



Reformulating Corporate Criminal Liability for Environmental Damage through Restoration-Oriented Sanctions and Compliance Mechanisms in Indonesia Framework



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Abstract

Environmental degradation in Indonesia is increasingly driven by corporate activities, yet corporate criminal liability remains ineffective in delivering deterrence and ecological recovery. This reflects a structural gap between the normative objectives of environmental protection and enforcement outcomes, primarily due to fragmented liability standards and the dominance of fine-centered sanctions. This study aims to reformulate corporate criminal liability by integrating restoration-oriented sanctions and corporate compliance mechanisms into a coherent framework. Using normative doctrinal legal research, this study analyzes statutory regulations, legal principles, and comparative practices to identify structural deficiencies and construct prescriptive arguments. The findings reveal that the existing framework produces largely symbolic enforcement, characterized by limited attribution of corporate responsibility and the absence of mandatory restoration obligations. Financial penalties alone fail to deter misconduct or remedy environmental harm. This study argues that restoration-oriented sanctions reorient criminal punishment toward ecological recovery, while compliance mechanisms embed preventive accountability within corporate governance. The originality lies in advancing an integrated liability model that positions restoration and compliance as core elements of corporate criminal responsibility, contributing to an outcome-oriented approach to environmental criminal law and offering concrete directions for strengthening environmental governance in Indonesia.

Keywords: Corporate Environmental Liability; Restoration-Oriented Sanctions; Compliance-Based Enforcement

I. Introduction

Indonesia is currently experiencing escalating environmental degradation predominantly driven by corporate activities, marked by increasing scale, intensity, and structural complexity¹. Corporate practices such as large-scale deforestation, extractive mining, land conversion for plantations, and industrial pollution have caused severe ecological consequences, including biodiversity loss, declining air and water quality, and long-term

¹ V. N. Xuan. "Determinants of environmental pollution: Evidence from Indonesia". *Journal of Open Innovation: Technology, Market, and Complexity*. vol. 10, no. 4, p. 5, 2024 <https://doi.org/10.1016/j.joitmc.2024.100386>

ecosystem disruption. These impacts indicate that environmental damage in Indonesia is no longer incidental but systemic in nature. The persistence of such damage reflects enduring weaknesses in regulatory control and corporate accountability mechanisms.

Although Indonesia has established a legal framework recognizing corporations as subjects of criminal liability for environmental harm, environmental degradation continues to intensify. The enforcement of corporate criminal liability has not produced meaningful environmental recovery or sustained behavioral change among corporate actors.² This condition exposes a significant discrepancy between the normative objectives of environmental protection law and its practical implementation. Criminal law, while formally available, has not functioned effectively as an instrument for environmental protection.

One of the principal weaknesses in the current enforcement framework lies in the dominance of fine-centered criminal sanctions. Monetary penalties remain the primary punitive response to corporate environmental crimes, yet they frequently operate as operational costs rather than effective deterrents. Such sanctions rarely compel corporations to undertake ecological restoration or prevent future harm.³ Consequently, criminal punishment fails to achieve its broader objectives of deterrence, prevention, and environmental recovery, while also encouraging superficial compliance that prioritizes formal legality over substantive ecological outcomes.

In response to the limitations of fine-centered sanctions identified across various jurisdictions, recent developments in environmental legal scholarship and comparative regulatory practices demonstrate a growing shift toward restoration-oriented enforcement models. These approaches reposition ecological recovery as a core objective of criminal sanctions by requiring offenders to actively engage in remediation, rehabilitation, or restoration efforts. Restoration-oriented sanctions align criminal liability with environmental protection goals by extending responsibility beyond financial compensation toward tangible ecological outcomes.⁴ Such models reflect an evolving understanding of environmental justice that emphasizes recovery of damaged ecosystems rather than purely punitive responses.

In parallel, compliance-based enforcement mechanisms have emerged as important tools for preventing environmental harm through proactive corporate governance and environmental risk management. By embedding compliance obligations within liability frameworks, corporations are incentivized to prevent environmental damage rather than merely respond after violations occur. However, Indonesia's existing corporate criminal liability framework remains fragmented and predominantly reactive, with limited integration between punishment, restoration obligations, and compliance mechanisms.⁵ This condition points to the absence of a coherent framework capable of aligning corporate criminal liability with environmental recovery and long-term sustainability objectives.

Existing scholarship on corporate criminal liability for environmental damage has developed along three primary analytical trajectories: punitive sanction regimes grounded in deterrence theory, restoration-oriented approaches rooted in ecological justice, and compliance-based enforcement reflecting regulatory governance models. However, these strands remain structurally disaggregated at both doctrinal and functional levels. Prior studies typically isolate the inefficiencies of fine-centered sanctions, the normative justification for environmental restoration, or the governance role of compliance systems, without examining how these elements are embedded within the architecture of criminal liability itself. Consequently, the

² T. Y. Chandra & B. Sobirov. "Corporate Criminal Liability for Illegal Toxic and Hazardous Waste Dumping". *Jurnal Ilmu Hukum Asosiasi Pimpinan Perguruan Tinggi Hukum Indonesia*. vol. 10, no. 1, p. 130, 2023. <https://doi.org/10.58829/lp.10.1.2023.123-140>

³ R. Torodji, Hartwiningsih, I. G. A. K. R. Handayani, & M. Nur. "The Role of the Corporate Penalty System Environmental Regulation". *Journal of Human Rights, Culture and Legal System*. vol. 3, no. 3, p. 607, 2023. <https://doi.org/10.53955/jhcls.v3i3.179>

