

Environmental Law Enforcement Reform for Sustainable Development: Advancing Ecological Justice of Golden Indonesia 2045

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Abstract

Legal reform is essential for strengthening justice, efficiency, and the rule of law to support sustainable development. This process involves enhancing regulations, judicial institutions, and law enforcement practices to promote consistency, transparency, and the elimination of corruption. Within the sustainability context, legal reform should prioritize environmental protection through emissions reduction, energy efficiency, and responsible waste management. Ecological justice is a foundational principle emphasizing the preservation of ecosystems and natural resources according to the principles of prevention, compensation, strict liability, and sustainable development. From a social justice perspective, ecological justice advocates for alternative economic systems that foster environmentally conscious development and empower communities across political, economic, and cultural dimensions. Currently,



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Indonesia is experiencing increased investment in the plantation and mining sectors, often without adequate environmental oversight. This trend contributes to deforestation, pollution, and biodiversity loss. Consequently, reform of environmental law enforcement is urgently required. This research adopts a normative juridical approach to analyze Indonesia's environmental legal framework, with particular attention to its effectiveness in addressing environmental degradation. The primary objective is to align national development goals, especially the vision of Golden Indonesia 2045, with the principles of ecological justice to ensure sustainability and intergenerational equity.

KEYWORDS *Ecological justice, environment, Golden Indonesia 2045, legal enforcement, legal reform*

Introduction

Sustainable environmental management has received growing attention in global discourse across both developed and developing countries. However, increased awareness of the reciprocal relationship between humans and the environment has not resulted in significant ecological improvement.¹ Instead, environmental pressures have intensified in parallel with rapid economic development. This paradox highlights that the dominant development model continues to prioritize economic growth at the expense of ecological sustainability.

Economic development frequently results in significant ecological consequences.² This pattern is evident in the case of PT Indonesia Weda Bay Industrial Park (IWIP) in Central Halmahera. Although IWIP is designated as a National Strategic Project and promoted as a primary driver of economic growth, it

¹ Lie Thien Siang, "Sampah: Tinjauan Teologis Terhadap Perilaku Ekonomis Yang Berdampak Pada Lingkungan," *Jurnal Teologi Dan Pendidikan Agama Kristen* 4, no. 2 (2024), <https://doi.org/10.55649/skenoo.v4i2.84>.

² Fatahillah, "Legitimasi Hukum Terhadap Perlindungan Ekologi Dan Pembangunan Berkelanjutan Di Aceh," *Jurnal Syntax Imperatif: Jurnal Ilmu Sosial Dan Pendidikan* 4, no. 6 (2024), <https://doi.org/10.54543/syntaximperatif.v4i6.303>.

has generated considerable ecological pressures. Industrial activities related to nickel mining and processing within the IWIP area have been linked to deforestation, degradation of coastal and marine ecosystems in Weda Bay, water pollution, and a decline in overall environmental quality, all of which have produced direct and measurable impacts on local communities. The increasing demand for energy, land, and natural resources has driven extensive environmental exploitation, resulting in deforestation, pollution, and ecosystem degradation. These circumstances underscore the necessity of robust and equitable legal intervention to achieve environmental sustainability. Given the complexity and interrelated nature of environmental systems, a systemic approach that integrates ecological science with the ethical and normative dimensions of law is essential

Indonesia, recognized as a megabiodiverse nation with a population exceeding 280 million, encounters significant challenges in balancing natural resource exploitation with environmental conservation.³ Although a legal framework exists, exemplified by Law No. 32 of 2009 on Environmental Protection and Management, the implementation and enforcement of environmental law remain suboptimal. Empirical evidence from regions including mercury pollution in Weda Bay, ecological health crises in Kabaena, deforestation and social conflicts in Morowali and Konawe, and forest degradation on Gag Island demonstrates persistent structural failures in achieving effective and equitable environmental law enforcement.

This situation underscores the urgent need to prioritize reform in environmental law enforcement as a strategic agenda. In the absence of comprehensive reform, environmental enforcement is likely to remain largely symbolic and reactive. Effective reform should extend beyond technical or institutional modifications and require a fundamental paradigm shift, repositioning the law from serving primarily as an instrument of economic control to functioning as a guardian of life and ecological justice.

³ Josua Ignatius Manik, "Implementasi Prinsip-Prinsip Hukum Lingkungan Dalam Pengelolaan Sumber Daya Alam Di Indonesia," *Innovative: Journal Of Social Science Research* 4, no. 4 (2024), <https://doi.org/10.31004/innovative.v4i4.14099>.

Within the global context, the environmental law enforcement practices of the People's Republic of China provide important insights. Over the past decade, China has achieved notable advancements in environmental protection policies, particularly through the implementation of criminal sanctions for environmental crimes. This strategy reflects a commitment to ecosystem preservation and signifies a broader shift toward the concept of an "ecological civilization" as advocated by the Chinese government.⁴ Through rigorous legal enforcement, China has established itself as a significant participant in global environmental governance.

The selection of the People's Republic of China as a comparative jurisdiction is deliberate and analytically significant. China exemplifies a developing country with structural parallels to Indonesia, particularly regarding centralized governance, dependence on natural resource-based industrialization, and the ongoing tension between economic growth and environmental protection. In contrast to comparisons with developed countries, which frequently lack contextual relevance, China provides a more suitable benchmark for Indonesia in formulating adaptive and pragmatic environmental law enforcement reforms. Furthermore, China has experienced a substantial transformation in its environmental governance over the last decade, transitioning from growth-focused regulation to a model that prioritizes ecological civilization and environmental accountability. Consequently, the People's Republic of China serves as a strategically relevant comparator for Indonesia in the pursuit of ecological justice within a developing-country context.

China has established robust state-driven monitoring mechanisms, such as mandatory environmental inspections, centralized data reporting, and performance-based accountability for local government officials. In China, environmental compliance is directly tied to bureaucratic evaluation and career advancement, which creates concrete incentives for enforcement. In contrast, Indonesia faces

⁴ Ira Rahma Fariza, "Analisis Kepentingan Tiongkok Untuk Compliance Terhadap Paris Agreement UNFCCC 2015-2020," *Jurnal Transformasi Global (JTG)* 9, no. 1 (2022), <https://doi.org/10.21776/ub.jtg.009.01.4>.

persistent enforcement challenges due to regulatory capture, discretionary licensing practices, limited monitoring capacity, and a reliance on administrative sanctions that rarely result in substantive environmental recovery or deterrence. This comparison demonstrates that enforcement reform in Indonesia requires not only normative regulation but also improvements in institutional design and enforcement incentives.

Environmental law enforcement in Indonesia remains predominantly reactive, symbolic, and case-driven, rather than preventive and systemic. Administrative sanctions are often imposed without sufficient follow-up on environmental restoration. Criminal prosecution is seldom pursued against corporate actors, and civil liability mechanisms are not fully utilized. Environmental impact assessments (AMDAL) frequently serve as procedural formalities instead of substantive safeguards. Furthermore, law enforcement agencies generally lack technical expertise and ecological awareness. Consequently, environmental law enforcement has not yet operated as an effective instrument for achieving ecological justice.

The 2024 study by Zerlina, Ivana, and Rayi, titled "The Urgency of Environmental Law Reform in Addressing Climate Change in Indonesia," underscores the critical need for environmental law reform in response to climate change in Indonesia.⁵ The study addresses legislative updates, enhancement of judicial capacity, ecosystem protection, regulatory compliance, international collaboration, support for innovation, and public participation. Research, which focuses specifically on the reform of environmental law enforcement through the application of ecological justice principles.

