



POLICY
PRACTICE
PARTNERSHIP

Climate Conference of parties (COP) Evolution from Kyoto to Belem

CLIMATE POLICY Compendium

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Table of Contents:

1. **Foreword**
2. **Glossary**
3. **Introduction**
4. **Evolution of COPs: The Transformation of Global Climate Governance**
5. **Carbon Pricing: Assessing Its Impact and Outcomes**
6. **Climate Finance: Equity, Commitments and Key Constraints**
7. **Conclusion**
8. **References**
9. **Appendix**
10. **Notes and Acknowledgements**



Foreword

It is a matter of great satisfaction to present this *Climate Policy Compendium*; a thoughtful and analytically grounded work produced as part of the academic engagement within our institution. This compendium reflects not only the intellectual commitment of our students but also the growing importance of interdisciplinary inquiry in addressing complex global challenges such as climate change.

At South Asian University, we have consistently emphasized the need to cultivate a balanced academic environment—one that integrates rigorous research with meaningful teaching, and theoretical understanding with practical relevance. This work exemplifies that spirit. By examining the evolution of global climate governance, the role of market-based mechanisms, and the challenges of climate finance, the authors have engaged critically with issues that lie at the intersection of policy, economics, and international cooperation.

What makes this compendium particularly relevant is its contextual sensitivity. Climate change is not merely a scientific or environmental concern; it is deeply intertwined with questions of equity, development, and regional cooperation—especially in South Asia. The perspectives presented here demonstrate an awareness of these complexities and reflect an encouraging level of analytical maturity.

As we continue to strengthen our role as a regional knowledge hub, such efforts reaffirm our commitment to fostering critical thinking, collaborative inquiry, and a deeper understanding of shared challenges. I hope this work will inspire further research and dialogue, both within and beyond our academic community.



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South Asian University 2026



Glossary

AAU	Assigned Amount unit
ACE	Action for climate empowerment
CBDR-RC	Common But Differentiated Responsibilities and Respective Capabilities
CCCDM	Common Carbon Credit Data Model
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
COP	Conference of Parties
ERU	Emission Reduction Unit
ETS	Emissions Trading System
EU	European Union
FAR	First Assessment Report
FCCC	Framework Convention on Climate Change
GCF	Green Climate Fund
GEF	Global Environment Facility
GHG	Greenhouse Gases
INC	Intergovernmental Negotiating Committee
IPCC	Intergovernmental Panel on Climate Change
JI	Joint Implementation
LDCF	Least Developed Countries Fund
MDB	Multilateral Development Bank
NAP	National Action Plan
NBS	Nature-Based Solution
NCQG	New Collective Quantified Goal
NDC	Nationally Determined Contributions
OECD	Organisation for Economic Co-operation and Development
PACM	Paris Agreement Crediting Mechanism
REDD+	Reducing Emissions from Deforestation and Forest Degradation
ROI	Return On Investment
SCCF	Special Climate Change Fund
SFWG	Sustainable Finance Working Group
SIDS	Small Island Developing States
UNEP	United Nations Environment Program
UNFCCC	United Nations Framework Convention on Climate Change
WMO	World Meteorological Organisation





Introduction

With the understanding of the issue of the greenhouse effect and the incessant need for development, humankind has reached a state from which returning is extremely difficult. Piling up the emissions from the burning of fossil fuels at an unprecedented rate has created a global issue so complex and so fragile that immediate action, however much needed, is not feasible. Development at the price of the environment was the basic building block of all developed economies. From the onset of industrialization, the heavy, unchecked utilization of fossil fuels led to the rapid, unequal development in the Global North versus the poorer Global South.

While the Global North thought of development as a virtue exclusive to them, the ill effects of this unsustainability did not go unnoticed. Acid rains, pollution, killer smog, and the destruction of agriculture were noticed everywhere. The turning point in climate consciousness was the launch of the book *Silent Spring* by Rachel Carson in the late 1960s, a sharp analysis of wildlife loss due to anthropogenic disturbance in the delicate ecological balance. The outrage of people did not go unheard. The studies piled up, and a big, disturbing picture started to emerge, one that could not have been any clearer- we were changing our planet in a way that was not well understood. Scientists, economists, and policymakers came together to look at the potential problem: it was not an issue of pollution within the bounds of a nation; the effects were transboundary. Our atmosphere was holding on to a vast amount of greenhouse gases, most notably CO₂, and Earth was warming at an alarming rate.

The problem was getting clearer, but the solution appeared evasive. We had to cut down on our emissions, but who were the 'we'?

