



Legal Approaches to Climate Change Mitigation: Evaluating Implementation Strategies and Mainstreaming Efforts

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Abstract

Climate change poses a serious threat to all nations. According to the World Economic Forum's Global Risk Report (2019), climate change ranks among the most significant global risks, contributing to natural disasters, extreme weather events, food and water crises, biodiversity loss, and ecosystem collapse. These impacts have profound consequences for human life. Despite growing awareness of climate change as a critical issue, large-scale efforts to mitigate its effects remain insufficient. This research seeks to analyze the factors contributing to the lack of public awareness in addressing climate change, particularly from a legal perspective. Legal frameworks play a crucial role in mainstreaming climate change mitigation and adaptation to prevent environmental disasters and promote sustainable development. Employing a normative approach, this research will explore the legal mechanisms necessary for integrating climate change mitigation and adaptation into regulatory frameworks.



A. Introduction

Climate change has had severe consequences in Indonesia, including loss of life and significant material damage, as evidenced by natural disasters in January 2024. Reports from the Emergency Operation Centre (Pusdalops) of the National Disaster Mitigation Agency (BNPB) documented multiple disasters, such as floods in Mesuji Regency, Lampung Province, and Prabumulih Regency, South Sumatra Province, caused by high-intensity rainfall. A recent example is the Jakarta-Bekasi flood on March 4, 2025, the worst since 2020, which resulted in two fatalities and submerged thousands of homes. Researchers from the National Research and Innovation Agency (BRIN) attributed the Bekasi flood to global climate change.¹

Climate change poses an escalating threat across social and economic spheres. The Global Risk Report 2019 by the World Economic Forum identifies it as a primary driver of global crises, including natural disasters, extreme weather, food and water shortages, biodiversity loss, and ecosystem collapse.² Global warming, driven by rising greenhouse gas emissions from human activities such as fossil fuel combustion, deforestation, and industrial processes, is a key contributor to climate change.³

Despite growing awareness, large-scale efforts to mitigate climate change remain inadequate. Limited understanding, public apathy, and competing priorities often hinder community engagement in mitigation efforts. Thus, mainstreaming climate change mitigation and adaptation is increasingly urgent. Mitigation seeks to reduce greenhouse gas emissions, while adaptation aims to minimize vulnerability to climate impacts. However, a critical legal gap persists, as many jurisdictions lack comprehensive regulatory frameworks to support these efforts. Consistent legal and policy measures are essential to ensuring the effective implementation of climate strategies. This research examines the extent to which existing legal instruments contribute to achieving climate change mitigation targets.

B. Discussion

1. Mainstreaming Climate Change Mitigation and Adaptation in Legal Instruments

Climate change has emerged as one of the most critical global challenges in the past decade. Recognized as a transboundary issue, it necessitates a coordinated response from all nations. The consequences of climate change extend across multiple sectors, including the environment, economy, public health, food security, and social stability. The widespread impact on both developed and developing nations underscores the necessity of international legal frameworks to facilitate global mitigation and adaptation efforts.⁴

Scientifically, climate change is characterized by alterations in the mean state and variability of climate-related factors over an extended period.⁵ This phenomenon significantly affects various ecological, social, and economic systems, posing a serious threat to human welfare and, in extreme cases, to human existence itself. As such, climate change is widely regarded as the most pressing environmental concern of the 21st century. Addressing this

¹ Muhamad Nandri Prilatama, banjir di Jakarta-Bekasi Bukan Cuma Karena Curah Hujan, Peneliti BRIN ungkap apa saja penyebabnya, accessed through <https://jabar.tribunnews.com/2025/03/09/banjir-di-jakarta-bekasi-bukan-cuma-karena-curah-hujan-peneliti-brin-ungkap-apa-saja-penyebabnya>.

² Shafira Zahro Rosyadi, "Museum Iklim Dan Lingkungan Di Jakarta Sebagai Kompleks Percontohan Sustainable Living" (Sebelas Maret University, 2024).

³ Jhen Reski Nugrah Toalla, "Efektivitas Peran Intergovernment Panel on Climate Change (PCC) Dalam Hal Policy Making Untuk Menanggulangi Isu Perubahan Iklim" (2013).

⁴ Arum Widiastuti, "Perubahan Iklim Dalam Hukum Internasional: Kerangka Hukum Untuk Tata Kelola Lingkungan Global," *Jurnal Thengkyang* 8, no. 1 (2023): 87.

