

# Civil Liability for Environmental Damage in Indonesia: An Assessment of Carbon Trading Mechanism's Role for Corporate Responsibility Promotion

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## ABSTRACT

The paper discusses civil liability for environmental damages in Indonesia, considering the carbon trading mechanisms role in promoting corporate responsibility. Hence, this research has adopted a normative approach, analyzing the existing juridical framework that governs environmental damage and discussing to what extent carbon markets, among other emissions trading systems or carbon taxes, can serve complementary functions of incentivizing corporations toward environmentally responsible behavior. The study identifies loopholes within Indonesia's legal system, particularly for the enforcement of environmental liability laws, and discusses how carbon trading could supplement these deficiencies through financial incentives for reducing emissions. The results show that while the mechanisms of carbon trading hold great potential to promote corporate responsibility, their effectiveness relies on robust market infrastructure, sound systems of monitoring and verification, and integration with existing policies on the environment. The study also finds that to enhance corporate environmental accountability in Indonesia, a combination between legal liability and market-driven incentives is essential.

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## 1. INTRODUCTION

Environmental degradation poses significant global threats, highlighting the need for robust legal frameworks to hold corporations accountable, with carbon trading emerging as a market-based mechanism that incentivizes companies to reduce emissions through the buying and

selling of carbon credits. This approach complements traditional legal instruments aimed at environmental protection. Various legal instruments have been developed to govern corporate behavior and community engagement in conservation efforts [1]. However, international environmental law faces challenges such as national sovereignty and inconsistent implementation, which

hinder its effectiveness in mitigating environmental harm [2]. Carbon trading offers economic incentives for companies to lower their carbon footprints, promoting sustainable practices [3], and allows flexibility in how companies meet regulatory requirements, potentially fostering innovative solutions for emissions reductions [3]. Despite its potential, carbon trading faces challenges, including market volatility and the risk of companies exploiting loopholes to avoid genuine emissions reductions [4], and the transition to renewable energy sources presents obstacles like high initial costs and environmental impacts from new technologies [3].

The legal framework for environmental protection in Indonesia is evolving, with mechanisms to hold corporations accountable for environmental damage, but challenges such as enforcement issues, regulatory gaps, and insufficient integration of sustainability into corporate practices hinder the effectiveness of these laws. The Indonesian Constitution recognizes environmental protection as a human right, yet enforcement remains weak [5], [6]. Corporate social responsibility (CSR) regulations encourage compliance with environmental laws, positively influencing corporate reputation, while non-compliance can lead to reputational damage and financial repercussions for companies [7]. In this context, carbon trading mechanisms are emerging as a complementary strategy to enhance corporate responsibility and environmental stewardship. Carbon trading is identified as a critical tool for mitigating climate change, but its success depends on robust legal frameworks [8]. Key challenges include overlapping jurisdictions and the need for improved monitoring and verification systems [8], while the Presidential Regulation No. 98 of 2021 aims to establish carbon pricing mechanisms, though gaps in equitable benefit distribution persist [8].

The purpose of this paper, therefore, is to ascertain how carbon trading mechanisms have influenced the corporate entity to be more responsible for the damages

it inflicts on the natural environment. From a normative juridical approach, the research shall assess the prevailing legal framework related to civil liability within Indonesia, then evaluate how well carbon trading mechanisms have integrated with this and consider their viability for compelling corporate adherence to environmental standards. Other directions of the research will analyze the problems and opportunities of using carbon trading in Indonesia, proving that these mechanisms really can contribute to a more sustainable future.

This study provides valuable insights into policy and legal reforms in Indonesia, focusing on the role of market mechanisms like carbon trading within environmental law. It contributes to the literature on environmental governance and corporate responsibility, exploring the interaction between legal liability and market mechanisms, and offering recommendations to improve Indonesia's environmental protection laws. Environmental challenges such as deforestation, air pollution, and biodiversity loss are worsened by industrialization and weak enforcement, highlighting the need for mechanisms to hold corporations accountable. While the Indonesian government has established frameworks like the Law on Environmental Protection (Undang-Undang No. 32 Tahun 2009), enforcement remains a challenge. Market mechanisms, particularly carbon trading, offer an economic incentive for corporate responsibility and environmental mitigation. Though Indonesia is in the early stages of implementing carbon trading, its full potential in ensuring corporate responsibility for environmental damage requires further analysis within Indonesia's legal framework.

