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Formulation of Legal Calculation of Environmental Damage as State Losses Resulting from Illegal Mining in Bangka Belitung

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Abstract

The paradigm shift from potential loss to actual loss in determining state financial losses following the Constitutional Court Decision has hindered the realization of substantive justice in the enforcement of corruption law, particularly in cases involving environmental corruption. Nevertheless, in corruption cases related to illegal mining in Bangka Belitung Province, judges of the Corruption Court have adopted a progressive approach by setting aside this paradigm shift to uphold substantive justice. Against this background, this study examines whether environmental damage constitutes state losses that give rise to corruption offenses, how environmental damage caused by illegal mining in Bangka Belitung is calculated, and how courts adjudicate cases involving such environmental damage. The research finds that the shift from potential loss to actual has led to environmental damage no longer being normatively classified as state losses, thereby limiting the application of corruption law to perpetrators of environmental destruction. The study further finds that, prior to this paradigm shift, the Ministry of Environment had issued a ministerial regulation establishing procedures for calculating environmental damage, which serves as the primary legal basis for assessing such losses. Finally, the research demonstrates that, despite the restrictive implications of the actual loss paradigm for environmental corruption cases, judges in the Corruption Court have adopted a form of judicial activism by disregarding it in practice to ensure the realization of substantive justice in cases of environmental damage resulting from illegal mining in Bangka Belitung Province.

Keywords

Environmental Damage as State Losses, Illegal Mining in Bangka Belitung, Substantive Justice in Corruption Law, Judicial Activism in Corruption Court Decisions.

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Introduction

The Bangka Belitung Islands Province is Indonesia's principal tin-producing region and contributes significantly to the global tin supply. Owing to its high economic value, tin resources constitute a strategic asset for regional development, national economic growth, and international trade. Previous studies have extensively examined the economic contribution of the mining sector, the governance of mineral resources, and the role of mining commodities in supporting regional and national development. Other scholars have focused on the regulatory framework governing mining activities and the challenges of law enforcement against illegal mining. In contrast, environmental law studies have documented the ecological consequences of unauthorized extraction and the necessity of environmental restoration. In the field of corruption law, existing research has primarily concentrated on conventional concepts of state financial losses arising from direct economic or fiscal harm.

Despite these valuable contributions, the intersection between environmental law and anti-corruption law remains insufficiently explored. In particular, previous studies have not comprehensively examined whether the costs of environmental damage and ecological restoration resulting from illegal mining can be legally characterized and calculated as state financial losses for corruption prosecution. This gap is especially significant in Bangka Belitung, where abundant mineral resources have been accompanied by widespread illegal mining, resulting in severe environmental degradation and substantial losses to the state. Accordingly, this study seeks to fill this gap by analyzing the legal formulation for calculating environmental damage as state financial losses resulting from illegal mining and by examining its implications for the enforcement of corruption law and the realization of substantive justice.

This study is grounded in the Theory of Sustainable Development and the Economic Analysis of Law, which emphasize that the exploitation of natural resources must balance economic benefits with environmental protection and that environmental costs should be internalized rather than imposed on the public. These theoretical perspectives provide the analytical foundation for examining whether environmental damage resulting from illegal mining may be legally characterized as state financial losses under anti-corruption law. Previous studies have discussed mining governance, environmental degradation, and state financial losses separately, yet few have examined their interrelationship within the framework of corruption law. Accordingly, this study addresses three principal questions: (1) whether environmental damage constitutes state financial losses giving rise to corruption offenses; (2) how environmental damage caused by illegal mining in Bangka Belitung should be calculated as state financial losses; and (3) how courts have interpreted and applied these principles in adjudicating illegal mining cases in Bangka Belitung Province.

By analyzing these legal mechanisms, this research aims to provide a theoretical foundation for more holistic law enforcement strategies that account for both direct financial embezzlement and indirect environmental damage. The nexus between the abundance of tin resources in Bangka Belitung Province and its contribution to the national economy is rooted in the strategic nature of tin as a high-value global mining commodity. A study by Marlina and Aprita (2024) notes that extractive materials in Indonesia play a pivotal role in national development and macroeconomic growth. This role encompasses mining resource management's capacity to stimulate local economies at the source while simultaneously fortifying national fiscal stability. Similarly, Septianda (2023) highlights that natural resources serve as vital export commodities that foster sustainable bilateral relations, ultimately playing a strategic role in the long-term trajectory of national economic development.

