perpetrators of crimes. There is a clear need for a system that allows for the effective and efficient confiscation and seizure of the proceeds and instruments of crime, because crimes with economic motives have the potential to damage the social

[6] Simon Butt and Sofie Arjon Schütte, 'Assessing Judicial Performance in Indonesia: The Court for Corruption Crimes', *Crime, Law and Social Change*, 62.5 (2014), pp. 603 – 619, doi:10.1007/s10611-014-9547-1.

order, which aims to achieve prosperity.[7]

Based on the experience of Indonesia and other countries, it is evident that uncovering criminal acts, identifying perpetrators, and imprisoning them is not yet effective enough to reduce the crime rate unless accompanied by efforts to confiscate and seize the proceeds and instruments of crime.[8] Allowing a crime's perpetrator to maintain control over its proceeds and instruments enables them or their associates to benefit from the proceeds, reuse the instruments, or even commit the same crime again.[9]

The urgency of this research is, first, to explain the legal rationale that if a mining activity is indicated as corruption, then assets resulting from the crime must be confiscated by the state as a form of asset restitution, which includes the revocation, confiscation, and/or elimination of illegally obtained profits so that they cannot be reused for other crimes.[10] Second, in the context of illegal mining carried out based on abuse of authority, it is clearly a criminal act of corruption, thus causing state financial losses. In this case, an asset recovery regulation is needed that not only positions economic value as the primary return but also ecological recovery.[11] Asset recovery must include an ecological dimension by referring to Ministerial Regulation Number 7 of 2014, which calculates ecological losses

---

[7] Hendi Yogi Prabowo, 'Re-Understanding Corruption in the Indonesian Public Sector through Three Behavioral Lenses Hendi', *Facilities*, 35.6 (2015), pp. 925–45, doi:10.1108/JFC-08-2015-0039; Ponco Hartanto, Ricky Ricky, and Vincent Ariesto Gunawan, 'Using Indonesian Corruption Law for Eradicating the Yogyakarta Sultanate Land Mafia: A Legal Formulation Study', *Indonesian Journal of Crime and Criminal Justice*, 1.1 (2025), pp. 23–53, doi:10.62264/ijccj.v1i1.122.

[8] Saldi Isra and others, 'Obstruction of Justice in the Effort to Eradicate Corruption in Indonesia', *International Journal of Law, Crime and Justice*, 51 (2017), pp. 72–83, doi:10.1016/j.ijlcj.2017.07.001.

[9] Jiwon Suh, 'Human Rights and Corruption in Settling the Accounts of the Past: Transitional Justice Experiences from the Philippines, South Korea, and Indonesia', *Bijdragen Tot de Taal-, Land- En Volkenkunde / Journal of the Humanities and Social Sciences of Southeast Asia*, 179.1 (2023), pp. 61–89, doi:https://doi.org/10.1163/22134379-bja10049.

[10] Emile van der Does de Willebois and Jean-Pierre Brun, 'Using Civil Remedies in Corruption and Asset Recovery Cases', *Case Western Reserve Journal of International Law*, 45.3 (2013), p. 615; Peter Leasure, 'Asset Recovery in Corruption Cases: Comparative Analysis Identifies Serious Flaws in US Tracing Procedure', *Journal of Money Laundering Control*, 19.1 (2016), pp. 4 – 20, doi:10.1108/JMLC-04-2015-0010.

[11] Dimitris Stevis, 'Whose Ecological Justice?', *Strategies: Journal of Theory, Culture & Politics*, 13.1 (2000), pp. 63–76, doi:10.1080/10402130050007520; Hartanto, Gigih, and Chancy, 'Discourse of Ecological Damage as a State Financial Loss : Evidence from Indonesia'; Biao Liu and Yifei Lyu, 'Economic Corruption, Green Recovery, and Mineral Trade Relationships in Emerging Economies', *Resources Policy*, 90 (2024), p. 104725, doi:https://doi.org/10.1016/j.resourpol.2024.104725.

and environmental economic losses, as well as recovery costs, so that the return of assets resulting from mining corruption not only recovers the state's financial losses but also guarantees environmental sustainability and fulfillment of the mandate of Article 33, paragraphs (3) and (4), of the 1945 Constitution.[12]

Previous research by Igbinedion and Osobase (2025) highlighted that addressing grand corruption in Global South countries, particularly Nigeria, is ineffective if it relies solely on legal instruments, as politics and economics often reinforce corrupt practices and undermine asset recovery. This research demonstrates that asset recovery requires a multidisciplinary approach, combining legal, political, and economic aspects to achieve significant results and support the achievement of sustainable development. Its relevance for Indonesia lies in a common challenge: the weak effectiveness of legal proceedings in corruption cases in the natural resource sector, including mineral and coal mining. Therefore, Indonesia can learn from this by promoting an Asset Forfeiture Bill that emphasizes not only legal aspects but also integrates political and economic strategies so that the recovery of state losses can simultaneously ensure ecological recovery and the prosperity of the people.[13]

Previous research by J. Pattiwael (2021) explained that an expanded definition of state losses is necessary because natural resources and the environment are part of the state's wealth, so ecological damage due to corruption is interpreted as state financial losses. This research refines its legal argument with a historical, systematic, and extensive approach to legislation. The legal basis used is the Minister of Environment Regulation No. 7 of 2014, Law No. 32 of 2009, and Articles 2 and 3 of the Corruption Eradication Law.[14] Meanwhile, previous research by Januari Siregar (2023) explains that the role of corporations as the main perpetrators of environmental damage is based on Law No. 32 of 2009. The results

---

[12] I Gede Yusa and Bagus Hermanto, 'Implementasi Green Constitution Di Indonesia: Jaminan Hak Konstitusional Pembangunan Lingkungan Hidup Berkelanjutan', *Jurnal Konstitusi*, 15.2 (2018), p. 306, doi:10.31078/jk1524; Sekar Anggun Gading Pinilih, 'The Green Constitution Concept in the 1945 Constitution of the Republic of Indonesia', *Mimbar Hukum - Fakultas Hukum Universitas Gadjah Mada*, 30.1 (2018), p. 200, doi:10.22146/jmh.28684.

[13] Simeon A Igbinedion and Anthony Osobase, 'Grand Corruption in the Global South: Legal, Political and Economic Analysis of Assets Recovery in Nigeria', *Journal of Economic Criminology*, 9 (2025), p. 100164, doi:https://doi.org/10.1016/j.jeconc.2025.100164.

[14] Joey Josua Pamungkas Pattiwael and others, 'KERUGIAN EKOLOGIS AKIBAT TINDAK PIDANA KORUPSI', in *JURNAL RECHTENS*, no. 1 (2021), X <https://m.tempo.com/read/news/2016/02/22/090747>.

of this research suggest that environmental damage should be categorized as state financial losses in the context of corruption. Therefore, it is necessary to harmonize environmental and corruption laws by improving ecological valuation methodologies.[15]

Based on the urgency points above, if a mining activity is indicated as corruption, then the assets resulting from the crime must be confiscated by the state as a form of asset return, which includes revocation, confiscation, and elimination of profits obtained illegally so that they cannot be used again for other crimes. In the context of illegal mining carried out through abuse of authority, it clearly includes criminal acts of corruption as regulated in Articles 2 and 3 of the Corruption Law and Article 158 of the Mineral and Coal Mining Law, while the state losses incurred are not only in the form of loss of money or goods as stipulated in Article 1 number (22) of the State Treasury Law, but also loss of potential state revenue as emphasized in the Constitutional Court Decision Number 25/PUU-XIV/2016.[16] Furthermore, due to the exploitative nature of the mining sector, asset recovery must incorporate an ecological dimension by referencing Regulation of the Minister of Environment Number 7 of 2014, which assesses ecological losses, environmental economic losses, and recovery costs. This ensures that the return of assets from mining corruption not only compensates for the state's financial losses but also promotes environmental sustainability and fulfills the constitutional mandate.

Therefore, the Corruption Crime Law is inadequate, particularly regarding the imposition of restitution or fines. These provisions are complex for judges to implement and are often not enforced because perpetrators prefer alternative punishments or imprisonment, or because the convict's assets are insufficient.[17] Based on the above

---

[15] Januari Siregar and Muaz Zul, 'PENEGAKAN HUKUM DALAM TINDAK PIDANA LINGKUNGAN HIDUP DI INDONESIA', *Mercatoria*, 8.2 (2015).

