

The Role of International law in Addressing Climate Change: Legal Perspective and Policy Solution

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Abstract

Climate change is one of the most significant challenges facing the world today. International law has a crucial role to play in addressing these issues through legal and policy frameworks. This study aims to analyze the role of international law in addressing climate change from a legal perspective and find effective policy solutions. The method used is a literature review with analysis of international legal documents and related policies, as well as case studies of policy implementation in several countries. The results show that although there have been some advances in international legislation and policy, there are still many challenges in its implementation that require innovative and collaborative solutions. The study also identified several policy solutions that could be improved through closer international cooperation, including harmonization of emission standards and more effective funding mechanisms. The recommendations of this study are expected to contribute to policymakers, legal practitioners, and other relevant parties in increasing the effectiveness of international law as a tool to address climate change.

I. Introduction

Climate change has become one of the most pressing challenges facing humanity. Not only do these phenomena cause more frequent extreme weather changes such as storms, droughts, and floods, but they also have long-term impacts on ecosystems, biodiversity, and natural resources that are vital for the survival of life on the planet (Santos et al., 2020). The impact on human life is vast, including health, food security, water availability, and economic stability, all of which are interrelated and mutually influencing. In many regions, climate change has become a trigger for migration and conflict, as the struggle to access increasingly limited resources has been achieved (Rajamani et al., 2021). Facing the issue of climate change requires a global response, because no single country can solve this problem alone. International engagement through cooperation and effective implementation of legal policies is key to mitigating the impacts and adaptation to climate change (Leal Filho et al., 2022). International initiatives such as the Paris Agreement and the United Nations' sustainable development agenda demonstrate global recognition and commitment to address these issues. However, the implementation of these agreements still faces many obstacles, including the need for adequate funding, technology transfer, and adequate building capacity. Thus, a deeper understanding of how international law can be strengthened to support effective policies is essential in the global fight against climate change (Singh, 2023).

International law plays an important role in uniting countries to collectively address the issue of climate change. International legal frameworks such as the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement establish a legal basis for countries to formulate and implement their commitments to reduce greenhouse gas emissions and adapt to the impacts of climate change (Johansson, 2023). These principles not only define the responsibilities of developed and developing countries, but also facilitate technical cooperation, technology transfer, and financial support. Through this legal mechanism, countries are expected to work together to achieve the global targets that have been set in an effort to limit global temperature rise (Johansson, 2023).

Furthermore, international law also plays a role in regulating issues related to environmental damage and climate justice. For example, through mechanisms such as the Adaptation Fund and the Green Climate Fund, international law seeks to allocate the necessary resources to countries most vulnerable to the impacts of climate change (Hormio, 2023). This practice is not only important in supporting developing countries in their adaptation and mitigation efforts, but also in ensuring that there is justice and equity in the global response to climate change. The involvement and commitment of all countries under the umbrella of international law is vital to achieving a fair and effective outcome (Carlarne, 2014).

International law can be used as an effective monitoring and enforcement tool to ensure compliance with climate commitments. With transparent reporting systems and peer review mechanisms, such as those implemented in the Paris Agreement, countries are required to periodically report on their progress in achieving set national targets. This helps in building trust between countries and drives increased climate ambition globally. In addition, ongoing discussions and renegotiation in international forums help in improving and adjusting the legal framework to be more responsive to the development of science and the dynamic climate politics (Bergquist et al., 2022; Lesch & Reiners, 2023).

Legal and policy approaches play a crucial role in dealing with climate change as they provide a framework that governs collective and individual actions at the global, regional, and national levels (Klenert et al., 2020). Effective legal policies allow for the establishment of clear standards and targets that countries and industries must achieve, which are essential for reducing greenhouse gas emissions and encouraging adaptation to the already inevitable effects of climate change. In addition, these policies can direct investments into clean technologies and sustainable practices, as well as ensure that there are legal consequences for those who fail to meet established environmental standards, thus creating strong economic incentives for innovation and continuous improvement (Bergquist et al., 2022).