⁴ A. Jiwanti. "Reorientation of Environmental Criminal Law Enforcement through the Formulation of Corporate Community Service Orders". *Journal of Multidisciplinary Research and Development*. vol. 7, no. 2, p. 981, 2025. <https://doi.org/10.38035/rrj.v7i2>

⁵ N. K. A. Sari. "Criminal Liability for Corporate Crime in Indonesia". *Al-Manhaj Jurnal Hukum dan Pranata Sosial Islam*. vol. 5, no. 1, p. 870, 2023. <https://doi.org/10.37680/almanhaj.v5i1.2687>

literature does not adequately explain how corporate criminal law can function as an integrated system capable of simultaneously delivering punishment, ecological repair, and behavioral prevention.

This fragmentation generates not merely a theoretical limitation, but a structural misalignment between the design of corporate criminal liability and the regulatory objectives of environmental protection, particularly in the Indonesian context. The existing framework lacks an integrated liability structure, resulting in enforcement that is inherently partial: sanctions impose punishment without ensuring restoration, restoration is not systematically mandated as a legal consequence, and compliance mechanisms remain external to the attribution of liability. This disjunction produces a liability regime that is formally valid but functionally incomplete, incapable of aligning legal responsibility with environmental outcomes.

This study addresses this structural deficiency by developing an integrated liability model that systematically embeds restoration-oriented sanctions and compliance mechanisms within the core structure of corporate criminal responsibility. The novelty of this research lies in its explicit departure from prevailing fragmented approaches by reconceptualizing restoration and compliance not as auxiliary or post hoc instruments, but as constitutive elements that directly shape the attribution of liability, the design of sanctions, and the objectives of criminal enforcement. Unlike prior studies that treat restoration as remedial and compliance as external governance, this study integrates both within the normative architecture of liability itself.

In doing so, this research does not merely refine existing doctrines but redefines corporate criminal liability from a sanction-centered model into an outcome-oriented framework that simultaneously integrates punishment, ecological recovery, and prevention within a single legal structure. This systemic reconstruction aligns criminal law with the demands of environmental governance and strengthens its capacity to produce substantive regulatory outcomes.

The urgency of this research is structural and immediate. The persistence of environmental degradation, combined with the normalization of monetary sanctions as calculable operational costs, demonstrates that the existing liability regime not only fails to internalize environmental harm but also generates perverse incentives that tolerate its continuation. In its current configuration, corporate criminal liability risks degenerating into a compliance-neutral, cost-absorptive system that legitimizes harm rather than deters it. Without integrating restoration obligations and compliance mechanisms into the core structure of liability, environmental criminal law cannot function as a credible instrument of deterrence or ecological recovery. Accordingly, the development of an integrated liability model is imperative to restore the regulatory effectiveness of criminal law and to secure its role in sustainable environmental governance in Indonesia.

II. Research Problems

Based on the background above, the problems in this study are:

1. How is corporate criminal liability for environmental damage currently regulated and enforced in Indonesia, and what structural weaknesses limit its effectiveness?
2. How can restoration-oriented sanctions be normatively integrated into corporate criminal liability to ensure substantive environmental recovery?
3. How can corporate compliance mechanisms be legally positioned within the corporate criminal liability framework to strengthen prevention and accountability?

III. Research Methods

This study employs a normative (doctrinal) legal research design to reformulate corporate criminal liability for environmental damage in Indonesia. It adopts a statute-based, conceptual, and comparative approach to examine the structure and operation of corporate environmental liability within the existing legal framework. Primary legal materials include Law No. 32 of 2009 on Environmental Protection and Management, its implementing regulations, and relevant provisions on corporate criminal liability, complemented by international environmental instruments and comparative legal sources as normative

benchmarks. Statutory provisions are analyzed using systematic and teleological interpretation to assess their internal coherence and alignment with environmental protection objectives.

The analysis integrates doctrinal interpretation with conceptual and comparative evaluation. Theoretical perspectives on deterrence, restoration, and regulatory compliance are employed as analytical lenses to assess whether the current liability regime effectively integrates punishment, ecological recovery, and prevention. A normative gap analysis is conducted to identify structural inconsistencies between the existing framework and the functional requirements of effective environmental enforcement, particularly regarding the dominance of fine-centered sanctions and the absence of mandatory restoration obligations. These findings are further examined through comparative insights to extract transferable legal principles. Based on this integrated analysis, the study develops a prescriptive liability model that embeds restoration obligations and compliance mechanisms within the core structure of corporate criminal responsibility, ensuring coherence with environmental governance objectives and practical applicability.

IV. Result and Discussion

1. Deficiencies of Existing Corporate Criminal Liability in Environmental Enforcement

Corporate criminal liability in environmental law reveals substantial weaknesses that undermine effective environmental enforcement. Although corporate actors are formally recognized as subjects of criminal liability, the application of this liability remains inconsistent and fragmented. These deficiencies are not merely technical but structural, affecting the overall capacity of environmental criminal law to function as an effective regulatory instrument.⁶ As a result, corporate accountability for environmental harm is often symbolic rather than substantive. This condition reflects deeper problems within the design and implementation of the existing liability framework.

