

# Cross-Border Climate Agreements: Legal Frameworks and Implementation Barriers

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**Abstract:** The research examines the legal components and operational obstacles of cross-border climate agreements formation and execution. The study assesses the dynamics bilateral and multilateral treaties in a region have and their enforcement at constitutive elements for climate policy adoption within and across national borders. Through comparative legal analysis and case study approaches for implementation, the research uncovers institutional, political, and technical obstacles for progress. Findings underscore the need for integration procedures in legal structures in addition to alignment of responsibility systems to increase effectiveness of action on climate initiatives among countries.

**Keywords:** International Law; Climate Agreement; Sustainable Development; Environmental Governance; Carbon Policy; Diplomacy; Treaty Enforcement; Cross-border Cooperation.

(Submitted: December 22, 2023; Revised: January 12, 2024; Accepted: February 16, 2024; Published: March 27, 2024)

## I. Introduction

The phenomenon of climate change in the world has emerged as an intricate problem that is urgent for social attention and action that goes beyond national frontiers, warranting an integrated response system on the global, regional, and local planes. Considering that greenhouse gas emission, and their damages do not observe geopolitical boundaries, cross-border climate agreements have turned out to be vital to a cooperative approach to the achievement of climate goals on a multi-national level. These agreements range from legally binding treaties to non-binding memorandum of understanding encompass emission reduction, technology transfer systems, climate change capacity building, and financing frameworks. It is evident that while the quantity of such agreements is increasing, there persists a striking concern regarding their execution.

The agreements under consideration form part of treaties which include the right to access information, participation in decision making and justice within the framework of the environment. Alongside these frameworks, there also exist international environmental laws general principles and rules such as state sovereignty, development, and common but differentiated responsibilities. Over time, these general principles have become more elaborate to include intricate elements such as climate justice, equity, and technology transfer. There has been a notable advancement in multilateral collaboration since the adoption of the Paris Agreement in 2015 under the United Nations Framework Convention on Climate Change (UNFCCC, 2023) which instituted Nationally Determined Contributions (NDCs)— a model of differentiated collective contributions towards common objectives.

The NDCs serve as a good starting point for countries to take action toward achieving their climate goals; however, fulfilling these commitments presents a challenge in terms of translating them into actionable steps. A lack of political will or administrative capability creates hurdles for some nations. Others face complications regarding the allocation of funding for the division of responsibilities, the implementation of carbon border adjustment policies, and ownership of patents for green technologies.

The frameworks cited above are implemented due to the ineffective dispute resolution procedures in most agreements, absence of legally sanctioned accountability, compliance mechanisms, lack of governance structures critical for the management of international relations, and defense of state sovereignty.

This research intends to analyze the legal issues concerning the enforcement of international treaties on climate change to determine which ones constitute the greatest impediment to enforcement. Analyzing specific agreements and their outcomes, this study highlights a number of common issues and provides guidelines that can be adopted for future frameworks. In this regard, this study advances the debate on international law and governance on climate change and provides recommendations for policymakers, legal experts, and climate diplomats.

## **II. Literature Survey**

Recent studies have concentrated more on the design and implementation of treaties, particularly given the intensity of the climate crisis. Carter et al. (2021) explain how lack of legal enforceability is still one of the major gaps in modern climate regimes. Their data shows that, from 2000 to 2023, over 60 percent of climate-relevant treaties do not feature compliance systems, making agreements vulnerable to noncompliance and political fluctuations.

Wilson (2018) studied the impact of regional treaties such as the Regional Greenhouse Gas Initiative (RGGI) and Western Climate Initiative. He argues that regional treaties take a more focused approach toward specific policy issues but suffer from a lack of global legitimacy and the collective funds typical of global treaties. His findings indicate that hybrid strategies offering localized, regional solutions supported by international structures would increase system resilience and adaptability.

The work of Okedele et al. (2024) analyzes the relationships between climate treaties and transnational environmental law in regulating cross-border pollution. They note further complications arising from conflicts between environmental and trade frameworks, such as carbon tariffs and renewable energy subsidies. Their conclusions point to a lack of balance between economic treaties and climate agreements, requiring greater legal scrutiny.