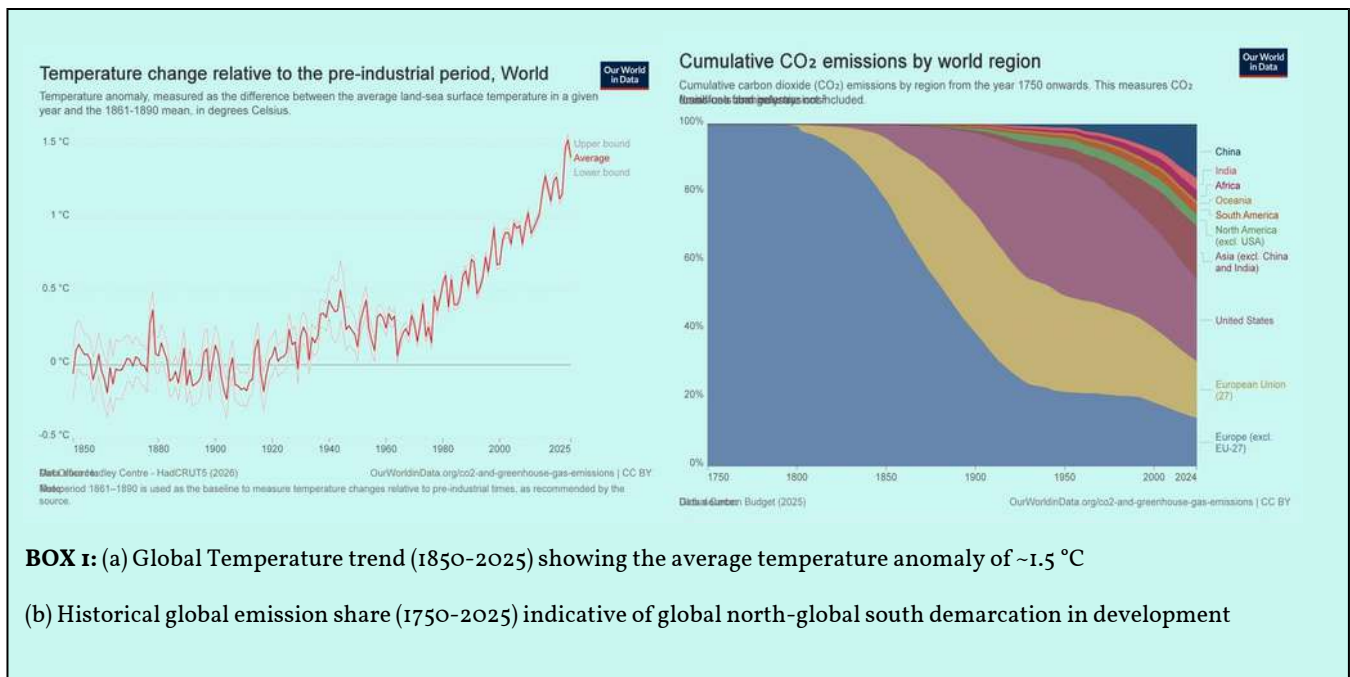
The global south nations that had no perceptible role in releasing these emissions into the environment should not be the ones to be cutting down on their own emissions-these were minuscule compared to those of the already developed economies of North America and Europe. The lead needed to be taken by the developed nations, for they were the ones who started it in the first place (see Box 1).

The problem of global warming was not related to science exclusively- it became a problem for economists and policymakers as well. Will cutting down on emissions not harm the pace of development? Can the emissions be curbed effectively without a monetary incentive? Why would the industries comply with cutting down on emissions when it is free to pollute? One way to answer it potentially lied in the newly maturing field of environmental economics: put a price on the emissions.

The late 1980s became the playground of economists and scientists, figuring out a measurable way forward. While economic reasoning provided a potential pathway for mitigation, the translation of this idea into global action required an institutional framework. This led to the emergence of formal climate governance structures under the United Nations system.

The United Nations Environment Program (UNEP) and the World Meteorological Organization (WMO) set up the IPCC- Intergovernmental Panel on Climate Change in 1988. IPCC's job was to compile and peer review the science of climate change- and to inform the policy makers of the full scale. The Second World Climate Conference of 1990 came up with a strategy to engage all nations in a multilateral talk- to set up an intergovernmental Negotiating Committee for a Framework Convention on Climate Change (INC/FCCC), which led to the establishment of UNFCCC in 1992. UNFCCC was a framework convention, which means it set general rules and a framework for the bigger picture- reducing emissions to the 1990 levels by the year 2000; an ambitious target in hindsight. It did not set any limits on emissions but called all nations together to voluntarily take up the task. However, UNFCCC did distinguish the nations based on their development and capabilities- Annexed and Non-Annexed Countries (See Appendix II). The integrated concept of CBDR-RC was to ensure that this target is achieved equitably. In 1995, UNFCCC convened a conference of the parties (COP) to monitor the progress on the target.