⁵ *Integrasi Adaptasi Perubahan Iklim Dan Pengurangan Risiko Bencana: Menuju Kesatuan Upaya Kehidupan Bermartabat*, n.d.

challenge requires comprehensive participation and solidarity across societal sectors, as its far-reaching consequences necessitate both mitigation and adaptive strategies. The adverse effects of climate change encompass various sectors, including agriculture, fisheries, public health, and economic stability, while also posing existential threats to small islands and coastal regions.⁶ In Indonesia, for example, climate change is evidenced by a rapid increase in temperature since 1960 and a sea level rise trend of approximately 0.8 mm per year, particularly affecting coastal and low-lying areas in Java.⁷

The manifestations and impacts of climate change vary across regions, necessitating context-specific legal responses. However, contemporary climate policies have often been critiqued for prioritizing the interests of developed nations while failing to adequately incorporate the principles of climate justice. To effectively address climate change mitigation and adaptation, national legal frameworks must be developed or strengthened to reflect each country's specific climatic conditions and policy objectives.

A robust national legal framework is essential to provide the legal foundation for climate adaptation policies, institutional structures, and long-term planning.⁸ Various countries have adopted different legislative approaches to address climate change. Some, such as Kazakhstan and Vietnam, have integrated climate change provisions into existing environmental laws and sectoral regulations. Others, including Japan and the United Kingdom, have enacted standalone climate laws or climate adaptation legislation. These frameworks serve to establish comprehensive and coherent adaptation strategies. While the specific provisions of adaptation laws differ across jurisdictions, common elements typically include mechanisms for information generation and dissemination, adaptation planning, institutional governance structures, and monitoring and evaluation processes. To enhance climate resilience, countries should conduct systematic evaluations of their existing legal frameworks to identify gaps and areas for improvement in climate governance.⁹

Indonesia has also incorporated climate change regulations into its national legal framework. Several laws and regulations have been enacted to address climate change and align Indonesia's commitments with international climate agreements:

- 1) Law Number 6 of 1994 concerning the United Nations Framework Convention on Climate Change Ratification. The UNFCCC is a national agreement from the UNCED 1992 in Rio de Janeiro (the Earth Summit). It manifests the global commitment of the world community to dealing with the impacts of climate change.¹⁰ This UN-initiated framework aims to stabilize the concentration of Greenhouse Gases in the Earth's atmosphere. This protocol places a heavy burden on developed countries under the principle of common but differentiated responsibilities, coming into force on February 16, 2005, with 192 ratifying it to date 11, with the note that the United States has not ratified the Kyoto Protocol.
- 2) Law Number 17 of 2004 concerning the Ratification of the Kyoto Protocol to The United Nations Framework Convention on Climate Change. The Kyoto Protocol is an international agreement related to the United Nations Framework Convention on Climate Change

⁶ Yanto Rochmayanto, Niken Sakuntaladewi, and Lukas Rumboko Wibowo, "Pengaruh-Utamaan Biaya Adaptasi Terhadap Perubahan Iklim Dalam Perencanaan Pembangunan," *Jurnal Analisis Kebijakan Kehutanan* 8, no. 7 (2014): 2.

⁷ Administrator, "Saatnya Melindungi Pulau Jawa!," *Indonesia.Go.Id*, January 21, 2024.

⁸ Kaharuddin Kaharuddin, Gilang Abi Zaifa, and Rianda Dirkareshza, "Dynamics of Formal Legal Procedures Establishment of Laws and Regulations," *Constitutionale* 4, no. 2 (2023): 112, <https://doi.org/10.25041/constitutionale.v4i2.3144>.

⁹ Matthieu Bellon and Emanuele Massetti, "Planning and Mainstreaming Adaptation to Climate Change in Fiscal Policy," *Staff Climate Notes*, 2022, <https://doi.org/10.5089/9798400201950.066>.

¹⁰ UNCC, "What Is the United Nations Framework Convention on Climate Change?," n.d., <https://unfccc.int/process-and-meetings/what-is-the-united-nations-framework-convention-on-climate-change>.