[16] Pratiwi and others, 'Managing and Reforesting Degraded Post-Mining Landscape in Indonesia: A Review', *Land*, 10.6 (2021), doi:10.3390/land10060658; I Made Ronyastra, Lip Huat Saw, and Foon Siang Low, 'Monte Carlo Simulation-Based Financial Risk Identification for Industrial Estate as Post-Mining Land Usage in Indonesia', *Resources Policy*, 89 (2024), p. 104639, doi:https://doi.org/10.1016/j.resourpol.2024.104639.

[17] Hendi Yogi Prabowo, Jaka Sriyana, and Muhammad Syamsudin, 'Forgetting Corruption: Unlearning the Knowledge of Corruption in the Indonesian Public Sector', *Journal of Financial Crime*, 25.1 (2018), pp. 28–56, doi:10.1108/JFC-07-2016-0048; Anisah Alfada, 'The Destructive Effect of Corruption on Economic Growth in Indonesia: A Threshold Model', *Heliyon*, 5.10 (2019), p. e02649, doi:https://doi.org/10.1016/j.heliyon.2019.e02649.

description, there is a clear need to reconstruct the criminal law system in Indonesia by regulating the confiscation and seizure of proceeds and instruments of crime within a law, including in the natural resource management sector. These regulations must be comprehensive and integrated with other regulations so that the law can be implemented effectively and provide legal certainty and legal protection to the public.

2. RESEARCH METHODS

This research is normative legal research based on the analysis of primary and secondary legal materials.[18] It can generate new arguments, theories, or concepts that serve as prescriptions for addressing issues related to the regulation of asset recovery in corruption cases in the mining sector, which need to pay attention to ecological aspects in addition to economic power in terms of recovering state financial losses. This research employs a statutory approach that examines laws and regulations to distinguish between the concepts of the Draft Law on Asset Confiscation and Regulation of the Minister of Environment Number 7 of 2014 in Indonesia, while also comparing the allocation of environmental recovery due to corruption with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) method from the United States. This research uses the Restorative Justice Theory by Robert C. Scott and Stephen P. Garvey, which emphasizes victim restitution, perpetrator accountability, and socio-ecological balance, including environmental restoration in the context of damage caused by mining corruption.[19] Its effectiveness is measured through financial and ecological restitution, stakeholder engagement, and perpetrator reintegration, ensuring fair, transparent, and sustainable justice. The data collection technique used in this research is a literature study. Legal materials are obtained by collecting relevant laws and regulations, books, academic works, and international and national journals.[20] The analysis technique used is deductive logic, a way of thinking that starts with the understanding that something also applies to

[18] Theresia Anita Christiani, 'Normative and Empirical Research Methods: Their Usefulness and Relevance in the Study of Law as an Object', *Procedia - Social and Behavioral Sciences*, 219 (2016), pp. 201–07, doi:10.1016/j.sbspro.2016.05.006.

[19] Ian Dobinson and Francis Johns, 'Qualitative Legal Research', 1 in *Research Methods for Law*, ed. by Mike McConville and Wing Hong Chui (Edinburgh University Press Ltd., 2007).

[20] Willy Naresta Hanum and Muhamad Nafi Uz Zaman, 'Existence of Human Rights Protection in Land and Mining Conflicts : Evidence from Indonesia', *Journal of Law, Environmental and Justice*, 2.3 (2024), pp. 285–306, doi:10.62264/jlej.v2i3.107.

all events of that type.

3. RESULTS AND DISCUSSION

Rationalizing Asset Recovery in Combating Mining Corruption in Indonesia

The criminology explains the types of criminal acts that are included as manipulative acts, including mercenary corruption, election fraud, political kickbacks, discretionary corruption, ideological corruption, and corrupt campaign practices.[21] However, in the context of criminal law, not all of these types are classified as acts of corruption. Therefore, acts deemed to constitute corruption must refer to the Corruption Crimes Act. Article 2, paragraph (1), explains that the crime of corruption is an act carried out by any person in a process that is contrary to the law to enrich themselves, other parties, or legal entities, and then cause losses to the state's finances or economy. This act can be subject to criminal sanctions in the form of life imprisonment or imprisonment for a minimum term of four years and a maximum of twenty years, as well as a fine of a minimum of two hundred million rupiah and a maximum of one billion rupiah. This means that the legal subject in this article is every person and/or corporation who is deemed to fulfill the elements of a criminal act that is detrimental to state finances.[22]

This research aims to develop a perspective that positions the crime of self-enrichment in the mining sector as a form of corruption. Consequently, the state has the right to confiscate illegal assets, and legal subjects are obligated to bear the burden of restoring state finances and the environment. However, it should be remembered that, based on Article 2 paragraph (1) and Article 3 of the Corruption Crime Law, for an act to be called corruption, it must fulfill three elements, namely the existence of an unlawful act, an element of unilateral gain, and the existence of state losses.[23] Article 18 regulates the

---

[21] Tinuk Dwi Cahyani, Muhamad Helmi Md Said, and Muhamad Sayuti Hassan, 'A Comparison Between Indonesian and Malaysian Anti-Corruption Laws', *Padjadjaran Jurnal Ilmu Hukum*, 10.2 (2023), pp. 275–99, doi:10.22304/pjih.v10n2.a7.

[22] Johanes D Widojoko, '17 - Indonesia's Anticorruption Campaign: Civil Society versus the Political Cartel', in *The Changing Face of Corruption in the Asia Pacific*, ed. by Marie dela Rama and Chris Rowley (Elsevier, 2017), pp. 253–66, doi:https://doi.org/10.1016/B978-0-08-101109-6.00017-4.

[23] Hendi Yogi Prabowo, 'To Be Corrupt or Not to Be Corrupt: Understanding the Behavioral Side of Corruption in Indonesia', *Journal of Money Laundering Control*, 17.3 (2014), pp. 306–26, doi:10.1108/JMLC-11-2013-0045.

confiscation of assets as an additional punishment, which states that confiscation of assets is carried out on tangible or intangible movable goods or immovable goods used for or obtained from criminal acts of corruption, including companies owned by convicts where criminal acts of corruption are committed, as well as goods that replace these goods. The regulation concerning the recovery or return of assets is outlined in Article 1, letter (b) of the Law Ratifying the United Nations Convention Against Corruption, which states that this convention aims to prevent and eradicate corruption, including asset recovery.[24] However, this law does not regulate the mechanism for asset recovery in detail, so it is necessary to examine the rationality and legal arguments regarding the importance of asset recovery as an instrument for eradicating corruption in the mining sector by considering an ecological perspective, namely as follows:

First, manipulative and illegal mining practices, with indications of abuse of authority to enrich a party, constitute a criminal act of corruption. As stipulated in the Corruption Law, any person who violates the law to benefit themselves, other parties, or corporations by misusing the authority or means available to them due to their position or status is considered to have committed a criminal act of corruption.[25] In the context of public natural resource corruption, this interpretation is then specifically explained in the Mining, Minerals, and Coal Law, Article 158, which states that subjects can be subject to criminal sanctions in the form of imprisonment and/or fines if they carry out mining activities without a Mining Business Permit, either for export or production operations; a Special Mining Business Permit, for example, for areas that were previously under a Coal Mining Business Work Agreement or Work Contract or even other valid permits, such as a People's Mining Permit, a Rock Mining Permit, and a Transportation and Sales Permit.[26]

In addition, corruption in the natural resource management and/or mining sector can appear in various forms that are interrelated and have a significant impact on state

[24] Ade Paranata, 'The Miracle of Anti-Corruption Efforts and Regional Fiscal Independence in Plugging Budget Leakage: Evidence from Western and Eastern Indonesia', *Heliyon*, 8.10 (2022), p. e11153, doi:https://doi.org/10.1016/j.heliyon.2022.e11153.

[25] Andrea Petermann, Juan Ignacio Guzmán, and John E Tilton, 'Mining and Corruption', *Resources Policy*, 32.3 (2007), pp. 91–103, doi:https://doi.org/10.1016/j.resourpol.2007.08.003.