The 1995 Berlin COP (the first COP) did not come up with the good news- the voluntary commitments did not work- a new target was needed beyond the year 2000. It also made it evident that the problem lied not in the target itself but in how developed nations were perceiving it. This perception of the problem itself, the root cause, and subsequently the mitigation pathway evolved with the evolution of the geopolitics and power dynamics of the globe.







Evolution of COPs: The Transformation of Global Climate Governance

- Shruti Mishra

Building on the institutional foundations established in the early 1990s, the evolution of the COP process reflects how climate governance adapted to changing political and economic realities. By the end of the 20th century, Climate change had become a global concern, and the scientific understanding followed closely. The establishment of IPCC in 1988 increased the scientific understanding of climate change through risk-based assessment reports and projections for the future climate of the globe in the first assessment report (FAR), which helped strengthen international policy actions regarding climate change by formally establishing the scientific basis for global climate governance. FAR established for the first time the anthropogenic origin of climate change and that the GHGs were the culprit; however, it did not confirm the sources or sinks of GHGs. IPCC became a seminal part of the formation of UNFCCC. With the UNFCCC coming into force, COPs became the supreme decision-making body of the convention.

COP EVOLUTION: THE EARLY PHASE (1995-2014):

During the early phase of COP's evolution, particularly from COP3 through COP7, COPs were primarily committed to the inner workings of the Kyoto Protocol. Hence, this period of the COP followed a top-down approach to cut down emissions. Developed nations were given legally binding targets for reducing greenhouse gas emissions, and market mechanisms were implemented that combine climate action with global trade/economic systems by enabling parties to buy and sell carbon credits from one another. The legal framework of the Kyoto system was developed with binding targets and associated penalties. However, the Kyoto Protocol was not devoid of issues of its own- the US did not ratify the protocol due to its own domestic views on climate change and governance. With the top emitter out of the binding target, the protocol fell short in covering the major portion of emissions as soon as it started. Furthermore, several nations did not go ahead with the second phase of the commitment of Kyoto Protocol in 2012 as well. Thus, even with all the pledges and ratifications, during this period, measuring outcomes was a key issue with the protocol- participation in the COP did not translate well into quantifiable reductions in global warming. By 2012, global emissions had risen 44% from 1997 levels.





Beginning with COP12 and through COP20, climate governance went into a significant transition. Shifting from rigid compliance-based methods to a more flexible means of achieving mitigation targets took place during this time. COP15-the Copenhagen Summit influenced the transformation of climate governance by introducing voluntary commitments and pledges related to financing the mitigation and adaptation in developing and vulnerable regions of the world. While it had very few legally binding components, COP15 changed the trajectory of climate negotiations in the following conferences. The framework for voluntary commitments and climate finance has since grown in strength across the COP conferences that followed. COP16 of Cancun, COP18 of Doha, and COP19 of Warsaw contributed to the establishment of a framework regarding voluntary commitments and climate finance. Also, the establishment of the Green Climate Fund (GCF) was made to support the adaptation and mitigation efforts of developing countries. Adaptation efforts later gained traction, with a focus on extreme natural disasters such as flooding and cyclone events. National Adaptation Plans (NAPs) were developed as part of countries' efforts to reduce climate impacts. Nature-based solutions (NBS), including REDD+, aim to enhance the protection of forests for their environmental and social value. The Warsaw International Mechanism (2013) was established under the UNFCCC to support vulnerable countries in addressing loss and damage to climate change.

This phase also included more focus on technology transfer and building the capacity of institutions such as the Technology Executive Committee, Global Technology Centre and Network. During this phase, there was also a change taking place within climate diplomacy. Previously, there had been a clear divide between the developed and developing countries; however, this divide started to weaken with the rise of the global south economic powers, especially China and India.

PARIS AGREEMENT (2015):

The Paris Agreement Era played an important role in the global environmental landscape with the signing of the landmark Paris Agreement (COP21). It concretized the transition from a 'top-down' to a 'bottom-up' approach to climate change mitigation. Each country developed its own domestically defined emission reduction target (Nationally Determined Contribution, NDC). A total of 196 countries participated in the process. Along with the transparent systems of accountability and the global stock take to assess progress, the Paris agreement came to include adaptation, finance, and renewal of confidence in the carbon





market via restructuring the carbon market mechanisms (Article 6) that had previously gone down post 2008 recession and failure of Kyoto Phase I.

