CBAM and International Law: Balancing Sustainable Trade, Climate Justice, and Legal Equity

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Abstract. The European Union's establishment of the Carbon Border Adjustment Mechanism (CBAM) signifies a legal advancement that aligns decarbonization goals with the international trade framework. This research is motivated by the increasing urgency of global energy transition and the potential normative conflicts between wealthy and developing nations about climate justice. The research problem examines the alignment of CBAM with international environmental law concepts and World Trade Organization (WTO) regulations. This paper employs a normative juridical approach and performs a regulatory analysis of Regulation (EU) 2023/956 to assess the legal foundations, equitable implications, and structural effects of CBAM. The main goal is to evaluate the capacity of CBAM to serve as a lawful, equitable, and inclusive legal tool in promoting a global green transition. The results suggest that while CBAM is legally established and has the ability to mitigate carbon leakage, its unilateral application may intensify global inequalities, especially for developing nations. Consequently, a revision of the policy is essential, one that guarantees enhanced inclusion, just compensation mechanisms, and equitable international discourse, to allow CBAM to function as a transformative tool in attaining climate justice and sustainable commerce. This paper offers one of the few legal equity analyses of CBAM that bridges international trade law, climate justice, and sustainable development.

1 Introduction

The global climate catastrophe has become an urgent transnational threat, characterized by an increase in average global temperatures of about 1.1°C above pre-industrial levels, according to the IPCC Sixth Assessment Report (2023) [1]. The repercussions encompass a heightened occurrence of climate-related calamities, disturbances to food security, and jeopardies to human rights and worldwide stability. The shift to a low-carbon economy is now an ethical and legal need for the international community, aligned with the goal of

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restricting global temperature increase to below 1.5°C as stipulated by the Paris Agreement [2].

The European Union, a prominent worldwide entity in climate policy, has adopted a strategic position in advancing decarbonization via an ambitious legislative framework encapsulated in the European Green Deal. The CBAM is a principal tool aimed at protecting domestic climate policies from carbon leakage risks and serves as a normative initiative to shape global emission standards via cross-border legal frameworks. Established in 2021, the CBAM mandates that exporting nations incur supplementary fees to the European Union if their products produce elevated carbon emissions. The strategy commenced a transitional implementation phase in October 2023, encompassing strategic industries including steel, aluminium, cement, fertilizers, and electricity [3]. Consequently, CBAM signifies a progressive, although contentious, initiative by the European Union to harmonize trade and environmental rules, with substantial ramifications for worldwide economic relations, especially concerning developing nations that possess inadequate decarbonization capabilities. Yet, there remains limited legal analysis on how CBAM aligns or conflicts with core international environmental and trade law principles.

Nonetheless, the execution of CBAM prompts significant inquiries concerning its alignment with established tenets of international environmental law. The principles of Common but Differentiated Responsibilities (CBDR), the Polluter Pays principle, and the notion of sustainable development, as articulated in the 1992 Rio Declaration and the 2015 Paris Agreement, emphasize the necessity of recognizing varying capacities and responsibilities among countries [4]. The unilateral nature of the CBAM method presents issues, since it tends to disregard the historical background and the existing capabilities of poor nations in transitioning to a low-carbon economy.

In addition to its environmental legitimacy, CBAM also prompts essential questions about global climate justice. The notion of climate justice emphasizes both the allocation of climate change effects and the fair access to clean technologies and funding for energy transition [5]. Recent studies reveal that structural inequalities between the Global North and Global South persist, leading to inequitable adaptation burdens: developing nations are forced to adapt to the consequences of emissions predominantly generated by industrialized countries, despite their negligible historical contributions to the climate crisis [6] The execution of CBAM without sufficient compensation mechanisms or transitional assistance for developing nations threatens to exacerbate structural inequalities and establish new trade barriers based on environmental standards, rather than factors of national capacity or historical accountability.

The execution of CBAM without sufficient compensation mechanisms or transitional assistance for developing nations threatens to intensify structural inequalities and establish new trade barriers based on environmental standards, rather than on factors of national capacity or historical accountability. This principle is essentially consistent with the ethos of non-discrimination and special and differential treatment as articulated in WTO regulations. Conversely, CBAM may be perceived as incompatible with the principles of Most Favoured Nation (MFN) and National Treatment, thereby engendering a contradiction between environmental preservation and equity in international commerce. Thus, the discussion on CBAM transcends mere technical or administrative aspects and instead interrogates the normative underpinnings of just global climate and trade policy.