[26] Willy Naresta Hanum, Tran Thi Dieu Ha, and Nilam Firmandayu, 'Eliminating Ecological Damage in Geothermal Energy Extraction : Fulfillment of Ecological Rights by Proposing Permits Standardization', *Journal of Law, Environmental and Justice*, 2.2 (2024), pp. 205–28, doi:10.62264/jlej.v2i2.105.

finances and environmental sustainability. The most prominent practices are those that harm state finances, including the manipulation of production reports, the avoidance of royalty payments, and the embezzlement of reclamation and post-mining funds.[27] Furthermore, bribery and gratuities frequently occur in the licensing process, where companies offer money, facilities, or shares to officials to secure the issuance of mining permits without fulfilling legal requirements, such as feasibility studies and environmental impact analyse. Embezzlement by officials is also common, for example, involving special funds allocated for environmental restoration. On the other hand, extortion entails compelling companies to provide specific deposits as a safeguard against authorities disrupting mining activities. Additionally, corruption is evident in several areas, including the illegal issuance of mining permits, the export and transfer of mining products without proper permits, collusion during the renegotiation of work contracts, and the failure to meet post-mining management obligations despite financial responsibilities outlined in regulations. All of these actions demonstrate a systematic and multi-layered pattern of abuse of authority, involving businesspeople, regional officials, and even political elites.[28]

For example, the case of mining permit bribery carried out by the former Directorate General of Mineral and Coal of the Ministry of Energy and Mineral Resources, which was accused of accepting a bribe of IDR 60,000,000.00 along with facilities to approve the revision of the Work Plan and Budget of a mining company without proper Environmental Impact Analysis documents. In this case, the convict was charged with Article 5 paragraph (2), Article 11, and Article 12 letters a-b of the Corruption Crime Law, violating the provisions of the environmental impact analysis in the Mining, Mineral, and Coal Law and the Environmental Law. This research analyzes the practice of mining permit bribery, showing a classic pattern where companies prefer shortcuts by bribing officials rather than fulfilling legal obligations. It is known that this act of corruption results in state financial losses due to non-mining tax revenues being leaked from projects based on invalid data. Additionally, it has the potential to cause environmental damage

[27] Rian Saputra and others, 'Ecological Justice in Indonesia and China Post- Mining Land Use ?', *Journal of Law, Environmental and Justice*, 2.3 (2024), pp. 254–84, doi:10.62264/jlej.v2i3.108.
[28] Fernando and others, *Deep Anti-Corruption Blueprint Mining, Mineral, and Coal Sector in Indonesia*; Tegnan and others, 'Mining Corruption and Environmental Degradation in Indonesia: Critical Legal Issues'.

and pollution, as it lacks a comprehensive environmental impact analysis.

Ideally, the process of issuing mining business permits should be carried out in accordance with the provisions of the Mining, Minerals, and Coal Law, namely that first, the government will determine the Mining Business Permit Area through an open auction mechanism to ensure transparency. Second, applicants for business permits, which can be business entities, cooperatives, or individuals, must submit an application that includes administrative, technical, and financial requirements, as well as environmental documents in the form of an environmental impact analysis.[29] Third, the government will carry out an assessment and only grant business permits when all prerequisites are satisfied. Ideally, the authority to issue business permits rests with the central government, specifically the Ministry of Energy and Mineral Resources for strategic, inter-provincial, and maritime mining, and at the provincial level for inter-district/city mining within a province. Following the 2020 revision of the Mineral and Coal Mining Law, the central government's authority has been further strengthened to minimize permit abuse by local governments. Based on the rationality of this first point, illegal mining with indications of abuse of authority as an effort to enrich a party constitutes a criminal act of corruption detrimental to state finances, thereby enabling asset recovery against the convict.[30]

Second, corruption in the mining sector is an act that harms state finances. It is known that the fundamental element in a corruption case is the existence of state financial losses. Definition of state financial loss in the Corruption Crime Law and Constitutional Court Decision Number 25/PUU-XIV/2016. Article 1, number (22) of Law Number 1 of 2004 concerning the State Treasury, explains that state losses are proven by the existence of elements of a shortage of money, securities, and/or goods that are real and certain as a

[29] Hanum, Ha, and Firmandayu, 'Eliminating Ecological Damage in Geothermal Energy Extraction : Fulfillment of Ecological Rights by Proposing Permits Standardization'; Rezki Purnama Samad, A. M. Yunus Wahid, and Hamzah Halim, 'Urgensi Partisipasi Masyarakat Terhadap Izin Usaha Pertambangan Pasir', *Al-Ishlah: Jurnal Ilmiah Hukum*, 24.1 (2021), pp. 143–62, doi:10.56087/aijih.v24i1.87.

[30] Rizkyana Zaffrindra Putri and Lita Tyesta A L W, 'Kajian Politik Hukum Tentang Perubahan Kewenangan Pemberian Izin Usaha Pertambangan Mineral Dan Batubara', *Jurnal Law Reform*, 11.2 (2015), pp. 199–206.

result of unlawful acts.[31] Meanwhile, according to the Constitutional Court decision, state financial losses are not only interpreted as losses of cash (physical assets), but also include the loss of potential state revenues due to the use of state assets that are not managed legally. For example, it is known that there is administrative malpractice, in the form of renting out land for mining business permits that do not comply with regulations, commodity permits that do not comply with commodity trading regulations, or administrative engineering, including impropriety by government officials as part of the practice of criminal acts of corruption in State-Owned Enterprises.[32]

Suppose the state does not receive the benefits it should receive due to unlawful acts. In that case, this is still included in the classification of state losses, even though the loss is a potential loss as long as it can be proven logically and measurably. A standardized method for calculating environmental damage due to corruption as state losses is crucial. Therefore, based on the doctrine of the Constitutional Court's ruling, the losses in this case do not have to be in the form of money physically lost from the state treasury but rather in the form of the loss of the state's right to economic benefits from natural resources managed unlawfully.[33]

In the context of criminal acts of mining corruption, as stipulated in Article 33, paragraphs 3 and 4, the earth, water, natural resources, and all forms of national economic development must adhere to the principles of sustainable ecology and maximize the prosperity of the people. Mining management is a form of exploitation of natural resources that should be utilized for the benefit of the people.[34] This research argues that

---

[31] Ahmad Redi, 'Dilema Penegakan Hukum Penambangan Mineral Dan Batubara Tanpa Izin Pada Pertambangan Skala Kecil (Dilemma of Law Enforcement in Small Scale Illegal Mining)', *Jurnal RechtsVinding*, 5.3 (2016), pp. 399–420.

[32] Hartanto, Gigih, and Chancy, 'Discourse of Ecological Damage as a State Financial Loss : Evidence from Indonesia'; Rika Fajrini, 'Environmental Harm and Decriminalization of Traditional Slash-and-Burn Practices in Indonesia', *International Journal for Crime, Justice and Social Democracy*, 11.1 (2022), pp. 28–43, doi:10.5204/ijcjsd.2034.

[33] Hartanto, Gigih, and Chancy, 'Discourse of Ecological Damage as a State Financial Loss : Evidence from Indonesia'; Hanum, Ha, and Firmandayu, 'Eliminating Ecological Damage in Geothermal Energy Extraction : Fulfillment of Ecological Rights by Proposing Permits Standardization'; Fernando and others, *Deep Anti-Corruption Blueprint Mining, Mineral, and Coal Sector in Indonesia*.

[34] Astghik Mavisakalyan and Anna Minasyan, 'Mining and Mistrust in Government', *European Economic Review*, 175 (2025), p. 105002, doi:https://doi.org/10.1016/j.euroecorev.2025.105002.

the perspective on criminal acts of corruption in mining management by state-owned enterprises, when the consequences cause environmental damage, warrants further examination.[35] From a legal perspective, a lawsuit for compensation for environmental damage is interpreted as the result of abuse of authority, collusion in granting permits, or the toleration of illegal activities by public officials.[36] Proving corruption that results in environmental damage and thus harms state finances is closely related to how investigators calculate the extent of the state's losses.

In other words, the losses from mining corruption are not only financial but also multidimensional, encompassing ecological damage, the marginalization of local community rights, and the loss of potential for sustainable economic development. From an environmental law perspective, this corrupt practice weakens the principles of sustainable development and increases the burden on the state, as it must bear the costs of ecosystem restoration. [37] Therefore, eradication of mining corruption should not only be directed at recovering state financial losses but also at recovering ecological losses and strengthening the accountability of public officials in upholding the constitutional mandate. Thus, corruption in the mining sector is clearly detrimental to state finances because the practice of abuse of authority, collusion in licensing, and the toleration of illegal mining have caused significant financial and ecological losses. [38] From the perspective of Article 33, paragraphs (3) and (4) of the 1945 Constitution, mining management, which should be for the prosperity of the people, has instead turned into a burden on the state due to corrupt practices that damage the environment and reduce

[35] Joan Martinez-Alier, 'Mining Conflicts, Environmental Justice, and Valuation', *Journal of Hazardous Materials*, 86.1 (2001), pp. 153–70, doi:https://doi.org/10.1016/S0304-3894(01)00252-7.