(UNFCCC), which binds member countries to set internationally binding emission reduction targets.¹¹

- 3) Law Number 16 of 2016 concerning the Ratification of the Paris Agreement to the United Nations Framework Convention on Climate Change. The Paris Agreement, adopted at the 21st UN Climate Change Conference (COP21) in Paris in 2015, is a new milestone in international law related to climate change. The agreement recognizes the need for collective efforts from all developed and developing countries to limit the increase in global temperatures to below 2 degrees Celsius above pre-industrial levels, with further efforts to limit the rise to 1.5 degrees Celsius.¹² Unlike the Kyoto Protocol, the Paris Agreement is more inclusive, with all member countries required to submit nationally determined contributions (NDCs) that reflect their ambitions in reducing emissions and adapting to the impacts of climate change. Although the Paris Agreement is considered a step forward in international climate diplomacy, challenges remain in its implementation.¹³ One of the main challenges is ensuring that the NDCs submitted by countries are ambitious enough to achieve the agreed goals. In addition, mechanisms to ensure compliance with the commitments made in the Paris Agreement are still lacking. Without clear sanctions or effective enforcement mechanisms, there are concerns that some countries may not live up to their promises.¹⁴

The laws and regulations related to and supporting climate change include:

- 1) Law Number 5 of 1960 concerning Basic Agrarian Principles; 11
- 2) Law Number 5 of 1990 concerning the Conservation of Biological Natural Resources and Ecosystems
- 3) Law Number 41 concerning Forestry;
- 4) Law Number 22 of 2001 concerning Oil and Gas;
- 5) Law Number 25 of 2004 concerning the National Development Planning System;
- 6) Law Number 30 of 2007 concerning Energy;
- 7) Law Number 18 of 2008 concerning Waste Management;
- 8) Law Number 4 of 2009 concerning Mineral and Coal Mining;
- 9) Law Number 31 of 2009 concerning Meteorology, Climatology, and Geophysics;
- 10) Law Number 32 of 2009 concerning Environmental Protection and Management
- 11) Law Number 18 of 2013 concerning the Prevention and Eradication of Forest Destruction

Indonesia has established various national legal instruments to address climate change, including the National Council on Climate Change (DNPI), formed through Presidential Regulation No. 46 of 2008 to coordinate climate change mitigation efforts and enhance Indonesia's position in international negotiations. Climate change mitigation has been regulated through several national laws, such as the Clean Development Mechanism (CDM) under Minister of Environment Decree No. 206 of 2005 and the framework for reducing emissions from deforestation and forest degradation (REDD+), governed by multiple regulations, including Minister of Forestry Regulation No. 68 of 2008 and No. 30 of 2009, as well as

¹¹ UNCC, "What Is the Kyoto Protocol?," n.d., https://unfccc.int/kyoto_protocol.

¹² Jiahui Qiu, Sharon Seah, and Melinda Martinus, "Examining Climate Ambition Enhancement in ASEAN Countries' Nationally Determined Contributions," *Environmental Development* 49, no. May 2023 (2024): 2, <https://doi.org/10.1016/j.envdev.2023.100945>.

¹³ UNCC, "Key Aspects of the Paris Agreement," n.d., <https://unfccc.int/most-requested/key-aspects-of-the-paris-agreement>.

¹⁴ Mathilde Hautereau-Boutonnet and Sandrine Maljean-Dubois, "Combining Tools and Actors for a Better Enforcement: A Case of the 2015 Paris Agreement on Climate Change," *Environmental Policy and Law* 53, no. 5–6 (2024): 415–17, <https://doi.org/10.3233/EPL-239011>.

Presidential Decrees No. 19 of 2010 and No. 25 of 2011. Presidential Regulation No. 61 of 2011 established the National Action Plan for Greenhouse Gas Emission Reduction, setting sectoral emission reduction targets.

Despite these measures, Indonesia lacks a comprehensive legal framework dedicated to climate change.¹⁵ While existing regulations address specific aspects of mitigation, there is no overarching law governing climate change adaptation. Given the inevitability of climate change impacts, Indonesia must strengthen its commitment to international legal frameworks and incorporate them into national policies.¹⁶ Effective legal enforcement, including legislative development, sanctions, and regulatory implementation, is crucial.¹⁷ Without a dedicated Climate Change Adaptation Law, Indonesia risks exacerbating environmental governance failures. This article highlights the urgency of such legislation and advocates for a multidoor law enforcement approach to enhance environmental law enforcement, particularly in addressing climate change. The necessity for this legal framework aligns with Article 10(1) of Law No. 12 of 2011 on the Formation of Legislation, underscoring the need for laws that respond to societal demands.¹⁸

Legislative products in the form of laws are important due to the following reasons.