There was much attention given to the less carbon-intensive and sustainable renewable energy in order to reduce the carbon footprint of industries and transport (the major emitter sectors globally). Climate finance became an increasingly important aspect through which Multilateral Development Banks created major funding models for climate projects. Agriculture, food production systems, and NBS emerged as an important part of the discussions on how to combat climate change.

POST-PARIS AGREEMENT (2016- 2024):

Following the adoption of the Paris Agreement in 2016, countries started to implement their commitments stated in their NDCs. The focus of the COPs held after COP21 was to implement the existing agreements rather than create new ones.

Adaptation to climate change has become a key area of focus for vulnerable countries, the majority of which lie in the global south. NBS, such as conservation of forests, wetlands, and other ecosystems, are being recognized as a sustainable way forward. Action for Climate Empowerment (ACE), which encourages awareness raising, education, and public participation in relation to action on climate change, has gained attention over the years. Focus is also on the impact of global trade and supply chains on overall emissions from the production and consumption of goods. Decarbonization of the power sector and transport is one of the major aspects of NDCs globally.

Climate change is increasingly impacting agricultural and food systems. Climate-smart agriculture, green technology transfer, and capacity-building have enabled the least developed countries to be active participants in climate action. In this phase of COP evolution, effective governance is based on the results of emissions reduction mechanisms, financial support, and increased resilience.

The overall focus of climate governance over this period shifted from strong compliance but weak participation to strong participation but weaker compliance. The need for stricter compliance with the rules of these COPs needs to be institutionalized and implemented for these COPs to be any more effective than Kyoto.

BELEM (2025) AND BEYOND:

The COP30 (Belém) represents a key progress checkpoint in the progression of the global climate regime, as shifting from negotiation to implementation became



the priority. COP30 continues to build on the results of the Global Stock take in COP28 in Dubai, aiming to achieve the strengthening of the legal-operational framework. Essentially, COP30 stipulates that countries continue to enhance their Nationally Determined Contributions (NDCs) through the review and ratchet mechanism of the Paris Agreement to meet the 2°C target. COP30 reflected the maturation of climate diplomacy; however, the geopolitical relationships between developed and emerging economies continue to affect the dialogue on fossil fuels, climate finance, and Loss and Damage.

Given its location in the Amazonia, COP30 reinforced Action for Climate Empowerment (ACE) through the encouragement of indigenous participation, public awareness, and inclusive governance. COP30 also created a stronger link between adaptation and mitigation by identifying resilience building through National Adaptation Plans (NAPs) and creating a stronger framework for disaster risk reduction for regions vulnerable to climate change.

COP30 is poised to put in place the needed financial and structural mechanisms, particularly the Loss and Damage Fund established at COP27 in Sharm el-Sheikh and further developed during COP28 in Dubai. Multilateral Development Banks (MDBs) are now expected to play an increasingly transformative role in aligning financial flows with low-carbon and climate-resilient pathways, mobilizing private capital, and supporting just transitions in developing economies. COP30 also places considerable attention on decarbonizing key sectors such as energy, transport, and agriculture, and will continue to promote sustainable global supply chains and green industrial policy. NBS is a significant part of COP30, particularly protecting native forests in the Amazon and restoring ecosystems, linking biodiversity objectives with climate change mitigation and adaptation efforts. In addition, the conference highlighted the need for equitable access to clean technology through technology transfer and capacity building as mandated by the Paris Agreement. Overall, COP30 is a forum for continuing the climate regime's transition towards a comprehensive, implementation-oriented framework, including the need for socio-economic transformation, resilience to natural disasters, and equitable development.

One aspect universally accepted by all parties throughout this transformation in the governance structure of COPs was support for market mechanisms for emissions reduction. Why did making emissions tradeable become a cornerstone of climate governance? Why would putting a price tag on emissions be favored by the industries that control the climate change discourse so heavily that the concept of 'phasing out' and later, a more equitable alternative- 'phasing down' fossil fuels in these COPs did not come up till COP26 (2021), 25 years since the first COP?