Anika and Suharno's 2020 study, "Law Enforcement on Environmental Issues to Achieve Sustainable Development (A Case Study of Forest Fires in Indonesia)," focuses exclusively on forest fires in Indonesia.⁶ In contrast, the present research

⁵ Zerlina Mendy Mahardhika et al., "Urgensi Reformasi Hukum Lingkungan Terhadap Perubahan Iklim Di Indonesia," *Jurnal Kebijakan Pembangunan* 19, no. 2 (2024): 235–44.

⁶ Anika Ni'matun Nisa and Suharno, "Penegakan Hukum Terhadap Permasalahan Lingkungan Hidup Untuk Mewujudkan Pembangunan

examines a wider spectrum of environmental degradation by analyzing multiple types of ecological disasters.

The 2025 study by Olivia, Edi, and Dini, titled "Reforming Environmental Criminal Law: A Comparative Study of the United States, the Netherlands, India, and Indonesia," addresses concerns similar to those of the present research. It emphasizes the necessity of strengthening environmental law in Indonesia through comparative analysis with other countries.⁷ The article further argues that exclusive reliance on criminal penalties to address environmental issues in Indonesia is highly ineffective. Consequently, it recommends establishing a specialized environmental court and implementing an environmental recovery mechanism grounded in the polluter pays principle.

Indonesia's National Long-Term Development Plan (RPJPN) 2025–2045 identifies ecological resilience as a foundational pillar in achieving the 2045 Golden Indonesia Vision. Within this framework, ecological justice serves as a fundamental principle for realizing sustainable development that is both inclusive and equitable across generations. Consequently, a critical question emerges: in what ways can environmental law enforcement reform be structured and implemented to effectively support this transformative agenda?

This paper examines the urgency and direction of environmental law enforcement reform in Indonesia to advance ecological justice toward Golden Indonesia 2045. Additionally, the study compares environmental law enforcement strategies and practices between Indonesia and the People's Republic of China to develop recommendations for improving environmental governance in Indonesia.

This study employs normative legal research. The methodology incorporates a legal principles approach, with particular emphasis on the principle of justice; a case approach that examines instances of environmental damage; a comparative law approach referencing the People's Republic of

Berkelanjutan," *Jurnal Bina Mulia Hukum* 4, no. 2 (2020): 294–312, <http://dx.doi.org/10.23920/jbmh.v4i2.337>.

⁷ Olivia Anggie Johar et al., "Reforming Environmental Criminal Law: A Comparative Study of the United States, the Netherlands, India, and Indonesia," *Kosmik Hukum* 25, no. 2 (2025), <https://doi.org/10.30595/kosmikhukum.v25i2.26167>.

China; and a statutory approach utilizing Law No. 32 of 2009. The research relies on secondary data, including primary legal materials such as the 1945 Constitution and Law No. 32 of 2009, secondary legal materials such as journals, dissertations, and books, as well as tertiary legal materials such as websites.

Result & Discussion

A. Enhancing Environmental Law Enforcement in Indonesia for Sustainable Development

Law enforcement in Indonesia should not be viewed solely as the responsibility of the government; instead, it constitutes a collective obligation of the nation. Persistent issues such as human rights violations, corruption, complex licensing procedures, horizontal conflicts, legal uncertainty, ineffective governance, and weak law enforcement reflect enduring structural challenges that have characterized every legal era in Indonesia. Although efforts have been made to strengthen law enforcement, these initiatives are often undermined by countervailing actions from both law enforcement officers and governmental institutions.⁸

The implementation of law enforcement comprises three fundamental components: the legal norms to be enforced, the institutions responsible for enforcement, and the officers within these institutions. These officers typically include members of judicial and administrative bodies, such as judges, prosecutors, police, and specific branches of the executive. A persistent challenge is that the laws enforced frequently reflect governmental objectives rather than the authentic aspirations of the populace.⁹ However, the principle of legal certainty requires that such laws continue to be implemented.

⁸ D. Manao, "Penyelesaian Penyalahgunaan Wewenang Oleh Aparatur Pemerintah Dari Segi Hukum Administrasi Dihubungkan Dengan Tindak Pidana Korupsi," *Wawasan Yuridika* 2, no. 1 (2018): 22, <https://doi.org/http://dx.doi.org/10.25072/jwy.v2i1>.

⁹ Dwi A. Rahayu, "Pembangunan Hukum Sebagai Upaya Peningkatan Daya Saing Daerah," *Jurnal Cakrawala Hukum* 10, no. 1 (2019): 1–8, <https://doi.org/https://doi.org/doi:10.26905/idjch.v10i1.3181>.

Three essential factors support upholding law and justice: legal provisions that align with public expectations; professional and resilient law enforcement officers with integrity; and a society with legal awareness that reinforces enforcement mechanisms. Legislation should be formulated with a strong moral conscience.¹⁰ When laws are perceived as beneficial and protective of individual rights, public compliance is more likely to occur voluntarily rather than through compulsion.

Laws and regulations that function merely as collections of articles without substantive meaning tend to create legal uncertainty, particularly within regional governance, where inconsistent implementation is prevalent. In Indonesia, public perception of the legal system is shaped by the effectiveness of law enforcement. Weak enforcement leads to the belief that law is ineffective.¹¹ While consistent and strong enforcement reinforces the law's legitimacy and the necessity for compliance. Despite this, law enforcement authorities and government bodies encounter persistent challenges. State institutions frequently compete to issue new legislation, yet not all enacted laws are practically enforceable.¹² Weak oversight, inadequate supervision, and low compliance with existing laws have contributed to the ineffective implementation of legal provisions and governance.

Violations of environmental law in Indonesia encompass a broad spectrum, from minor offenses such as improper disposal of household waste to serious crimes involving the discharge of hazardous, toxic, or radioactive materials. Accordingly, strategies to address these violations are equally varied, including public legal education and the imposition of criminal sanctions. The enforcement of criminal laws continues to serve

¹⁰ Muslim Lobubun, "Inkonsistensi Peraturan Perundang-Undangan Dalam Penyelenggaraan Pemerintahan Daerah Di Indonesia," *Jurnal Pembangunan Hukum Indonesia* 4, no. 2 (2022), <https://doi.org/https://doi.org/10.14710/jphi.v4i2.294-322>.

¹¹ Taufik Ismail Ramadhan, "Penegakan Hukum Lingkungan Di Indonesia Tantangan Dan Solusi," *Jurnal Penelitian Multidisiplin Ilmu* 3, no. 4 (2024).

¹² Arvin Asta Nugraha, "Peran Hukum Lingkungan Dalam Mencegah Kerusakan Dan Pencemaran Lingkungan Hidup," *Jurnal Hukumtora: Hukum Untuk Mengatur Dan Melindungi Masyarakat* 7, no. 2 (2021), <https://doi.org/https://doi.org/10.55809/tora.v7i2.8>.

as a primary approach to combating environmental crime, in conjunction with the implementation of environmental management legislation.

Conceptually, law enforcement is fundamentally concerned with harmonizing normative values embedded in stable legal norms and translating these values into concrete actions, representing the culmination of value realization. The philosophical foundations underlying this concept require further elaboration to enhance their practical applicability.

The principal challenges in law enforcement arise from a range of influencing factors. These factors are inherently neutral; their effects, whether beneficial or detrimental, depend on their particular attributes. The key influencing factors are as follows:

1. The substance of the law, primarily referring to statutory regulations;
2. Law enforcement agents, encompassing individuals responsible for drafting and implementing laws;
3. Supporting infrastructure and facilities that enable law enforcement;
4. Society, which provides the context within which the law operates;
5. Culture, which encompasses human creativity, thought, and expression that collectively shape the social environment.

Van Doorn emphasized the significance of the human factor in discussions of law enforcement.¹³ Human actors are central because they execute enforcement activities. Another fundamental issue concerns the environment in which law enforcement takes place, encompassing both the personal circumstances of the individuals involved and the broader institutional context.