- 1) Legislative products can provide a grand and long-term design for instruments/policies for climate change control efforts in Indonesia;
- 2) Legislative products, especially laws, can handle and form a pattern of adaptation to climate change that is poly-centric in a comprehensive manner considering the multi-actor and multi-sector climate change problem. The existence of laws can reach and encourage harmonization of policies and coordination between parties;
- 3) The existence of legislative products in the form of laws has a more definite impact because it can bind the entire community and has sanctions. Enforcement of rules is more effective when compared to other legal products, such as ministerial regulations;
- 4) Legislative products in the form of laws have a much wider reach than local regulations or ministerial regulations that cannot contain sanctions.

2. Obstacles to Mainstreaming Climate Change Mitigation and Adaptation in Legal Instruments

Environmental management and resource utilization in Indonesia face significant legal challenges, particularly concerning permit violations. In Central Kalimantan, 606 mining permits covering approximately 3.27 million hectares and 285 plantation units covering 3.5 million hectares lack proper lease or release permits.¹⁹ Corruption in the forestry sector remains a persistent issue, with at least six cases handled by the Corruption Eradication Commission (KPK) since its establishment. Notable cases include the Palalawan Regent in Riau, who unlawfully issued 15 IUPHHK-HT permits, resulting in state losses of Rp 1.208 trillion and severe deforestation, and the former Governor of East Kalimantan (2003–2008), who approved

¹⁵ Qanszelir Gabriel Bataranotti and Agung Kurnia Adipratama, "Peran Dan Tantangan Indonesia Dalam Upaya Menghadapi Perubahan Iklim Di Tingkat Global," *UPH Journal of International Relations* 13, no. 26 (2021): 57, <https://doi.org/http://dx.doi.org/10.19166/verity.v13i26.5246>.

¹⁶ Jale Tosun and B. Guy Peters, "The Politics of Climate Change: Domestic and International Responses to a Global Challenge," *International Political Science Review* 42, no. 1 (2021): 4, <https://doi.org/10.1177/0192512120975659>.

¹⁷ Haekal - Siraj, "Indonesian Policy in Ratifying The 2015 Paris Agreement," *Global: Jurnal Politik Internasional* 21, no. 1 (2019): 71, <https://doi.org/10.7454/global.v21i1.353>.

¹⁸ Fitri Amelina, "Peran Hukum Di Indonesia Dalam Penanggulangan Dampak Perubahan Iklim," *Jurnal Hukum Lingkungan Indonesia* 1, no. 1 (2021): 185–86, <https://doi.org/10.38011/jhli.v1i1.9>.

¹⁹ Amelina.

a one-million-hectare oil palm plantation in Berau, causing IDR 348 billion in state losses and widespread forest destruction. Furthermore, business actors frequently neglect their obligations, such as operating plantations outside concessions, lacking fire suppression equipment, and allowing uncontrolled fires. Meanwhile, bureaucratic complexities hinder community access to forest resources, including community forests, community plantation forests, and village forests.

Environmental pollution is another critical concern. Although Indonesia is not among the world's largest greenhouse gas emitters²⁰, it bears responsibility under the "common but differentiated responsibilities" principle. Pollution threatens environmental quality²¹ and public health, particularly in urban areas. Air pollution, for instance, has reached alarming levels in Jakarta.²² According to the 2023 World Air Quality Report, Indonesia recorded the worst air quality in Southeast Asia, largely due to emissions from coal-fired power plants (PLTU). In Jakarta, PLTUs in Banten and West Java contribute 20–30% of air pollution, while transportation accounts for 30–40%.²³ Minister of Environment and Forestry Siti Nurbaya Bakar reported that 44% of air pollution in the Jabodetabek area originates from vehicles, 34% from PLTUs, and the remainder from other sources. Research by the Center for Research on Energy and Clean Air (CREA) in 2023 estimated that PLTU-related pollution causes 1,470 deaths annually and results in health-related economic losses of up to IDR 14.2 trillion.²⁴

Environmental pollution not only threatens human health but also disrupts ecosystems and biodiversity. The 2019 waste pollution case in Karawang exemplifies its widespread impact, contaminating forests, rivers, land, seas, and residential areas. That year, 36 environmental pollution cases were reported, yet only one resulted in the identification of a perpetrator. Air pollution, particularly fine particulate matter (PM 2.5), significantly affects public health, reducing Indonesians' average life expectancy by 1.4 years, according to the AQLI report. Ahmad Safrudin, a member of the Indonesian Clean Air Forum, announced plans for a class-action lawsuit under Law No. 32 of 2009 on Environmental Protection and Management, aiming to recover economic losses, including healthcare costs for respiratory diseases.²⁵

To address pollution, Indonesia must implement effective strategies, including transitioning from coal to renewable energy sources such as solar power. Strengthening industrial oversight through stricter emission standards and routine inspections is also crucial. Expanding environmentally friendly public transportation can also help reduce air pollution.

