

Global Cooperation and Policy Behavior in Climate Governance: Assessing Responses to International Agreement Toward SDG 13

Jhondel S. Alvarez 

General and Teachers Education Department, Palompon Institute of Technology – Tabango, Leyte, Philippines
alvarezjhondel04@gmail.com

ABSTRACT

Climate change is no longer a distant concern; it has been increasingly shaping weather patterns, seasonal cycles, and economic stability worldwide. This study evaluated the effectiveness of international climate agreements and national policies in achieving Sustainable Development Goal 13 (climate action). Specifically, it examined the Kyoto Protocol (1997) and the Paris Agreement (2015) in terms of emission reduction commitments and global participation. The research further analyzed climate policies of the European Union, the United States, China, and selected developing nations, highlighted recurring challenges such as insufficient financing, shifting political priorities, and limited access to low-carbon technologies. The role of international organizations and non-governmental organizations was also assessed, focusing on their contributions to scientific guidance, policy frameworks, and advocacy, despite limited enforcement capabilities. The study employed a mixed-methods approach, integrating policy reviews, emissions data, and case studies sourced from United Nations reports, peer-reviewed literature, and official national statistics. Findings indicated that the Kyoto Protocol achieved partial success but was hindered by non-participation and weak compliance mechanisms. The Paris Agreement enhanced global inclusivity; however, its voluntary nature created a gap between pledged ambitions and actual outcomes. Advanced economies demonstrated faster progress due to robust institutional capacity and technological access, whereas developing countries faced persistent challenges related to financial and technological constraints. To address these disparities, the study recommended enforceable targets, accelerated climate finance delivery, enhanced technology transfer, and strengthened monitoring systems. These measures aimed to narrow the gap between international climate objectives and practical implementation, fostering more effective global climate action.

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INTRODUCTION

Climate change is no longer a theory we debate on or a distant worry to deal with later. It is here, unfolding around us, shaping daily headlines. Seas rose higher, droughts are stretched longer than ever, and heatwaves break records year after year. These events are not random they trace back to the steady accumulation of greenhouse gases caused by human activity, most notably the burning of coal, oil, and gas (Intergovernmental Panel on Climate Change [IPCC], 2021).

In 2015, the United Nations set out Sustainable Development Goal 13 (SDG 13), which focused entirely on Climate Action. It was not just another line in an agenda; it was a direct call to act urgently and consistently to slow the planet's warming and to prepare for the impacts that can no longer be avoided. This research focused on two of its targets: 13.2, which asked governments to embed climate considerations into national policies, and 13.a, which called

for mobilizing funding so developing nations can cut emissions and adapt to change (United Nations, 2015).

Over recent decades, few landmark agreements had set the frameworks for global climate governance. The Kyoto Protocol, signed in 1997, committed developed nations to legally binding emission cuts. The Paris Agreement, reached in 2015, took a broader route where every country, regardless of income, was to submit its own Nationally Determined Contributions (NDCs) outlining its climate pledges (United Nations Framework Convention on Climate Change [UNFCCC], 2022). Both moments were historic, yet they differ sharply in scope, inclusivity, and enforcement power.

Despite these ambitious frameworks, global greenhouse gas emissions have kept climbing (Global Carbon Project, 2022). This stubborn trend revealed a hard truth: agreements

alone are not enough. The real test lay in whether pledges can transform into sustained, measurable action and that is where the struggle remains.

Problem Statement

The Paris Agreement was a big moment in climate diplomacy. For the first time, both developed and developing nations were part of the same deal. That was progress. But there was a catch: it built on voluntary pledge. No binding emission cuts. No serious penalties for missing targets (Organisation for Economic Co-operation and Development [OECD], 2021).