One of the most fundamental deficiencies lies in the fragmentation of liability standards across environmental regulations. Corporate liability norms are dispersed among various sectoral laws, creating inconsistencies in defining when and how corporations can be held criminally responsible.⁷ This fragmentation complicates enforcement by producing divergent thresholds of liability across different environmental sectors. Consequently, similar forms of environmental harm may result in unequal legal consequences depending on the regulatory regime applied. Such inconsistency weakens legal certainty and undermines the principle of equality before the law.

The lack of a unified framework for corporate criminal liability also impedes prosecutorial effectiveness. Enforcement authorities face difficulties in determining the appropriate legal basis for charging corporate offenders due to overlapping and unclear provisions.⁸ This situation increases the risk of selective enforcement and discretionary decision-making that is not grounded in uniform standards. As a result, corporate offenders may exploit regulatory ambiguities to avoid criminal responsibility. The enforcement gap created by this condition diminishes the deterrent function of environmental criminal law.

Institutional limitations further exacerbate the weaknesses of corporate criminal liability enforcement. Environmental crimes committed by corporations often involve complex organizational structures and sophisticated operational processes.⁹ Law enforcement agencies frequently lack the technical capacity and institutional coordination required to investigate and

⁶ Y. Fernando. "Corporate Criminal Liability in Environmental Cases". *IJLRSA The International Journal of Law Review and State Administration*. vol. 3, no. 3, p. 70, 2025.

⁷ L. Saipudin, Salim HS, Rodliyah, & L. Wulandari. "The Concept of Corporate Criminal Liability in The Indonesian Criminal Law System". *Jurnal IUS Kajian Hukum dan Keadilan*. vol. 13, no. 2, p. 480, 2025. <http://dx.doi.org/10.29303/ius.v13i2.1817>

⁸ H. Harris. "Corporate Liability within the IACC Framework: A Proposal for Enhanced Corporate Accountability". *Transnational Criminal Law Review*. vol. 2, no. 1, p. 81, 2023. <https://doi.org/10.22329/tclr.v2i1.7906>

⁹ E. H. Tarigan & Y. M. Saragih. "Corporate Criminal Liability in Oil and Gas Sector Crimes in Indonesia". *Jurnal Riset Rumpun Ilmu Sosial Politik dan Humaniora*. vol. 3, no. 3, p. 57, 2024. <https://doi.org/10.55606/jurrish.v3i3.6475>

prosecute such cases effectively. These limitations reduce the likelihood of successful enforcement and contribute to a perception of low accountability among corporate actors. In practice, weak enforcement capacity reinforces corporate impunity rather than compliance.

Another significant deficiency arises from the difficulty of attributing criminal responsibility to corporate entities. Existing enforcement practices often rely on proving the fault or intent of individual corporate managers rather than addressing the structural nature of corporate decision-making.¹⁰ This approach inadequately reflects the reality that environmental harm is frequently the result of institutional policies rather than isolated individual actions. Consequently, corporate liability becomes dependent on individual culpability, limiting its effectiveness. This misalignment undermines the capacity of criminal law to address corporate environmental harm comprehensively.

The effectiveness of corporate criminal liability is further weakened by an excessive reliance on monetary fines as the primary sanction. Financial penalties are commonly imposed without consideration of their actual deterrent or corrective impact.¹¹ In many cases, fines are absorbed as part of operational costs rather than functioning as meaningful punishment. This practice fails to reflect the scale of environmental damage caused and does not compel corporations to alter harmful practices. As a result, monetary sanctions alone are insufficient to achieve environmental justice.

The dominance of fine-centered sanctions also obscures the restorative dimension of environmental protection. Existing sentencing frameworks rarely require corporations to undertake concrete actions to restore damaged ecosystems. Without mandatory restoration obligations, criminal sanctions remain disconnected from environmental recovery objectives.¹² This disconnect allows corporations to resolve legal violations through financial payment while leaving ecological harm unaddressed. Consequently, environmental degradation persists despite formal enforcement actions.

The absence of restorative components in corporate criminal liability undermines both accountability and deterrence. When sanctions do not require remediation, corporations lack incentives to internalize the environmental costs of their activities.¹³ This condition encourages repeated violations, particularly among financially powerful corporate actors. Criminal liability that fails to incorporate restoration measures cannot effectively prevent future harm. Therefore, the current enforcement model remains reactive rather than corrective.

A further deficiency is the absence of a mandatory linkage between criminal conviction and environmental recovery obligations. Existing legal frameworks do not consistently require convicted corporations to engage in ecological restoration as part of their punishment. This gap results in enforcement outcomes that prioritize punishment over remediation. Without explicit legal obligations for recovery, environmental harm remains unresolved even after criminal proceedings conclude. Such outcomes weaken public trust in environmental law enforcement.

The lack of mandatory recovery obligations also undermines the coherence of environmental criminal law with deterrence theory. Effective deterrence requires sanctions that impose tangible consequences proportionate to the harm caused.¹⁴ However, when corporate offenders can satisfy legal responsibility through fines alone, sanctions lose their preventive impact. Environmental criminal law thus fails to discourage future violations or promote sustainable corporate behavior. This misalignment highlights the need for sanctions that integrate

¹⁰ E. Berglof & S. Claessens. "Enforcement and Corporate Governance". *The World Bank Research Observer*. vol. 21, p. 7, 2004.