A cleaner and more sustainable environment requires collective awareness and action. The principle of "common but differentiated responsibilities"²⁶ underscores Indonesia's role in pollution reduction and environmental preservation.²⁷ Recognizing environmental protection

²⁰ Luca Tacconi and Muhammad Zahrul Muttaqin, "Reducing Emissions from Land Use Change in Indonesia: An Overview," *Forest Policy and Economics* 108, no. July (2019): 225, <https://doi.org/10.1016/j.forpol.2019.101979>.

²¹ Zhong Fang et al., "Air Pollution's Impact on the Economic, Social, Medical, and Industrial Injury Environments in China," *Healthcare (Switzerland)* 9, no. 3 (2021): 261, <https://doi.org/10.3390/healthcare9030261>.

²² Ioannis Manisalidis et al., "Environmental and Health Impacts of Air Pollution: A Review," *Frontiers in Public Health* 8, no. February (2020): 1–13, <https://doi.org/10.3389/fpubh.2020.00014>.

²³ Greenpeace Indonesia, "Polusi Udara, Ancaman Genteng Tak Kasat Mata," *GreenPeace*, 2024, <https://www.greenpeace.org/indonesia/cerita/58786/polusi-udara-ancaman-genteng-tak-kasat-mata/>.

²⁴ "World Air Quality Report: Region and City PM 2.5 Ranking," 2023.

²⁵ "Indonesia Masuk 'Enam Negara Paling Berkontribusi Terhadap Polusi Udara Global', Warga Akan Gugat Pemerintah Dan Industri," *BBC News Indonesia*, 2023, <https://www.bbc.com/indonesia/articles/c72enp76622o>.

²⁶ Tide Aji Pratama et al., *Diplomasi Parlemen Di Tengah Gejolak Dunia* (Jakarta Pusat: Sekretariat Jenderal DPR RI, 2024).

²⁷ Kementerian Lingkungan Hidup dan Kehutanan, "Kinerja Pengendalian Pencemaran Dan Kerusakan Lingkungan Tahun 2023 Siaran Pers Nomor: SP. 447/HUMAS/PPIP/HMS.3/12/2023," 2023, <https://ppid.menlhk.go.id/berita/siaran-pers/7573/kinerja-pengendalian-pencemaran-dan-kerusakan-lingkungan-tahun-2023>.

as a shared global responsibility can shape human behavior toward sustainability, ensuring the well-being of future generations.

One of the main challenges in enforcing international climate law is the disparity in responsibilities between developed and developing countries. The principle of common but differentiated responsibilities, as enshrined in international agreements such as the Kyoto Protocol and the Paris Agreement, acknowledges that developed nations bear a greater obligation to reduce emissions due to their historical contributions to global warming.²⁸ However, translating this principle into effective law enforcement remains contentious. Developing countries, which contribute less to global emissions but face greater vulnerability to climate change,²⁹ argue that developed nations fail to meet their obligations adequately, particularly regarding emission reductions and financial or technological support. Conversely, developed countries seek greater participation from emerging economies, especially given the rising emissions from countries like China and India. This imbalance complicates efforts to achieve an effective and equitable global agreement and undermines the enforcement of climate commitments.³⁰

Resource constraints in developing countries further hinder environmental law enforcement.³¹ Many lack the financial, technological, and institutional capacity needed to implement emissions reduction and climate adaptation policies. Although mechanisms like the Green Climate Fund aim to provide financial assistance, the funding often falls short, and the bureaucratic process to access it is complex. These limitations underscore the necessity for enhanced international support in finance and technology to ensure that all nations can meet their climate commitments.

Specific industries pose obstacles to climate law enforcement. Fossil fuel-dependent sectors, such as oil and gas, often resist policies aimed at reducing emissions, leveraging their influence over national and international policies to maintain the status quo. The transition to a low-carbon economy, which is central to global climate efforts, presents significant economic and social challenges, particularly for countries whose economies are heavily reliant on fossil fuels.³² Achieving a just and sustainable transition requires a carefully planned and inclusive approach.