This study aims to: (1) assess CBAM's legal compatibility with international law; (2) examine its implications for climate justice; and (3) propose legal pathways for equitable reform. This investigation is important, as CBAM signifies a policy breakthrough in global decarbonization efforts and prompts critical examination of its potential structural biases in North-South interactions. This research utilizes a normative juridical approach and critical

analysis of pertinent legal frameworks to enhance the creation of international climate policy that is more inclusive, equitable, and lawful within the global legal order.

2 CBAM: Legal Structure and Policy Objectives

Analysing the European Union's implementation of the CBAM necessitates an understanding of the policy's fundamental objectives and its legal ramifications within the framework of global climate governance and the international trade system. An examination of CBAM's conceptual and operational framework indicates that the mechanism serves not just as a fiscal tool but also as a strategic regulatory instrument intended to attain the EU's climate objectives equitably and competitively. It primarily seeks to prevent carbon leakage where production shifts to jurisdictions with laxer emission standards and to maintain fair competition during the EU's transition to net-zero emissions [7]. While CBAM reinforces internal EU policy coherence, its extraterritorial application challenges WTO equality principles and the CBDR doctrine. In this context, CBAM serves as a regulatory mechanism that guarantees imported goods incur a carbon cost comparable to that levied on local products under the EU Emissions Trading System (EU ETS).

Conversely, the implementation of CBAM signifies the European Union's endeavours to preserve its economic competitiveness in light of increasingly stringent environmental regulations. The EU aims to prevent competitive disadvantages resulting from the unilateral implementation of aggressive decarbonization initiatives through this adjustment mechanism. CBAM establishes a carbon charge on imported goods according to their emissions intensity, so fostering equitable competition between domestic and international manufacturers and promoting the global implementation of elevated environmental norms. These findings confirm that CBAM is not solely a protectionist tool, but rather a normative mechanism with a transnational aspect designed to enhance international climate governance. The CBAM is firmly established within the European Union's legal framework and serves as a supplementary tool to the EU ETS. The mechanism mandates importers to get CBAM certificates that correspond to the carbon emissions inherent in specific imported goods, including steel, cement, aluminium, fertilizers, hydrogen, and energy. The main aim of this initiative is to harmonize the carbon cost between domestic items under the ETS and imported goods from nations lacking equivalent emissions regulations, thus reducing market distortion and mitigating carbon leakage.

The connection between CBAM and the EU ETS is crucial, as both frameworks are grounded in the core principle of carbon pricing as a market-oriented instrument for emissions regulation. CBAM is structured to mirror the carbon price set by the EU ETS, indicating that the quantity of CBAM certificates importers must acquire will be modified based on the current carbon allowance price inside the ETS. Consequently, CBAM functions not only as a financial tool but also as a legal instrument that incorporates the notion of internalizing externalities inside international trade. This illustrates that, legally, CBAM represents an expansion of the European Union's internal emissions regulation into the global trade system, while also indicating the increasing significance of regional climate law in influencing international normative structures.

The legal foundation for the execution of CBAM is expressly delineated in Regulation (EU) 2023/956 of the European Parliament and of the Council dated 10 May 2023, which articulates the legal framework for the carbon border adjustment mechanism. This law asserts that CBAM is a fundamental component of the Fit for 55 policy package, which seeks to diminish the European Union's greenhouse gas emissions by a minimum of 55% by 2030 relative to 1990 levels [8]. Article 1 of the rule mandates the implementation of CBAM to ensure that the pricing of imported products more correctly represents their carbon content and seeks to incentivize foreign trading partners to adopt equivalent emissions reduction

plans. The rule implements a transitional method until 2025, during which importers must report emissions without financial requirements, prior to the full enforcement of the carbon levy plan in 2026. [8]. This arrangement provides CBAM with a definitive legal basis within the European Union's legislative framework and signifies a tangible advancement in incorporating environmental considerations into international trade law.

From the standpoint of environmental economic law, the CBAM functions as a concrete tool for the principle of internalizing externalities, necessitating that the social cost of carbon emissions is incorporated into product pricing. This theory is extensively examined in contemporary environmental policy literature; for example, Heine, Faure, and Dominioni (2020) investigate the implementation of the polluter pays principle as a method that is both normative and economically efficient in fostering adherence to sustainable development objectives [9]. CBAM meets these expectations by mandating that importers acquire carbon certificates, therefore accounting for the carbon content of imported products and mitigating carbon leakage from areas with less rigorous emissions standards. Consequently, CBAM operates both as an environmental fiscal policy and as a legal mechanism to embody the principle of ecological justice in the realm of international trade.