¹¹ M. O. Alzwaie & A. Aljahani. "Corporate Criminal Liability for Money Laundering in Light of International Standards: A Comparative Perspective". *Corporate Law & Governance Review*. vol. 7, no. 4, p. 41, 2025. <https://doi.org/10.22495/clgrv7i4p4>

¹² R. Saputra, A. Usada, & M. S. Islam. "Ecological Justice in Environmental Criminal Sanctions for Corporations in Indonesia: Problems and Solution". *Journal of Law, Environmental and Justice*. vol. 2, no. 1, p. 3035, 2024. <https://doi.org/10.62264/jlej.v2i1.19>

¹³ T. R. Zarzani, Ismaidar, & M. Sihombing. "Corporate Criminal Liability in Environmental Pollution Crimes". *International Journal of Sociology and Law*. vol. 1, no. 3, p. 36, 2024. <https://doi.org/10.62951/ijsl.v1i3.101>

¹⁴ C. A. Pazvantoglu. "Ecocide as a Separate Crime under the Rome Statute: A Legal Analysis of the Discourse". *Environmental Policy and Law*. vol. 55, no. 2-3, p. 61, 2025. <https://doi.org/10.1177/18785395251351171>

both punitive and restorative elements.

Inconsistencies in legal definitions and penalty structures fundamentally undermine the effectiveness of corporate criminal liability by generating systemic uncertainty within the enforcement framework. Ambiguous norms and uneven sanctioning schemes do not merely complicate interpretation, but disrupt the coherence of liability attribution and erode the predictability of legal consequences. This condition enables corporations to strategically exploit regulatory ambiguities to minimize exposure to meaningful sanctions, thereby weakening the normative authority of environmental criminal law. More critically, the absence of clear and uniform standards transforms sanctions into contingent and negotiable outcomes, diminishing their credibility as instruments of deterrence and facilitating patterns of strategic compliance rather than genuine behavioral change.

Taken together, these deficiencies demonstrate that the existing framework of corporate criminal liability is not only inadequate but structurally misaligned with the regulatory objectives of environmental protection. Fragmented liability standards, fine-centered sanctions, weak attribution mechanisms, and the absence of mandatory restoration obligations collectively produce a liability regime that fails to integrate its core functions – deterrence, remediation, and prevention – into a coherent system. In this configuration, criminal liability permits formal compliance while tolerating substantive environmental harm, reducing enforcement to a largely symbolic exercise. Such a system does not merely fail to prevent environmental damage but actively normalizes it as a manageable cost of doing business. Accordingly, effective reform requires not incremental doctrinal adjustment, but a fundamental restructuring of the liability framework. The following section therefore develops a model that integrates restoration-oriented sanctions and compliance mechanisms as constitutive elements of a reconfigured system of corporate criminal liability.

2. Restoration-Oriented Sanctions as a Normative Reform Model

Restoration-oriented sanctions represent a reform pathway that addresses the structural disconnection between criminal punishment and environmental recovery. This model does not replace criminal liability but reorients its outcomes toward ecological repair and sustained corporate accountability.¹⁵ The central premise is that corporate punishment in environmental cases should be assessed not merely by the severity of penalties but by the extent to which sanctions restore damaged ecosystems. From a doctrinal perspective, restoration-oriented sanctions function as a normative bridge between environmental protection objectives and criminal sentencing structures. Accordingly, this section examines the conceptual basis, legal justification, and comparative implementation of restoration-based sanctions as a coherent reform model.

Restoration-oriented sanctions are grounded in a restorative justice framework that conceptualizes environmental harm as an injury requiring repair rather than solely condemnation. Restorative justice reframes the purpose of criminal sanctions from retribution toward repairing harm and restoring disrupted relationships. In environmental contexts, the harmed parties include ecosystems and communities whose well-being depends on ecological integrity.¹⁶ This perspective supports the view that corporate accountability must incorporate concrete obligations to rehabilitate environmental functions. Consequently, restoration-oriented sanctions align criminal liability with environmental justice by prioritizing recovery as a measurable enforcement outcome.

Environmental crimes typically generate diffuse, cumulative, and long-term harms that are inadequately addressed through conventional sanctions. Monetary penalties reduce complex ecological losses to abstract financial values, leaving environmental functions impaired. Restoration-oriented sanctions respond to this limitation by obligating offenders to participate

¹⁵ M. I. Budiarto & B. T. Bawono. "The Concept of Restorative Justice as an Alternative for Resolving Environmental Crimes Involving Corporations". *Ratio Legis Journal*. vol. 3, no. 1, p. 1186, 2024.

¹⁶ F. A. Ndaru. "Restorative Environmental Law Enforcement: Ensuring Environmental Restoration and Compliance Through Multiple Legal Instruments". *Asia Pacific Journal*. vol. 10, no. 2, p. 5, 2025. <https://doi.org/10.21532/apfjournal.v10i2.379>

directly in ecological recovery.¹⁷ This approach transforms corporate accountability from symbolic punishment into tangible remediation. It also reinforces the normative position that restoration should be treated as a core consequence of environmental crime.

From the perspective of deterrence theory, restoration-oriented sanctions enhance compliance by imposing obligations that cannot be easily internalized as routine business costs. Financial fines may be absorbed without altering corporate behavior, particularly where enforcement risks are perceived as low. Restoration mandates impose operational, reputational, and long-term compliance burdens that are more difficult to externalize.¹⁸ These consequences compel corporations to confront the environmental impacts of their activities directly. As a result, restoration-oriented sanctions function as both corrective and preventive enforcement tools.