An integrated policy approach is urgently needed to address the complexity of climate change which not only impacts the environment but also the socio-economic aspects of society (Ferraro & Failler, 2020). Through well-designed policies, governments can regulate the appropriate distribution of resources and support for communities most affected by climate change, such as coastal communities and farmers in developing countries. These policies are also important to ensure justice and sustainability in climate change adaptation and mitigation, provide a framework for countries to work together in global solidarity, and ensure that no one is left behind in global efforts to confront one of the greatest challenges of our time (Carlarne, 2014).

Research by Schmidt et al. (2018) evaluated the impact of the Kyoto Protocol on greenhouse gas emission reductions by developed countries and found that although there have been significant reductions in emissions, this achievement is uneven among all member states. Meanwhile, research by Jensen (2020) on the implementation of the Paris Agreement shows that although the agreement has encouraged more countries to set more ambitious national targets, shortcomings in verification and enforcement mechanisms make it difficult to accurately and effectively assess progress. Both studies highlight strengths and weaknesses in the implementation of international legal policies, showing that while the legal framework has contributed to some improvements, there is still plenty of room for improvement (Mumtaz, 2023).

Research by Gupta and Ivanova (2019) focuses on adaptation mechanisms governed by

international law, emphasizing that current policies are still lacking in supporting countries most vulnerable to the impacts of climate change. They argue that there needs to be a significant change in the way funding and resources are allocated to ensure that sustainable and effective adaptation can occur. From a policy perspective, their analysis proposes a more inclusive policy revision that takes into account the specific needs of developing and underdeveloped countries. The results of this study broadly support the idea that, while international law has established a strong foundation for collective action, there is an urgent need to strengthen certain aspects of these policies to be more effective in confronting the global challenge of climate change (Dietrich Brauch, 2021). Therefore, this study aims to analyze the role of international law in addressing climate change from a legal perspective and find effective policy solutions.

2. Research Method

This research is a literature review with the analysis of legal documents as the main approach to understanding the role of international law in addressing climate change. This process involves the collection and comprehensive examination of a wide range of international legal documents, including conventions, treaties, and protocols related to climate change, such as the United Nations Framework Convention on Climate Change (UNFCCC), the Kyoto Protocol, and the Paris Agreement. In addition, this study also examines policy documents from various international and regional organizations involved in efforts to address climate change. The purpose of this analysis is to identify and evaluate the effectiveness of the legal and policy frameworks that have been implemented, as well as to identify gaps and obstacles in their implementation.

Furthermore, this study uses a case study approach to deepen the analysis regarding the implementation of international law and policy in several different countries. This method allows researchers to explore how such laws and policies are translated into concrete actions at the national level and their effects on climate change mitigation and adaptation efforts. Through interviews with legal and policy experts, as well as secondary data analysis from government reports and scientific publications, the study aims to present practical and evidence-based recommendations to strengthen the role of international law in combating climate change. Each case study is selected based on certain criteria, such as significant success or failure in climate policy, to ensure that the findings have broad relevance and application.

3. Results and Discussion

Implementation Evaluation of Current International Policy and Law

In tackling climate change, international law and policy have played an important role, but a thorough evaluation shows that there are various weaknesses that need to be addressed. The Kyoto Protocol, as one of the initial efforts to regulate the reduction of greenhouse gas emissions globally, has been successful in some aspects but has also faced a lot of criticism (Chikwe et al., 2024). The protocol sets legally binding targets for developed countries to reduce their emissions, but fails to include developing countries in similar emissions obligations. This led to a shift in high-intensity industrial activity to countries that were not bound by the Kyoto targets, reducing the global effectiveness of the protocol in reducing emissions overall (Gilbert et al., 2023).

The Paris Agreement, adopted in 2015, tries to address some of the shortcomings of the Kyoto Protocol by encouraging all countries, including developing countries, to participate. The agreement introduces Nationally Determined Contributions (NDCs), which allow countries to set their own targets according to their respective national circumstances and capacities. This is a step forward because it increases global participation, but the voluntary nature of NDCs means there is no robust legal mechanism to ensure countries meet their targets. As a result, despite the increase in global commitments, there are still serious concerns about whether these targets are ambitious enough to meet the long-term goal of controlling global temperature increases (Ozili, 2019).