Law enforcement is fundamentally the process of applying legal norms to specific events. Within criminal law, it involves an effort to realize the intent of criminal legislation through concrete actions. Consequently, criminal law enforcement is

¹³ Jhon Mulia Sinaga, "Rekonstruksi Regulasi Penegakan Hukum Lingkungan Berbasis Nilai Keadilan Ekologis" (2024), <http://repository.unissula.ac.id/id/eprint/37368>.

regarded as an integral component of broader crime prevention strategies.

Environmental law enforcement presents greater complexity than other forms of legal prosecution due to its intersection with multiple legal domains. Administrative enforcement is distinct from civil and criminal enforcement processes. According to Yahya Harahap, environmental law enforcement is fundamentally connected to one of the most basic human rights: the right to environmental protection. This connection is supported by increasing demands for legal guarantees that include:

1. The right to ensure harmonious coexistence between production activities and the human environment.
2. The right to prevent or eliminate damage to the environment and biosphere, while simultaneously promoting human health and well-being.
3. The right to protection from air pollution resulting from toxic emissions produced by factories and motor vehicles, thereby ensuring that clean air remains unpolluted.
4. The right to protection against industrial waste pollution in terrestrial, riverine, and marine environments, thereby ensuring that all water bodies are safeguarded from any form of waste contamination.

1. Case Study: The Environmental Impact of PT Indonesia Weda Bay Industrial Park ("IWIP")

IWIP, a downstream industrial hub located in Halmahera, currently occupies 5.000 hectares, with planned expansion to 15.000 hectares. This joint venture, consisting of Chinese investors (Tsingshan holding 40%, Huayou and Zhenshi each holding 30%), organizes its operations into two zones: nickel processing activities in the uplands and support facilities, including a port, coal power plant (PLTU), and airport along the coastline.

The establishment of IWIP has resulted in significant environmental consequences. Research conducted by WALHI Maluku and an investigation by Betahita have documented substantial marine ecosystem degradation, including coral reef

destruction and a marked decline in local fishery yields. Both residents and workers report that coastal damage in Weda Bay began following the commencement of IWIP's operations. The industrial impact has affected approximately 1,432 hectares in Weda Bay, leading to a substantial transformation of the local environment.

FIGURE 1. Map of the Impact of Nickel Downstreaming in Halmahera on the Coastal Area of Weda Bay



Sources: Google Earth Engine Timelapse, 2024¹⁴

Research conducted by WALHI North Maluku in the vicinity of the IWIP identified substantial pollution affecting marine ecosystems and water quality in Weda Bay. Analyses of water and biological samples demonstrated that several physical and chemical parameters did not meet established standards. Salinity (32.13 ppt) was below the threshold specified by Ministerial Decree No. 51/2004. Both water pH (6.64) and dissolved oxygen (3.70 mg/L) were also below acceptable levels. Elevated nutrient levels were detected, with nitrate (0.011 mg/L) and phosphate (0.022 mg/L) exceeding permissible limits, alongside the presence of toxic ammonia (0.4 mg/L). Additionally, concentrations of heavy metals, including iron (Fe: 0.70 mg/L) and nickel (Ni: 0.10 mg/L), surpassed United States Environmental Protection Agency (USEPA) standards, while

¹⁴ Aryo Bhawono, "Jejak Pencemaran IWIP di Teluk Weda" (2024), <https://betahita.id/news/detail/10585/jejak-pencemaran-iwip-di-teluk-weda.html?v=1726540188>

mercury (Hg: 0.001 mg/L) was near the maximum allowable threshold.¹⁵

Heavy metal contamination has been observed to accumulate in the vital organs of marine organisms, including giant clams, parrotfish, rabbitfish, and dorabe, resulting in cellular damage such as necrosis in the intestines, kidneys, and liver. Furthermore, evidence demonstrates food chain contamination by arsenic, cadmium, lead, and mercury, which are highly toxic elements associated with cardiovascular disease, cancer, and neurological disorders in humans. Interviews with local respondents indicated seafood consumption of 2–6 servings within two days prior to sampling, thereby increasing the long-term risk of chronic exposure and non-communicable diseases (NCDs).

Indonesia, recognized as one of the world's most bio-diverse countries and classified as a mega bio-diverse nation, is currently confronting the prospect of becoming the epicenter of an ecological crisis. Instead of fulfilling its role as a steward of global biodiversity, the country is undergoing significant environmental degradation, particularly in regions designated as ecological strongholds. The situation in Weda Bay, Central Halmahera, illustrates the state's failure to enforce environmental law both effectively and equitably.

Weda Bay, once known for its highly productive coastal marine biodiversity and as a vital source of livelihood for local communities, is now suffering from acute ecological damage. Uncontrolled nickel mining expansion has led to ocean pollution, coastal sedimentation from tailings waste, and a drastic decline in fish catches. Changes in seawater coloration serve as an early indicator of biotic imbalance in the aquatic ecosystem.

Environmental degradation persists despite the presence of legal instruments that, in principle, prohibit pollution and require environmental protection. Law No. 32 of 2009 on Environmental Protection and Management explicitly prohibits acts of pollution and prescribes criminal sanctions for violators (Articles 69, 98, and 99). Likewise, Law No. 3 of 2020 on

¹⁵ Aryo Bhawono, "Jejak Pencemaran IWIP Di Teluk Weda," *BETAHITA.ID*, 2024, <https://betahita.id/news/detail/10585/jejak-pencemaran-iwip-di-teluk-weda.html?v=1726540188>.

Mineral and Coal Mining reinforces the obligation for mining companies to comply with environmental standards.

However, these regulations lack effective enforcement mechanisms. Environmental law enforcement in Weda Bay is largely symbolic and characterized by significant disparities. The local government of Central Halmahera has denied the existence of environmental pollution, despite scientific evidence, media reports, and complaints from affected communities. This situation demonstrates that the existence of legal frameworks alone does not ensure ecological justice without institutional commitment and the willingness to hold environmental violators, particularly large corporations, accountable.

The enactment of Law No. 11 of 2020 on Job Creation (Omnibus Law) further complicates the regulatory landscape. Rather than strengthening environmental protections, this legislation introduces significant deregulation. Notable changes include the weakening of Environmental Impact Assessments (AMDAL) through business risk classifications, the elimination of environmental permits as independent legal instruments, and the limitation of public participation in environmental decision-making processes.

This legal regression creates a pronounced inconsistency between the stated objectives of sustainable development and the realities of legislative practice. From the perspective of ecological justice, the law ought to recognize nature as a legal subject with inherent rights to exist, recover, and flourish. However, under current legislative frameworks, the environment is frequently treated solely as an object of economic exploitation.

The state's lack of decisive action in addressing pollution in Weda Bay indicates a transformation in institutional roles, shifting from the protection of ecological justice to the facilitation of corporate interests. Although the government articulates commitments to sustainable development, its actions reflect a permissive approach to large-scale environmental violations.

Consequently, environmental law loses its impartiality, becoming "soft on the powerful, harsh on the powerless." Corporations responsible for polluting ecosystems frequently evade legal consequences, whereas citizens who express

environmental concerns are often criminalized or labeled as impediments to development. This dynamic undermines the legitimacy of law as an instrument of justice and reinforces the perception that legal frameworks primarily serve the interests of power and capital.

In the context of Indonesia's Golden Vision 2045, the Weda Bay case must not be viewed merely as a local tragedy but as a systemic early warning of national environmental governance failure. Without serious reforms, Indonesia risks allowing economic growth to become a driver of ecological collapse. The long-term vision of national development should not be limited to economic indicators, but must also incorporate ecological sustainability, intergenerational justice, and the protection of the right to a dignified life for all beings.