The urgency of environmental damage in Indonesia cannot be more pertinent. Indonesia, one of the largest emitters of greenhouse gases in the world, is under immense pressure to reduce its carbon footprint and limit environmental damage, mainly due to deforestation and industrial activity. The need for effective enforcement of environmental laws is crucial in ensuring that

businesses are held accountable for their actions. However, most of these mechanisms are on paper and generally suffer from weaknesses in enforcement and application, besides low involvement of the public in environmental governance. All this depletes the effectiveness of traditional civil liability measures to prevent and repair environmental damage.

The global emergence of sustainable development and the urgency of climate change mitigation require innovative approaches, with carbon trading emerging as a promising method to complement existing legal frameworks by providing economic incentives for companies to reduce emissions. Given this context, it is essential to integrate carbon trading into Indonesia's legal landscape, addressing both its potential and challenges to ensure it effectively encourages corporate responsibility. Despite existing legal frameworks designed to hold corporations accountable for environmental damage, Indonesia faces significant issues such as poor enforcement of environmental laws, regulatory gaps, and corporate resistance to responsibility, which hinder the effectiveness of these mechanisms. Although carbon trading is part of Indonesia's climate change strategy, it has yet to fully provoke corporate responsibility due to gaps between legislation and implementation. This research aims to examine the effectiveness of carbon trading mechanisms in fostering corporate accountability for environmental damage in Indonesia, by reviewing the legal framework for civil liability, analyzing the integration of carbon trading within the country's environmental governance, identifying challenges and opportunities, and providing recommendations for policy and legal reforms to improve corporate environmental responsibility.

## 2. LITERATURE REVIEW

### 2.1. *Environmental Liability and Corporate Responsibility*

Environmental liability is the legal responsibility of companies to compensate for

the damage they cause to the environment, ensuring that they internalize the costs of environmental degradation. The main Indonesian legislation that covers environmental liability is the Environmental Protection and Management Law (Undang-Undang No. 32 Tahun 2009), which puts the principle that a business is responsible for the environmental damage caused by its activities. Under this law, companies are held liable for pollution, deforestation, and other environmental damages and are required to rehabilitate the environment and compensate for any losses incurred. Barriers that have been identified to impede the effectiveness of environmental liability in Indonesia include, among others, weak enforcement mechanisms, a lack of public participation, and corruption. As pointed out by [9], [10], although the environmental regulations of Indonesia are wide-ranging, a lack of political will and adequate resources to support effective monitoring and enforcement generally defeats their application. Corporations therefore often get away with liability for environmental damage, which perpetuates environmental degradation. To deal with these issues, other complementary market mechanisms like carbon trading have been advanced to complement corporate responsibility. The paper presents an economic motive for the firms to minimize environmental damage with a financial cost of carbon emissions.

### 2.2. *Carbon Trading Mechanisms: Theory and Practice*

Emission trading, commonly referred to as carbon trading, is the market mechanism that grants one firm the right to create carbon credits to be utilized by another firm in reducing greenhouse gas emission. It works on a cap-and-trade principle wherein the government imposes an emission limit and then later assigns allowances to companies, which can sell or buy credits depending upon their respective levels of emission [11]. The Kyoto Protocol and the Paris Agreement made the development of global carbon markets possible, including pioneering schemes such as the EU Emissions Trading

Scheme. In Indonesia, the government is working to develop a carbon market at a national level through the Indonesia Carbon Pricing Policy that includes a carbon tax and emissions trading system for reducing emissions to meet international climate goals (Government of Indonesia 2021).

Research on carbon trading in Indonesia is still emerging, with studies suggesting it could enhance corporate responsibility alongside traditional legal frameworks. Carbon trading allows companies to offset emissions through projects like reforestation and renewable energy [12]. However, challenges such as regulatory uncertainties, limited monitoring capacity, and unclear enforcement mechanisms [13] must be addressed for carbon trading to effectively promote corporate environmental responsibility.

### **2.3 Corporate Responsibility to Environmental Governance**

Corporate responsibility refers to the ethical obligation of business to contribute positively to society and the environment aside from maximizing profits. This includes the introduction, by a firm, of sustainable practices that minimize environmental impacts and ensure that business operations do not harm the environment in environmental governance [10], [14]. CSR encourages business enterprises to be involved in environmentally protective actions like reduction of emissions, improvement of waste management, and investing in green technologies. However, while CSR can stimulate voluntary environmental stewardship, it has often fallen short of the scale of environmental damage caused by industries [15].