However, within this conceptual framework, the issue arising regarding the role of tin in improving the national economy is the reality of tin mining. In fact, tin mining in the Bangka Belitung Province has not boosted the national economy significantly.[1] On the contrary, tin mining activities in the province have instead led to significant environmental damage accompanied by substantial state losses.[2]

One of the main factors contributing to significant environmental damage and massive state losses in tin mining activities in the Bangka Belitung Province is the widespread practice of illegal mining. For instance, one notable case of illegal tin mining in the province that resulted in environmental damage and state losses is the 2024 corruption case in the tin trade sector investigated by the Attorney General's Office, which involved 22 suspects.[3] The total state losses due to environmental damage caused by such illegal mining activities, based on calculations by Bambang Hero Sahardjo, reached IDR 271.06 trillion.[4]

The basis for calculating such state losses refers to the Minister of Environment Regulation (Permen LH) Number 7 of 2014 concerning Environmental Losses Due to Pollution and/or Environmental Damage, which regulates the calculation of environmental losses from environmental aspects by experts appointed by central or regional environmental authorities.[5] Factors influencing the magnitude of

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1 Timothy Karosekali and Mardian Frans, "Environmental Loss As An Element Of State Loss In Corruption Offences," *JURNAL HUKUM SEHASEN* 11 (March 2025), https://doi.org/10.37676/jhs.v11i1.7192.

2 Arif Rohman, Hartiwiningsih, and Muhammad Rustamaji, "Illegal Mining in Indonesia: Need for Robust Legislation and Enforcement," *Cogent Social Sciences* 10 (May 2024), https://doi.org/10.1080/23311886.2024.2358158.

3 Armitran Firsantara and Faidatul Hikmah, "Analisis Urgensitas Pembentukan Wilayah Pertambangan Rakyat Dalam Mengatasi Permasalahan Tambang Timah Tanpa Izin Di Laut Dan Pesisir Di Bangka Belitung," no. 1 (2024): 82–99.

4 Dwi Haryadi, Ibrahim Ibrahim, and Darwance Darwance, "Environmental Issues Related To Tin Mining In Bangka Belitung Islands," *PEOPLE: International Journal of Social Sciences* 8 (November 15, 2022): 67–85, https://doi.org/10.20319/pijss.2022.83.6785.

5 Menteri Lingkungan Hidup Republik Indonesia, "Peraturan Menteri Lingkungan Hidup Republik Indonesia Nomor 7 Tahun 2014 Tentang Kerugian Lingkungan Hidup Akibat Pencemaran Dan/Atau Kerusakan Lingkungan Hidup," 2014.

environmental losses include the duration of pollution, the volume of pollutants, and the status of the affected land.[6]

The problem, as illustrated above, is that environmental damage from illegal mining is still not recognized as a state loss. The separation of environmental damage from state losses is due to the Constitutional Court Decision Number 25/PUU/XIV/2016, which removed the word "can" before the phrase "causing state financial losses" in Article 2 paragraph (1) of Law Number 31 of 1999 concerning the Eradication of Corruption Crimes as amended by Law Number 20 of 2001.[7] As a result, state losses must be interpreted as actual losses rather than potential losses.[8] Consequently, environmental damage caused by illegal mining, which is not recognized as a state loss, prevents perpetrators from being prosecuted under the corruption law.

The consequence of separating environmental damage from state losses may, in the future, hinder law enforcement efforts in corruption cases and render irreparable environmental damage caused by corrupt practices.[9] This also correlates with the absence of a deterrent effect for perpetrators, which could potentially lead to an increase in corruption cases involving natural resources in the future.[10] According to Rimawan Pradiptyo, an optimal deterrent effect for corruption offenders can be achieved by increasing the expected cost borne by the perpetrators, as financial penalties that are significantly lower than the value of the corruption result in incomplete recovery of state losses.[11]

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[6] Michael Faure and Jing Liu, "The Compensation for Environmental Damage in China: Theory and Practice," *Journal of Environmental Law*, 2018, 209–32.

[7] Constitutional Court of the Republic of Indonesia, "Decision Number 25/PUU-XIV/2016 Concerning Judicial Review of Law Number 31 of 1999 Concerning the Eradication of Corruption Crimes as Amended by Law Number 20 of 2001" (2017).