To this end, concrete reforms are urgently required, including progressive environmental legal reform that recognizes nature as a legal subject and places ecological justice at the core of regulation; law enforcement must be consistent, non-discriminatory, and courageous in taking action against large corporate polluters. Impacted areas such as Weda Bay must undergo recovery through restorative and participatory approaches involving local communities. Without such foundational reforms, national development risks losing its moral, ecological, and constitutional legitimacy. The Weda Bay case is not merely an environmental tragedy; it is a reflection of the state's failure to fulfill its constitutional responsibility to protect the environment and ensure citizens' rights to a healthy quality of life.

Reform of environmental law enforcement grounded in ecological justice should commence with the recognition of nature as a legal subject possessing inherent rights to exist, regenerate, and evolve. This foundational principle requires reinforcement through a strong commitment to intergenerational justice, ensuring that all policies account for long-term environmental impacts and safeguard the rights of future generations. Local and Indigenous communities, who are frequently the most vulnerable to environmental degradation due to their reliance on threatened natural resources, should be

prioritized in environmental protection efforts.¹⁶ Despite these imperatives, the principal challenge lies in the effective implementation of legal enforcement, as environmental law enforcement in Indonesia continues to encounter significant systemic obstacles.¹⁷

Concrete reform measures may be pursued through three primary approaches. First, Law No. 32 of 2009 should be amended to explicitly recognize the rights of nature and strengthen the role of communities in environmental monitoring. This amendment should also critically assess provisions within the Job Creation Law, particularly those that weaken AMDAL, remove environmental permits as independent legal instruments, and limit public participation in environmental decision-making. Second, institutional capacity should be enhanced by establishing an independent environmental court based on ecological science and by increasing the authority of the Ministry of Environment and Forestry (KLHK) and regional governments to monitor, investigate, and prosecute environmental violations. Third, a paradigm shift in legal enforcement is necessary, moving from *ultimum remedium* (last resort) to *primum remedium* (primary response), to ensure that environmental offenders no longer regard legal sanctions as insignificant or avoidable.

Without this decisive approach, Indonesia's commitment to sustainable development and the SDGs will remain rhetorical.¹⁸ The current reliance on administrative sanctions and negotiation often prolongs corporate impunity. By making ecological justice the foundation of enforcement, Indonesia can better protect its environment and secure the rights to life of current and future generations.

¹⁶ Wahyu Nugroho, "Kebijakan Pengelolaan Tambang Dan Masyarakat Hukum Adat Yang Berkeadilan Ekologis," *Jurnal Konstitusi* 15, no. 4 (2018), <https://doi.org/https://doi.org/10.31078/jk1547>.

¹⁷ Asmarani Ramli, "The Importance of Non-Conviction Based (NCB) Regulations For Asset Confiscation in Illegal Investment," *Journal of Law and Legal Reform* 5, no. 1 (2024): 2, <https://doi.org/https://doi.org/10.15294/jllr.vol5i1.2089>.

¹⁸ Zainudin Hasan, "Penegakan Hukum Lingkungan Sebagai Upaya Pembangunan Yang Berkelanjutan," *Jurnal Ilmiah Advokasi (JIAD)* 11, no. 1 (2023), <https://doi.org/https://doi.org/10.36987/jiad.v11i1.3693>.

According to Keith Hawkins,¹⁹ as cited by Koesnadi Hardjasoemantri, environmental law enforcement can be pursued through two major strategies: regulatory refinement and the imposition of sanctions. In this framework, the penal style approach emphasizes sanctions as a response to violations, aimed at deterrence and preventing recurrence. This system is inherently repressive, involving the full spectrum of criminal procedures from investigation to sentencing. While primarily reactive, preventive efforts such as public legal education can also be integrated into this policy framework.

Ogus and Abbot, building on Becker's rational choice model, proposed a behavioral economic approach to environmental crime. Offenders commit an environmental violation when the benefit (B) outweighs the cost (C), with C equal to the product of the severity of the sanction (S) and the probability of penalization (p): $B > p \times S$. To deter such conduct, sanctions must satisfy $S > B/p$. Thus, the lower the probability of enforcement, the more severe the penalty must be. Abbot further argued that sanction severity should also reflect the degree of harm (H) caused: $S > H/p$. This principle holds that penalties must exceed either anticipated benefits or environmental damage, especially when enforcement is unlikely.²⁰

In environmental law, sanctions cannot be arbitrarily assigned. They must be proportionate to the scale of ecological harm. This reflects the principle of ecological justice, under which environmental impacts such as river pollution, forest destruction, or the discharge of toxic waste affect not only the natural world but also compromise sustainable development. Therefore, legal frameworks must impose progressive sanctions: the greater the danger, the harsher the legal consequence. The

¹⁹ Setiyono, "Pertanggungjawaban Korporasi Dalam Tindak Pidana Lingkungan Terhadap Kebakaran Hutan Dan Lahan Yang Berdampak Dilampauinya Baku Mutu Kerusakan Lingkungan Hidup," *AL-QISTH LAW REVIEW* 7, no. 2 (2024), <https://doi.org/https://doi.org/10.24853/al-qisth.7.2.275-294>.

²⁰ Andri Gunawan Wibisana, "Tentang Ekor Yang Tak Lagi Beracun: Kritik Konseptual Atas Sanksi Administratif Dalam Hukum Lingkungan Di Indonesia," *Jurnal Hukum Lingkungan Indonesia* 6, no. 1 (2019), <https://doi.org/https://doi.org/10.38011/jhli.v6i1.123>.

objective is not only to punish the offender but also to create a strong deterrent effect and preserve ecosystem balance.

Law No. 32 of 2009 on Environmental Protection and Management (EPML) affirms Indonesia's commitment to sustainable development. In conjunction with regional derivative regulations, this law mandates administrative sanctions and prioritizes criminal sanctions as the primary response (*primum remedium*), rather than as a last resort. Effective law enforcement is essential for addressing environmental problems and requires the application of coercive legal instruments, including criminal sanctions.²¹ This prioritization acknowledges that environmental violations frequently cause irreversible harm, thereby necessitating more assertive enforcement measures. Environmental law enforcement, therefore, serves not only a punitive function but also protects the public's right to a healthy environment and upholds intergenerational justice. Without such an approach, efforts toward sustainable development risk remaining rhetorical.

2. Environmental Law Enforcement and Ecological Justice as Fundamental Pillars Toward Golden Indonesia 2045

Realizing the vision of Golden Indonesia 2045 necessitates a development paradigm that transcends mere economic growth and prioritizes ecological sustainability through the establishment of strong and equitable environmental law. The management of Indonesia's extensive natural resources must be conducted responsibly, with explicit attention to environmental carrying capacity and the principle of intergenerational justice. Ecological justice, which includes the protection of nature's

²¹ Danang Johar Arimurti and Fatma Ulfatun Najicha, "Analysis of Changes in Criminal Threats in

Regulations on Environmental Protection and Management," *Indonesian Journal of Environmental Law*

and Sustainable Development 2, no. 2 (2023): 151, <https://doi.org/https://doi.org/10.15294/ijel.v2i2.40205>.

rights and the restoration of environmental damage, should be regarded as equally important as social justice. These two forms of justice are fundamentally interconnected; without a healthy environment, inclusive development cannot be achieved, and in the absence of effective legal enforcement, the exploitation of natural resources will continue to harm vulnerable communities and intensify the climate crisis.

Therefore, strengthening environmental law should extend beyond administrative or technical measures to encompass ethical and political commitments, reaffirming the state's responsibility to protect all forms of life.²² Law enforcement must be recognized as a critical component of ecological resilience. In response to climate disruption and environmental disasters, environmental law should function not only as a deterrent to pollution, deforestation, and biodiversity loss, but also as a mechanism of justice by decisively sanctioning environmental offenders (*primum remedium*) and restoring the rights of affected communities. Comprehensive legal reform is essential for realizing Golden Indonesia 2045; without such reform, the national vision risks forfeiting its ecological and social legitimacy. Integrating ecological justice into the legal system constitutes more than a normative requirement; it is a vital investment in the nation's continued existence. The state must serve as a steward of both society and the environment, rather than merely facilitating short-term economic gains. Through equitable environmental law, Indonesia can achieve sustainable economic growth and foster the ecological resilience required for enduring national prosperity. Absent these measures, Golden Indonesia 2045 may remain an unfulfilled aspiration in the face of escalating climate challenges. Achieving this vision requires a national development model that emphasizes not only rapid economic growth but also the sustainable protection and management of natural resources within a robust and fair legal framework.