Another major challenge lies in monitoring and reporting progress on climate commitments. While international agreements emphasize transparency and accountability, many countries still struggle to collect, analyze, and report accurate emissions data. Without reliable data, it is difficult to assess compliance and identify areas requiring further action. Strengthening capacity

²⁸ Yuli Chen, "Reconciling Common but Differentiated Responsibilities Principle and No More Favourable Treatment Principle in Regulating Greenhouse Gas Emissions from International Shipping," *Marine Policy* 123 (2021), <https://doi.org/10.1016/j.marpol.2020.104317>.

²⁹ Kristalina Georgieva, Vitor Gaspar, and Ceyla Pazarbasioglu, "Poor and Vulnerable Countries Need Support to Adapt to Climate Change," 2022, <https://www.imf.org/en/Blogs/Articles/2022/03/23/blog032322-poor-and-vulnerable-countris-need-support-to-adapt-to-climate-change>.

³⁰ Bo Meng et al., "Developing Countries' Responsibilities for CO2 Emissions in Value Chains Are Larger and Growing Faster than Those of Developed Countries," *One Earth* 6, no. 2 (2023): 168, <https://doi.org/10.1016/j.oneear.2023.01.006>.

³¹ Fredj Jawadi, Thierry M. Pondie, and Abdoukarim Idi Cheffou, "New Challenges for Green Finance and Sustainable Industrialization in Developing Countries: A Panel Data Analysis," *Energy Economics* 142 (2025): 7, <https://doi.org/10.1016/j.eneco.2024.108120>.

³² UNCC, "Leaving No One Behind in the Transition Towards a Low-Carbon Economy," 2023, <https://unfccc.int/news/leaving-no-one-behind-in-the-transition-towards-a-low-carbon-economy>.

for monitoring and reporting is therefore crucial to ensuring effective climate law enforcement.³³

Addressing these challenges requires a comprehensive strategy that integrates stronger international cooperation, financial and technological support for developing nations, and robust accountability mechanisms. Transparency and accountability must remain central to climate governance in several aspects, as follows:

1. Strengthening collaborative capacity among international institutions, civil society organizations, and private entities;
2. Utilizing information and communication technology (ICT) to enhance transparency and accountability through modern technological systems;
3. Promoting civil society participation in monitoring and reporting on-ground conditions;
4. Enhancing institutional capacity in science, technology, and infrastructure, particularly in relation to climate change; and
5. Ensuring transparency in assessing, comparing, and comprehending all relevant aspects of climate governance

While climate change does not directly cause the aforementioned issues, its impacts will inevitably exacerbate these problems if left unaddressed. Effective law enforcement is essential to addressing legal violations and supporting government efforts to mitigate climate change in Indonesia.³⁴ Corruption, mining permits, illegal logging, and other environmental violations further undermine environmental protection and management. One potential solution is multi-prosecution, which imposes additional penalties on environmental offenders.³⁵ Furthermore, a multidoor law enforcement approach could enhance deterrence and improve enforcement effectiveness.

A key debate concerns whether Indonesia should enact a dedicated climate change law, given that it is not among the world's largest carbon emitters. However, both developed and developing nations—including the European Union, the United Kingdom, Australia, New Zealand, China, Colombia, and the Philippines—have implemented climate legislation to address environmental challenges and economic opportunities. Indonesia, with its abundant natural and human resources, must shift toward a green economy, and a climate change law could serve as a strategic entry point.

Currently, no specific regulations comprehensively address Indonesia's opportunities and challenges in mitigating climate change. This legal gap further complicates forest management and broader environmental governance. A dedicated climate change law could facilitate coordinated efforts, particularly in a developing country like Indonesia, where resource and infrastructure constraints heighten vulnerability to climate change impacts.³⁶

The urgency of establishing a dedicated climate change law in Indonesia is a logical consequence of the country's commitment as a party to the Climate Change Convention, ratified in 1994. As part of its law enforcement efforts, Indonesia must consider enacting such

³³ Baku, "Stronger Regulations and Law Enforcement Essential to Mitigate Climate Change, Says UNODC at COP29," 2024, <https://www.unodc.org/unodc/frontpage/2024/November/stronger-regulations-and-law-enforcement-essential-to-mitigate-climate-change--says-unodc-at-cop29.html>.