Environmental restoration orders and remediation obligations serve as the primary instruments for operationalizing restoration-oriented sanctions. Restoration orders require convicted corporations to undertake specific actions aimed at repairing ecological damage. Remediation obligations translate recovery objectives into enforceable duties, such as rehabilitation, cleanup, or ecosystem function restoration. These mechanisms shift criminal enforcement from abstract punishment toward verifiable performance outcomes. Their legitimacy depends on a clear causal link between the proven violation and the restoration measures imposed.

Comparative legal practice demonstrates that restoration-oriented sanctions have been incorporated into environmental criminal enforcement in several jurisdictions. In the United States, restoration and remediation orders form an integral part of criminal sentencing for environmental offenses, particularly under federal environmental statutes addressing pollution and habitat destruction.¹⁹ These sanctions require corporate offenders to restore affected ecosystems as a condition of criminal liability. Restoration is treated as a mandatory outcome rather than a discretionary supplement. This model reinforces the corrective function of criminal law.

In the European Union, restoration obligations are embedded within environmental liability regimes that emphasize the “polluter pays” principle. Member states implement restoration-oriented measures that require responsible entities to restore damaged environments or compensate through equivalent ecological restoration. Criminal enforcement is often coordinated with administrative restoration mechanisms, ensuring continuity between liability determination and environmental recovery. This integrated approach strengthens enforcement coherence. Restoration operates as a legally enforceable obligation tied to environmental harm.

Australia provides another comparative reference in the application of restoration-oriented sanctions. Environmental enforcement mechanisms increasingly incorporate mandatory remediation orders accompanied by judicial supervision.²⁰ Community involvement is often encouraged to ensure that restoration efforts reflect local ecological needs. This participatory model enhances transparency and accountability. Restoration obligations are framed as enforceable consequences of environmental violations rather than voluntary corporate initiatives.

In India, environmental criminal enforcement has evolved toward incorporating restoration measures alongside punitive sanctions. Courts increasingly require corporate offenders to engage in environmental rehabilitation as part of criminal outcomes. This approach reflects judicial recognition that punishment alone is insufficient to address ecological harm. Restoration functions as a corrective obligation linked directly to the offense. The Indian experience demonstrates judicial willingness to integrate restorative objectives within criminal

¹⁷ Z. Savasan. “Penalizing Environmental Harm: Merits, Limits and Alternatives”. *Anadolu Universitesi Hukuk Fakultesi Dergisi*. vol. 11, no. 2, p. 556, 2025. <https://doi.org/10.54699/andhd.1688562>

¹⁸ Y. Zhou. “Raising the deterrent effect of the U.S. deferred prosecution agreement: New perspectives on the U.S. from the U.K. and Jersey”. *Journal of Economic Criminology*. vol. 10, p. 7, 2025. <https://doi.org/10.1016/j.jeconc.2025.100189>

¹⁹ A. W. Putra. “Environmental Restoration as a Principal Punishment in Indonesia Environmental Crimes: Restorative Justice in Formulation”. *IOP Conference Series: Earth and Environmental Science*. p. 6, 2025. <https://doi.org/10.1088/1755-1315/1537/1/012066>

²⁰ J. V. D. Heijden. “Competitive Enforcement: Comparative Analysis of Australian Building Regulatory Enforcement Regimes”. *IOS Press*. p. 27, 2008..

liability frameworks.

Comparative experience also reveals common challenges in implementing restoration-oriented sanctions. Jurisdictions frequently encounter difficulties in defining measurable restoration benchmarks and monitoring compliance.²¹ Ecological harm is often complex and cumulative, complicating assessment and verification. Without clear parameters, restoration obligations risk becoming symbolic. These challenges underscore the need for precise legal formulation and institutional support.

In the Indonesian context, comparative insights serve as sources of transferable design principles rather than direct legal transplants. These principles include the mandatory linkage between conviction and restoration, clarity of obligations, and credible compliance supervision. Where enforcement has traditionally emphasized financial penalties, restoration-oriented sanctions introduce an outcome-based enforcement logic.²² However, successful adaptation requires alignment with domestic institutional capacity. Comparative analysis thus informs calibration rather than replication.

The positioning of restoration-oriented sanctions within sentencing structures must be understood not merely as a policy choice, but as a reflection of the underlying theory of corporate criminal liability. Within a deterrence-based framework, sanctions are expected to impose non-transferable and non-externalizable costs that alter corporate behavior. However, fine-centered sanctions frequently fail to meet this requirement, as they can be internalized as operational expenses. In this context, restoration-oriented sanctions serve a distinct theoretical function by linking liability directly to the material consequences of environmental harm. Where restoration is embedded as a core component of sentencing, criminal liability operates not only as a punitive mechanism but as a corrective instrument that aligns adjudication with ecological recovery. Conversely, when restoration remains discretionary, liability becomes structurally incomplete, as punishment is detached from remediation, thereby undermining both deterrence and the integrity of the liability system. Restoration must therefore be conceptualized as a constitutive element of sentencing that integrates retributive, corrective, and preventive functions within a unified liability framework.

From the perspective of criminal law theory, the legitimacy of restoration-oriented sanctions depends on their consistency with foundational principles such as proportionality, legal certainty, and due process. These principles do not merely constrain punishment, but structure the conditions under which liability can be justified and enforced. Restoration obligations must be proportionate to the environmental harm established through adjudication, ensuring that sanctions reflect both the gravity and the material consequences of the offense. At the same time, legal certainty requires that restoration duties be clearly defined, measurable, and enforceable, thereby avoiding indeterminate obligations that risk arbitrary application. In this regard, restoration operates at the intersection of restorative justice and classical criminal law principles, requiring a balance between ecological repair and procedural legitimacy. Normative precision is therefore essential not only to safeguard fairness, but also to ensure that restoration-based liability remains doctrinally coherent and practically enforceable.