[36] Blake McClintock and Peter Bell, 'Australia's Mining Interests within Nigeria and Libya: Policies, Corruption and Conflict', *International Journal of Law, Crime and Justice*, 41.3 (2013), pp. 247–59, doi:https://doi.org/10.1016/j.ijlcj.2013.06.004.

[37] Jie Liu and others, 'Corruption Induced Energy Inefficiencies: Evidence from China's Energy Investment Projects', *Energy Policy*, 183 (2023), p. 113825, doi:https://doi.org/10.1016/j.enpol.2023.113825; Liu and Lyu, 'Economic Corruption, Green Recovery, and Mineral Trade Relationships in Emerging Economies'.

[38] Ohad Raveh and Yacov Tsur, 'Can Resource Windfalls Reduce Corruption? The Role of Term Limits', *Journal of Environmental Economics and Management*, 122 (2023), p. 102891, doi:https://doi.org/10.1016/j.jeem.2023.102891; Elías Cisneros and Krisztina Kis-Katos, 'Unintended Environmental Consequences of Anti-Corruption Strategies', *Journal of Environmental Economics and Management*, 128 (2024), p. 103073, doi:https://doi.org/10.1016/j.jeem.2024.103073.

state revenues.

Third, the mining sector is an exploitative activity, so it requires ecological recovery guarantees, which are included in the form of asset recovery.[39] The mining sector is inherently exploitative because it relies on the extraction of non-renewable natural resources, thus creating a significant risk of environmental damage.[40] Therefore, ecological recovery guarantees are needed, positioned as part of the asset recovery mechanism in corruption crimes. In Indonesia, the legal instrument used as a reference for calculating state losses due to pollution or environmental damage is the Minister of Environment Regulation Number 7 of 2014 concerning Environmental Losses Due to Pollution and/or Environmental Damage. This regulation provides a methodological basis for assessing ecological losses, environmental economic losses, and recovery costs, so that the calculation of state losses is no longer solely financial but also includes an ecological dimension.

According to this regulation, environmental losses in mining cases that cause water pollution, air pollution, and environmental damage due to illegal mining can be calculated quantitatively. This calculation includes ecological losses, environmental economic losses, and recovery costs. In mining corruption crimes, this approach is used to prove state losses due to environmental damage.[41] In Indonesia, the calculation of state losses based on environmental damage is based on Minister of Environment Regulation No. 7 of 2014 concerning Environmental Losses Due to Pollution and/or Environmental Damage. However, this policy is not entirely appropriate when considering the considerations section of Minister of Environment Regulation No. 7 of 2014, an implementing regulation of the Environmental Law that outlines the government's right to sue in cases causing

[39] Ridwan Arifin, Sigit Riyanto, and Akbar Kurnia Putra, 'Collaborative Efforts in ASEAN for Global Asset Recovery Frameworks to Combat Corruption in the Digital Era', *Legality: Jurnal Ilmiah Hukum*, 31.2 (2023), pp. 329–43, doi:10.22219/ljih.v31i2.29381.

[40] Benjamin Scott, 'Environmental Crime and Money Laundering in Australia', in Financial Crime, Law and Governance: Navigating Challenges in Different Contexts, ed. by Louis Goldbarsht Doron and de Koker (Springer Nature Switzerland, 2024), pp. 99–121, doi:10.1007/978-3-031-59547-9_5.

[41] Hartanto, Gigih, and Chancy, 'Discourse of Ecological Damage as a State Financial Loss : Evidence from Indonesia'; Hanum, Ha, and Firmandayu, 'Eliminating Ecological Damage in Geothermal Energy Extraction : Fulfillment of Ecological Rights by Proposing Permits Standardization'.

environmental losses. [42] This means, that the use of Environmental Regulation Number 7 of 2014 outside the government's right to sue must be questioned because the right to sue is always related to civil disputes. Hence, its use in cases of corruption is inappropriate.

To rationalize the legal argument on this issue, a case research was taken of the main case of alleged corruption in the trade of tin commodities in the Mining Business License area of PT. Timah Tbk's operations from 2015 to 2022 have resulted in state losses reaching IDR 271.069 trillion. The loss figure is not the total amount of money embezzled but rather an estimate of environmental losses in the form of damage to forest and non-forest areas. Forest areas experienced ecological losses of IDR 157.83 trillion, environmental economic losses of IDR 60.276 trillion, and restoration costs of IDR 5.257 trillion. Furthermore, regarding non-forest areas, ecological losses reached IDR 25.87 trillion, environmental economic losses were estimated at IDR 15.2 trillion, and environmental restoration costs were IDR 6.629 trillion. These calculations are based on Ministerial Regulation of the Environment Number 7 of 2014 concerning environmental losses due to mining activities. Therefore, another standard operating framework is needed that the government can develop to calculate the extent of environmental losses resulting from illegal mining practices in Indonesia.[43]

Based on the three points above, if a mining activity is suspected of corruption, the state must confiscate the assets resulting from the crime as a form of asset return. This includes revocation, confiscation, and elimination of profits obtained illegally, ensuring they cannot be used again for other crimes.[44] In this context, illegal mining carried out through abuse of authority clearly includes criminal acts of corruption as regulated in Articles 2 and 3 of the Corruption Law and Article 158 of the Mineral and Coal Mining Law, while

---

[42] Hartanto, Gigih, and Chancy, 'Discourse of Ecological Damage as a State Financial Loss : Evidence from Indonesia'; Arie Afriansyah, Anbar Jayadi, and Angela Vania, 'Fighting the Giants: Efforts in Holding Corporation Responsible for Environmental Damages in Indonesia', *Hasanuddin Law Review*, 4.3 (2018), pp. 325 – 338, doi:10.20956/halrev.v4i3.1626.

[43] Bambang Slamet Riyadi and others, 'Environmental Damage Due to Hazardous and Toxic Pollution: A Case Study of Citarum River, West Java, Indonesia', in *International Journal of Criminology and Sociology* (2020), IX <https://www.cnnindonesia.com/nasional/20190203004645-20->; Hanum, Ha, and Firmandayu, 'Eliminating Ecological Damage in Geothermal Energy Extraction : Fulfillment of Ecological Rights by Proposing Permits Standardization'.

[44] Tommaso Trinchera, 'Confiscation And Asset Recovery: Better Tools To Fight Bribery And Corruption Crime', *Criminal Law Forum*, 31.1 (2020), pp. 49 – 79, doi:10.1007/s10609-020-09382-1.

the state losses incurred are not only in the form of loss of money or goods as stipulated in Article 1 number (22) of the State Treasury Law, but also loss of potential state revenue as emphasized in the Constitutional Court Decision Number 25/PUU-XIV/2016. Furthermore, because the mining sector is exploitative, asset recovery must include an ecological dimension by referring to the Minister of Environment Regulation Number 7 of 2014, which calculates ecological losses, environmental economic losses, and recovery costs, so that the return of assets resulting from mining corruption not only recovers the state's financial losses but also guarantees environmental sustainability and fulfillment of the mandate of Article 33, paragraphs (3) and (4), of the 1945 Constitution.

Mining Corruption and Asset Recovery: Urgencies and Challenges in Environmental Restoration

Based on three rational points above, namely, illegal mining with indications of abuse of authority as an effort to enrich a party is a criminal act of corruption, corruption in the mining sector is an act that is detrimental to state finances, and the mining sector is an exploitative activity, so there needs to be a guarantee of ecological recovery included in the form of asset recovery.[45] Therefore, the urgency of regulating asset recovery as a means to prevent criminal acts of corruption in the mining sector is very urgent so that vital natural resources are fully utilized and exploited for the prosperity of the people. Allegations of corruption in mining, minerals, and coal in vital state-owned enterprises violate the values and rights of the public in the Constitution. As a strategic step, the author recommends discussing and ratifying the Asset Confiscation Bill, which, article by article, specifically regulates the systematic confiscation of corruption in various public natural resource management sectors, including mining, minerals, and coal, thereby positioning asset confiscation as also referring to environmental recovery efforts.[46] The challenge of enforcing the law on corruption, as stated in the Explanation of the Corruption Crime Law, is that corruption in Indonesia occurs systematically and widely so that it not only harms state finances but also violates the social and economic rights of

[45] Lego Karjoko and others, *The Principle of Social Justice As a Solution in Illegal Mining Activities in The Old Wells Oil Management*, 5.2 (2021).