The unregulated exploitation of natural resources, in the absence of an adaptive and integrative environmental legal

²² Eno Suwarno, "Analisis Kritis Akses Dan Eksklusi Dalam Regulasi Kehutanan Undang-Undang Nomor 41 Tahun 1999 Tentang Kehutanan," *ANDREW Law Journal* 4, no. 1 (2025), <https://doi.org/https://doi.org/10.61876/alj.v4i1.41>.

framework, significantly increases the risks of systemic and irreversible ecological degradation. Consequently, environmental law should serve as the foundation for regulating interactions among the state, society, and nature, ensuring that all resource extraction activities are conducted responsibly and within established environmental boundaries. Within this framework, ecological justice must be recognized as a central element of comprehensive social justice, rather than a peripheral issue.²³ Both ecological and social justice should be treated as equally important and integrated pillars of national development. Ecological justice encompasses the protection of environmental rights, the restoration of ecological damage, and the recognition of the right to life of affected communities as a non-derogable human right that cannot be diminished under any circumstances. Therefore, the strengthening of environmental law should not be perceived solely as a technocratic initiative; it represents a profound ethical and political commitment, reflecting the state's dedication to the preservation of life in its most substantive and holistic form.

Environmental law enforcement should be recognized as a central pillar in strengthening national resilience to the threats posed by climate change and ecological crises.²⁴ In the current era, characterized by the increasing frequency and severity of ecological disasters, the environmental legal system must demonstrate adaptability, responsiveness, and progressiveness. The law should transcend its traditional role as a mechanism for regulating behavior and instead function as an essential element of climate change mitigation and adaptation strategies, grounded in justice for all generations, regions, and social groups. Within this context, environmental legal reform is an essential prerequisite for achieving a sustainable and inclusive Golden Indonesia 2045.²⁵ Failure to reconstruct the legal system with

²³ Andrie Elia Embang, *Pembangunan Berkelanjutan Perspektif Sosiologi Dan Tantangan Global* (Medan: PT Media Penerbit Indonesia, 2025).

²⁴ M. Nurdin, "Peranan Penyidik Dalam Penegakan Hukum Terhadap Pelanggaran Tindak Pidana Lingkungan Hidup," *Jurnal Hukum SAMUDRA KEADILAN* 12, no. 2 (2017), <https://ejurnalunsam.id/index.php/jhsk/article/view/131>.

²⁵ Lailiy Muthmainnah, "Problem Intrinsik Dalam Agenda Pembangunan Berkelanjutan: Analisis Filsafat Politik Terhadap Pengelolaan

ecological justice as a core principle of development risks undermining both the ecological and social legitimacy of this vision.

A legal framework focused exclusively on capital accumulation and economic growth, without consideration for ecosystem sustainability, will hasten ecological degradation and exacerbate socio-environmental inequalities. In contrast, embedding ecological justice within the national legal system constitutes a structural investment in Indonesia's long-term viability. When law is based on integrity, public participation, and a strong commitment to environmental sustainability, it reinforces the state's responsibility as a protector of life rather than merely a facilitator of economic expansion. Thus, the establishment of an ecologically just legal system is not only a normative requirement in a constitutional state (*rechtsstaat*), but also an existential necessity for the survival of the nation and Indonesian civilization.

B. Strategies and Practices of Environmental Law Enforcement in Indonesia and the People's Republic of China

The Sustainable Development Goals (SDGs) program, initiated by the United Nations (UN), has been adopted by its member states. This global initiative aims to intensify collective efforts toward achieving sustainable development worldwide. Among the 17 goals, several are directly relevant to environmental law and governance, including: ²⁶ SDG 6 (Clean Water and Sanitation), SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action), SDG 14 (Life Below

Lingkungan Di Indonesia Pasca Reformasi,” *JWP (Jurnal Wacana Politik)* 6, no. 1 (2021), <https://doi.org/https://doi.org/10.24198/jwp.v6i1.27801>.

²⁶ United Nations Development Programme, “What are the Sustainable Development Goals?,” *THE SDGS IN ACTION*, n.d., accessed July 18, 2025, <https://www.undp.org/sustainable-development-goals#:~:text=What%20are%20the%20Sustainable%20Development,t he%20SDGs%20in%20ev ery%20context>.

Water), and SDG 15 (Life on Land). Each country retains the autonomy to determine which goals to prioritize based on its national context and development gaps. In the field of environmental protection, nations exhibit distinct characteristics and approaches to formulating strategies and implementing environmental law enforcement practices.

1. Indonesia

Indonesia, endowed with significant environmental resources and abundant natural wealth, demonstrates a strong commitment to environmental sustainability. This commitment is articulated in Article 28H of the 1945 Constitution, which affirms that every person has the right to a good and healthy environment, and in Article 33 paragraph (4), which underscores the importance of sustainable development. Consequently, all policies and decisions by both governmental and private entities are required to consider environmental factors and ensure that ecological sustainability is not overlooked during the development process.²⁷

Article 33 paragraph (4) further asserts that the environment constitutes an integral component of the national economic development agenda. The state is responsible for managing the environment and natural resources to maximize benefits for the population, both now and in the future.²⁸

In addition to its constitutional foundation, environmental preservation values are deeply embedded within the customary laws of local communities. Sundanese customary law regards sustainable environmental stewardship as both a collective welfare strategy and a moral obligation that must be preserved across generations. This perspective is based on

²⁷ Jumas et al., "Establishing an Environmental Court in Indonesia: Addressing Legal Challenges for Environmental Justice in Line with SDG 13 and SDG 16," *Journal of Lifestyle and SDGs Review* 5, no. 1 (December 2024): e03043, <https://doi.org/10.47172/2965730x.sdgsreview.v5.n01.pe03043>.

²⁸ Sudarmo Sudarmo et al., "Critical Study of the Implementation of the Right of Self-Determination in Protecting Indonesia's Environmental and Economic Sovereignty," *E3S Web of Conferences* 611 (January 2025), <https://doi.org/10.1051/e3sconf/202561105002>.

three core principles: *Kebataraan, Kedewaan, and Karatuan*.²⁹ Similarly, Balinese philosophy emphasizes the concept of Tri Hita, which underscores the necessity of maintaining harmony between humans and God, among individuals, and between humans and nature as essential for achieving a peaceful and balanced life.³⁰

Indonesia's implementation of constitutional mandates and societal legal awareness is demonstrated through its active engagement with the Sustainable Development Goals (SDGs) established by the United Nations (UN). Since 2015, Indonesia has incorporated the SDGs agenda into its National Medium-Term Development Plans (RPJMN) for the 2015–2019 and 2020–2024 periods. These commitments are further detailed in key national policy documents, including the National Action Plan for the SDGs and the SDGs Roadmap 2017–2030.³¹ The commitment is further reinforced by Presidential Regulation No. 59 of 2017 and Presidential Regulation No. 111 of 2022, which specifically regulate the implementation of sustainable development goals.