³⁴ Xiaolan Xie et al., "The Impacts of Climate Change on Violent Conflict Risk: A Review of Causal Pathways," *Environmental Research Communications* 6, no. 11 (2024): 160–68, <https://doi.org/10.1088/2515-7620/ad8a21>.

³⁵ I V Natalia and M Priyanta, "Optimization of the Multidoor Approach Implementation in Handling Criminal Cases in the Environmental Field," *Tadulako Law Review* 5, no. 1 (2020): 108, <http://jurnal.untad.ac.id/jurnal/index.php/TLR/article/view/15243>.

³⁶ Linda Yanti Sulistiawati, "Climate Change Related Litigation in Indonesia," *Communications Earth and Environment* 5, no. 1 (2024): 1–9, <https://doi.org/10.1038/s43247-024-01684-1>.

legislation to strengthen its response to climate change. Moreover, the enactment of a climate change law aligns with the mandate of the 1945 Constitution of the Republic of Indonesia, which guarantees the right to a dignified and clean environment. This right extends beyond the physical environment to encompass the fundamental human right to life, which must be protected and fulfilled.³⁷

Effective law enforcement must balance three essential elements: legal certainty, utility, and justice. Law should not only serve a repressive function but also play a preventive role in guiding societal behavior before legal violations occur. Mochtar Kusumaatmadja emphasized that the primary function of law is to ensure unity. In addressing climate change, legal instruments must proactively mitigate environmental harm and strengthen public awareness of climate risks.

Given Indonesia's status as a non-Annex I country under international climate agreements, it is not among the world's largest greenhouse gas emitters. However, under the principle of "common but differentiated responsibilities,"³⁸ developed countries—responsible for approximately 80% of global greenhouse gas emissions—must take the lead in mitigation efforts. At the same time, developing nations like Indonesia require access to energy for sustainable development. Despite these disparities, Indonesia has a responsibility as part of the global community to voluntarily contribute to reducing emissions and addressing climate change impacts.³⁹

In Indonesia, climate change-related provisions exist within Law Number 32 of 2009 on Environmental Protection and Management, alongside institutions such as the National Council on Climate Change (DNPI), the REDD+ Task Force, and the REDD+ Agency. However, there is no dedicated legal framework specifically addressing climate change issues, particularly concerning the Seven Protection Efforts outlined in the Conference of the Parties (COP) 16 and the Cancun Agreement. Indonesia lacks a comprehensive legal framework recognizing and protecting indigenous peoples' rights in the context of climate change. Existing sectoral regulations—such as those governing mining, forestry, oil and gas, and energy—require further harmonization and integration with climate change policies. A coordinated approach is necessary to align these regulations with climate action strategies.⁴⁰

The evolution of environmental law demonstrates its dual function: as a mechanism of social control to maintain stability and as an instrument for societal transformation (a tool of social engineering). In "Caring for the Earth: A Strategy for Sustainable Living", the role of environmental law is further elaborated as follows:

- 1) Implementing policies that support the concept of sustainable development;
- 2) Ensuring compliance through the enforcement of various sanctions;
- 3) Providing guidance to the public on actions necessary to safeguard their rights and fulfill their obligations;
- 4) Defining rights, obligations, and behaviors that may be harmful to society; and

³⁷ Sayyidatihiyaa Afra Geubrina Raseukiy, "Membaca Kebijakan Hukum Dalam Pemenuhan Hak Atas Lingkungan Yang Bersih, Sehat, Dan Berkelanjutan Sebagai Hak Asasi Manusia Universal," *Jurnal Hukum Lingkungan Indonesia* 9, no. 1 (2023): 5–7, <https://doi.org/10.38011/jhli.v9i1.508>.

³⁸ Ellen Hey and Sophia Paulini, "Common but Differentiated Responsibilities A . Introduction B . Content," no. May (2021).

³⁹ Firdaus Muhamad Iqbal and Neni Ruhaeni, "Pengaturan Emisi Gas Rumah Kaca Berdasarkan," *Jurnal Dinamika Global* 7, no. 2 (2022): 226.

⁴⁰ Ibironke Odetola, "Law ; an Instrument of Social Change in the Attainment of Sustainable Development .," *IOSR Journal Of Humanities and Social Science* 28, no. 2 (2023): 25, <https://doi.org/10.9790/0837-2802092328>.