[8] Republic of Indonesia, "Law Number 1 of 2004 Concerning the State Treasury, State Gazette of the Republic of Indonesia of 2004 Number 5," Supplement to the State Gazette Number 4355 (n.d.).

[9] United Nations, "United Nations Convention against Corruption (Adopted 31 October 2003," 2005.

[10] Komisi Pemberantasan Korupsi, "Dampak Sosial Korupsi," 2016.

[11] Peter Mahmud Marzuki, "Penelitian Hukum," *Jakarta: Kencana Prenada Media* 55 (2005).

In light of these issues, it is essential to examine and propose the importance of positioning environmental damage as part of state losses. Therefore, this study is based on three fundamental questions: (1) whether environmental damage constitutes state losses that result in corruption offenses; (2) how to calculate environmental damage caused by illegal mining in Bangka Belitung; and (3) how courts decide cases involving environmental damage caused by illegal mining in Bangka Belitung. By clarifying the legal basis for calculating environmental damage as state financial losses, this research is expected to strengthen anti-corruption law enforcement and provide policy recommendations for enhancing accountability in the mining sector. In the long term, such legal improvements may help deter illegal mining activities and promote the sustainable management of natural resources in Bangka Belitung Province.

This study employs a normative legal research design to examine the legal formulation of environmental damage as state financial losses resulting from illegal mining activities in Bangka Belitung Province.[12] The research integrates statutory, conceptual, and case approaches, each of which serves a distinct analytical function in addressing the research questions.[13]

First, the statutory approach is used to examine the legal framework governing mining activities, environmental protection, and anti-corruption law in Indonesia.[14] The analysis focuses on Law No. 3 of 2020 concerning Mineral and Coal Mining, Law No. 31 of 1999 as amended by Law No. 20 of 2001 concerning the Eradication of Corruption, and Law No. 32 of 2009 concerning Environmental Protection and Management, together with their implementing regulations. This approach is intended to determine whether the existing regulatory framework recognizes environmental restoration costs as part of state financial losses and to identify normative inconsistencies among these legal instruments.

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[12] Terry Hutchinson, *Researching and Writing in Law*, 2018.

[13] Mahmud Marzuki, "Penelitian Hukum."

Second, the conceptual approach is employed as the principal analytical framework for interpreting the legal issues examined in this study.[14] The concept of State Financial Loss is used to analyze whether ecological damage resulting from illegal mining may be legally categorized as a recoverable loss to the state under anti-corruption law.[15] The Polluter Pays Principle serves as the basis for evaluating the responsibility of mining operators to bear environmental restoration costs rather than transferring such costs to the public or the state.[16] The Theory of Sustainable Development is applied to assess whether the existing legal framework balances economic exploitation with environmental protection for future generations.[17] Meanwhile, the Economic Analysis of Law provides an analytical perspective for evaluating the efficiency and accountability of incorporating environmental restoration costs into the calculation of state financial losses.[18] These concepts are applied throughout the discussion and constitute the theoretical foundation for answering the first and second research questions.[19]

Third, the case approach is conducted to examine judicial practice concerning illegal tin mining in Bangka Belitung Province.[20] The cases analyzed consist of final and legally binding (inkracht) corruption

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14 Hutchinson, *Researching and Writing in Law*.

15 Ponco Hartanto, Subagio Gigih, and Riami Chancy, "Discourse of Ecological Damage as a State Financial Loss : Evidence from Indonesia" 2, no. 3 (2024): 307–31.

16 United Nations, "Transforming Our World: The 2030 Agenda for Sustainable Development, UN General Assembly Resolution 70/1, UN Doc A/RES/70/1," n.d., 18–35.

17 OECD, "Long-Term Budgeting: A Cautionary Tale from U.S. Experience" 17 (n.d.).

18 Hutchinson, *Researching and Writing in Law*.

19 Supreme Court of the Republic of Indonesia, "Decision No. 434 K/Pid.Sus/2025, Concerning Corruption Related to Illegal Tin Mining in Bangka Belitung Province.," 2025.