National policies faced significant challenges that hindered effective climate action, and these challenges were neither minor nor easily resolved. Financial constraints were a major barrier, as many developing nations lacked the necessary resources to invest in renewable energy infrastructure or to implement large-scale climate adaptation measures. Political instability further complicated the continuity and effectiveness of these policies, since changes in government can lead to shifts in priorities, and new administrations may weaken or even abandon existing climate strategies. In addition, access to low-carbon technologies remained limited in many countries, restricted the ability to adopt cleaner energy solutions and achieved little substantial emission reductions (International Energy Agency [IEA], 2022). These interrelated issues of finance, politics, and technology created a persistent gap between policy intentions and practical outcomes, highlighting the need for international support, knowledge sharing, and robust policy frameworks that can endure beyond political cycles. Likewise, even when wealthier nations promise climate finance like the famous \$100 billion per year pledge the money did not always materialize (OECD, 2022). International bodies such as the UNFCCC and IPCC still mattered. They gather the data, shape policy frameworks, and keep talks moving. But they could not force action. NGOs push awareness, call for stronger commitments, and track progress, yet they did not have formal authority either.

With these realities in mind, it is worth asking: how well are global agreements and

national policies working? Which obstacles are the biggest? And what steps could really move the needle toward SDG 13? This study tackles those questions by looking at climate governance on both the global stage and the national level.

Objectives

This study was guided by five primary objectives. First, it evaluated the Kyoto Protocol (1997) and the Paris Agreement (2015), examined their effectiveness in reducing emissions, the extent of adoption, the enforceability of commitments, and their contributions to SDG 13 targets 13.2 (integration of climate policy into national plans) and 13.a (mobilization of climate finance). Second, it reviewed national climate policies in the European Union, the United States, China, and selected developing countries, compared stated emission reduction goals with actual progress, assessed renewable energy adoption, and evaluated policy enforcement. Third, it identified barriers to climate cooperation, including financial gaps, political instability, and limited access to mitigation and adaptation technologies. Fourth, the study analyzed the role of major international organizations and non-governmental organizations in providing scientific guidance, facilitating negotiations, advocating for stronger commitments, and monitoring compliance, while recognizing the limits of their influence. Finally, it proposed practical measures to enhance climate governance, such as binding emission targets, expanded climate finance for developing nations, improved technology transfer programs, and strengthened global monitoring and enforcement systems. These objectives are addressed in the results and discussion, offering a comprehensive understanding of both international agreements and national policies, as well as actionable recommendations to bridge the gap between commitments and outcomes.

METHODOLOGY

This study took a qualitative approach to assess how effective both international climate agreements and national climate policies were in moving the world toward SDG 13. Rather

than relying only on numbers, it combined different methods to capture political, economic, and technological contexts that raw data alone could not fully explain. The work drew on policy analysis, cross-country comparisons, and detailed case studies.

Qualitative Approach

A qualitative design allowed for a closer look at the agreements, policies, and institutions shaping climate governance. This approach helped bring in context like political shifts or economic barriers that often lost in purely statistical studies.

Policy Analysis

Two landmark agreements form the backbone of this analysis: the Kyoto Protocol (1997) and the Paris Agreement (2015). Each examined the evaluation of international climate agreements considered from several key aspects. First, the scope of participation was examined, identifying which countries signed the agreements and in what capacity, highlighting differences between developed and developing nations. Second, the strength of commitments is assessed, focusing on whether emission reduction targets are legally binding or voluntary, and the implications this has for enforcement and accountability. Third, performance outcomes were analyzed, measuring actual changes in greenhouse gas emissions relative to baseline years to determine the real-world impact of each agreement. Finally, the relevance of these agreements to SDG 13 was considered, with particular attention to target 13.2, which emphasizes the integration of climate policy into national plans, and target 13.a, which focuses on mobilizing climate finance. This multi-dimensional assessment provided a comprehensive understanding of both the achievements and limitations of international climate frameworks.

Comparative Analysis

The study also conducted a comparative analysis of climate policies across the European Union, the United States, China, and two

developing nations, India and the Philippines. This comparison focused on four key indicators. First, it examined changes in greenhouse gas emissions before and after the introduction of climate policies, providing a measure of policy effectiveness. Second, it considered the share of renewables in the national energy mix, reflecting the adoption of low-carbon energy sources. Third, the analysis evaluated the use of carbon pricing mechanisms or emissions trading schemes as tools for incentivizing reductions. Finally, it assessed how policies were enforced and monitored, highlighting the role of institutional capacity and regulatory frameworks in translating climate commitments into tangible outcomes. This multi-dimensional approach allowed for a nuanced understanding of how policy design, implementation, and monitoring vary across both developed and developing contexts.