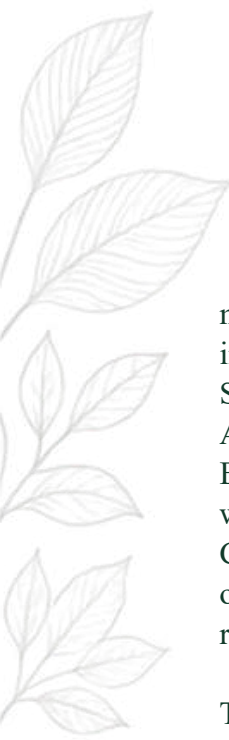
Carbon Pricing: Assessing Its Impact and Outcomes

- **Rashmi Rai**

To understand why market mechanisms are favored by all parties, amongst all the deadlocks in negotiations in COPs, it will be helpful to understand why market mechanisms for emission reduction came into the picture. Starting in the year 1967 as a micro-economic simulation experiment for the then National Air Pollution Control Administration (later EPA's Office of Air and Radiation), the trading of air pollutants began as an exercise to find a cost-effective pathway to reduce emissions without reducing the industrial output. Later, the US Clean Air Act of 1990 operationalized this Cap-and-Trade mechanism, where an upper limit to emissions is enforced while allowing for the permits of pollution to be traded among the industries as they see fit in a cost-effective manner. This Cap-and-Trade system worked very well in a permanent 10-million-ton reduction in SO₂ emissions from 1980 levels. In parallel, European countries such as Sweden (1991) and Finland (1990) introduced carbon taxation regimes. These policies demonstrated that carbon pricing could be both effective and economically compatible, as both economies continued to grow despite the imposition of taxes on emissions. However, Emissions trading was more favorable to industrialists and thus more politically viable.

The market mechanism had a geopolitical aspect to it as well: not all parties were in favor of taxation; the liberal economy of the US never came up with a tax for carbon emissions, while taxation was very successful in the European Union with a mixed governmental structure. The European Union was ready for a uniform cut for all annexed parties, but the US-led group, with Canada, New Zealand, Japan, and Switzerland, did not like the idea. They argued for a flexible, market-based mechanism to cut emissions, so that parties could come up with the cheapest cut possible. Additionally, the annexed parties were also not entirely happy about the non-annexed countries left aside- China was a rapidly growing economy with the second-highest emissions globally at the time. Annexed nations, thus, wanted a way to involve the non-annexed nations in the race to reduce emissions as well. The US, being the biggest emitter at the time, became a key player in deciding that a flexible market mechanism would have the upper hand.

Thus, the Kyoto Protocol institutionalized market-based mechanisms as a negotiated compromise shaped by geopolitical dynamics, particularly the advantage held by the United States and its preference for flexible, cost-effective

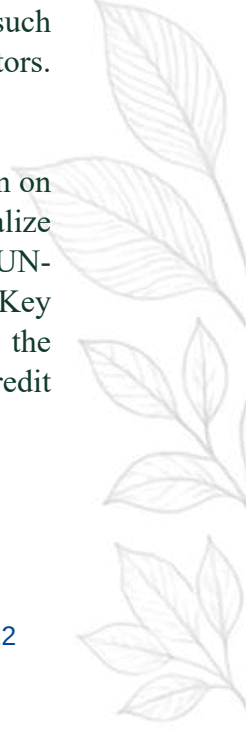


mitigation strategies over uniform emission cuts favored by the European Union. Introduced in 1997, this compromise took the form of three flexible mechanisms: the Emissions Trading System (based on Assigned Amount Units, AAUs), Joint Implementation (JI), which enabled Annex I countries to invest in emission reduction projects in other Annex I nations and earn Emission Reduction Units (ERUs), and the Clean Development Mechanism (CDM), which allowed investment in mitigation efforts in non-Annex I countries in exchange for Certified Emission Reductions (CERs). Both ERUs and CERs were standardized to the value of one AAU, thereby creating a unified and flexible framework for achieving emission reduction targets across different national and economic contexts.

These mechanisms appeared clean and simple at first glance, but the geopolitics surrounding the implementation proved to be very complicated. The CDM especially drew attention over the issue of additionality- whether the credited emission reductions would have occurred in the absence of market incentives. Empirical studies have shown that a significant share of CDM projects likely failed this criterion, raising doubts about the environmental integrity of the system. Similarly, the presence of surplus allowances, often referred to as “hot air,” particularly in economies in transition, diluted the effectiveness of emissions caps by allowing compliance without actual mitigation. These issues point to a broader tension: while carbon markets aim to optimize efficiency, they can also enable the redistribution rather than the reduction of emissions. The contemporary emissions trading system in Europe, the EU-ETS, however, proved that well-regulated and monitored implementation of this mechanism could be effective.

The launch of China’s own ETS (2021), based upon emission intensity instead of absolute emissions, marked a parallel addition in ETS. The emphasis on intensity instead of absolute emissions also marked the rise of a trading system catering to the developmental aspirations of the rapidly developing economies of China, as well as India. The expansion of emissions trading systems gained further momentum with their adoption in developing economies such as India, Indonesia, and Mexico, where they are primarily targeted at high-emission sectors. (See Box 2).