In addition, international funding mechanisms such as the Green Climate Fund were initiated to assist developing countries in their efforts to mitigate and adapt to climate change. Although this idea is good in theory, in practice, there are often difficulties in the effective and timely distribution of funds. Lack of funds and bureaucracy in the distribution process can hinder real efforts by developing countries in the implementation of climate change projects (Carlarne, 2014).

Technology transfer is also an important component of the international response to climate change. However, there are significant obstacles to effective implementation, especially related to patents and technology secrecy (Santos et al., 2020). Developing countries often face difficulties in accessing new technologies due to cost and regulatory barriers. Without adequate access to efficient and clean technology, these countries may not be able to meet their emissions targets. Furthermore, despite efforts to build capacity in developing countries, there are still shortcomings in education, training, and resources needed to make full use of existing international aid and policies. Failure to build

this capacity can result in ineffective implementation and a lack of local capacity to plan and execute climate change strategies.

Overall, current evaluations of international policy and law show that while there has been progress in some areas, there are still many challenges to be overcome in order to achieve an effective global response to climate change. Improved policies, increased engagement of developing countries, stronger law enforcement, and greater financial support are needed to address these shortcomings and achieve global climate goals more effectively (Rajamani et al., 2021).

Implementation of Climate Policies And Laws in Several Developed Countries

The implementation of climate change policies and laws in developed countries has shown mixed results, with each country taking a unique approach based on its own socioeconomic needs and conditions. In the European Union, climate policy has been implemented through a comprehensive package of measures that includes emissions regulations, renewable energy subsidies, and carbon taxes(Hartmann et al., 2023). The European Union has succeeded in significantly reducing emissions through the Emissions Trading System (ETS), which encourages companies to reduce emissions by providing incentives through emission quota trading schemes. This policy has set a standard that many other countries follow and shows how integrative policies that cover different sectors of the economy can be successful in reducing carbon footprints(Lesch & Reiners, 2023).

In the United States, approaches to climate change have varied significantly depending on the administration in power. Under the Obama Administration, the Clean Power Plan was introduced to reduce emissions from power plants, although the plan faces significant legal and political challenges. However, many states, such as California, have adopted stricter emission standards and supportive policies for electric vehicles and renewable energy(Ferraro & Failler, 2020). These policies show that in the United States, many effective climate initiatives often come from the state level rather than federal policies. Meanwhile, in Japan, the government has implemented various policies to cut emissions and promote clean technologies, including fiscal incentives for companies and consumers who adopt green technologies. Japan has also invested significantly in research and development for renewable energy and battery technology, demonstrating the country's commitment to reducing its reliance on fossil energy(Averchenkova et al., 2021). These policies, combined with community and industry efforts, have resulted in substantial improvements in energy efficiency and emission reductions

Canada, with its diverse environment, has placed a strong focus on adaptation as well as mitigation. The federal government has implemented a national carbon price and is planning further restrictions on methane emissions from the oil and gas industry. This Canada approach reflects the need to adapt climate policies to different geographical and economic conditions across the country, demonstrating the importance of solutions tailored to local contexts (Palomo et al., 2021). In Australia, the debate over climate policy is often highly polarized, but the country has seen progress in several areas, particularly in the development of renewable energy. Australia has one of the highest rates of solar and wind energy utilization per capita, driven by policies at both the federal and state levels. However, Australia still faces challenges in reducing emissions overall, especially from the mining and industrial sectors (Singh & Salili, 2020). Overall, the implementation of climate policies in developed countries shows a mix of successes and challenges. Each country shows variations in strategy and results, depending on internal political factors, economic conditions, and natural resources. The lessons from this experience are important for understanding and optimizing global climate policy and finding new effective ways to respond to the urgent climate crisis.