A primary focus of the Indonesian government's implementation of the Sustainable Development Goals (SDGs) is SDG 13 (Climate Action), due to the nation's significant vulnerability to climate change, natural disasters, and deforestation. This commitment is evident in several national policies, such as the National Action Plan on Climate Change (RAN-PI) and the Nationally Determined Contributions (NDCs).³² Furthermore, Indonesia has enacted the National

²⁹ Mella Ismelina Farma Rahayu, Anthon F. Susanto, and Amad Sudiro, "The Meaning of the Principle of Local Wisdom in Management and Protection Law Environment Indonesia," *Journal of Lifestyle and SDGs Review* 5, no. 2 (November 2024): e02958, <https://doi.org/10.47172/2965-730x.sdgsreview.v5.no2.pe02958>.

³⁰ Rahayu, Susanto, and Sudiro. "The Meaning of the Principle of Local Wisdom in Management and Protection Law Environment Indonesia,"

³¹ Ignatia Martha Hendrati et al., "INDONESIAN POLICY ON SDGs: WHAT'S THE TOP FOCUS?," in *OECOMICUS Journal of Economics*, vol. 9, no. 2 (2025), <https://doi.org/https://doi.org/10.15642/oje.2025.9.2.82-92>.

³² Ignatia Martha Hendrati et al., "INDONESIAN POLICY ON SDGs: WHAT'S THE TOP FOCUS?,"

Action Plan for Marine Plastic Debris and established Marine Protected Areas (MPAs) to conserve marine ecosystems and mitigate pollution.

To address greenhouse gas emissions, Indonesia has adopted the Low Carbon Development Initiative (LCDI). This policy prioritizes renewable energy utilization, the advancement of sustainable agricultural systems, and forest conservation. The government has also launched peatland restoration projects to reduce carbon emissions associated with land degradation. Collectively, these measures illustrate Indonesia's pragmatic approach to environmental challenges and have served as a model for other countries facing comparable ecological and climatic conditions.³³

In addition to these policy measures, Indonesia has established a comprehensive regulatory framework for environmental protection and management. Attention to environmental law began to increase during the 1970s and 1980s, as evidenced by the enactment of Law No. 4 of 1982 on Basic Provisions for Environmental Management, which served as a foundational step in the development of Indonesia's environmental legal system. Environmental awareness expanded considerably after the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992, which produced Agenda 21 and emphasized global climate change concerns.³⁴

In response to these developments, Indonesia revised its environmental legislation by enacting Law No. 23 of 1997 on Environmental Management, which offered a more comprehensive articulation of the fundamental principles of environmental protection. This law was later repealed and replaced by Law No. 32 of 2009 on Environmental Protection and Management. The new law consolidated and improved upon previous legislation, introduced stronger mechanisms for public

³³ Nyphadear Tiara Scoorpy Ananda Putra and Randhi Satria, *Bridging the Gap: Indonesia and the Path to Sustainable Development in the Global South* (Paris: Atlantis Press SARL, 2025), https://doi.org/https://doi.org/10.2991/978-2-38476-368-9_5.

³⁴ L. Yustitianiingtyas, "Environmental Law Policy in Indonesia: Challenges and Sustainable Justice," in *IOP Conference Series: Earth and Environmental Science* 1473 (IOP Publishing, 2025).

participation, established more rigorous law enforcement provisions, and adopted an impact-based approach to environmental governance.³⁵

Article 2 of Law 32/2009 set forth several foundational principles intended to guide environmental protection and development efforts, including the following: (a) *state responsibility*; (b) *sustainability and preservation*; (c) *harmony and balance*; (d) *integration*; (e) *utility*; (f) *precautionary principle*; (g) *justice*; (h) *eco-regions*; (i) *biodiversity*; (j) *the polluter pays principle*; (k) *participatory governance*; (l) *local wisdom*; (m) *good environmental governance*; and (n) *regional autonomy*.

These principles indicate that, at a normative level, Indonesia's environmental policy and regulatory framework are consistent with the objectives of the SDGs. Nevertheless, persistent implementation challenges hinder effective enforcement. Violations of environmental regulations and policy deviations remain common. This situation creates a persistent dilemma: although the state is constitutionally required to protect environmental sustainability, the national economy continues to rely heavily on natural resource exploitation.³⁶ Ideally, as mandated in Article 33 paragraph (4) of the 1945 Constitution, economic growth should occur in conjunction with sustainable environmental management. In practice, however, legal violations frequently arise due to the ongoing tension between economic interests and environmental protection.

Law No. 32 of 2009 constitutes the primary legal framework for environmental governance in Indonesia. This law prescribes a range of sanctions for violations committed by individuals or corporations. Among its most significant provisions is Article 88, which establishes the principle of strict liability. In contrast to general criminal offenses that require proof of fault, such as *mens rea* (intent), deliberate conduct, or

³⁵ L. Yustitiningtyas.

³⁶ Nyphadear Tiara Scoorpy Ananda Putra and Randhi Satria, *Bridging the Gap: Indonesia and the Path to Sustainable Development in the Global South*.

negligence, Article 88 permits the imposition of legal responsibility without the necessity of proving fault.³⁷

"Any person whose actions, business activities, and/or operations involve the use of hazardous and toxic substances (B3), the generation and/or management of B3 waste, and/or cause serious threats to the environment shall be held strictly liable for any resulting damages, without the necessity of proving elements of fault." (Article 88, Law No. 32 of 2009 on Environmental Protection and Management)

The adoption of strict liability in environmental regulation is particularly significant, as environmental crimes often involve lengthy and complex evidentiary processes, and the resulting damage may not become apparent immediately. In the absence of this principle, law enforcement against polluters or those who cause environmental destruction would be substantially more challenging, given that establishing intent or negligence is frequently impractical or ambiguous. By permitting legal liability to be imposed directly based on the occurrence of environmental harm, this provision enhances the enforcement mechanisms against environmentally detrimental activities. It reinforces the legal stance that individuals or entities engaging in high-risk environmental practices must assume full responsibility for the consequences of their actions, irrespective of intention or negligence.³⁸

2. The People's Republic of China ("PRC")

³⁷ E. N. Agusta and N. Sa'adah, "Corporate Crimes Against Nature: Rethinking Strict Liability in Indonesian Environmental Law," *International Journal of Environmental Sciences* 11, no. 4 (2025): 538–41, <https://doi.org/https://doi.org/10.64252/89xhkg28>.

³⁸ I. Rachmawati, "The Transformation from Fault Liability to Strict Liability: A Cutting-Edge Indonesian Maritime Tort Law," in *2nd International Conference on Environment, Green Technology, and Digital Society (INTERCONNECTS 2024)*, 2025, <https://doi.org/2nd> International Conference on Environment, Green Technology, and Digital Society (INTERCONNECTS 2024).

As one of Asia's largest and a major global economic force, the People's Republic of China (PRC) is recognized for its strict environmental legal framework. This approach supports its 2023 national strategies focused on environmental protection and green development.³⁹

In China, both economic and social factors are essential to achieving the SDGs, given the scale of economic activity and the large population. Environmental sustainability is a key measure of the nation's SDG progress from an ecological perspective. The PRC views a healthy environment as inclusive public welfare, fundamental to national well-being and accessible to all.⁴⁰

This perspective is institutionally embodied in the ecological civilization policy (生态文明), which seeks to achieve a Beautiful China (美丽中国) by 2035, in alignment with the 2030 UN SDGs framework.⁴¹ The Chinese government actively incorporates environmental sustainability into its development agenda to achieve these long-term objectives.

Between 2015 and 2021, the PRC demonstrated significant progress in green development.⁴² This trajectory reflects the nation's capacity to address environmental challenges, including carbon emissions, climate change, air and water pollution, soil contamination, and wildlife extinction.⁴³

As the world's largest emitter of CO₂, the PRC is undergoing a significant transition toward a low-carbon

³⁹ Yang Guan et al., "Environmental Sustainability and Beautiful China: A study of Indicator Identification and Provincial Evaluation," *Environmental Impact Assessment Review* 105 (March 2024), <https://doi.org/10.1016/j.eiar.2024.107452>.