The CBAM policy is a crucial element of the European Union's green transition plan as outlined in the European Green Deal, which aims for carbon neutrality by 2050. This instrument facilitates the EU's economic transition by applying the notion of internalizing externalities to international commerce. Clausing, Elkerbout, Nehrkorn, and Wolfram (2024) illustrate that CBAM has produced substantial policy spillover effects across many nations, promoting the implementation of novel national carbon pricing frameworks and bolstering global momentum for climate policy initiatives [10]. This illustrates that CBAM has transnational potential as a regulatory instrument that affects the conduct of partner nations beyond the European Union's jurisdiction, so establishing the subject as an innovative and ambitious paradigm for global environmental legislation.

Nonetheless, the external ramifications of CBAM on trading partner nations—especially developing countries—suggest the possibility of systemic inequality. Lehtonen (2024) assesses that the impact of heightened production costs and probable output decline is more pronounced for non-OECD nations, particularly in Africa and Asia, resulting in elevated costs and diminished export competitiveness due to this policy. Without supporting mechanisms like technology transfer or compensation grounded in historical accountability (Common but Differentiated Responsibilities), CBAM may intensify global inequality and undermine the ideals of equity in international trade [11]. Consequently, an inclusive international discourse that addresses the requirements of developing nations is crucial to guarantee that CBAM authentically embodies the concepts of climate solidarity and transnational justice.

3 CBAM in the Perspective of International Environmental and Trade Law

To assess the legality and validity of the CBAM, it is crucial to contextualize it within the framework of international environmental law, which has developed via fundamental principles and global accords. Principles such as CBDR, the Polluter Pays Principle, sustainable development, and the No-Harm Rule are the essential normative foundations of transboundary environmental governance. Consequently, any examination of CBAM's stance must evaluate the degree to which this policy instrument conforms to these principles and its ramifications for global obligations on climate change mitigation. While CBAM advances environmental integrity by internalizing the carbon costs of production, aligning price signals with climate objectives, and incentivizing emissions reductions beyond the EU, it simultaneously creates distributive inequities by imposing compliance burdens on exporters

from developing countries and sectors with limited mitigation capacity. Crucially, these environmental principles do not operate in isolation but intersect with WTO norms: the policy's design and application must therefore be scrutinized both for consistency with international environmental duties and for compatibility

From the standpoint of international environmental law, the CBAM holds a multifaceted and ambiguous status concerning essential principles such as CBDR, the Polluter Pays Principle, the principle of sustainable development, and the No-Harm Rule. CBAM exemplifies the Polluter Pays Principle by imposing an emissions-related tax on products according to their carbon content [12], Consequently, it strengthens the incorporation of environmental costs into global trade. Likewise, the notion of sustainable development is evident in the European Union's endeavours to reconcile economic interests with long-term environmental preservation. From the standpoint of developing countries, CBAM elicits apprehensions about its alignment with the CBDR principle, as the policy is implemented uniformly without sufficient regard for the varying historical responsibilities and economic capacities of developed and developing nations. Although the No-Harm Rule mandates that states refrain from inflicting environmental damage beyond their borders, the CBAM may, ironically, inflict economic detriment on exporting nations that lack the technological capability to shift to low-carbon industrial systems.

Moreover, within the framework of the Paris pact, CBAM has ignited discussions concerning its alignment with the principles of multilateralism and the voluntary, collaborative methodology advocated by the pact. While CBAM does not overtly contravene Article 6 of the Paris Agreement, which accommodates market-based systems, its unilateral nature may be perceived as diverging from the communal ethos and the idea of mutual respect for national capabilities. The European Union has formally declared that CBAM aims to enhance global climate ambition and mitigate carbon leakage. Nonetheless, without transitional procedures or adaptive support for developing nations, this approach threatens to generate structural imbalances within the multilateral trading system. Consequently, enhanced international discourse is essential to guarantee that the implementation of CBAM does not establish a detrimental precedent in climate negotiations, but instead fortifies the international environmental legal framework in a manner that is equitable, cooperative, and forward-thinking.

The CBAM has garnered considerable interest in the realm of international trade law, especially concerning its possible conflicts with the regulations of the WTO. A primary worry is the potential infringement of the MFN and National Treatment principles as established in the General Agreement on Tariffs and Trade (GATT) 1994. The MFN principle mandates WTO member states to avoid discrimination among their trading partners [13], The main legal issue pertains to whether CBAM may be validated under Article XX of the GATT, which permits exceptions for measures essential to save human, animal, or plant life, or concerning the protection of depleting natural resources. To comply with this clause, CBAM must fulfil the criteria of "necessity" and "non-arbitrariness," proving that it is proportionate, non-protectionist, and executed in good faith. A WTO-compliant CBAM must clearly define its environmental objective, guarantee procedural transparency, and incorporate prior negotiations with impacted governments to maintain both environmental integrity and trade fairness. The non-discrimination and national treatment obligations of the WTO create a tension that is crucial for evaluating the legal legitimacy of CBAM.