[46] Keerty Nakray, 'Environmental, Social, Governance and Public Policy in India', in *Encyclopedia of Monetary Policy, Financial Markets and Banking (First Edition)*, ed. by Nicholas Apergis, First Edition (Academic Press, 2025), pp. 324–30, doi:https://doi.org/10.1016/B978-0-44-313776-1.00232-4.

the community at large, therefore the eradication of corruption needs to be carried out with extraordinary means. Thus, the eradication of criminal acts of corruption must be carried out specially, including the implementation of an effective asset confiscation system.[47]

Restorative Justice theory emphasizes the importance of reparation of victims' losses, responsibility of perpetrators, and restoration of social balance as an alternative or complement to retributive punishment. In the environmental context, this approach has evolved into environmental restorative justice, which not only highlights the interests of human victims but also incorporates ecological restoration as part of justice. Thus, legal action not only demands sanctions against perpetrators but also restores the social and environmental conditions harmed by the crime so that justice can be felt by both the community and the affected environment. Some important figures in the development of this theory include Howard Zehr, known as the "father of restorative justice," who emphasized the principles of repairing harm, involving stakeholders, and reintegrating offenders. Meanwhile, Robert C. Scott and Stephen P. Garvey highlight the application of restorative justice in cases of environmental damage and natural resource management. This theory is relevant in the context of mining corruption because it supports the argument that the recovery of state assets must include ecological restoration, so that the assets returned are not only financial but also serve to restore environmental balance for the public good.

In its application, this theory can be measured through several indicators, namely the level of financial and ecological recovery, which indicates the extent to which assets resulting from corruption are returned and environmental damage is repaired; the involvement of stakeholders, including the community, government, and related parties, in the recovery process; the responsibility of perpetrators, both financially, ecologically, and socially; the effectiveness of reintegration of perpetrators into society with increased legal and environmental awareness; and justice for victims, where the affected community and environment truly receive tangible benefits from the recovery.[48] Thus, restorative

[47] McClintock and Bell, 'Australia's Mining Interests within Nigeria and Libya: Policies, Corruption and Conflict'; Petermann, Guzmán, and Tilton, 'Mining and Corruption'.

[48] Sara K Phillips, 'The Legal Construct of Mining Conflicts', *Resources Policy*, 109 (2025), p. 105706, doi:https://doi.org/10.1016/j.resourpol.2025.105706.

justice theory provides a comprehensive conceptual framework to ensure that asset and environmental recovery from mining corruption is carried out in a fair, transparent, and sustainable manner.[49]

In this discussion, the author agrees with the explanation in the academic paper of the Draft Law on Asset Confiscation that the act of confiscating assets in the provisions of the confiscation of assets of criminal acts is carried out against: 1) the suspect or defendant who dies, runs away, is permanently ill, or whose whereabouts are unknown; 2) the defendant who is acquitted of all charges; 3) assets whose criminal case cannot be tried; or 4) assets whose criminal case has been found guilty by a court with permanent legal force, and later it is discovered that there are assets from criminal acts that have not been declared confiscated.[50]

Asset security includes administrative, physical, and legal safeguards. In physically securing assets, the Asset Confiscation Agency may collaborate with security forces. For certain assets, the Asset Confiscation Agency may conduct an assessment upon receipt and submission to the public prosecutor. The results of the asset assessment are presented in the form of an asset assessment report. This report is submitted to the investigator or public prosecutor. An Auction Office conducts the auction sale of decided-to-be-confiscated assets. The proceeds from the asset auction are deposited directly into the state treasury as non-tax state revenue. The management of confiscated assets is subject to provisions. The Asset Confiscation Agency can use assets that are still in the status of confiscated objects with the approval of the minister.[51]

If the confiscated assets are required for use by a government agency, this may be implemented after obtaining the minister's approval. If the minister's approval is not obtained, the assets must be sold through auction. The use of assets is implemented based on technical considerations, taking into account the interests of the state and the public interest. The return of assets, either in part or in full, is carried out against a third party or

---

[49] Giovanna Marcolongo and Diego Zambiasi, 'Offshore Finance and Corruption in Oil Licensing', *Energy Economics*, 137 (2024), p. 107787, doi:https://doi.org/10.1016/j.eneco.2024.107787.

[50] Hong and Yang, 'How Natural Resources Affect Corruption in China'.

[51] Yuanguo Li and others, 'The Extractive Industries Transparency Initiative: Achieving Disclosure, but Falling Short on Corruption Reduction', *The Extractive Industries and Society*, 22 (2025), p. 101602, doi:https://doi.org/10.1016/j.exis.2024.101602.

other person as stated in the Asset Confiscation Decision.[52] The Asset Confiscation Agency may request an authorized government agency to conduct an audit of the implementation of the asset return. The audit results are submitted to the Asset Confiscation Agency for follow-up in accordance with the provisions of laws and regulations.[53] The proceeds from asset management are deposited directly into the state treasury as non-tax state revenue. The use of funds from non-tax state revenue from the management of confiscated assets is carried out in accordance with statutory regulations. A portion of the funds from non-tax state revenue from the management of confiscated assets can be used for a) education and training related to tracing, investigating, and managing confiscated assets; b) law enforcement related to asset confiscation; and c) research and development of technology related to asset confiscation. The author recommends implementing asset recovery in the natural resource management sector, particularly in mining, minerals, and coal, by aligning with the operational standards for calculating ecological losses outlined in Minister of Environment Regulation No. 7 of 2014 and incorporating the principles of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) from the United States as follows:

Table 2 Recommendations for Ecologically Based Asset Recovery Concepts in the Mining

Regulatory Substance	Standardization	Calculation
Asset Management	a. Asset management is carried out by the Asset Confiscation Agency, which is responsible to the Minister; b. The authorized ministries include the Ministry of Energy and Mineral Resources and the Ministry of Environment; c. The Ministry carries out the following functions: storage, security, maintenance, assessment, use, utilization, transfer; and d. Specifically in the natural resource utilization sector, a minimum of 50% of asset utilization and use proceeds are allocated to Environmental Recovery Costs if the mining process results in environmental damage and/or pollution.	Cases of Environmental Damage Due to Gold, Iron Sand, Bauxite, Coal, Nickel, Class C Mining on Land, Protected Areas, Forest Areas, and Conservation Areas.
Ecological Loss Cost Allocation	a. Cost of activating the water system function (CHTA); b. Water management costs (CTA); c. Erosion and runoff control costs (CEL); d. Land formation costs (CPT);	Total Ecological Loss: CKEg = CHTA + CTA + CEL + CPT + CUH + CPL + CPB + C gen + Ccar.

[52] Trinchera, 'Confiscation And Asset Recovery: Better Tools To Fight Bribery And Corruption Crime'; Shruti Kohli, 'Developing Cyber Security Asset Management Framework for UK Rail', *2016 International Conference on Cyber Situational Awareness, Data Analytics and Assessment, CyberSA 2016*, doi:10.1109/CyberSA.2016.7503296.

[53] Hong and Yang, 'How Natural Resources Affect Corruption in China'.

	e. Cost of lost nutrients (CUH); f. Waste decomposition function costs (CPL); g. Biodiversity restoration costs (CPB); h. Cost of genetic restoration (C gen); and i. Cost of carbon release (C Car).	
Allocation of Economic Loss Costs	In this economic damage section, an important parameter worth considering is the loss of land use over 100 years.	For this reason, if the land is used for cultivation on 1 ha of forest land, it is IDR 32,000,000.00/ha.
Ecological Restoration Cost Allocation	The restoration costs to activate lost environmental functions are the sum of water supply through reservoir construction (CR is IDR 40,500,000.00/ha), erosion and runoff control, nutrient recycling, waste decomposition, biodiversity, genetic resources, and carbon release.	Total Ecological Recovery: CPEg = CR + CEL + CPT + CUH + CPL + CPB + C gen + C car.