20 Supreme Court of the Republic of Indonesia, "Directory of Court Decisions, Comprising Final and Legally Binding Corruption Judgments Concerning Illegal Mining Issued between 2015 and 2024," n.d.

judgments issued between 2015 and 2024 that involve illegal mining activities causing environmental damage.[21]

The cases were selected based on two criteria: (i) the dispute concerns illegal tin mining resulting in ecological degradation, and (ii) the prosecution or judicial reasoning addresses, directly or indirectly, the issue of state financial losses arising from environmental damage or environmental restoration costs. Through this approach, the study compares statutory provisions, legal doctrines, and judicial reasoning to evaluate how courts have interpreted the relationship between environmental damage and state financial losses. The findings of this analysis primarily address the third research question, which concerns judicial approaches to illegal mining cases.

The study relies exclusively on secondary legal materials, including primary, secondary, and tertiary sources.[22] Primary legal materials include legislation, Constitutional Court decisions, Supreme Court decisions, and relevant corruption court judgments.[23] Secondary legal materials comprise peer-reviewed journal articles, academic books, legal commentaries, and prior research on mining law, environmental law, and anti-corruption law.[24] Tertiary legal materials, including legal dictionares and encyclopedias, are used to clarify technical legal terminology where necessary.[25]

Legal materials were collected through a systematic literature review and document analysis using official legal databases, including the Indonesian Supreme Court Decision Directory and official government regulatory databases.[26] The collected materials were evaluated based on

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21 Soerjono Soekanto and Sri Mamudji, *Penelitian Hukum Normatif: Suatu Tinjauan Singkat* (Jakarta: Rajawali Pers, 2015).

22 Raja Didit et al., "Legal Analysis of the Supreme Court Decision Regarding the Annulment of Acquittal in Corruption Crime Case: A Study of Decision Number 1227 K/Pid.Sus/2022" 7, no. 2 (2026): 1375–88.

23 I D Dobinson and Francis Johns, "Qualitative Legal Research," 2007, 16–45, https://doi.org/10.1515/9781474404259-005.

24 Bryan A. Garner, *Black's Law Dictionary*, 2024.

25 Indonesia, "Directory of Court Decisions, Comprising Final and Legally Binding Corruption Judgments Concerning Illegal Mining Issued between 2015 and 2024."

26 Mike McConville and Wing Hong Chui, "Law Research Methods for Law," 2017.

their relevance, authority, and consistency with the research objectives before being verified for completeness and reliability.[27]

The analysis employs a qualitative doctrinal method using deductive reasoning.[28] General legal principles and statutory norms are first identified and interpreted, after which they are applied to the specific legal issues concerning environmental damage caused by illegal mining.[29] The results of the statutory analysis, conceptual analysis, and case analysis are then synthesized to formulate legal arguments regarding the classification and calculation of environmental damage as state financial losses within the framework of Indonesian anti-corruption law.

This research is limited to publicly accessible legal materials and judicial decisions that have attained final legal standing. Accordingly, ongoing proceedings and non-public law enforcement practices fall outside the scope of this study. Furthermore, the analysis is confined to the Indonesian legal system and does not compare it with other jurisdictions.

A. Does environmental Damage Constitute State Losses?

Before analyzing the intersection of ecological harm and financial liability, it is essential to define "environmental damage" and "state losses." Under Law No. 32 of 2009 and Law No. 6 of 2023, environmental damage refers to physical, chemical, or biological alterations that exceed standard damage criteria. Conversely, Law No. 1 of 2004 defines state losses as a "real and definite" shortage of treasury assets resulting from unlawful acts.[30] and Law Number 6 of 2023 concerning Job Creation (Job Creation Law)[31], which essentially defines environmental damage as direct and/or indirect changes to the physical, chemical, and/or biological characteristics of the environment that exceed the standard criteria for environmental damage.

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27 Hutchinson, *Researching and Writing in Law*.

28 Raymond Wacks, *Understanding Jurisprudence: An Introduction to Legal TheoryAn Introduction to Legal Theory*, 2020, https://doi.org/10.1093/he/9780198864677.001.0001.

29 Article 1 point (17) Law No. 32 of 2009, "Environmental Protection and Management" (2009).

30 Article 22 Law No. 6 of 2023, "Job Creation" (2023).

31 Andri Wibisana G, "Environmental Loss, State Economic Loss?," Kompas, 2024.

The positioning of environmental damage as a component of state losses has gained momentum due to the devastating impact of illegal mining, which externalizes ecological costs onto the public while generating private profit. Bambang Hero Sahardjo argues that the costs of environmental restoration should be considered in corruption cases involving illegal mining, as environmental damage imposes financial burdens that the state must ultimately bear. Including these costs in the assessment of state losses provides a more comprehensive form of legal accountability.