The effectiveness of restoration-oriented sanctions is further shaped by insights from regulatory theory, particularly the concept of cost internalization. Environmental harm often persists because its costs are externalized to society and ecosystems. Restoration obligations counter this dynamic by reassigning those costs to the offender in a non-substitutable form that cannot be discharged through monetary payment alone. However, the success of this mechanism depends on the existence of an enforcement architecture capable of translating legal obligations into verifiable ecological outcomes. Monitoring systems, reporting mechanisms, and inter-agency coordination are therefore not ancillary features, but constitutive conditions that determine

²¹ D. Puspitaloka, Y.Kim, & H.Purnomo. "Analysis of Challenges, Costs, and Governance Alternative for Peatland Restoration in Central Kalimantan, Indonesia". *Trees Forests and People*. vol. 6, no. 2, p. 7, 2021. <https://doi.org/10.1016/j.tfp.2021.100131>

²² I. Kvirikashvili. "The Duties under the Doctrine of Superior Responsibility: What Can We Learn from Business Standards on Corporate Governance & Compliance?". *German Law Journal*. vol. 26, no. 4, p. 21, 2024. <https://doi.org/10.1017/glj.2024.66>

whether restoration functions as a real regulatory tool or remains merely symbolic. Without such institutional infrastructure, restoration risks degenerating into declaratory compliance without substantive impact.

Taken together, these theoretical and institutional considerations demonstrate that restoration-oriented sanctions represent more than a supplementary reform; they constitute a necessary reconfiguration of the structure of corporate criminal liability. By embedding restoration within the core logic of sentencing, liability is transformed from a sanction-centered model into an outcome-oriented system that integrates deterrence, ecological recovery, and prevention. Comparative practice confirms that such integration enhances both the credibility and effectiveness of environmental criminal law. Accordingly, corporate environmental liability must be reconceptualized around restoration as a constitutive element, providing the normative foundation for the subsequent incorporation of compliance-based mechanisms as a complementary preventive dimension.

3. Integrating Corporate Compliance Mechanisms into Criminal Liability Framework

Integrating corporate compliance mechanisms into the criminal liability framework introduces a preventive dimension that complements punitive and restoration-oriented approaches in environmental enforcement.²³ Compliance mechanisms operate *ex ante* by reducing the likelihood that environmental harm will occur in the first place. This preventive function is strategically important because corporate environmental offenses often produce cumulative, wide-ranging, and difficult-to-reverse impacts. Compliance, therefore, should not be treated solely as an internal corporate matter detached from public enforcement. Instead, it should be positioned as a structural component of corporate criminal accountability.

Corporate compliance programs are structured systems designed to secure adherence to applicable laws, regulatory standards, and internal policies relevant to environmental protection. They typically consist of internal rules, operational procedures, and oversight mechanisms that enable corporations to identify and control environmental risks.²⁴ The existence of a compliance program signals institutional awareness of legal duties rather than reliance on *ad hoc* responses after violations occur. Within corporate criminal liability, compliance functions as an indicator of responsible corporate governance. Accordingly, compliance has direct relevance to evaluating corporate conduct in environmental cases.

Effective compliance is not passive but prevention-oriented, aiming to detect and address risks before they materialize as legal violations. Risk identification is central to this function, as it enables corporations to recognize operational areas most prone to environmental harm.²⁵ Through structured risk assessment, corporations can implement mitigation measures that reduce the probability of unlawful conduct and ecological damage. Without such mechanisms, responses tend to occur only after harm has already taken place. Compliance thus operates as an early-control instrument within the broader architecture of corporate environmental accountability.

Training and internal education constitute another core component of compliance mechanisms. Training ensures that employees understand relevant environmental obligations and the legal consequences associated with non-compliance. This knowledge reduces the likelihood of operational misconduct that could escalate into environmental crime.²⁶ From a corporate criminal liability perspective, training evidences an institutional effort to prevent violations rather than merely manage reputational fallout. It also supports the development of a

²³ B. Rasyidi, G. Nachrawi, & Juwita. "The Principle of Strict Liability in Prosecuting Environmental Criminal Actions by Corporations". *Jurnal Humaniorum: Jurnal Hukum dan Ilmu Sosial*. vol. 1, no. 02, p. 45, 2023. <https://doi.org/10.37010/hmr.v1i02.13>

²⁴ L. Andreisova. "Building and Maintaining an Effective Compliance Program". *International Journal of Organizational Leadership*. vol. 5, no. 1, p. 31, 2016. <https://doi.org/10.33844/ijol.2016.60259>

²⁵ T. Aven & O. Renn. "Improving Government Policy on Risk: Eight Key Principles". *Reliability Engineering & System Safety*. vol. 176, p. 235, 2018. <https://doi.org/10.1016/j.res.2018.04.018>

²⁶ G. M. Odhiambo, E. W. Waiganjo, & A. N. Simiyu. "Green Employee Training – A Remedy for Environmental Behaviour: The Case of Public Universities in Kenya". *European Journal of Business & Management Research*. vol. 8, no. 5, p. 7, 2023. <https://doi.org/10.24018/ejbmr.2023.8.5.2142>

compliance culture, which is essential in reducing systemic risk. In this respect, compliance is simultaneously structural and cultural.