Source: Complied by the Author

Table 2 shows the recommendations for the ecologically based asset recovery concept in the mining sector. Mining asset management is carried out by the Asset Confiscation Agency, which is responsible to the relevant minister, with coordination from the Ministry of Energy and Mineral Resources and the Ministry of Environment. Asset management functions include storage, security, maintenance, assessment, use, utilization, and transfer of assets. Specifically for the natural resources sector, proceeds from asset utilization are allocated to Environmental Recovery Funds so that any damage or pollution resulting from mining activities can be addressed. This management standardization refers to cases of environmental damage due to gold mining, iron sand, bauxite, coal, nickel, class C, as well as protected areas, forests, and conservation.[54]

The ecological loss cost allocation includes various components that measure environmental impacts, such as the costs of maintaining and regulating water management functions (CHTA and CTA), erosion and runoff control (CEL), soil formation (CPT), nutrient loss (CUH), waste decomposition functions (CPL), biodiversity recovery (CPB), genetic recovery (C gen), and carbon release (C Car). The total ecological loss is calculated by summing all these components (CKEg = CHTA + CTA + CEL + CPT + CUH + CPL + CPB + C gen + C Car), so that the restoration cost can be determined

[54] Laura J. Sonter and others, 'Conservation Implications and Opportunities of Mining Activities for Terrestrial Mammal Habitat', *Conservation Science and Practice*, 4.12 (2022), doi:10.1111/csp2.12806; Thesalonika Vega Puspa Agatha, I Gusti Ayu Ketut Rachmi Handayani, and Fatma Ulfatun Najicha, 'Urgency of the Role of Society in Protection Conservation Area', *Law Research Review Quarterly*, 8.2 (2022), pp. 153–70, doi:10.15294/lrrq.v8i2.53828.

comprehensively and quantitatively. In addition to ecological losses, this table also emphasizes the allocation of economic loss costs, which considers the loss of land use for 100 years. For example, the use of 1 hectare of forest land for cultivation is estimated at IDR 32,000,000.00 per hectare. This calculation ensures that economic losses due to the loss of land function are also taken into account so that asset restoration is not only ecological but also considers economic aspects.

The ecological restoration cost allocation integrates all costs to restore lost environmental functions, including water supply through reservoir construction (CR = IDR 40,500,000.00/ha), erosion control, nutrient recycling, waste decomposition, biodiversity restoration, genetic resources, and carbon release. Total ecological restoration (CPEg = CR + CEL + CPT + CUH + CPL + CPB + C gen + C Car) serves as the basis for calculations to ensure that state and environmental assets are optimally restored. Thus, this ecologically based asset restoration concept provides a comprehensive framework for addressing the impacts of mining damage while ensuring long-term benefits for communities and the environment.

Furthermore, regarding the calculation of environmental losses and the allocation of recovery costs, the government can adopt procedures for determining environmental loss calculations, such as the environmental recovery concept in the United States, using the Comprehensive Environmental Response, Compensation, and Liability Act (CERLA) method, all state compensation is used solely for the cost of restoring polluted or damaged environments. CERLA, also known as the Superfund Act of 1980, focuses on cleaning up and restoring the environment from hazardous waste.[55] CERLA emphasizes that any party responsible for pollution (potentially responsible party) must pay the full costs of compliance and compensation, not to the state treasury, but to be allocated directly to recovery activities. The CERLA calculation formula does not use a single mathematical formula but instead follows a scientific and economic assessment framework called the Natural Resource Damage Assessment (NRDA). The total NRDA is the direct restoration cost (Cd) plus compensatory restoration cost (Cc), plus assessment cost (Ca), plus monitoring and oversight (Cm). Therefore, the cost component in the NRDA is specifically

[55] Leanne Bowie and Jonathan Fulcher, *Planning for Post-Mining Land Uses*, no. September (2017) <http://www.hdc.nsw.gov.au/honeysuckle>.

the Direct Restoration Cost, which is restorative in nature for direct environmental recovery.[56]

In a fundamental comparison, CERLA in the United States focuses on ecological restoration, as losses are calculated not only for state financial compensation but also for environmental restoration. In fact, in the United States, 70–80% of the fines from environmental settlements are used exclusively for environmental restoration. [57] Meanwhile, Ministerial Regulation No. 7 of 2014 focuses more on calculating losses as the basis for legal sanctions, with restoration as only one component. Therefore, the CERLA concept can be used as a recommended model for calculating ecological losses that the Indonesian government can adopt. In principle, the restoration plan in Indonesia, formulated in cases of environmental loss, emphasizes the importance of the state as a guardian of nature, not the owner of natural resources, as mandated by the constitution. Under the principle of state responsibility, the state's right to control is interpreted as a public mandate to maintain environmental sustainability and continuity.[58]

Based on this research, illegal mining with indications of abuse of authority constitutes a criminal act of corruption that harms state finances and causes ecological damage.[59] Therefore, law enforcement in the mining sector must be equipped with an asset recovery mechanism that encompasses both financial and ecological aspects. The urgency of regulating asset recovery is apparent to ensure that public natural resources are optimally utilized for the prosperity of the people while upholding public rights according to the constitution. In this context, the theory of restorative justice, especially the environmental version, is a relevant conceptual framework because it emphasizes the restoration of victims' losses, the responsibility of perpetrators, and the restoration of socio-ecological

---

[56] Jeff Skousen and Carl E. Zipper, 'Post-Mining Policies and Practices in the Eastern USA Coal Region', *International Journal of Coal Science and Technology*, 1.2 (2014), pp. 135–51, doi:10.1007/s40789-014-0021-6.

[57] Pratiwi and others, 'Managing and Reforesting Degraded Post-Mining Landscape in Indonesia: A Review'.

[58] Muhammad Bagus Adi Wicaksono and Devi Triasari, 'Coal Post-Mining Reclamation Policies in Several Countries : Lessons for Indonesia', *Journal of Law, Environmental and Justice*, 2.3 (2024), pp. 229–53, doi:10.62264/jlej.v2i3.106.

[59] Liu and Lyu, 'Economic Corruption, Green Recovery, and Mineral Trade Relationships in Emerging Economies'; Gang Xu and others, 'Anti-Corruption, Safety Compliance and Coal Mine Deaths: Evidence from China', *Journal of Economic Behavior & Organization*, 188 (2021), pp. 458–88, doi:https://doi.org/10.1016/j.jebo.2021.05.013.

balance so that justice is not only retributive but also restorative for society and the environment. [60] The concept of ecologically based asset management includes management by the Asset Confiscation Agency under the coordination of the relevant Ministry, with functions that include storage, security, maintenance, assessment, use, utilization, and transfer of assets, as well as allocation of the results of their utilization for environmental recovery costs, including the maintenance of water system functions, erosion control, biodiversity and genetic restoration, and carbon release.

Thus, the allocation of ecological restoration costs is regulated in detail and comprehensively, including the construction of reservoirs for water supply, erosion control, nutrient recycling, waste decomposition, biodiversity restoration, genetic resources, and carbon release, so that state assets and the environment are optimally restored. This calculation aligns with the CERLA principle in the United States, which emphasizes allocating costs entirely to ecological restoration, thus serves as a model for adaptation in Indonesia. Therefore, eradicating mining corruption requires a specific and comprehensive approach, including the implementation of a reverse proof system, transparent asset management and return, and the principle of environmental restorative justice. This strategy ensures justice for the people, the sustainability of natural resources, and the prevention of corruption in the mining sector, emphasizing the role of the state as a guardian of nature responsible for maintaining environmental sustainability.

4. CONCLUSION

Corruption and manipulative practices based on abuse of authority that harm state finances must be eradicated through asset confiscation, both economically and for ecological recovery from the damage caused by the exploitation of vital natural resources. The urgency of passing the Asset Confiscation Law is increasingly pressing due to the inconsistency of previous legislators, while the public demands legal certainty to ensure optimal recovery of state losses and environmental protection. This research shows, first, the results of the rationality research in the form of arguments that manipulative and illegal mining practices with indications of abuse of authority as an effort to enrich a party constitute criminal acts of corruption; corruption in the mining sector is an act that is

[60] Xu and others, 'Anti-Corruption, Safety Compliance and Coal Mine Deaths: Evidence from China'; Petermann, Guzmán, and Tilton, 'Mining and Corruption'.

detrimental to state finances; and the mining sector is an exploitative activity, so there needs to be a guarantee of ecological recovery, which is included in the form of asset recovery. Second, the Asset Confiscation Bill must establish an effective confiscation system that supports both economic and ecological recovery. This should be achieved through clear regulations on asset management, the allocation of ecological loss costs, economic loss allocation, and ecological recovery cost allocation.