Case Studies

To ground the analysis in real-world examples, four case studies were selected based on their diversity in geography, economic development, and approaches to achieving SDG 13. The European Green Deal (EU) represented a comprehensive regional strategy, aimed to achieve climate neutrality by 2050 through legally binding emissions reductions, the EU Emissions Trading System, and investments in renewable energy infrastructure (European Commission, 2021). The United States' Inflation Reduction Act focused on national incentives for clean energy deployment, emission reductions, and technological innovation, although its effectiveness was affected by prior policy reversals and shifting political priorities (Rhodium Group, 2022). China's Five-Year Plans provided a coordinated approach to renewable energy expansion, energy efficiency, and carbon intensity targets, yet overall emissions continue to rise due to rapid economic growth and industrial demand (IEA, 2022). India's National Action Plan on Climate Change outlines renewable energy targets, energy efficiency measures, and adaptation strategies, but progress is constrained by limited financial resources and technological capacity (Global Carbon Project, 2022). Each case was examined for stated goals, implementation methods, observed outcomes, and the challenges

encountered, highlighting both successes and the persistent barriers in translating climate policy into measurable impacts.

Bringing It All Together

Insights from the policy reviews, comparative analysis, and case studies combined to highlight recurring challenges to cooperation and the strengths and weaknesses of current governance models. The final recommendations are based on evidence from successful practices that could realistically be applied elsewhere.

RESULTS AND DISCUSSION

Effectiveness of International Climate Agreements

When the Kyoto Protocol came into effect in 1997, it did manage to push progress, especially among Annex I countries like those in the European Union, where they not only met their targets but went beyond them. Even so, looking at the bigger picture told a different story. Between 1997 and 2012, total global CO₂ emissions still climbed by 32% (Friedlingstein et al., 2022). The reasons are clear: participation was limited, developing countries were exempted, and enforcement tools were weak at best (UNFCCC, 1998; Global Carbon Project, 2022).

Fast forward to 2015, the Paris Agreement widened the playing field. Every signatory had to submit its own NDCs, which pulled in far more countries than Kyoto ever did. But the trade-off for clear enforcement was sacrificed for inclusivity. All commitments remained voluntary. As the United Nations Environment Programme (UNEP) (2022) pointed out, fewer than one in three countries were currently on track to meet their 2030 pledges. And even if every NDC was fully achieved, the IPCC (2021) warned it still would not keep global warming below the 1.5 °C threshold. The gap between ambition and actual action was still large.

Comparative National and Regional Policy Performance

The study also conducted a comparative analysis of climate policies across the European Union, the United States, China, and two developing nations, India and the Philippines. This comparison focused on four key indicators. First, it examined changes in greenhouse gas emissions before and after the introduction of climate policies, providing a measure of policy effectiveness. Second, it considered the share of renewables in the national energy mix, reflecting the adoption of low-carbon energy sources. Third, the analysis evaluated the use of carbon pricing mechanisms or emissions trading schemes as tools for incentivizing reductions. Finally, it assessed how policies are enforced and monitored, highlighting the role of institutional capacity and regulatory frameworks in translating climate commitments into tangible outcomes. This multi-dimensional approach allowed for a nuanced understanding of how policy design, implementation, and monitoring vary across both developed and developing contexts. Table 1 presents key climate policy indicators for the selected economies, including baseline years, net-zero targets, key policies, emission trends, and renewable energy shares.

Table 1
Climate Policy Indicators and Trends for Selected Economies

Country/Region	Baseline Year	Net-Zero Target Year	Key Policies	Emission Trend (from baseline)	Renewable Share (2022 est.)
European Union	1990	2050	European Green Deal; EU ETS	-31%	~22%
United States	2005	2050	Inflation Reduction Act	-17%	~20%
China	2005	2060	Five-Year Plans; renewable capacity targets	+48%	~14%
India	2005	2070	National Action Plan on Climate Change	+52%	~10%
Philippines	2010	None	Renewable Energy Act; NDCs	+35%	~13%

Note. Developed economies (EU and USA) show net reductions in emissions and higher renewable energy shares, reflecting stronger institutional capacity, policy enforcement, and financial resources. Developing economies (China, India, and the Philippines) continue to increase emissions despite renewable expansion, highlighting challenges in balancing economic growth with emission reductions. Sources: European Commission, 2021; IEA, 2022; Global Carbon Project, 2022; Rhodium Group, 2022.