State Compliance with International Legal Obligations

Countries' compliance with international legal obligations is a key component in ensuring that global efforts to address climate change are effective. However, this level of compliance often varies between countries, depending on various internal and external factors (Tache & Săraru, 2024). International agreements such as the Paris Agreement provide a framework that allows countries to set their own targets in efforts to reduce emissions, but they lack strong enforcement mechanisms. This creates challenges in ensuring that countries actually meet the commitments they have made, especially when the targets are based solely on voluntary commitments with no clear legal sanctions (Ozili, 2019.). One reason why compliance can be a challenge is the difference in capacity between developed and developing countries. Developing countries often have more limited resources to implement the policy and infrastructure changes needed to achieve ambitious emissions targets. Meanwhile, developed countries may have the resources, but face internal political challenges that could hamper climate policy. A good example is the significant climate policy change in the United States that occurred with the change of administration, which shows how politicized this issue can affect compliance with international obligations (Mumtaz, 2023).

In the context of the European Union, the implementation of climate policy tends to be more consistent, supported by a strong regulatory system and effective

monitoring. The EU's ETS (Emissions Trading System) is a prime example of how enforcement mechanisms can be integrated in policies to ensure compliance. These mechanisms provide economic incentives for compliance, and sanctions for violations, ensuring that member states are more likely to meet their targets. However, compliance challenges are not limited to emissions policies. Issues such as deforestation and biodiversity conservation are also included in international legal obligations through conventions such as the Convention on Biological Diversity (Tietjen & Gopalakrishnan, 2023). Countries like Brazil, which owns most of the Amazon forest, have a special responsibility in this regard. Despite great international pressure, illegal logging and land conversion continue to occur, exposing the limitations of international legal mechanisms in controlling domestic actions.

Solutions to improve compliance may include strengthening international legal frameworks with clearer and stronger enforcement mechanisms, as well as increased assistance for developing countries to build their capacity to meet these obligations. In addition, transparency and accountability can be improved through stricter reporting and verification of emissions data and mitigation efforts undertaken by countries (Pirlot, 2024).

Finally, international cooperation and open dialogue between countries are important to address compliance issues. Building trust and a shared understanding of each country's challenges and needs can help in crafting solutions that not only meet international legal standards, but are also practical and sustainable in a complex global political and economic context (Cifuentes-Faura, 2022). The dialogue should also include the participation of the private sector and civil society, which are increasingly playing an important role in global climate policy.

Strengthening International Legal Cooperation in Addressing Climate Change

Strengthening international legal cooperation is an important step in improving the global response to climate change. This cooperation not only facilitates the achievement of climate goals set by various agreements, but also supports the exchange of technologies and best practices between countries (Gilbert et al., 2023). One way to strengthen this cooperation is through the improvement of existing enforcement mechanisms and the development of new legal instruments that can more effectively address specific and rapidly changing challenges. Improving the international legal framework in a flexible and responsive manner will help the international community adapt to the latest scientific discoveries and evolving economic trends (Hormio, 2023).

In addition, the development and implementation of uniform global standards for emissions reporting and environmental sustainability can play an important role in international legal cooperation. This uniform standard makes it easier to compare efforts and progress between countries, and allows for more effective monitoring and evaluation (Bergquist et al., 2022). It would also close loopholes that countries often exploit to avoid their responsibilities. Transparency and openness in reporting are key to building trust and compliance with international obligations, enabling more coherent policies and better coordination of actions.

Increased international cooperation can also be achieved through the development of co-financing mechanisms for climate mitigation and adaptation projects. This co-funding not only helps developing countries implement clean technologies and adaptation strategies, but also strengthens a sense of ownership and commitment to global climate goals. Cooperation in this financing can involve multilateral development banks, the private sector, and philanthropic organizations, each of which makes an important contribution in addressing substantial funding challenges (Dietrich Brauch, 2021).

In addition, international cooperation in the research and development of environmentally friendly technologies can accelerate the adoption of innovative and effective solutions to reduce emissions and improve resilience to climate impacts. This research cooperation can include scientific exchanges, the establishment of international research consortiums, and the development of education and training programs that can support global capacity building (Dietrich Brauch, 2021). Thus, this cooperation not only advances scientific understanding, but also expands access to new technologies that can be used by countries that need them.

Furthermore, strengthening regional cooperation can be an effective way to approach climate issues that have regional or local characteristics. Regional organizations such as the European Union, ASEAN or Mercosur can adapt and implement solutions that suit the specific context and needs of their members (Singh, 2023; Carlarne, 2014). This regional cooperation can complement global efforts with more focused solutions and often faster to implement, given the similarities in socioeconomic and environmental conditions.