Despite this view, the existing legal framework does not provide a clear basis for treating environmental restoration costs as state financial losses in corruption cases. Environmental law is primarily concerned with restoring damaged ecosystems, whereas corruption law requires proof of state financial losses under specific legal standards. This difference creates uncertainty in law enforcement and raises the question of whether environmental damage can be legally recognized as part of state financial losses.

The legal framework governing state financial losses in Indonesia changed significantly following the shift from Constitutional Court Decision No. 003/PUU-IV/2006 to Constitutional Court Decision No. 25/PUU-XIV/2016. In its 2006 decision, the Constitutional Court upheld the use of the word “can” (dapat) in the Anti-Corruption Law, thereby allowing potential state losses to be considered in corruption cases and facilitating law enforcement even when losses had not yet materialized. However, Constitutional Court Decision No. 25/PUU-XIV/2016 subsequently required that state financial losses be actual and definite, to strengthen legal certainty and prevent the criminalization of administrative discretion exercised in good faith. While this interpretation enhances legal certainty, many scholars argue that it creates challenges in environmental corruption cases because ecological damage often results in restoration costs that emerge over time and cannot be immediately quantified. Consequently, the requirement to prove actual and definite losses may complicate the prosecution of illegal mining cases that cause substantial environmental harm.[32]

[32] Indah Sri Utari et al., “Illegal Nickel Mining in Protected Forests: Challenges in Whistleblower and Justice Collaborator Protection in Indonesia,” *Indonesian*

The following table summarizes significant court decisions that applied the MK's strict interpretation. While all cited the 2016 decision, a deeper analysis of the *ratio decidendi* reveals nuanced differences in how judges handled evidentiary standards:

Table 1. Nuanced Judicial Reasoning in Rejecting Environmental Loss

Court Decision	Nuance in Judicial Reasoning
Supreme Court No. 4950K/Pid.Sus/2023 (Surya Darmadi)	While acknowledging unlawful acts, the court distinguished between "economic losses" and "state financial losses." The judges ruled that while environmental harm impacts the economy, it does not constitute a direct reduction of the state treasury as defined by the State Treasury Law.
PN Jkt Pst No. 39/Pid.Sus-TPK/2024	The panel emphasized the prosecution's failure to prove a "definite amount." It held that restoration cost estimates provided by experts were "hypothetical and future-oriented," thus failing the *actual loss* test established by MK 25/2016.
PN Jkt Pst No. 40 41/Pid.Sus-TPK/2024	In these related palm oil cases, the court focused on the "administrative nature" of environmental violations. It argued that environmental damage should be settled via administrative or civil sanctions (Law 32/2009) rather than being forced into the state loss A framework of corruption law.

Source: Supreme Court Decision Directory and processed by the author

The 2016 Decision holds an *erga omnes* effect, meaning it is universally binding. Theoretically, this should settle the debate: environmental damage cannot be state loss because it is inherently speculative. However, a tension exists between this binding precedent

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and the "Judicial Activism" explored in Section 3. While the MK has narrowed the definition of state loss, some trial judges, driven by the principle of *substantive justice,* have begun to bypass this restriction. They argue that if environmental damage leads to a direct and measurable expenditure from the state budget for restoration, the loss ceases to be "potential" and becomes "actual." This situation creates a fragmented legal landscape in which the erga omnes effect of the Constitutional Court's interpretation appears to conflict with the evolving jurisprudence of the Corruption

Courts in environmental corruption cases. From the perspective of progressive legal theory, law is not merely a collection of rigid rules but an instrument for achieving substantive justice. Accordingly, when a strict interpretation of the concept of state financial loss limits the effective enforcement of environmental accountability, judges may adopt a more purposive interpretation to ensure that the objectives of anti-corruption law and environmental protection are fulfilled. This tension demonstrates that the legal definition of "state loss" remains contested and continues to evolve through judicial interpretation.