⁴⁰ Yang Guan et al., "Environmental Sustainability and Beautiful China: A study of Indicator Identification and Provincial Evaluation," *Environmental Impact Assessment Review* 105 (March 2024), <https://doi.org/10.1016/j.eiar.2024.107452>.

⁴¹ Md. Ziaul Islam and Shuwei Wang, "Exploring the Unique Characteristics of Environmental Sustainability in China: Navigating Future Challenges," *Chinese Journal of Population, Resources, and Environment* 21, no. 1 (March 2023): 37–42, <https://doi.org/10.1016/j.cjpre.2023.03.004>.

⁴² Guan et al., "Environmental Sustainability and Beautiful China: A study of Indicator Identification and Provincial Evaluation."

⁴³ Islam and Wang, "Exploring the Unique Characteristics of Environmental Sustainability in China: Navigating Future Challenges."

economy. Following the reopening in 2023 after a three-year COVID-19 lockdown, international observers noted substantial progress in sustainable transformation. By the end of 2022, 77% of urban public transportation in the PRC consisted of new energy vehicles.⁴⁴ The PRC has demonstrated the capability to implement clean energy solutions at a scale comparable to other global leaders.⁴⁵

The PRC also leads global renewable energy investment, particularly in solar, wind, and hydrogen technologies. The government has decommissioned low-quality oil and coal power plants to reduce air pollution, support a carbon-free future, and lower carbon intensity by 18.8%. The PRC's advancements in solar energy, wind power, battery technology, and electric vehicles have matched or surpassed those of many Western countries, demonstrating the rapid pace and scale of innovation.⁴⁶ The increasing adoption of electric vehicles, along with the swift expansion of charging infrastructure, further exemplifies this trend. The PRC utilizes advanced technologies such as artificial intelligence (AI), the Internet of Things (IoT), and big data to monitor environmental conditions. For instance, the national air quality monitoring network covers more than 1,500 locations, and real-time water quality sensors enable authorities to detect environmental changes promptly.⁴⁷ AI-based predictive models are also being developed to forecast air and water pollution patterns.⁴⁸

⁴⁴ Xiaoying You, "How China's buses shaped the world's EV revolution," *BBC*, June 12, 2023,

<https://www.bbc.com/future/article/20231206-climate-change-how-chinas-electric-vehicle-revolution-began-with-buses>.

⁴⁵ "China's Green Stride Forward: Accelerating Industrial Sustainable Transformation," *The World Business Council for Sustainable Development (WBCSD)*, June 10, 2024,

<https://www.wbcsd.org/news/chinas-green-stride-forward-accelerating-industrial-sustainable-transformation/>.

⁴⁶ "China's Green Stride Forward: Accelerating Industrial Sustainable Transformation."

⁴⁷ Giulia Interesse, "Eco-Tech Revolution: China's 2025 Blueprint for Sustainable Innovation," *China Briefing*, March 12, 2025, <https://www.china-briefing.com/news/beautiful-china-2025-innovating-sustainability-with-eco-tech/>.

⁴⁸ Interesse.

The PRC has achieved significant advancement in environmental conservation, such as a 23.4% increase in forest coverage, the establishment of five national parks in 2021, the remediation of 98% of polluted water bodies, and notable improvements in air quality within major urban centers.⁴⁹ Historical analysis indicates that the PRC incorporated environmental regulations into its 1978 Constitution and reaffirmed them in 1982. Following the Stockholm Conference, the PRC government convened a national convention on environmental protection. Beginning in 1972, the PRC initiated major reforms in its environmental management system approximately every decade to address evolving environmental challenges. In 1973, regulations concerning environmental protection and restoration were introduced within the criminal justice system.⁵⁰ Since 1979, the PRC has promulgated several foundational environmental regulations, including the Environmental Protection Law (EPL), the Law of the Prevention and Control of Air Pollution, and 1.000 sector environmental regulations across various departments.⁵¹ The EPL serves as the primary legal framework for environmental protection in China and has undergone multiple revisions since its enactment in 1989, with the most recent amendment in 2014 to address emerging environmental concerns and administrative developments.

The Environmental Protection Law of the PRC was first enacted in 1989 to regulate the protection, monitoring, and management of the environment. Subsequent revisions in 1995, 2002, and 2014 reflected ongoing developments in China's economy and society. The most recent revision in 2020 aimed to strengthen the legal framework for environmental protection,

⁴⁹ Islam and Wang, "Exploring the Unique Characteristics of Environmental Sustainability in China: Navigating Future Challenges."

⁵⁰ Andi Hamzah, *Penegakan Hukum Lingkungan* (Sinar Grafika, 2008).

⁵¹ Yahyanto, "Penegakan Hukum Pidana Lingkungan (Studi tentang Penegakan Hukum Kasus Pencemaran Lingkungan oleh Korporasi setelah berlakunya Undang-Undang No 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup di Kab. Kolaka Propinsi Sulawesi Tenggara)" (Universitas Islam Indonesia, 2011), <https://dspace.uui.ac.id/bitstream/handle/123456789/9253/YAHYANTO.pdf?sequence=1&isAllowed=y>.

enhance environmental monitoring and law enforcement, and improve the nation's capacity for environmental protection.

Article 4 of the EPL demonstrates the integration of sustainable development and environmental protection, stating:

“Protecting environment is a fundamental national policy of the state. The state shall adopt economic and technological policies and measures conducive to economically and cyclically utilizing resources, protecting and improving environment and enhancing the harmony between mankind and nature to coordinate economic and social development with environmental protection”

This article establishes environmental protection as a fundamental national policy, placing it on par with other principles of national development. It further underscores that economic growth should not occur at the expense of environmental integrity, as indicated by the reference to “cyclically utilizing resources,” which embodies the principle of a circular economy, namely, the repeated and efficient use of resources. Therefore, economic development, social progress, and environmental protection are presented as interdependent and inseparable objectives.

The principles of environmental protection contained in Article 5 of the EPL are as follows:⁵²

1. Environmental protection should be prioritized as a proactive measure rather than addressed only after environmental damage has occurred.
2. There is an emphasis on preventive legal measures, particularly the early control of pollution and environmental damage. This approach is grounded in the recognition that the environment is highly susceptible to pollution and that ecological systems may be irreversibly harmed.
3. Supervision by the PRC accompanies preventive efforts. This supervisory framework is guided by the principle that “whoever pollutes shall be responsible for eliminating the pollution.” Environmental management is implemented

⁵² Andi Hamzah, *Penegakan Hukum Lingkungan* (Jakarta: Sinar Grafika, 2008).

comprehensively and integratively, encompassing water, air, soil, waste, and ecosystems rather than addressing these elements in isolation.

4. In addition to eliminating and preventing environmental pollution, public participation in the restoration and protection of nature is mandated.
5. Furthermore, the PRC consistently enhances its environmental management system in response to evolving conditions and developments. Legal accountability for environmental damage is enforced through administrative, civil, and criminal measures.

The Ministry of Environmental Protection (MEP) is responsible for implementing environmental regulations in the PRC in accordance with applicable provisions. As the highest regulatory authority in the PRC, the MEP is mandated to develop regulations, monitor their implementation, and ensure compliance with environmental protection policies. The MEP also coordinates cross-sectoral policies related to emission reduction, natural resource conservation, and control of air, water, and soil pollution. Furthermore, the MEP aligns domestic environmental policies with China's international commitments, including the Paris Agreement and the UN Sustainable Development Goals (SDGs). Within the framework of “Beautiful China” and “Ecological Civilization,” the MEP serves as the primary institution for formulating policies and performance indicators.⁵³

Since 2008, the MEP has strengthened its institutions and was elevated to a ministerial-level agency. This reflects the PRC's growing focus on sustainability and international pressure to lower carbon emissions.⁵⁴

The PRC government uses a command-and-control approach to set environmental standards and enforce compliance, including administrative or criminal sanctions for violations. This approach includes:⁵⁵

⁵³ Haitao Yin, Xuemei Zhang, and Feng Wang, “Environmental Regulations in China,” *Oxford Research Encyclopedia of Environmental Science*, ahead of print, 2019, <https://doi.org/10.1093/acrefore/9780199389414.013.418>.