Finally, international legal cooperation must actively engage civil society and the private sector. Through dialogue and more inclusive partnerships, innovation and a broader commitment to sustainability can be created (Averchenkova et al., 2021). Civil society can contribute to increasing public awareness and pressure on governments to comply with their international obligations, while the private sector can bring significant expertise, technology, and resources to support climate mitigation and adaptation efforts.

By strengthening synergies between all stakeholders, international legal cooperation can be more effective in combating global climate change.

4. Conclusion

From the results of this study, it can be concluded that international law plays a crucial role in overcoming climate change, despite facing various challenges in implementation and compliance. Protocols and agreements such as the Kyoto Protocol and the Paris Agreement have established important legal foundations, but their effectiveness has been hampered by limitations in enforcement and fluctuating commitments from participating countries. The evaluation reveals that while international legal frameworks help in uniting countries in common goals, there is a need for stronger enforcement mechanisms, greater transparency in reporting, and increased cooperation and financial support to ensure that all countries can contribute effectively and equitably to the global fight against climate change. Furthermore, the study also recommends the development of broader international cooperation, involving civil society and the private sector to take an active role in climate solutions. Strengthening international legal cooperation through a more inclusive and responsive approach to the needs of individual countries and regions can bring the innovation and adaptation needed to confront climate change. By supporting and implementing policies based on strong cooperation and shared commitment, the world can move towards a more sustainable and environmentally just future.

References

- Averchenkova, A., Fankhauser, S., & Finnegan, J. J. (2021). The impact of strategic climate legislation: Evidence from expert interviews on the UK Climate Change Act. *Climate Policy*, 21(2), 251–263. <https://doi.org/10.1080/14693062.2020.1819190>
- Bergquist, M., Nilsson, A., Harring, N., & Jagers, S. C. (2022). Meta-analyses of fifteen determinants of public opinion about climate change taxes and laws. *Nature Climate Change*, 12(3), 235–240. <https://doi.org/10.1038/s41558-022-01297-6>
- Carlarne, C. (2014). Delinking International Environmental Law & Climate Change. *Michigan Journal of Environmental & Administrative Law*, 4.1, 1. <https://doi.org/10.36640/mjeal.4.1.delinking>
- Chikwe, C., Eneh, N., & Akpuokwe, C. (2024). Conceptual Framework for Global Protection Against Technology-Enabled Violence Against Women and Girls. *International Journal of Science and Technology Research Archive*, 11, 279–287. <https://doi.org/10.30574/ijstra.2024.11.2.0415>
- Cifuentes-Faura, J. (2022). European Union policies and their role in combating climate change over the years. *Air Quality, Atmosphere & Health*, 15(8), 1333–1340. <https://doi.org/10.1007/s11869-022-01156-5>
- Dietrich Brauch, M. (2021). Should the European Union Fix, Leave or Kill the Energy Charter Treaty? *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3823596>
- Ferraro, G., & Failler, P. (2020). Governing plastic pollution in the oceans: Institutional challenges and areas for action. *Environmental Science & Policy*, 112, 453–460. <https://doi.org/10.1016/j.envsci.2020.06.015>
- Gilbert, J., Macpherson, E., Jones, E., & Dehm, J. (2023). The Rights of Nature as a Legal Response to the Global Environmental Crisis? A Critical Review of International Law's 'Greening' Agenda. In D. Dam-de Jong & F. Amtenbrink (Eds.), *Netherlands Yearbook of International Law 2021* (Vol. 52, pp. 47–74). T.M.C. Asser Press. https://doi.org/10.1007/978-94-6265-587-4_3
- Hartmann, P., Marcos, A., Castro, J., & Apaolaza, V. (2023). Perspectives: Advertising and climate change – Part of the problem or part of the solution? *International Journal of Advertising*, 42(2), 430–457. <https://doi.org/10.1080/02650487.2022.2140963>
- Hormio, S. (2023). Collective responsibility for climate change. *WIREs Climate Change*, 14(4), e830. <https://doi.org/10.1002/wcc.830>
- Johansson, V. (2023). Just Transition as an Evolving Concept in International Climate Law. *Journal of Environmental Law*, 35(2), 229–249. <https://doi.org/10.1093/jel/eqad017>
- Klenert, D., Funke, F., Mattauch, L., & O'Callaghan, B. (2020). Five Lessons from COVID-19 for Advancing Climate Change Mitigation. *Environmental and Resource Economics*, 76(4), 751–778. <https://doi.org/10.1007/s10640-020-00453-w>
- Leal Filho, W., Wall, T., Rui Mucova, S. A., Nagy, G. J., Balogun, A.-L., Luetz, J. M., Ng, A. W., Kovaleva, M., Safiul Azam, F. M., Alves, F., Guevara, Z., Matandirotya, N. R., Skouloudis, A., Tzachor, A., Malakar, K., & Gandhi, O. (2022). Deploying artificial intelligence for climate change adaptation. *Technological Forecasting and Social Change*, 180, 121662. <https://doi.org/10.1016/j.techfore.2022.121662>
- Lesch, M., & Reiners, N. (2023). Informal human rights law-making: How treaty bodies use 'General Comments' to develop international law. *Global Constitutionalism*, 12(2), 378–401. <https://doi.org/10.1017/S2045381723000023>
- Mumtaz, M. (2023). Intergovernmental relations in climate change governance: A Pakistani case. *Global Public Policy and Governance*, 3. <https://doi.org/10.1007/s43508-023-00066-1>
- Ozili, P. K. (n.d.). *Green finance research around the world: A review of literature*.