The inclusion of carbon trading mechanisms within a corporate responsibility framework can further the effectiveness of CSR through financial incentives for companies to reduce their emissions. Carbon trading internalizes costs for businesses of their environmental impact by placing a price on carbon emissions, thus making pollution more costly. This market-based approach, on the other hand, incentivizes companies to

reduce their emissions at low costs, thus contributing to sustainable development. Other studies, such as [15], argue that carbon trading pushes companies to reimagine their environmental strategies, moving from voluntary CSR toward more comprehensive environmental management systems. By linking financial incentives with legal requirements, carbon trading can favor responsible corporate behavior whereby businesses will not only comply with environmental regulations but also help mitigate global climate change.

### **2.4. The Contribution of Carbon Trading to Corporate Responsibility in Indonesia**

In Indonesia, carbon trading mechanisms have emerged as a potentially promising strategy for enhancing corporate responsibility, particularly for industries such as palm oil, mining, and manufacturing, which are considered to be the highest contributors to environmental degradation. As the biggest emitter of greenhouse gases in Southeast Asia, Indonesia's carbon trading is important for the attainment of Indonesia's goals on climate change and corporate accountability in environmental protection. Some studies, conducted by [12], [13], among others, indicate that the carbon trading system could be instrumental in cutting down emissions, enhancing air quality, and accelerating green technologies in such sectors as palm oil and forestry, which have been among the largest contributors to deforestation and carbon emissions. A national carbon trading system could incentivize these industries to adopt more sustainable practices, such as reforestation or improved land-use management, to meet emissions reduction targets. However, the effectiveness of carbon trading in Indonesia depends on the strength of regulatory frameworks, corporate engagement, and the government's capacity to monitor and enforce emissions reductions [16]. Besides, there is a concern that carbon trading may be inadequate to reduce emissions without comprehensive institutional reforms that incorporate stringent environmental regulations and mechanisms for compliance.

### 3. METHODS

#### 3.1. Design

The design of this research is qualitative research, where a doctrinal or legal research approach shall be followed for analyzing the prevailing legal frameworks concerning carbon trading mechanisms for assessing their contribution to ensuring corporate environmental responsibility and indicating further improvements that can be made in law. The present study will not only assess primary legal sources such as statutes and regulations but also include secondary sources in its analysis, including academic articles, reports, policy documents, and case law. This leads to a reasoned and deep analysis of how carbon trading can complement the existing environmental laws of Indonesia.

#### 3.2. Data Collection

This research will be collecting data from both primary sources and secondary sources. It includes primary sources, such as fundamental legal documents like the Basic Environmental and Management Act (Law no. 32 of 2009); carbon pricing policy; and any relevant regulations that touch on the topic of carbon trading and environmental liability of the corporate world. It will provide an update of government reports to the Ministry of Environmental and Forestry, Bappenas, and the Ministry of Finance about development in carbon markets and strategy toward pricing mechanisms or emissions trading schemes. The review of the case law regarding environmental liability, corporate responsibility, and carbon trading would provide a proper idea of judicial interpretation.

Secondary data will comprise academic literature dealing with environmental law, corporate responsibility, and mechanisms of carbon trading in Indonesia and the world. Reports from international organizations such as the World Bank and UNFCCC, and NGOs working in the field of sustainability and carbon markets, will also be considered. Besides that, legal

commentaries, policy briefs, and law firm analyses will be reviewed to ascertain the efficacy of Indonesia's regulations and the challenges in implementing the mechanisms of carbon trading.

#### 3.3. Data Analysis

Qualitative and doctrinal analysis will be done to examine the position of Indonesian law on environmental liability and how carbon trading affects corporate responsibility. Laws relating to the above, such as the Environmental Protection and Management Law (Undang-Undang No. 32 Tahun 2009), will be analyzed in view of corporate responsibility, civil liability, and its mechanisms for enforcement, pointing out the lacuna in regulation deterring carbon trading. It will evaluate Indonesia's carbon pricing and market policies, such as the carbon tax and ETS, against international standards of the Kyoto Protocol and the Paris Agreement. Additionally, this study will investigate how carbon trading incentivizes companies to reduce environmental impact. The comparative analysis is supported by examples of case studies, including the EU-ETS and US RGGI initiatives, making note of challenges and benefits for Indonesia. It will also dwell on some of the specific areas in Indonesia, like monitoring and enforcement relating to emission, in order to include carbon trading into the national legal framework.

### 4. RESULTS AND DISCUSSION

#### 4.1. Legal Framework of Environmental Liability in Indonesia

The existing environmental legal framework of Indonesia rests principally on the Law of the Republic of Indonesia Number 32 Year 2009 on Environmental Protection and Management, which articulates general principles related to environmental protection and corporate responsibility. This law has stated that any company operating in Indonesia is liable in case of environmental damage its operation may cause due to negligence or as an act of commission. In such a scenario, it states that restoration of the

damaged environment and compensation shall be done by the corporations.