- 5) Granting and reinforcing mandates and authorities for relevant government officials to effectively perform their duties and responsibilities.

Indonesia's economic sectors, including agriculture, plantations, and fisheries, are highly dependent on climate conditions and serve as key pillars of food security.⁴¹ External disruptions to the climate pose significant risks to these economic foundations. At the local level, climate change threatens microeconomic stability, and if not anticipated at the national level, it could lead to broader macroeconomic disruptions.⁴² Addressing these challenges requires comprehensive development planning, financial support, and technological advancements. However, the absence or inadequacy of these measures should not justify inaction, as the impacts of climate change are already being felt.

Adaptation is a crucial response to climate change, complementing mitigation efforts aimed at reducing greenhouse gas emissions. Adaptation involves adjustments within human systems to manage climate risks and capitalize on potential opportunities. Richard J. T. Klein emphasizes that successful adaptation and development contribute to sustainable livelihoods by enhancing human capital, protecting the environment, and ensuring financial and physical stability.⁴³

Climate change poses direct and indirect threats to sustainable development, potentially slowing progress. To promote sustainability, climate adaptation must be integrated into national and regional development agenda.⁴⁴ Mainstreaming adaptation into strategic plans, policies, and institutional frameworks ensures that climate risks are systematically addressed. As Sperling, cited in Klein's "Mainstreaming Climate Adaptation into Development: A Policy Dilemma", argues, integrating adaptation into development policies strengthens natural resource sustainability, economic resilience, and governance, enabling more responsive and accountable decision-making.

The necessity of enacting a dedicated climate change law in Indonesia remains a subject of debate, given that Indonesia is not among the world's largest carbon emitters. However, several developed and developing countries, including the European Union, the United Kingdom, Australia, New Zealand, China, Colombia, and the Philippines, have introduced climate legislation to address both the environmental and economic implications of climate change. With its significant natural and human resource potential, Indonesia should reorient its development trajectory toward a green economy, with climate change legislation serving as a strategic foundation. The absence of a legal framework tailored to Indonesia's specific climate challenges and opportunities further exacerbates issues such as forest mismanagement and weak environmental governance.

A dedicated climate change law would facilitate coordinated efforts to mitigate and adapt to climate change, particularly in a developing country like Indonesia, where the consequences are likely to be severe due to resource and infrastructure constraints. Moreover, Indonesia's commitment to the Climate Change Convention, which it ratified in 1994, necessitates stronger legal mechanisms for climate action. The formulation of such a law aligns with the

⁴¹ Andrianto Ansari et al., "Evaluating the Effect of Climate Change on Rice Production in Indonesia Using Multimodelling Approach," *Heliyon* 9, no. 9 (2023): 1–2, <https://doi.org/10.1016/j.heliyon.2023.e19639>.

⁴² Lola Malihah, "Tantangan Dalam Upaya Mengatasi Dampak Perubahan Iklim Dan Mendukung Pembangunan Ekonomi Berkelanjutan: Sebuah Tinjauan," *Jurnal Kebijakan Pembangunan* 17, no. 2 (2022): 225, <https://doi.org/10.47441/jkp.v17i2.272>.

⁴³ Anne C. Pisor et al., "To Understand Climate Change Adaptation, We Must Characterize Climate Variability: Here's How," *One Earth* 6, no. 12 (2023): 1665–76, <https://doi.org/10.1016/j.oneear.2023.11.005>.

⁴⁴ Fabio Rubio Scarano, "Ecosystem-Based Adaptation to Climate Change: Concept, Scalability and a Role for Conservation Science," *Perspectives in Ecology and Conservation* 15, no. 2 (2017): 67, <https://doi.org/10.1016/j.pecon.2017.05.003>.

constitutional mandate under the 1945 Constitution of the Republic of Indonesia, which guarantees the right to a dignified and clean environment. This right extends beyond physical environmental conditions to encompass broader human well-being, ensuring that environmental protection contributes to the fulfillment of fundamental human rights.

C. Conclusion

The existing legal framework in Indonesia has not been effective in addressing climate change mitigation and adaptation, as evidenced by the recurring environmental disasters across the country. While Indonesia has various regulations concerning the environment, forestry, biodiversity conservation, energy, and mineral and coal mining, these laws do not comprehensively regulate climate change. Given the increasing severity of climate-related impacts, Indonesia requires specific legislation dedicated to climate change mitigation and adaptation to ensure a more coordinated and effective response.

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