Article 6 of the Paris Agreement provides the framework for multilateral cooperation on carbon trading. In COP29 (Baku), negotiators finalized their key guidance to operationalize Article 6.4 of the Paris Agreement, which established the framework for the first UN-regulated global carbon market: the Paris Agreement Crediting Mechanism (PACM). Key developments in the COP30 negotiation process indicated a possible breakthrough in the establishment of a UN-regulated carbon market. The G20 SFWG’s Common Carbon Credit Data Model (CCCDM), developed in 2025, aims to standardize data across markets





and improve traceability, potentially easing cross-border transactions and supporting due diligence.

Since 2018, member states have been developing key components to operationalize the PACM, including new standards to measure project impact, and an audit, appeals, and grievance mechanism to uphold accountability and human rights. These milestones position the PACM for full implementation following COP30. During COP30, representatives from several countries reaffirmed their support for the Open Coalition on Compliance Carbon Markets. The initiative now includes Brazil, China, the European Union, the United Kingdom, Canada, Chile, Germany, Mexico, Armenia, Zambia, France, Rwanda, Andorra, Guinea, New Zealand, Monaco, Singapore, and Norway.

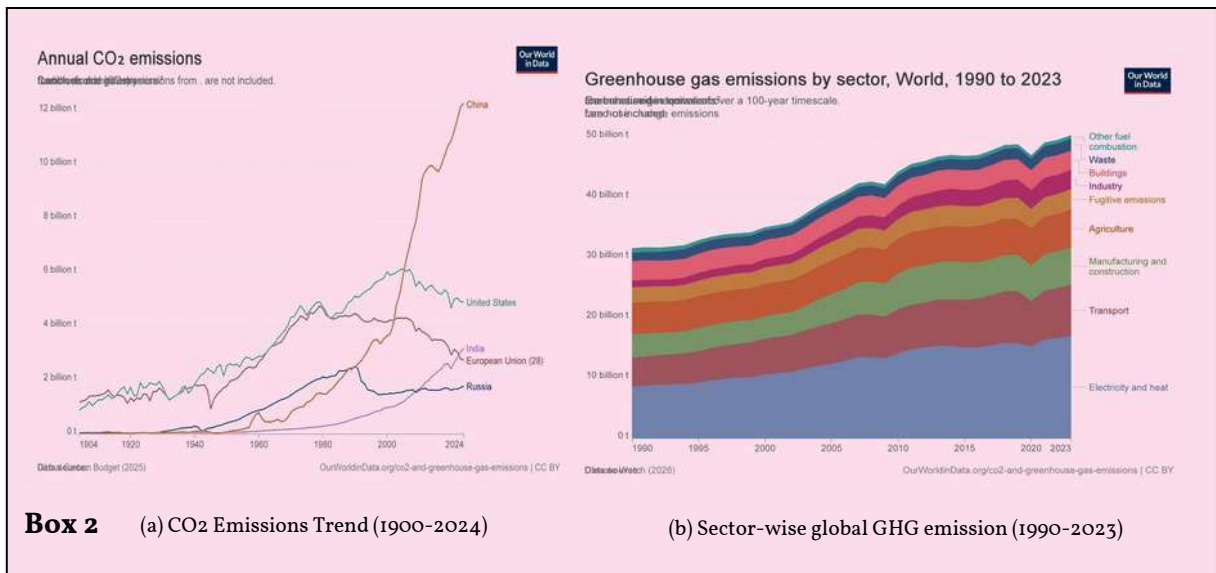
DID IT WORK?

According to the 2025 NDC Synthesis Report (which reviewed NDCs submitted before September 2025), 89% of submitting Parties indicate plans to engage in voluntary cooperation under Article 6, signaling growing confidence in carbon market mechanisms. This may create potential demand for verified carbon management credits as countries seek cost-effective pathways to meet their targets. Despite the withdrawal of the US from the Paris Agreement and UNFCCC, this growing confidence and demand for a well-regulated mechanism to trade emissions demonstrate the resilience of climate governance in the era of great geopolitical instability. However, the strength and stability of governance do not automatically translate into its effectiveness in emission reductions: the prime goal of the entire exercise.