However, the law grants civil liability on all environmental damages, though there are many challenges in enforcing the same. In this regard, these include the following:

- There are weak enforcement mechanisms: Whereas the law imposes liability for environmental damage by companies, it is usually not enforced due to issues related to capacity, bureaucratic bungling, and sometimes political will.
- Limited compensation to the affected parties: In practice, compensation for environmental damage is usually small, and rarely are the communities or ecosystems affected given due restitution.
- Difficulty in proving environmental damage: The onus of proof often lies with the affected parties, which may be hard to meet because assessments of environmental damage are usually technical.

These obstacles notwithstanding, the present legal framework in civil liability stands a good chance of encouraging corporate environmental responsibility if consolidated with principles of better enforcement, clear guidelines, and effective monitoring.

#### ***4.2. Carbon Trading Mechanisms in Indonesia***

Recently, Indonesia has been working toward carbon trading mechanisms, one of the ways the country has promised to meet its commitments under the Paris Agreement. The application of the carbon tax-especially starting in 2021 with the Omnibus Law on Job Creation-was applied on the emissions produced from certain sectors to incentivize companies to further reduce their carbon footprint. Besides this, Indonesia has also attempted to develop an ETS through various pilot projects that permit companies to buy and sell carbon credits to offset their emissions. The Indonesian Carbon Market is still in its infancy but is considered a very important instrument for encouraging corporate responsibility in carbon emissions.

However, various challenges have cropped up during the implementation of these mechanisms, including limited participation and awareness by companies, probably because of unclear regulatory frameworks, lack of guidance, or insufficient incentives to engage companies in carbon trading. On the other hand, there are considerable barriers to effective MRV due to the general shortage of Indonesian resources and technical capacity related to environmental monitoring. Finally, at current low prices, carbon is a less-than-effective incentive in Indonesia both for the carbon tax and for ETS; as such, its potential for significantly changing corporate behavior via either the carbon tax or ETS financial incentives is considerably diminished.

Indonesia's efforts to implement carbon trading mechanisms, including carbon taxes and emissions trading systems (ETS), are crucial for meeting its Paris Agreement commitments, but these initiatives face significant challenges that hinder their effectiveness. The legal framework established by Presidential Regulation No. 98 of 2021 is essential for carbon pricing but has gaps, particularly in equitable benefit distribution and participation of vulnerable communities [8]. Limited awareness and participation from companies stem from unclear regulations and insufficient incentives, undermining the potential of carbon trading [8]. Additionally, effective Monitoring, Reporting, and Verification (MRV) is hampered by a lack of resources and technical capacity in Indonesia, which is critical for ensuring compliance and transparency in carbon trading [8]. The current low carbon prices diminish the financial incentives for companies to engage in carbon trading, further complicating the situation [17]. While Indonesia's collaboration with international partners, such as the UK, aims to enhance low-carbon initiatives, these programs require a participatory approach to address the needs of vulnerable groups [18]. Furthermore, the Joint Crediting Mechanism (JCM) has shown potential but highlights the need for a more robust framework to

maximize its impact on emissions reduction [19].

#### ***4.3. The Contribution of Carbon Markets to Corporate Accountability***

Carbon trading mechanisms offer a real opportunity to fill in the gaps of existing environmental law by introducing more financial incentives for corporations to minimize their environmental impact. When well designed, such systems provide a powerful incentive for business to internalize carbon emissions costs by deploying cleaner technologies, improving energy efficiency, and minimizing waste. Besides, carbon trading goes in line with the CSR objectives, which give an opportunity for firms to prove themselves as social entities concerned about sustainability, while their reputation increases in stakeholders' eyes. These mechanisms also introduce transparency and accountability because companies have to report on their emissions and follow regular monitoring and reporting. Moreover, carbon markets created through financial incentives stimulate innovation in the corporate world by forcing them to invest in research and development that will see a reduction of emissions and in product and process development. Still, if carbon trading is going to effectively support corporate responsibility, there are various preconditions. First, an unequivocal regulatory framework must provide clarity, ensure fairness, and, above all, be enforceable, together with well-defined rules for monitoring, reporting, and verifying emission reductions. Second, actual reductions can only be achieved if there are mechanisms for enforcement, with fines imposed for incompliance or fraudulent activity. Finally, carbon trading requires cooperation between the public and private sectors: though governments must provide an enabling environment for carbon markets, businesses must also take an active role in the reduction and trading programs if the mechanism is to achieve any real results.