1. **Analysis of Environmental Damage Calculation Procedures: The Transformation of Civil Instruments into the Criminal Corruption Regime**

The methodology for calculating environmental damage in Indonesia currently relies on Minister of Environment Regulation (Permen LH) No. 7 of 2014 regarding Environmental Losses Due to Pollution and/or Environmental Damage. However, there is an urgent need to critically assess the position of this regulation within the criminal justice system. Historically and philosophically, Permen LH 7/2014 was established as a technical guideline to implement Article 90 of Law No. 32 of 2009 (Environmental Law), specifically intended for resolving environmental disputes through civil litigation (compensation) or administrative channels.[33] Furthermore, environmental damage cases processed through legal mechanisms generally rely on Permen LH Number 7 of 2014 as the principal legal basis for such calculations.

The migration of this instrument into the realm of Criminal Corruption (Tipikor) prosecution marks a significant paradigm shift in Indonesian jurisprudence. This transition creates a serious doctrinal challenge: reconciling an "economic valuation" methodology based on estimates with the strict evidentiary standards for "state financial loss." Following the Constitutional Court Decision No. 25/PUU-XIV/2016, the law demands that state losses be "actual and definite" (*actual loss*) rather than merely "potential" or speculative (*potential loss*).

In the specific context of illegal tin mining in the Bangka Belitung Islands Province, Permen LH No. 7 of 2014 is operationalized through nine analytical criteria designed to identify the causal relationship between mining activities and environmental damage, as well as to determine the magnitude of such damage. The assessment is conducted by environmental experts or expert teams appointed by the competent government authority in accordance with the applicable regulations, who carry out a comprehensive evaluation extending beyond visible physical damage to include broader ecosystem degradation and the estimated costs of environmental restoration. For instance, in addressing the "affected environmental media," the analysis in Bangka Belitung encompasses the morphological degradation of land due to onshore open-pit mining, which strips the topsoil as well as marine pollution caused by floating "unconventional" mines (TI Apung) that destroy coral reefs and seagrass beds. Since these illegal activities predominantly occur within state-protected forests or coastal waters, the "non-private property" criterion is automatically met, giving the state legal standing to claim this ecological damage as a public loss, which is then integrated into the framework of state financial losses. However, there are significant methodological complexities within the parameters used, as summarized in the following table:

Table 2. Technical Parameters and Juridicial Challenges in Environmental Loss Calculation

Assessment Component	**Technical Parameters**	**Operational Description (Bangka Belitung Case)**	**Juridical Challenges & Limitations**
Ecological Losses	Intrinsic Ecosystem Value	Calculating the loss of carbon sequestration, hydrological functions, and biodiversity due to illegal land clearing.	Often viewed as hypothetical loss as these values are not recorded as liquid assets in state balance sheets.
Environmental Economic Losses	Natural Service Utilization Value	Calculating real community losses, such as decreased fish catches or loss of clean water access for residents near mines	Risks double counting or overlapping with civil compensation claims filed by community groups.
Restoration Costs	Physical Rehabilitation Costs	Estimated costs for reclamation, replanting, and heavy metal detoxification to return the land to its baseline state.	May clash with the actual loss requirement if these costs have not yet been spent by the state treasury.
Verification Costs	Law Enforcement Admin Costs	Real costs incurred by agencies for field verification, lab sampling, and post-damage monitoring.	Must be proven with real expenditure receipts to be categorized as a definitive state financial loss.

Source: Various literature sources processed by the author

As a pinnacle of this analysis, Court Decision No. 70/Pid.Sus-TPK/2024/PN.Jkt.Pst, involving a staggering valuation of IDR 271 trillion in the Bangka Belitung tin trade case, serves as a pivotal yet controversial precedent. This figure resulted from an extensive application of Permen LH 7/2014, dominated by ecological losses (IDR 157.7 T) and ecosystem service losses (IDR 60.2 T). To estimate the value of environmental damage resulting from illegal mining, this study uses a model that combines the cost of environmental restoration with the economic value of ecosystem services lost during the period of damage. The model is expressed as follows:

a. **Total Loss = (Degraded Area × Unit Restoration Cost) + (Ecosystem Service Value × Duration)**

The first component represents the cost to restore the damaged area, calculated based on the extent of the affected land and the estimated restoration cost per unit of area. The second component reflects the value of ecosystem services that cannot be enjoyed while the environment remains damaged. It includes the loss of ecological functions and other ecosystem benefits until recovery is achieved.