The market mechanisms since the Kyoto Protocol (1997) till present have not resulted in a decrease in emissions. In fact, the rate of emissions increased after 2015, owing to the rapid economic growth of India and China, with China securing the first position in emissions ranking, followed by the US and India (See Box 2). However, Belem COP30 came with more favorable news- the emissions itself grew, but we managed to flatten the curve a little: the rate of emissions fell for the first time. Although not a huge percentage, this fall in the rate of emission signaled something important- these trends suggest the possibility of improved effectiveness under a more structured and regulated framework. While we will not be able to reach our target of 1.5 °C, the 2 °C dream is still alive, although far-fetched.



These outcomes point to deeper structural limitations within market-based mechanisms that go beyond their intended efficiency gains. Beyond its role as a mitigation tool in global climate governance, the Clean Development Mechanism (CDM) significantly reshaped international trade dynamics and supply chains. By enabling the outsourcing of emission reductions to countries with less stringent regulatory frameworks, it contributed to carbon leakage, where emissions are displaced rather than genuinely reduced. More broadly, while emissions trading systems offer cost-efficient pathways for mitigation, they also raise concerns



about carbon commodification. The creation of financial incentives can shift focus from actual emissions reductions to the generation of tradable credits, attracting actors more interested in profit than environmental outcomes. As a result, emissions trading remains contested both in terms of its efficiency as a market mechanism and its effectiveness in delivering real, measurable mitigation.

While carbon markets offered a plausible cost-efficient mechanism for mitigation, their limitations in ensuring equitable outcomes exposed a fundamental gap in climate governance. Addressing this gap required a parallel system- one that could redistribute resources and support vulnerable nations beyond market logic. This brings us to the role of climate finance.





Climate Finance: Equity, Commitments and Key Constraints

- Harsh Raj Verma

Climate finance is a cornerstone in Global Climate Governance, particularly when it comes to equity and differentiated responsibilities between the Developed and the Developing countries. The evolution of Climate Finance from the Kyoto Protocol to an emerging framework under the New Collective Quantified Goal (NCQG) reflects a transition from a market-oriented flow to institutionalized financial commitments.

Despite this transition, a central paradox persists. Although the financial pledges have expanded over time, ground-level climate action is limited.

This prompts three central lines of inquiry:

1. How has the Global Climate Finance evolved over the different COPs
2. To what extent have these financial commitments been met, and
3. What are the structural constraints that limit the utilization of the finance

The following sections address these questions by tracing the evolution of financial commitments, evaluating their delivery, and examining the structural constraints that shape their effectiveness.

EVOLUTION OF THE GLOBAL CLIMATE FINANCE:

Phase I: The Kyoto Era (1997 to 2009):

The Kyoto Protocol was primarily dependent upon the different market-based instruments, particularly the CDM, to finance the mitigation. Although this was supported by multilateral funding through the Global Environment Facility (GEF) established pre-UNFCCC in 1991, the formal operational rules were set during the Marrakech Accords. There was an absence of a global finance target and a high dependence on the performance of the carbon markets.

Private Sector investments under the CDM and the Multilateral grants dominated the finance during this phase. The majority of the finance was diverted toward the mitigation activities, and a very minimal amount was accounted for adaptation. The estimated flow of finance during this phase was between \$5 Billion to \$15 Billion annually, according to the World Bank.



During the Marrakech COP, a funding of roughly \$450 Million was committed, but only about \$10 Million was met through the Least Developed Countries Fund (LDCF) and the Special Climate Change Fund (SCCF), under the GEF. Although this phase showed the potential of markets as an instrument for mitigation and adaptation to climate change impacts, it failed to ensure predictability and equity in climate finance.

Phase II: The Copenhagen-Paris Era (2010 to 2023)

This phase marked a significant shift with the Copenhagen Accord coming into the picture, which introduced the \$100 Billion annual climate finance goal. There was an expansion in the institutional mechanisms, like the GCF (Green Climate Fund), along with the ODA (Official Development Assistance), used by the OECD to track the flow of finance to developing countries.

A commitment of \$30 Billion annually for the period between 2010 to 2012 was made as a fast start finance, which was then increased to \$100 Billion annually by 2020. There was a gradual increase in climate finance from \$52 Billion in 2013 to \$115.9 Billion in 2022. The year 2022 also marked the achievement of the 2009 Copenhagen Goal. Around 75 to 80% of the finance came through the public finance, the Private finance contributed roughly between 20 to 25%, which was mobilized through public interventions. Out of the total finance, ~70% was in the form of loans, and ~25% was in the form of grants.

60 to 70% was used in mitigation and the rest 25 to 30% was allocated to adaptation. There was an over reliance on debt instruments and ambiguities in accounting methodologies. This phase was successful in institutionalizing climate finance but it also exposed the credibility and equity gaps.