⁵⁴ Yin, Zhang, and Wang.

⁵⁵ Yin, Zhang, and Wang.

1. Setting emission limits;
2. Environmental permitting requirements;
3. Monitoring and reporting obligations;
4. Enforcement through administrative penalties, fines, suspension of operations, or facility closure.

The 2014 revision of the Environmental Protection Law (EPL 2014) authorizes agencies to impose cumulative daily fines for violations that are not promptly corrected. Companies that continue to pollute after being ordered to stop may face ongoing fines until operations are suspended.⁵⁶

Article 59 of the EPL 2014 authorizes environmental officials to seal or confiscate equipment from businesses that fail to meet environmental standards:

"Where any enterprise, public institution, or other business is fined and ordered to make correction for illegally discharging pollutants but refuses to make correction, the administrative agency legally making the punishment decision may impose continuous fines on it in the amount of the original fine for each day from the next day after it is ordered to make correction.

The fine punishment as mentioned in the preceding paragraph shall be determined on the basis of factors such as the operation costs of pollution prevention and control installations, the direct losses caused by the illegal act and the illegal income as provided for by the relevant laws and regulations.

Based on the actual needs for environmental protection, the types of illegal acts subject to continuous daily fines as mentioned in the first paragraph hereof may be increased in local regulations."

Article 64 of EPL 2014 stipulates:

"Where any violation of this Law constitutes a crime, the violator shall be investigated for criminal responsibility in accordance with the law; where any loss is caused to others, the violator shall bear liability for compensation in accordance with the law."

A violation of the EPL may be classified as a criminal offense, subjecting the offender to criminal proceedings. The

⁵⁶ Yin, Zhang, and Wang.

phrase “shall be investigated for criminal responsibility” indicates the complementary application of criminal law. While the EPL is not itself a criminal statute, it explicitly references the criminal legal system when criminal elements are identified. Relevant provisions are found in Article 338 (Crime of Major Environmental Pollution Incident) and Article 339 (Crime of Illegal Disposal of Hazardous Waste) of the Criminal Law of the PRC. This framework aligns with the concept of “Green Criminology” in international law, which acknowledges that severe environmental violations may constitute crimes against humanity or transnational crimes. If the violation results in harm to others, the perpetrator is also required to provide compensation under the Tort Law of the PRC, which is incorporated into the Civil Code of the PRC (post-2021). Therefore, both criminal and civil accountability mechanisms are present.

3. Comparison between Indonesia and the PRC

Indonesia and the PRC are two prominent Asian nations that encounter significant challenges in environmental protection as a result of ongoing economic development. Although both countries have established environmental rules and policies, their respective strategies, approaches, and implementation methods differ considerably.

In Indonesia, Law No. 32 of 2009 constitutes the primary legal framework for environmental protection. The Vision of Golden Indonesia 2045 strategy, which aligns with the 2030 SDGs, emphasizes green development and environmental protection as central pillars of sustainable economic transformation. This strategy particularly focuses on energy transition, strengthening the environmental ecosystem, and promoting circular economy-based innovation. Article 88 of Law No. 32 of 2009 implements a command-and-control approach incorporating the principles of strict liability and absolute responsibility. In the PRC, the EPL serves as the legal foundation for environmental regulation. The EPL was initially enacted in 1989 and underwent significant revisions in 2014 and 2020. The National strategies such as Ecological Civilization and Beautiful

China, which are also aligned with the 2030 SDGs, guide the PRC's environmental policy. Articles 4 and 5 of the EPL establish environmental protection as a fundamental national policy, emphasizing the principles of protection priority, prevention and accountability.

In Indonesia, the institutional authority in this field is the Ministry of Environment and Forestry. Law enforcement is implemented by Environmental Supervisors, PPNS, and both general and administrative courts. The sanction mechanism encompasses administrative, civil, and criminal penalties, as further detailed in Articles 97 to 120 of Law No. 32 of 2009.

In the People's Republic of China, the Ministry of Environmental Protection (MEP), now known as the Ministry of Ecology and Environment (MEE), holds primary regulatory authority. This institution possesses a comprehensive mandate for regulation, supervision, and cross-sectoral coordination. Enforcement is conducted through a command-and-control approach, including administrative penalties, daily fines (Article 59 of the EPL), and business closure. Criminal liability is addressed in Article 64 of the EPL, which refers to the PRC Criminal Law.

Regarding sanction and accountability mechanisms, Indonesia applies strict liability in cases of environmental pollution and significant damage. Legal actions may be initiated by the government, the public, or environmental non-governmental organizations (NGOs). Although law enforcement reform has progressed slowly, efforts are underway to enhance the capacity of PPNS, increase transparency in legal proceedings, and promote restorative environmental approaches. In contrast, China implements dual accountability, encompassing both criminal and civil liability. The imposition of cumulative and unlimited daily fines serves to heighten the deterrent effect on violators. Civil liability, previously governed by the tort law system, is now incorporated into the PRC Civil Code. The revision of the EPL represents a significant reform milestone, strengthening enforcement authority and establishing a more robust accountability framework.

Overall, the PRC demonstrates notable institutional strengthening and assertive environmental law enforcement, particularly through frequent regulatory revisions at the local

government level. In contrast, Indonesia continues to encounter structural and resource limitations in implementation. Consequently, comprehensive law enforcement reform is essential for achieving sustainable environmental governance. Indonesia could consider adopting cumulative daily fines, as implemented in the PRC, which have proven effective in enhancing deterrence and promoting business compliance. Additionally, Indonesia may benefit from institutional strengthening of environmental authorities, such as adopting models similar to the Ministry of Ecology and Environment (MEE), to ensure full authority and independence in enforcement actions. For serious violations, it is also recommended that Indonesia integrate administrative and criminal sanctions concurrently.

Conclusion

Reforming environmental law enforcement is essential to ensure that progress towards Golden Indonesia 2045 does not compromise natural resources or the well-being of future generations. Centering ecological justice within policy frameworks requires law enforcement to prioritize sustainability, engage communities, and act impartially against environmental violators. The environment should be regarded not only as a resource but as a collective asset that requires preservation. Through equitable, humane, and forward-looking reforms, Indonesia can achieve national advancement while maintaining ecological balance.

Indonesia and the PRC both encounter significant challenges in environmental protection amid rapid economic development. While both nations possess robust legal frameworks, their strategies differ. Indonesia applies the principle of strict liability under Law No. 32/2009, yet enforcement remains hindered by institutional weakness and limited resources. In contrast, the PRC adopts a more assertive and coordinated strategy, characterized by regular regulatory updates. Cumulative daily fines and integration of administrative and criminal sanctions. This comparison suggests that Indonesia could benefit from the PRC's approaches to institutional strengthening, sanctions effectiveness, and legal mechanisms integration. Reforming environmental law

enforcement is therefore an urgent priority for Indonesia to achieve strong, equitable, and sustainable environmental governance in pursuit of Golden Indonesia 2045.

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DECLARATION OF CONFLICTING INTERESTS

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

FUNDING INFORMATION

This research was funded by Universitas Pelita Harapan.

ACKNOWLEDGMENT

We would like to express our sincere gratitude to Universitas Pelita Harapan for funding this research. We also extend our thanks to all parties who were involved in the research.

HISTORY OF ARTICLE

Submitted : July 24, 2025

Revised : January 26, 2026

Accepted : June, 9 2026

Published : June 30, 2026