In this study, the formula is used as an analytical tool to explain how environmental damage can be translated into an economic value. The resulting calculation provides a basis for examining whether environmental restoration costs may be considered part of state financial losses in cases of illegal mining and, therefore, be taken into account in the enforcement of anti-corruption law.[33] During the trial, a substantial debate erupted regarding the validity of "ecosystem services" as a state financial loss. The defense argued that these are abstract values that have never been recorded in the state's budget (APBN), thereby failing the "shortage of money" definition under the State Treasury Law. Conversely, progressive judges hold that because the state possesses the "Right to Control" over nature

[33] Indah Sri Utari et al., "A Criminological Perspective on Corruption as a Catalyst of Economic Breakdown: Socio-Legal Challenges in Indonesian Environmental Governance," *Jambe Law Journal* 9, no. 1 (2026): 205–47, https://doi.org/10.22437/jmj4ac47.

(Article 33 of the Constitution), any decline in ecological value constitutes a real financial loss. This discourse demonstrates that for practitioners, calculation methods based on Permen LH 7/2014 are not merely about numbers, but about a collision of doctrines between formal legal certainty and substantive ecological justice

b. Court Decisions in Environmental Damage Cases Analyzing Judicial Activism and Substantive Justice

While Constitutional Court Decision No. 25/PUU-XIV/2016 attempted to restrict the scope of corruption to "actual" financial losses, panels of judges in cases involving illegal mining in Bangka Belitung have exercised judicial activism. In this context, judicial activism is not mere disregard of positive law, but rather a broad and purposive interpretation of the "State Financial Loss" element to encompass ecological destruction.

In Decision No. 70/Pid.Sus-TPK/2024/PN.Jkt.Pst, the court addressed the Constitutional Court's "actual loss" requirement by redefining the nature of state assets. The judges reasoned that natural resources, under Article 33 of the 1945 Constitution, are state-controlled assets with inherent economic value. Consequently, any degradation of these resources constitutes a "real" reduction in the state's wealth. The court explicitly noted:

"Environmental damage is not merely a physical change to the landscape, but a quantifiable decrease in the state's ecological capital. Therefore, the valuation of such damage under Permen LH 7/2014 fulfills the criteria of a 'certain and real' loss to the state treasury."

By framing ecological services as part of the state's economic balance sheet, the judges did not "disregard" the Constitutional Court but rather expanded the definition of "actual" to include environmental forensics.[34]

[34] Diandra Preludio Ramada et al., "Marine Pollution and Fishermen's Rights: A Socio-Legal Examination of Coastal Environmental Law in Indonesia," *Indonesian*

The analysis in Table 3 is based on three indicators: (i) the legal basis cited by the court, (ii) the treatment of environmental restoration costs in the judgment, and (iii) the court's interpretation of the concept of state financial losses. These indicators are used to distinguish between a formal approach and a more substantive approach adopted by different courts.

Table 3. Judicial Activism in Recognizing Environmental Damage as State Loss in Corruption Court Decisions

No.	Court Decision	Legal Basis for Activism	Judicial Outcome
1	PN Jkt Pst No. 70/2024	Article 33 of the 1945 Constitution & Purposive Interpretation of Law No. 31/1999.	Recognized IDR 271T as state loss; prioritized the "Right to a Healthy Environment" over narrow accounting.
2	PT DKI No. 1/2025	Systematic Interpretation: Linking UU PPLH (Environmental Law) with UU Tipikor (Anti-Corruption Law).	Upheld the inclusion of restoration costs as a mandatory component of state financial restitution.
3	PT DKI No. 2/2025	The "Social Impact of Corruption" doctrine as an aggravating factor in sentencing.	Affirmed that massive environmental harm justifies maximum statutory penalties regardless of the "actual loss" debate.
4	PT DKI No. 3/2025	Judicial Discretion: Setting a precedent that ecological loss is a "Public Loss" equates to "State Loss."	Reinforced the move toward a green anti-corruption framework.

Source: Supreme Court Decision Directory

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The judicial activism observed in these cases reflects a response to the "legal vacuum" created when formal accounting methods fail to capture the multi-generational cost of illegal mining. Instead of relying solely on judicial discretion, the judges utilized systematic interpretation, viewing the Anti-Corruption Law through the lens of environmental human rights. The application of the Polluter Pays Principle in these cases reflects the idea that the economic consequences of environmental damage should be borne by the party that caused the harm. If the costs of environmental restoration are excluded from the assessment of state losses, the financial burden of repairing the damaged ecosystem may ultimately fall on the state. For this reason, several judges considered environmental restoration costs an important element in evaluating the overall losses resulting from illegal mining activities. At the same time, the state bears the multi-trillion rupiah cost of reclamation.