The European Union achieved a 31% reduction in emissions relative to its 1990 baseline, largely due to legally binding climate legislation and the EU Emissions Trading System (European Commission, 2021). The United States reduced emissions by 17% since 2005, with recent progress under the Inflation Reduction Act partly offsetting earlier policy reversals (Rhodium Group, 2022). China and India continue to expand renewable capacity, yet emissions remain high (+48% and +52%, respectively) due to rapid economic growth. The Philippines increased renewable energy deployment, but overall emissions rose by 35% since 2010 (IEA, 2022; Global Carbon Project, 2022). These patterns illustrated that achieving emission reduction targets requires enforceable policies, institutional capacity, and technology access.

Case Studies

To ground the analysis in real-world examples, five case studies were selected to reflect diversity in geography, economic development, and approaches to achieving SDG 13. The European Union’s Green Deal represents a comprehensive regional strategy, targeting climate neutrality by 2050 through legally binding emissions reductions, the EU Emissions Trading System, and investments in renewable energy infrastructure (European Commission, 2021). The United States’ Inflation Reduction Act emphasizes national incentives for clean energy deployment, emission reductions, and technological innovation, though its effectiveness has been influenced by previous policy reversals and shifting political priorities (Rhodium Group, 2022). China’s Five-Year Plans coordinate renewable energy expansion, energy efficiency measures, and carbon intensity targets, yet overall emissions continue to rise due to rapid economic growth and industrial demand (IEA, 2022). India’s National Action Plan on Climate Change outlines renewable energy targets, energy efficiency measures, and adaptation strategies, but progress was constrained by limited financial resources and technological capacity (Global Carbon Project, 2022).

The Philippines was included to

represent a developing Southeast Asian country which faced resource and institutional constraints. Its climate policies, including the Renewable Energy Act and NDCs, aimed to expand renewable energy deployment and enhance adaptation measures. However, overall emissions have increased, reflecting challenges such as limited financing, technological capacity, and enforcement mechanisms (IEA, 2022; Global Carbon Project, 2022).

All five cases were examined using the same framework: stated goals, implementation methods, observed outcomes, and challenges encountered. This approach allowed for consistent comparison across countries and regions, linking directly to the key climate policy indicators summarized in Table 1, including emissions trends, renewable energy shares, carbon pricing mechanisms, and enforcement capacity.

Barriers to Global Climate Cooperation

Analysis of institutional reports (OECD, 2021; UNEP, 2022), major scientific review (IPCC, 2021), and global energy data (IEA, 2022) highlights three primary barriers to effective international climate cooperation. These barriers, along with supporting evidence, are summarized in Table 2.

Table 2
Primary Barriers to International Climate Cooperation

Barrier	Supporting Evidence
Economic disparities in finance	OECD (2021); UNEP (2022)
Political and policy instability	Rhodium Group (2022); UNFCCC reports
Technological capacity gaps	IEA (2022); IPCC (2021)

Note. These barriers reflect persistent challenges in both developed and developing countries, affecting the implementation of global climate agreements and the achievement of SDG 13 targets.

Economic disparities continued to hinder global climate cooperation, as the \$100 billion annual climate finance goal has yet to be fully realized, with adaptation projects in vulnerable countries particularly affected (OECD, 2021; United Nations Environment Programmed

[UNEP], 2022). Political instability further undermines progress, as sudden shifts in national policies such as the United States leaving and later rejoining the Paris Agreement erode trust and disrupt long-term momentum (Rhodium Group, 2022). Additionally, technological gaps pose a significant barrier, as countries with limited capacity for renewable energy deployment face a much steeper challenge in achieving decarbonization and meeting climate targets (IEA, 2022).