5. CONFLICTING INTEREST STATEMENT

The authors state that there is no conflict of interest in the publication of this article.

REFERENCES

Afriansyah, Arie, Anbar Jayadi, and Angela Vania, 'Fighting the Giants: Efforts in Holding Corporation Responsible for Environmental Damages in Indonesia', *Hasanuddin Law Review*, 4.3 (2018), pp. 325 – 338, doi:10.20956/halrev.v4i3.1626

Agatha, Thesalonika Vega Puspa, I Gusti Ayu Ketut Rachmi Handayani, and Fatma Ulfatun Najicha, 'Urgency of the Role of Society in Protection Conservation Area', *Law Research Review Quarterly*, 8.2 (2022), pp. 153–70, doi:10.15294/lrrq.v8i2.53828

Alfada, Anisah, 'The Destructive Effect of Corruption on Economic Growth in Indonesia: A Threshold Model', *Heliyon*, 5.10 (2019), p. e02649, doi:https://doi.org/10.1016/j.heliyon.2019.e02649

Arifin, Ridwan, Sigit Riyanto, and Akbar Kurnia Putra, 'Collaborative Efforts in ASEAN for Global Asset Recovery Frameworks to Combat Corruption in the Digital Era', *Legality: Jurnal Ilmiah Hukum*, 31.2 (2023), pp. 329–43, doi:10.22219/ljih.v31i2.29381

Bowie, Leanne, and Jonathan Fulcher, *Planning for Post-Mining Land Uses*, no. September (2017) <http://www.hdc.nsw.gov.au/honeysuckle>

Butt, Simon, and Sofie Arjon Schütte, 'Assessing Judicial Performance in Indonesia: The Court for Corruption Crimes', *Crime, Law and Social Change*, 62.5 (2014), pp. 603 – 619, doi:10.1007/s10611-014-9547-1

Cahyani, Tinuk Dwi, Muhamad Helmi Md Said, and Muhamad Sayuti Hassan, 'A Comparison Between Indonesian and Malaysian Anti-Corruption Laws', *Padjadjaran Jurnal Ilmu Hukum*, 10.2 (2023), pp. 275–99, doi:10.22304/pjih.v10n2.a7

Christiani, Theresia Anita, 'Normative and Empirical Research Methods: Their Usefulness and Relevance in the Study of Law as an Object', *Procedia - Social and Behavioral Sciences*, 219 (2016), pp. 201–07, doi:10.1016/j.sbspro.2016.05.006

Cisneros, Elías, and Krisztina Kis-Katos, 'Unintended Environmental Consequences of Anti-Corruption Strategies', *Journal of Environmental Economics and Management*, 128 (2024), p. 103073, doi:https://doi.org/10.1016/j.jeem.2024.103073

Dobinson, Ian, and Francis Johns, 'Qualitative Legal Research', 1 in *Research Methods for Law*, ed. by Mike McConville and Wing Hong Chui (Edinburgh University Press Ltd., 2007)

Fajrini, Rika, 'Environmental Harm and Decriminalization of Traditional Slash-and-Burn Practices in Indonesia', *International Journal for Crime, Justice and Social Democracy*, 11.1 (2022), pp. 28–43, doi:10.5204/ijcjsd.2034

Fernando, Zico Junius, and others, *Deep Anti-Corruption Blueprint Mining, Mineral, and Coal Sector in Indonesia*, in *Cogent Social Sciences*, no. 1 (2023), IX, doi:10.1080/23311886.2023.2187737

Hanum, Willy Naresta, Tran Thi Dieu Ha, and Nilam Firmandayu, 'Eliminating Ecological Damage in Geothermal Energy Extraction : Fulfillment of Ecological Rights by Proposing Permits Standardization', *Journal of Law, Environmental and Justice*, 2.2 (2024), pp. 205–28, doi:10.62264/jlej.v2i2.105

——, and Muhamad Nafi Uz Zaman, 'Existence of Human Rights Protection in Land and Mining Conflicts : Evidence from Indonesia', *Journal of Law, Environmental and Justice*, 2.3 (2024), pp. 285–306, doi:10.62264/jlej.v2i3.107

Hartanto, Ponco, Subagio Gigih, and Riami Chancy, 'Discourse of Ecological Damage as a State Financial Loss : Evidence from Indonesia', *Journal of Law, Environmental and Justice*, 2.3 (2024), pp. 307–31, doi:10.62264/jlej.v2i3.110

Hong, Ji Yeon, and Wenhui Yang, 'How Natural Resources Affect Corruption in China', *World Development*, 175 (2024), p. 106471, doi:https://doi.org/10.1016/j.worlddev.2023.106471

Igbinedion, Simeon A, and Anthony Osobase, 'Grand Corruption in the Global South: Legal, Political and Economic Analysis of Assets Recovery in Nigeria', *Journal of Economic Criminology*, 9 (2025), p. 100164,

doi:https://doi.org/10.1016/j.jeconc.2025.100164

Isra, Saldi, and others, 'Obstruction of Justice in the Effort to Eradicate Corruption in Indonesia', *International Journal of Law, Crime and Justice*, 51 (2017), pp. 72–83, doi:10.1016/j.ijlcj.2017.07.001

Josua Pamungkas Pattiwael, Joey, and others, 'KERUGIAN EKOLOGIS AKIBAT TINDAK PIDANA KORUPSI', in *JURNAL RECHTENS*, no. 1 (2021), X <https://m.tempo.com/read/news/2016/02/22/090747>

Kohli, Shruti, 'Developing Cyber Security Asset Management Framework for UK Rail', *2016 International Conference on Cyber Situational Awareness, Data Analytics and Assessment, CyberSA 2016*, doi:10.1109/CyberSA.2016.7503296

Leasure, Peter, 'Asset Recovery in Corruption Cases: Comparative Analysis Identifies Serious Flaws in US Tracing Procedure', *Journal of Money Laundering Control*, 19.1 (2016), pp. 4 – 20, doi:10.1108/JMLC-04-2015-0010

Lego Karjoko, and others, *The Principle of Social Justice As a Solution in Illegal Mining Activities in The Old Wells Oil Management*, 5.2 (2021)

Li, Yuanguo, and others, 'The Extractive Industries Transparency Initiative: Achieving Disclosure, but Falling Short on Corruption Reduction', *The Extractive Industries and Society*, 22 (2025), p. 101602, doi:https://doi.org/10.1016/j.exis.2024.101602

Liu, Biao, and Yifei Lyu, 'Economic Corruption, Green Recovery, and Mineral Trade Relationships in Emerging Economies', *Resources Policy*, 90 (2024), p. 104725, doi:https://doi.org/10.1016/j.resourpol.2024.104725

Liu, Jie, and others, 'Corruption Induced Energy Inefficiencies: Evidence from China's Energy Investment Projects', *Energy Policy*, 183 (2023), p. 113825, doi:https://doi.org/10.1016/j.enpol.2023.113825

Marcolongo, Giovanna, and Diego Zambiasi, 'Offshore Finance and Corruption in Oil Licensing', *Energy Economics*, 137 (2024), p. 107787, doi:https://doi.org/10.1016/j.eneco.2024.107787

Martinez-Alier, Joan, 'Mining Conflicts, Environmental Justice, and Valuation', *Journal of Hazardous Materials*, 86.1 (2001), pp. 153–70, doi:https://doi.org/10.1016/S0304-3894(01)00252-7

Mavisakalyan, Astghik, and Anna Minasyan, 'Mining and Mistrust in Government', *European Economic Review*, 175 (2025), p. 105002, doi:https://doi.org/10.1016/j.euroecorev.2025.105002

McClintock, Blake, and Peter Bell, 'Australia's Mining Interests within Nigeria and Libya: Policies, Corruption and Conflict', *International Journal of Law, Crime and Justice*, 41.3 (2013), pp. 247–59, doi:https://doi.org/10.1016/j.ijlcj.2013.06.004

Nakray, Keerty, 'Environmental, Social, Governance and Public Policy in India', in *Encyclopedia of Monetary Policy, Financial Markets and Banking (First Edition)*, ed. by Nicholas Apergis, First Edition (Academic Press, 2025), pp. 324–30, doi:https://doi.org/10.1016/B978-0-44-313776-1.00232-4