The claim of "proportional punishment" must be weighed against the IDR 271 trillion loss. While no single defendant was fined the full amount, the courts utilized additional penalties under Article 18 of the Anti-Corruption Law, specifically the payment of "replacement money" (*uang pengganti*) tailored to the cost of environmental restoration.[35]

Sentencing was deemed proportional because the judges applied the maximum prison terms (near the 20-year statutory limit) and substantial fines, noting that the "extraordinary nature" of the environmental harm exacerbated the defendants' culpability. By aligning the severity of the sentence with the scale of ecological devastation, the judiciary sought to create a

[35] Diandra Preludio Ramada and Indah Sri Utari, "Unveiling the Surge in Corruption: A Menacing Threat to Indonesia's Stability in Anti-Corruption Law Reform," *Journal of Law and Legal Reform* 5, no. 1 (2024), https://doi.org/10.15294/jllr.vol5i1.2092.

deterrent effect that formalist interpretations of state loss previously failed to provide.[36]

Conclusion

This study concludes that the paradigm shift from "potential loss" to "actual loss," as established by Constitutional Court Decision No. 25/PUU-XIV/2016, has created a significant normative barrier to environmental justice in the enforcement of corruption laws. While the decision was intended to provide legal certainty for state officials, in the mining industry, this shift has effectively narrowed the scope of law enforcement. Ecological damage is inherently long-term and non-linear, often leading to its categorization as speculative or hypothetical loss, difficult to convert into immediate "cash" figures within the traditional state accounting balance sheet.

In addressing how courts decide these cases, the research identifies a dualistic, fragmented judicial trend. On one hand, there is a formalist-restrictive path where the majority of courts strictly adhere to the 2016 Constitutional Court precedent. These courts reject environmental components as part of state losses, viewing them as hypothetical, which frequently results in defendants being acquitted of financial liability for ecological destruction. On the other hand, a progressive-activist path has emerged, as evidenced in Decision No. 70/Pid.Sus-TPK/2024, where judges prioritize substantive justice. In this context, substantive justice is operationally defined as a legal interpretation that recognizes "ecosystem service values" as an inseparable part of state wealth. By linking the "Right to Control by the State" over natural resources to ecological health, judges have successfully elevated restoration costs from mere estimates to "actual" state financial losses.

Although this study is based on cases from Bangka Belitung Province, the legal issues identified are not unique to that region. The concepts of state financial losses, the application of the Anti-Corruption Law, and the regulation of environmental restoration are governed by

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36 Indah Sri Utari et al., "Legal Protection for Child Sexual Violence Victims: Victimology Perspectives, Challenges, and Policy Solutions in Asia," *Jurnal Suara Hukum* 8, no. 1 (2026), https://doi.org/10.26740/jsh.v8n1.p40-77.

national laws that apply nationwide in Indonesia. Therefore, the difficulties found in calculating environmental damage as state financial losses may also arise in other regions where illegal exploitation of natural resources occurs. In this context, Bangka Belitung serves as a case study that illustrates broader challenges in integrating environmental protection into the enforcement of corruption law. Based on these findings, this study proposes three strategic interventions to strengthen the legal framework and improve accountability for environmental damage.

First, there is a pressing need for a legislative amendment to the Anti-Corruption Law to explicitly include "environmental restoration costs" and the "loss of ecosystem services" within the statutory definition of state financial loss. Second, regulatory harmonization must be achieved by integrating the technical calculation methods set out in Minister of Environment Regulation No. 7 of 2014 into the auditing standards of the State Audit Board (BPK) to ensure high evidentiary weight. Third, the Supreme Court should issue a Circular Letter (SEMA) to provide unified guidelines for judges in calculating environmental losses, thereby preventing the current disparity in verdicts that undermines legal certainty.

Finally, the author acknowledges the limitations of this study, particularly its reliance on a selective subset of court decisions and secondary legal materials from 2015 to 2024, which may not capture the full spectrum of judicial attitudes in less-publicized regional cases. Consequently, future research should undertake comparative studies with international jurisdictions that have successfully codified "ecocide" or environmental corruption into their legal systems. Furthermore, empirical legal studies are recommended to analyze the psychological and sociological factors that drive judges toward judicial activism in environmental cases.

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