Nonetheless, the European Union may endeavour to substantiate the enforcement of CBAM by invoking the exceptions delineated in Article XX of the GATT, specifically subparagraphs (b) and (g), which allow for deviations from trade obligations based on environmental protection and natural resource conservation. For Article XX to be applicable, the European Union must establish that CBAM is not intended as a covert form of protectionism and that its execution is both non-discriminatory and commensurate with its

environmental aims. The WTO's two-tier examination for Article XX exclusions will be essential in assessing the validity of CBAM under international law. Consequently, while CBAM may be portrayed as a mechanism to avert carbon leakage and foster global decarbonization, its execution must be meticulously adjusted to prevent infringing upon the established multilateral trading system.

Significant precedents in WTO dispute jurisprudence, including United States — Import Prohibition of Certain Shrimp and Shrimp Products (US–Shrimp) and European Communities — Measures Affecting Asbestos and Asbestos-Containing Products (EC–Asbestos), offer an analytical framework for evaluating the legality of CBAM under Article XX of the GATT. In the US–Shrimp case, the WTO Panel first determined that the U.S. import prohibition violated the principle of non-discrimination. The Appellate Body clarified that environmental actions may be allowed under Article XX if implemented non-discriminatorily and in good faith, including attempts to negotiate with trading partners. In the EC–Asbestos dispute, the WTO acknowledged that safeguarding human health and the environment could constitute valid justifications for deviating from free trade principles, contingent upon the measures being substantiated by scientific data and adhering to the concept of proportionality. The primary conclusion from both cases is that the efficacy of any WTO defense of the CBAM would significantly hinge on the European Union's design and execution of the policy—guaranteeing openness, proportionality, and equitable consultation opportunities for impacted developing countries as trading partners. These precedents show that environmental measures can survive WTO scrutiny when grounded in genuine multilateralism and transparent consultation.

From the standpoint of global climate justice, the European Union's implementation of the CBAM presents significant issues regarding the potential perpetuation of structural imbalances between rich and poor nations. While CBAM is ostensibly intended to foster global decarbonization and mitigate carbon leakage, its unilateral implementation may, in practice, intensify climate injustice by insufficiently accounting for the adaptive capacities of developing countries. Countries in the Global South historically the least culpable for global emissions now face new carbon-based trade impediments that could impede their export performance and economic development[14]. In this context, CBAM seems inconsistent with the notion of common but differentiated responsibilities (CBDR), which advocates for equitable burden-sharing based on past accountability and capacity. An equitable CBAM necessitates varied tariff rates, transitional flexibility, or compensation mechanisms for least-developed nations to align climate objectives with distributive justice in the global trading framework.

Moreover, CBAM has rekindled criticism regarding the concepts of “ecologization of inequality” and “climate colonialism,” in which wealthier nations enforce rigorous environmental standards on developing countries without offering sufficient compensation or technology transfer systems. Biermann and Kalfagianni (2020) contend that coercive climate policies without global consensus may reinforce colonial institutions anew, manifested through green initiatives that neglect the economic and social realities of poor nations [15]. CBAM, In this context, CBAM can be viewed as a variant of green protectionism that strengthens the European Union's regulatory dominance in global climate policy. Consequently, the execution of this strategy necessitates reconfiguration into a more inclusive and fairer framework, supplemented by substantial support for energy transition in developing nations, to avoid the emergence of new inequalities in the realm of international trade.

4 Conclusion

The implementation of the CBAM by the European Union represents a policy innovation aimed at internalizing environmental costs within international trade while preserving the competitiveness of its industries during the transition to a green economy. Normatively, CBAM is supported by a strong legal foundation through Regulation (EU) 2023/956 and is designed to prevent carbon leakage while establishing a level playing field between domestic and imported products. This instrument aligns with the principle of internalizing externalities, supports the objectives of the European Green Deal, and demonstrates potential as a transnational regulatory model that fosters a global shift toward decarbonization. This study contributes a legal-justice perspective to CBAM scholarship, proposing an integrated reform model aligning trade law with global equity principles

Nevertheless, CBAM generates normative tensions within the framework of international law, particularly with respect to the principle of CBDR, the World Trade Organization's non-discrimination principle, and the spirit of multilateralism embodied in the Paris Agreement. Its unilateral implementation, in the absence of adequate compensation mechanisms, risks exacerbating climate injustice and creating new forms of trade barriers that disproportionately burden developing countries. Therefore, a policy reformulation and intensified international dialogue are necessary to ensure that CBAM functions not only as an ecologically effective instrument for green transition, but also as one that is legally fair and globally inclusive.