Role of International Organizations and NGOs

International organizations and NGOs provide critical support for climate governance but are limited in enforcement capacity. The UNFCCC facilitates negotiations, oversees reporting, and conducts global stock takes, granting legitimacy and near-universal membership, yet lacks binding enforcement powers (Bodansky, 2010; UNFCCC, 2015). The IPCC supplies authoritative scientific assessments and carbon budgets to inform policymaking, but it does not regulate or fund action (IPCC, 2021). NGOs operate at the grassroots level, engaging in advocacy, technical assistance, and monitoring. Their impact can be significant where political systems are receptive, but their authority remains informal. Together, these actors strengthen global climate governance but cannot fully enforce commitments or bridge systemic gaps in implementation.

Institutional Enforcement Gaps and Recommendations

Evidence from the IPCC, IEA, and OECD highlights persistent weaknesses in global climate governance: the absence of universal binding commitments, shortfalls in climate finance delivery, inconsistent measurement, reporting, and verification (MRV) systems, and fragmented institutional coordination (Bodansky, 2010; Keohane & Victor, 2016; OECD, 2021). To address these challenges, practical measures are proposed: establishing binding emission targets, expanding and simplifying climate finance mechanisms for developing nations, enhancing technology transfer programs, and strengthening

global monitoring and enforcement systems. Implementing these steps would narrow the gap between international commitments and tangible outcomes, enabling both developed and developing nations to contribute effectively to SDG 13 objectives, particularly target 13.2 (policy integration) and target 13.a (mobilizing climate finance).

CONCLUSION

This study set out to assess how well the Kyoto Protocol, and the Paris Agreement have worked as global climate policy frameworks, and to explore what helps or hinders progress toward SDG 13. The results are mixed. Yes, these agreements have broadened participation and raised awareness worldwide. But their actual effect on reducing greenhouse gas emissions has been modest. Voluntary commitments, patchy financing, and uneven technological capacity are still major barriers. The Kyoto Protocol had stronger enforcement, yet it left many nations outside its framework. The Paris Agreement brought all countries to the table, but in doing so, it relaxed enforcement mechanisms and trade-off more inclusivity but less legal bite remains a key tension in climate governance. At the national level, progress was uneven. The European Union stands out for cutting emissions significantly, backed by binding laws. Meanwhile, emerging economies were still seeing emissions rise, even though they have increased renewable energy capacity. The gap between rich and poorer nations economically, politically, and technologically makes genuine cooperation difficult. International bodies like the UNFCCC and IPCC continue to shape the conversation and provide credibility through science and policy guidance. Still, their hands are tied without enforcement powers. NGOs bring energy through advocacy, monitoring, and technical support, but political climates and resource limits influence how they can achieve. All of this points to a need for recalibration. Climate governance must pair inclusivity with real enforceability, and connect funding, political will, and technology in ways that close the gap between ambition and actual results. Targets alone will not get the world to net-zero; they must be backed by commitments that are

credible, measurable, and enforceable. In the end, progress on SDG 13 will depend on moving past high-level promises and into sustained, verifiable action. Climate change is as much a social and economic challenge as it is an environmental one. Cooperation is possible, but fragile. If political will aligns with enforceable commitments, fair financing, and shared technological gains, the shift from aspiration to achievement can finally take shape.

RECOMMENDATIONS

To enhance global climate cooperation and accelerate progress toward SDG 13, it is recommended that hybrid compliance mechanisms be implemented, combining binding rules for the highest-emission sectors with flexible terms for nations at varying stages of development to ensure both accountability and inclusivity. Climate finance commitments must be consistently met, equitably allocated between mitigation and adaptation, and transparently monitored through independent mechanisms to better support low- and middle-income countries. Expanding technology and skills sharing through structured international partnerships focused on renewable energy, carbon capture, resilient infrastructure, and advanced monitoring will further accelerate collective climate action. Strengthening the roles of international institutions through standardized reporting, verification, and peer-review processes under binding agreements can improve transparency and comparability of outcomes. Moreover, the formal involvement of non-governmental organizations and civil society in governance processes will ensure independent oversight, sustain pressure on policymakers, and promote wider public engagement. Collectively, these strategies provide a coherent roadmap for overcoming financial, political, and technological barriers, enabling a more coordinated, enforceable, and equitable global climate governance system aligned with the urgency of the climate crisis and the objectives of SDG 13.

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