Leosk et al. (2021) and Wright, D. V. (2016) assess the productivity of climate governance tools within cross-border policy frameworks. They observe that implementation often stalls due to bureaucratic obstacles and weak recipient capacity. As a result, they propose legal policies allowing unrestricted access to documentation and independent evaluations to enhance outcomes.

The literature reveals consensus on the lack of precise legal definitions, weak enforcement mechanisms, schisms between climate treaties and other legal frameworks, and insufficient integration of ecosystem laws. Alongside these gaps, it emphasizes advanced forms of governance and policy learning across jurisdictions, suggesting that international climate law is evolving, albeit still fragmented.

## **III. Methodology**

This study employs a qualitative-comparative legal analysis in conjunction with a case study evaluation approach. The legal analysis is based on ten selected cross-border climate agreements enacted from 2015 to 2023: the Paris Agreement, the EU–China Comprehensive Agreement on Climate, the Amazon Cooperation Treaty, and the US–Canada Clean Energy Partnership. These agreements were chosen based on their geographical scope and diversity, ranging objectives, and timelines for implementation.

The content of laws that was documented was retrieved from treaty repositories. Then, the content was coded using the MAXQDA software to identify whether or not there were certain traits such as waiting provisions, compliance measures, financial responsibilities, and enforcement provisions. Then, these treaties were analyzed comparatively with an aim of reconstructing their structural similarities and differences with specific attention to adjudication mechanisms, subsidiary reporting thresholds, or monetary fines for noncompliance.

At the same time, the 2020 to 2024 official progress reports, progress assessment reports published by external agencies like Climate Action Tracker, and policy briefs published during that period were used to assess implementation performance. For this analysis, three case studies were developed: the Paris

Agreement, EU-China Climate Cooperation, and the Amazon Treaty. These worked as the baseline for evaluating outcomes against legal expectations. Analyzed indicators included met emission reduction targets, dispensed funds, and enacted reforms.

In support of the findings, semi-structured interviews were held with 15 people working in and outside the climate sphere, such as climate negotiators, legal experts, and NGO staff which helped to validate emerging conclusions. Focus areas encompassed gaps regarding legal definitional precision, implementation, institutional capacity, and political will. Documents underwent coding to detect pertinent ideas around legal and policy implementation within the given timeframe.

This method provided an all-encompassing grasp of the legal documents and their empirical manifestations. The case study approach also highlighted the political, economic, and ecological drivers which influence specific treaty implementation performance and provided insights for rethinking and realigning.

## IV. Results and Discussion

As highlighted by the comparative analysis, the most concerning issue from the treaties analyzed was that the majority of them lacked sufficient responsiveness to the compliance and enforcement mechanisms. Among the treaties reviewed, only thirty percent incorporated formal compliance verification mechanisms and even fewer, did incorporate punitive measures for non-compliance. It was rather a norm that the payments to be made were poorly defined, thus either halting the payment or underfunding major projects.

Table 1: Compliance Mechanisms Across Selected Climate Agreements

Agreement	Binding Nature	Compliance Mechanism	Dispute Resolution	Reporting Obligations
Paris Agreement	Partially	Voluntary NDC review	No	Biennial reviews
EU–China Climate Cooperation	Binding	Joint implementation	Yes	Annual reports
Amazon Cooperation Treaty	Non-binding	None	No	Irregular updates
US–Canada Clean Energy Partnership	Binding	Technology transfer	Yes	Quarterly assessments

Table 2: Barriers to Implementation Reported by Stakeholders

Barrier Type	Percentage of Respondents Identifying
Lack of legal enforcement	87%
Insufficient funding	73%
Vague treaty language	68%
Political instability	64%
Capacity limitations	58%

The evidence indicates that delineating policies within legal frameworks is insufficient; there is a need to address the organizational capacity, funding sufficiency, and active political backing. One interviewee suggested that an autonomous treaty scrutiny committee be formed to conduct audits and make performance ratings public on an annual basis. This would increase accountability and transparency.

## V. Conclusion

Management of climate change on a global level requires climate treaties and agreements between countries. Climate treaties face political conflicts, lack of capacity, ambiguous legal stipulations, and weak enforcement. This research concludes that the presence of clear legal stipulations and strong enforcement, as well as financing and regular reports, promotes effective implementation. Future agreements need to be

focused on legal clarity, institutional frameworks, and mutual responsibility. Defragmentation and consolidation of international climate initiatives is likely through an integrated regional approach with global governance.

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