Paranata, Ade, 'The Miracle of Anti-Corruption Efforts and Regional Fiscal Independence in Plugging Budget Leakage: Evidence from Western and Eastern Indonesia', *Heliyon*, 8.10 (2022), p. e11153, doi:https://doi.org/10.1016/j.heliyon.2022.e11153

Petermann, Andrea, Juan Ignacio Guzmán, and John E Tilton, 'Mining and Corruption', *Resources Policy*, 32.3 (2007), pp. 91–103, doi:https://doi.org/10.1016/j.resourpol.2007.08.003

Phillips, Sara K, 'The Legal Construct of Mining Conflicts', *Resources Policy*, 109 (2025), p. 105706, doi:https://doi.org/10.1016/j.resourpol.2025.105706

Pinilih, Sekar Anggun Gading, 'The Green Constitution Concept in the 1945 Constitution of the Republic of Indonesia', *Mimbar Hukum - Fakultas Hukum Universitas Gadjah Mada*, 30.1 (2018), p. 200, doi:10.22146/jmh.28684

Ponco Hartanto, Ricky Ricky, and Vincent Ariesto Gunawan, 'Using Indonesian Corruption Law for Eradicating the Yogyakarta Sultanate Land Mafia: A Legal Formulation Study', *Indonesian Journal of Crime and Criminal Justice*, 1.1 (2025), pp. 23–53, doi:10.62264/ijccj.v1i1.122

Prabowo, Hendi Yogi, 'Re-Understanding Corruption in the Indonesian Public Sector through Three Behavioral Lenses Hendi', *Facilities*, 35.6 (2015), pp. 925–45, doi:10.1108/JFC-08-2015-0039

——, Jaka Sriyana, and Muhammad Syamsudin, 'Forgetting Corruption: Unlearning the Knowledge of Corruption in the Indonesian Public Sector', *Journal of Financial Crime*, 25.1 (2018), pp. 28–56, doi:10.1108/JFC-07-2016-0048

Pratiwi, and others, 'Managing and Reforesting Degraded Post-Mining Landscape in Indonesia: A Review', *Land*, 10.6 (2021), doi:10.3390/land10060658

Putri, Rizkyana Zaffrindra, and Lita Tyesta A L W, 'Kajian Politik Hukum Tentang Perubahan Kewenangan Pemberian Izin Usaha Pertambangan Mineral Dan Batubara', *Jurnal Law Reform*, 11.2 (2015), pp. 199–206

Raveh, Ohad, and Yacov Tsur, 'Can Resource Windfalls Reduce Corruption? The Role of Term Limits', *Journal of Environmental Economics and Management*, 122 (2023), p. 102891, doi:https://doi.org/10.1016/j.jeem.2023.102891

Redi, Ahmad, 'Dilema Penegakan Hukum Penambangan Mineral Dan Batubara Tanpa Izin Pada Pertambangan Skala Kecil (Dilemma of Law Enforcement in Small Scale Illegal Mining)', *Jurnal RechtsVinding*, 5.3 (2016), pp. 399–420

Ronyastra, I Made, Lip Huat Saw, and Foon Siang Low, 'Monte Carlo Simulation-Based Financial Risk Identification for Industrial Estate as Post-Mining Land Usage in Indonesia', *Resources Policy*, 89 (2024), p. 104639, doi:https://doi.org/10.1016/j.resourpol.2024.104639

Samad, Rezki Purnama, A. M. Yunus Wahid, and Hamzah Halim, 'Urgensi Partisipasi Masyarakat Terhadap Izin Usaha Pertambangan Pasir', *Al-Ishlah: Jurnal Ilmiah Hukum*, 24.1 (2021), pp. 143–62, doi:10.56087/aijih.v24i1.87

Saputra, Rian, and others, 'Ecological Justice in Indonesia and China Post- Mining Land Use ?', *Journal of Law, Environmental and Justice*, 2.3 (2024), pp. 254–84, doi:10.62264/jlej.v2i3.108

Scott, Benjamin, 'Environmental Crime and Money Laundering in Australia', in *Financial Crime, Law and Governance: Navigating Challenges in Different Contexts*, ed. by Louis Goldbarsht Doron and de Koker (Springer Nature Switzerland, 2024), pp. 99–121, doi:10.1007/978-3-031-59547-9_5

Siregar, Januari, and Muaz Zul, 'PENEGAKAN HUKUM DALAM TINDAK PIDANA LINGKUNGAN HIDUP DI INDONESIA', *Mercatoria*, 8.2 (2015)

Skousen, Jeff, and Carl E. Zipper, 'Post-Mining Policies and Practices in the Eastern USA Coal Region', *International Journal of Coal Science and Technology*, 1.2 (2014), pp. 135–51, doi:10.1007/s40789-014-0021-6

Slamet Riyadi, Bambang, and others, 'Environmental Damage Due to Hazardous and

Toxic Pollution: A Case Study of Citarum River, West Java, Indonesia', in *International Journal of Criminology and Sociology* (2020), IX <https://www.cnnindonesia.com/nasional/20190203004645-20->

Sonter, Laura J., and others, 'Conservation Implications and Opportunities of Mining Activities for Terrestrial Mammal Habitat', *Conservation Science and Practice*, 4.12 (2022), doi:10.1111/csp2.12806

Stevis, Dimitris, 'Whose Ecological Justice?', *Strategies: Journal of Theory, Culture & Politics*, 13.1 (2000), pp. 63–76, doi:10.1080/10402130050007520

Suh, Jiwon, 'Human Rights and Corruption in Settling the Accounts of the Past: Transitional Justice Experiences from the Philippines, South Korea, and Indonesia', *Bijdragen Tot de Taal-, Land- En Volkenkunde / Journal of the Humanities and Social Sciences of Southeast Asia*, 179.1 (2023), pp. 61–89, doi:https://doi.org/10.1163/22134379-bja10049

Tegnan, Hilaire, and others, 'Mining Corruption and Environmental Degradation in Indonesia: Critical Legal Issues', *Bestuur*, 9.2 (2021), pp. 90–100, doi:10.20961/bestuur.v9i2.55219

Trinchera, Tommaso, 'Confiscation And Asset Recovery: Better Tools To Fight Bribery And Corruption Crime', *Criminal Law Forum*, 31.1 (2020), pp. 49 – 79, doi:10.1007/s10609-020-09382-1

Wahyudi, Sugeng, 'Penal Policy on Assets Recovery on Corruption Cases in Indonesia', *JOURNAL of INDONESIAN LEGAL STUDIES*, 4.1 (2019), pp. 104–15, doi:10.15294/jils.v4i01.28224

Wicaksono, Muhammad Bagus Adi, and Devi Triasari, 'Coal Post-Mining Reclamation Policies in Several Countries : Lessons for Indonesia', *Journal of Law, Environmental and Justice*, 2.3 (2024), pp. 229–53, doi:10.62264/jlej.v2i3.106

Widojoko, Johanes D, '17 - Indonesia's Anticorruption Campaign: Civil Society versus the Political Cartel', in *The Changing Face of Corruption in the Asia Pacific*, ed. by Marie dela Rama and Chris Rowley (Elsevier, 2017), pp. 253–66, doi:https://doi.org/10.1016/B978-0-08-101109-6.00017-4

Willebois, Emile van der Does de, and Jean-Pierre Brun, 'Using Civil Remedies in Corruption and Asset Recovery Cases', *Case Western Reserve Journal of International*

Law, 45.3 (2013), p. 615

Xu, Gang, and others, 'Anti-Corruption, Safety Compliance and Coal Mine Deaths: Evidence from China', *Journal of Economic Behavior & Organization*, 188 (2021), pp. 458–88, doi:https://doi.org/10.1016/j.jebo.2021.05.013

Yogi Prabowo, Hendi, 'To Be Corrupt or Not to Be Corrupt: Understanding the Behavioral Side of Corruption in Indonesia', *Journal of Money Laundering Control*, 17.3 (2014), pp. 306–26, doi:10.1108/JMLC-11-2013-0045

Yusa, I Gede, and Bagus Hermanto, 'Implementasi Green Constitution Di Indonesia: Jaminan Hak Konstitusional Pembangunan Lingkungan Hidup Berkelanjutan', *Jurnal Konstitusi*, 15.2 (2018), p. 306, doi:10.31078/jk1524