#### ***4.4. International Case Studies and Lessons for Indonesia***

Drawing from international experiences, there are a number of salient lessons that could be applied to Indonesia's carbon trading mechanisms. The European Union Emissions Trading Scheme (EU ETS) has been ranked as one of the most successful carbon trading systems in the world. Its success underlines the importance of a cap-and-trade system, clear carbon pricing, and strong enforcement mechanisms—features that should be considered in building Indonesia's domestic carbon market if it is to be effective. Similarly, the California Cap-and-Trade Program offers another outstanding example of how emissions trading can complement other regulatory instruments, such as renewable energy targets. It points out the need for stability in the market and the consideration of long-term strategies as a means of achieving predictable outcomes. Furthermore, China's carbon trading pilot programs in cities like Beijing and Shanghai provide insights into the necessity of policies tailored to local conditions, showing how successful carbon markets rely on addressing specific regional environmental, economic, and industrial contexts.

Indonesia can greatly benefit from these international models by designing policies and measures for its carbon trading initiative that assess the unique challenges and opportunities it faces. The EU ETS, for instance, demonstrates how a cap-and-trade system can effectively reduce emissions by setting a limit on total greenhouse gas emissions and allowing the trading of permits [20]. Moreover, the consistent enforcement of regulations in the EU ensures compliance, encouraging businesses to adopt cleaner technologies and thus significantly reducing emissions [20]. Insights from California's Cap-and-Trade Program also offer valuable lessons, particularly regarding the need for a stable market environment, which is crucial for long-term investments in green technologies [21]. The integration of carbon trading with renewable energy targets further illustrates how emissions trading can work

alongside other regulatory measures to enhance overall effectiveness [21].

China's localized pilot programs in cities such as Beijing and Shanghai serve as key lessons for Indonesia. These pilots demonstrate the necessity of adapting carbon trading policies to local conditions, ensuring that regional environmental and economic contexts are considered [21]–[23]. These pilot programs serve as valuable testing grounds for refining carbon trading systems before they are fully implemented on a national scale, a strategy that Indonesia should adopt to ensure the success of its carbon market [13]. By learning from these international experiences, Indonesia can enhance its carbon trading mechanisms and design policies that are both effective and tailored to its specific needs.

#### 4.5. Discussion

This discussion section looks at implications and reflects on the role of carbon trading mechanisms in fostering corporate responsibility for environmental damage in Indonesia. The focus is based on an integrated approach where legal frameworks are linked to market-driven incentives through mechanisms such as carbon trading. Although environmental liability laws are sound in Indonesia, enforcement is often weak because of resource and political challenges. Mechanisms such as carbon trading, including the carbon tax and ETS, can fill this gap by creating financial incentives for businesses to reduce emissions. However, for carbon trading to be truly effective, it needs to supplement and complement civil liability laws in a way that legally binds companies to take care of environmental damages while creating a financial incentive for them to innovate and go greener.

The success of carbon trading mechanisms in encouraging corporate accountability depends on the financial incentives provided by them. Civil liability laws hold companies responsible for environmental destruction, but most do not carry direct financial penalties, tending to reduce the extent to which such a law could force companies to go green. Carbon trading

mechanisms make the reduction of carbon output cheaper than continued pollution by placing a price on carbon emissions. Regarding efficiency, the problems of low participation by companies, a general lack of knowledge within companies, and poor market liquidity afflict carbon trading systems. Overcoming these barriers requires better infrastructure for carbon markets in Indonesia, access to the market, early-mover incentives, and increased corporate understanding of how companies can benefit from these systems. The Indonesian government will also have to find ways to overcome problems with monitoring reductions, ensuring stability in the market, and adapting lessons learned internationally to develop an improved and efficient carbon trading mechanism.

## 5. CONCLUSION

The study thereby concludes that integrating carbon trading mechanisms into Indonesia's current legal framework concerning environmental liability will add much value to corporate responsibility in cases of environmental damages. Whereas Indonesian environmental laws are well-founded in the light of holding companies liable for environmental damages, actual enforcement remains weak. The carbon trading mechanism, including emission trading systems and carbon taxes, provides significant fiscal incentives that, in principle, could encourage businesses to reduce impacts on the natural environment. These can only effectively be achieved provided Indonesia tackles such challenges as improving the infrastructure of markets and the transparency of monitoring and verification processes and developing public-private partnerships. By integrating legal accountability with market-driven incentives, Indonesia may have a more comprehensive and efficient strategy for corporate responsibility toward environmental achievements. An integrated approach is very relevant in tackling urgent environmental



challenges and fostering long-term sustainability in the country.

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