- Palomo, I., Locatelli, B., Otero, I., Colloff, M., Crouzat, E., Cuni-Sanchez, A., Gómez-Baggethun, E., González-García, A., Grêt-Regamey, A., Jiménez-Aceituno, A., Martín-López, B., Pascual, U., Zafra-Calvo, N., Bruley, E., Fischborn, M., Metz, R., & Lavorel, S. (2021). Assessing nature-based solutions for transformative change. *One Earth*, 4(5), 730–741. <https://doi.org/10.1016/j.oneear.2021.04.013>
- Pirlot, A. (2024). Carbon Leakage and International Climate Change Law. *Transnational Environmental Law*, 13(1), 61–86. <https://doi.org/10.1017/S2047102524000049>
- Popa Tache, C. E., & Săraru, C. S. (2024). Evaluating today's multi-dependencies in digital transformation, corporate governance and public international law triad. *Cogent Social Sciences*, 10(1), 2370945. <https://doi.org/10.1080/23311886.2024.2370945>
- Rajamani, L., Jeffery, L., Höhne, N., Hans, F., Glass, A., Ganti, G., & Geiges, A. (2021). National 'fair shares' in reducing greenhouse gas emissions within the principled framework of international environmental law. *Climate Policy*, 21(8), 983–1004. <https://doi.org/10.1080/14693062.2021.1970504>
- Santos, C., Agardy, T., Andrade, F., Calado, H., Crowder, L., Ehler, C., García-Morales, S., Gissi, E., Halpern, B., Orbach, M., Pörtner, H.-O., & Rosa, R. (2020). Integrating climate change in ocean planning. *Nature Sustainability*, 3. <https://doi.org/10.1038/s41893-020-0513-x>
- Singh, B. (2023). *Environmental Law Federated Learning for Envision Future Trajectory Smart Transport System for Climate Preservation and Smart Green Planet: Insights into Global Governance and SDG-9 (Industry, Innovation and Infrastructure)*. 6, 2023.
- Tietjen, B., & Gopalakrishnan, T. (2023). Loss and Damage Funding in the UN Climate Negotiations: From Dialogue to Reality. *Environment: Science and Policy for Sustainable Development*, 65(3), 18–28. <https://doi.org/10.1080/00139157.2023.2180268>
- Wewerinke-Singh, M., & Salili, D. H. (2020). Between negotiations and litigation: Vanuatu's perspective on loss and damage from climate change. *Climate Policy*, 20(6), 681–692. <https://doi.org/10.1080/14693062.2019.1623166>