References

[1] C. Méndez, N. Simpson, F. Johnson, and A. Birt, *Climate Change 2023: Synthesis Report (Full Volume) Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Geneva: Intergovernmental Panel on Climate Change, 2023. doi: 10.59327/IPCC/AR6-9789291691647.

[2] J. E. Hansen *et al.*, "Global Warming Has Accelerated: Are the United Nations and the Public Well-Informed?," *Environ. Sci. Policy Sustain. Dev.*, vol. 67, no. 1, pp. 6–44, Jan. 2025, doi: 10.1080/00139157.2025.2434494.

[3] M. Amendola, "Winners and Losers of the EU Carbon Border Adjustment Mechanism. An Intra-EU issue?," *Energy Econ.*, vol. 142, p. 108139, 2025, doi: https://doi.org/10.1016/j.eneco.2024.108139.

[4] G. Marín Durán, "Securing Compatibility of Carbon Border Adjustments With the Multilateral Climate and Trade Regimes," *Int. Comp. Law Q.*, vol. 72, no. 1, pp. 73–103, 2023, doi: 10.1017/S0020589322000501.

[5] D. Keumala, A. Sabirin, S. Setiyono, M. F. Az, and J. R. Arranchado, "Indonesia's Sustainable Green Economy Policy in the Energy Sector: Challenges and Expectations," *J. Media Huk.*, vol. 32, no. 1 SE-Articles, pp. 1–20, Dec. 2024, doi: 10.18196/jmh.v32i1.24109.

[6] A. Schulan and J. C. Heilinger, "Three Injustices of Adaptation Finance - A Relational Egalitarian Analysis," *J. Agric. Environ. Ethics*, vol. 37, no. 3, pp. 1–18, 2024, doi: 10.1007/s10806-024-09932-2.

[7] U. R. Beck, P. K. Kruse-Andersen, and L. B. Stewart, "Carbon Leakage in a Small Open Economy: The Importance of International Climate Policies," *Energy Econ.*, vol. 117, p. 106447, 2023, doi: https://doi.org/10.1016/j.eneco.2022.106447.

[8] P. Morone and A. Alfino, "Impact of the EU Carbon Border Adjustment Mechanism on the Global South," *Discov. Sustain.*, vol. 6, no. 1, 2025, doi: 10.1007/s43621-025-01131-x.

[9] K. YE, Bin, YANG, "The extraterritorial effects of EU law in the context of green transition : comments on CBAM and the proposed CSDDD," *Chinese J. Eur. Stud.*, vol. 41, no. 6, pp. 34–57, 2023.

[10] K. Clausing, M. Elkerbout, K. Nehrkorn, and C. Wolfram, "How Carbon Border Adjustments Might Drive Global Climate Policy Momentum," *Resour. Futur. Rep.*, vol. 24–20, no. October, 2024.

[11] B. Lin and H. Zhao, "Threatening the Poor? The Economic Impacts of Carbon Border Adjustment Mechanism on Developing Countries," *Struct. Chang. Econ. Dyn.*, vol. 71, pp. 582–593, 2024, doi: https://doi.org/10.1016/j.strueco.2024.09.005.

[12] G. Dolphin and Gianluigi Ferrucci, "The EU's CBAM: Implications for Member States and Trading Partners," *Int. Monet. Fund*, vol. 2025, no. 125, pp. 4–29, 2023.

[13] W. Suwanprasert, "The role of the most favored nation principle of the GATT/WTO in the New Trade model," *Rev. Int. Econ.*, vol. 28, no. 3, pp. 760–798, 2020, doi: 10.1111/roie.12470.

[14] A. Putra, "The Role of International Human Rights Law in Fights Against Climate Change," *J. Media Huk.*, vol. 28, no. 2 SE-Articles, pp. 153–164, Dec. 2021, doi: 10.18196/jmh.v28i2.10988.

[15] S. Pedersen, D. Stevis, and A. Kalfagianni, "What is planetary justice?," *Env. Polit.*, vol. 33, no. 7, pp. 1137–1145, Nov. 2024, doi: 10.1080/09644016.2024.2418222.