Internal reporting channels and whistleblower protections further strengthen the preventive capacity of compliance systems. Reporting mechanisms facilitate early detection of violations and enable prompt corrective action before environmental harm intensifies.²⁷ Whistleblower protections are necessary to incentivize transparency and reduce the risk that misconduct will be concealed. Without credible protection, employees may remain silent, allowing violations to persist and escalate. Consequently, reporting architecture forms a key safeguard in environmental compliance governance. This mechanism enhances internal accountability while supporting external enforcement objectives.

The effectiveness of compliance mechanisms increases significantly when they are explicitly integrated into the criminal liability framework. Such integration positions compliance as a relevant factor in assessing corporate fault and structuring sanctions. Where compliance failures carry the risk of criminal accountability, corporations gain stronger incentives to invest in credible internal controls.²⁸ This transforms criminal law from a purely reactive instrument into a driver of responsible corporate governance. In this sense, compliance becomes part of the normative logic of criminal accountability rather than an optional corporate practice.

In liability assessment, the presence or absence of a robust compliance program may indicate the corporation's institutional orientation toward environmental risk. A corporation that disregards compliance systems signals tolerance toward unlawful practices and elevated risk acceptance. Conversely, a corporation with meaningful compliance architecture demonstrates active efforts to prevent environmental harm. This distinction matters when evaluating the seriousness of corporate culpability and the proportionality of legal consequences. Compliance thus provides an evidentiary lens for assessing whether violations reflect systemic governance failures. Accordingly, compliance carries probative value in corporate environmental prosecutions.

Compliance integration also has direct implications for sentencing. In determining sanctions, compliance may serve as a differentiating factor between corporations exhibiting systemic negligence and those that have implemented preventive measures in good faith.²⁹ This enables more context-sensitive sentencing that better reflects degrees of organizational responsibility. Such differentiation supports fairness while maintaining deterrence. It also allows sanctions to be oriented toward organizational correction rather than exclusively toward punishment. Compliance, therefore, can function as a bridge between deterrence and corporate rehabilitation.

Compliance mechanisms also align with restorative objectives by supporting long-term prevention of recurrence. By requiring corporations to strengthen internal controls, compliance contributes to structural reform within the organization.³⁰ This reduces the likelihood of repeat offenses and supports sustained environmental protection outcomes. Restoration-oriented sanctions repair harm after the fact, while compliance mechanisms seek to prevent future harm through governance change. In combination, these approaches improve the integrity of environmental enforcement. Compliance thus contributes to environmental justice by supporting continuity between accountability and prevention.

Incentive-based enforcement provides an additional pathway for strengthening compliance and shaping corporate behavior. Incentives may include regulatory facilitation or sanction mitigation for corporations that demonstrate verifiable compliance performance. Such

²⁷ D. N. Maiviza & W. R. Kusumah. "Analysis of Internal Audit, Whistleblowing System and Organizational Culture in Fraud Prevention (A Case Study of PT Pos Indonesia)". *Journal of Accounting and Finance Management*. vol. 6, no. 3, p. 1616, 2025. <https://doi.org/10.38035/jafm.v6i3>

²⁸ C. X. Antunez, R. N. Darmadji, & Z. Q. Mangundihardjo. "Reinforcing Corporate Accountability in Indonesian Environmental Law: A Dialectical Examination of Strict Liability and Criminal Sanctions". *Law Review*. vol. 24, no. 1, p. 41, 2024. <http://dx.doi.org/10.19166/lr.v24i1.9675>

²⁹ A. Aviram. "In Defense of Imperfect Compliance Programs". *Florida State University Law Review*. vol. 32, no 2, p. 765, 2025.

³⁰ F. Castro, L. Leonori, & S. Giorgio. "A comprehensive review of literature on compliance function post-Basel III". *Journal of Financial Regulation and Compliance*. p. 21, 2025. <https://doi.org/10.1108/JFRC-04-2025-0093>

approaches encourage corporations to move beyond minimal legal adherence and toward proactive environmental stewardship. By linking benefits to measurable compliance behavior, enforcement shifts from mere penalty avoidance to sustained risk management.³¹ This combination of sanctions and incentives can generate a more effective compliance ecosystem. Importantly, incentives must remain conditional and evidence-based to avoid undermining deterrence.

Despite these advantages, compliance integration faces structural challenges. Not all corporations possess equal resources to establish comprehensive compliance systems, particularly in sectors with complex operational risks. In addition, regulatory ambiguity concerning how compliance should affect liability and sentencing may produce inconsistent enforcement outcomes.³² Such inconsistency can weaken the credibility of compliance as a legal mechanism. These challenges underscore the need for clear standards that define what constitutes adequate compliance. Without such standards, compliance may become either underutilized or misapplied.

A further challenge is the risk of formalistic compliance or “paper compliance,” where corporations adopt programs in form but not in substance.³³ In such cases, compliance documentation exists without genuine implementation or behavioral change. This undermines the preventive purpose of compliance and may distort judicial assessment if evaluation focuses merely on program existence. Compliance assessment must therefore prioritize effectiveness, operational integration, and demonstrable outcomes.³⁴ This approach ensures that compliance contributes meaningfully to environmental protection rather than serving as a defensive narrative. Preventive governance requires substance, not symbolism.

To function effectively within criminal law, the integration of compliance mechanisms requires not only regulatory clarity but a precise conceptual anchoring within the structure of corporate criminal liability. Legal frameworks must explicitly link compliance failures to liability attribution while defining their evidentiary and sentencing significance. In this configuration, compliance is no longer a matter of internal governance, but a legally operative factor that directly shapes the assessment of corporate fault and the proportionality of sanctions. Absent clear and harmonized standards across sectoral regimes, compliance remains vulnerable to interpretive fragmentation and regulatory arbitrage, thereby limiting its capacity to function as a constitutive element of criminal accountability.

Monitoring and verification are indispensable in transforming compliance from a formal obligation into an enforceable legal mechanism. From a regulatory perspective, compliance contributes to deterrence only when it produces verifiable behavioral change and resists reduction to symbolic or “paper” compliance. Oversight mechanisms—including reporting systems, independent verification, and inter-agency coordination—must therefore be understood not as administrative supports, but as structural conditions that determine the legal effectiveness of compliance. Without such enforcement architecture, compliance remains declaratory, incapable of generating meaningful preventive impact or reinforcing the credibility of liability.

In the Indonesian context, integrating compliance mechanisms addresses a structural deficiency in a liability regime that remains predominantly reactive and sanction-oriented. Ex post enforcement is inherently insufficient to address cumulative and irreversible environmental harm. Compliance introduces a preventive dimension by embedding risk management and institutional responsibility within corporate decision-making structures. However, its

³¹ A. Sneideriene & R. Legenzova. “Greenwashing prevention in environmental, social, and governance (ESG) disclosures: A bibliometric analysis”. *Research in International Business and Finance*. vol. 74, p. 61, 2025. <https://doi.org/10.1016/j.ribaf.2024.102720>

³² J. L. Short. “The politics of regulatory enforcement and compliance: Theorizing and operationalizing political influences”. *Regulation & Governance*. vol. 15, no. 3, p. 661, 2021. <https://doi.org/10.1111/rego.12291>

³³ S. Sangwa & M. Placide. “Compliance as the New Competence: How Obedience Cultures Erode Innovation and Leadership Ethics in Global Workplaces”. *Open Journal of Stewardship Economics & Ethical Innovation*. vol. 1, no. 1, p. 11, 2025. <https://zenodo.org/uploads/16576050>

³⁴ A. O. Ogedengbe, T. O. Jejenwa, H. O. Olawale, S. C. Friday, & M. N. Ameyaw. “Enhancing Compliance Risk Identification Through Data-Driven Control Self-Assessments and Surveillance Models”. *Shodhsharyam, International Scientific Refereed Research Journal*. vol. 6, no. 4, p. 231, 2023. <https://doi.org/10.32628/SHISRRJ>

effectiveness depends on alignment with domestic institutional capacity to avoid formalistic adoption without substantive transformation. The objective is not to shift enforcement responsibilities to corporations, but to align corporate governance with legally enforceable public obligations. Compliance must therefore be measurable, operational, and directly linked to liability consequences to function as a credible component of criminal law.

Conceptually, compliance reconfigures corporate criminal liability from a reactive sanctioning model into a preventive accountability system. It complements restoration-oriented sanctions by addressing behavioral and organizational dimensions that cannot be corrected solely through punishment or post hoc remediation. By incentivizing internal control, organizational learning, and risk avoidance, compliance strengthens long-term deterrence and reduces recurrence. This integration reflects a broader transformation of criminal law toward hybrid models that combine deterrence, correction, and prevention within a unified regulatory logic. Compliance thus operates as a structural bridge between liability and governance, ensuring that criminal law engages not only with past violations but with future risk.

Ultimately, the integration of corporate compliance mechanisms is not an optional enhancement, but a necessary condition for the functional completeness of corporate criminal liability. When treated as a substantive and enforceable legal obligation, compliance does not merely improve enforcement outcomes – it enables the liability system to operate as a preventive and outcome-oriented framework. In conjunction with restoration-oriented sanctions, compliance transforms environmental criminal law from a system that reacts to harm into one that actively governs risk, integrates prevention with remediation, and aligns legal accountability with environmental protection objectives. These findings establish the doctrinal basis for a restructured liability model and its broader normative and policy implications

V. Conclusion

This study answers the central research problem by demonstrating that corporate criminal liability for environmental damage in Indonesia remains structurally ineffective in achieving its intended regulatory objectives. The findings show that the existing framework is fragmented, predominantly reliant on fine-centered sanctions, and lacks both effective mechanisms for attributing corporate responsibility and mandatory restoration obligations. As a result, criminal enforcement operates largely at a formal level, permitting compliance in appearance while failing to ensure ecological recovery or prevent recurrent environmental harm. To address these deficiencies, this study establishes that corporate criminal liability must be reformulated through an integrated framework that systematically embeds restoration-oriented sanctions and compliance mechanisms within the core structure of liability, thereby aligning punishment with environmental recovery and preventive accountability.

The implications of this study are both theoretical and practical. Theoretically, it contributes to the development of environmental criminal law by advancing a coherent liability model that integrates deterrence, remediation, and prevention within a single framework. Practically, it provides a structured direction for strengthening environmental governance by repositioning restoration as a mandatory consequence of environmental offenses and incorporating compliance as a legally relevant factor in liability assessment and sentencing. However, this study is limited by its normative doctrinal approach, which focuses on legal structures and comparative insights without empirical examination of enforcement practices or institutional capacity. Future research is therefore recommended to incorporate empirical and socio-legal analysis to evaluate the practical implementation of restoration obligations and compliance mechanisms, as well as to assess their effectiveness across different regulatory and industrial contexts.

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