Phase III: Baku to Belem, and Beyond

The emergence of a new framework under the New Collective Quantified Goal (NCQG) during the COP 29 in Baku, Azerbaijan, marked a paradigm shift towards large-scale finance mobilization. It set a new target in climate financing, the annual \$300 Billion till 2035 in public-led climate finance for developing countries, serving as a successor to the \$100 Billion annual goal. The COP 30 in Belem saw a shift in the focus from ‘counting Billions’ to ‘restructuring Trillions’, which also involved Multilateral Development Bank (MDB) reforms and the Global Solidarity Levies. It established the annual \$1.3 Trillion goal by 2035. There is an increase in the role of Private Finance, and emphasis is given on the Adaptation and Loss & Damage fund.

However, challenges like lack of binding commitments and uncertainty in the implementation still exists. Although, this phase signifies ambition but, it still remains structurally under defined.

THE DISBURSEMENT DEFICIT:

The most common yet most critical constraint across all phases is the gap between approved and disbursed finance (see Box 3). For example, the GCF has a commitment portfolio of \$20.2 Billion, but the actual disbursements are only \$6.5 Billion, as of 2026. The reasons behind this deficit are listed as follows;

- Complex approval procedures
- Stringent fiduciary standards act as a bottleneck for immediate action
- Limited absorptive capacity of the developing countries
- Long gestation period for different infrastructure projects, such as renewable energy grids.

Year	Milestone / Mechanism	Committed (USD)	Disbursed (USD)	Funding Vehicle
1997	Kyoto Protocol	No central fund set	~Small Bilateral Aid	Initial CDM (Clean Development Mechanism) framework.
2001	COP7 (Marrakech)	~\$450 million (Initial)	~\$10 million	Establishment of LDCF and SCCF under the GEF.
2009	Copenhagen Accord	\$30 billion (FST)	~\$24 billion (by 2012)	Fast-Start Finance (2010–2012): The first major pledge.
2010	COP16 (Cancun)	\$100 Billion / year	N/A (Goal for 2020)	Pledged by developed nations to be reached by 2020.
2015	Paris Agreement	~\$10 billion (GCF-1)	~\$0 (Operational start)	Green Climate Fund (GCF): Initial Resource Mobilization.
2019	OECD Assessment	\$79.6 Billion (Total)	\$79.6 Billion	Aggregated public/private mobilized (OECD tracking).
2020	The \$100B Deadline	\$83.3 Billion (Total)	\$83.3 Billion	Failed to meet the \$100B goal this year (per OECD).
2022	Milestone Year	\$115.9 Billion (Total)	\$115.9 Billion	Goal Met: Public finance hit \$91.6B; Private \$21.9B.
2024	COP29 (Baku)	\$300 Billion (Floor)	~\$1.2 billion (GCF only)	NCQG: New Collective Quantified Goal (Targeting \$1.3T).
2025	COP30 (Belém)	\$1.3 Trillion (by 2035)	~\$118 billion (Est.)	Belém Package: Focus on tripling Adaptation Finance.
2026	Current Status	~\$20.2 billion (GCF)	\$6.5 Billion (GCF)	Total cumulative GCF disbursements since inception.

Box 3: Committed v/s Disbursed Finance over the COPs



THE CHALLENGES:

- **Sectoral Imbalances:** Mitigation projects dominate due to their ROI (Return on Investment) potential, while Adaptation, which is comparatively more necessary for the vulnerable countries, remains underfunded.
- **Geographic Inequity:** The flow of finance is concentrated in economically stable countries, whereas the most vulnerable regions, e.g., Sub-Saharan Africa and the Small Islands Developing States (SIDS), receive a very small share of disbursed finance.
- **Scope of CDM and underlying issues:** The OECD's 2024 assessment stated that developed countries mobilized \$115.9 billion in climate finance for developing nations in 2022, finally surpassing the long-promised \$100 billion target- albeit two years late. However, independent analyses suggest that a significant portion of this finance was not new, but derived from reclassification or redirection of existing development aid. This issue is further compounded by the composition of finance itself: a large share is delivered as loans rather than grants, and is heavily skewed toward mitigation rather than adaptation. In contrast, the Green Climate Fund (GCF)—the primary institutional mechanism designed to operationalize equitable climate finance—illustrates the gap between commitments and delivery.

WAY FORWARD

As we move towards the COP 31, the focus would likely be on the 'Quality of Finance', as the discussions in the Belem COP have suggested that the currently disbursed money is debt-heavy. While the scale of climate finance has already expanded significantly, the focus is to make it more effective, equitable, and accessible. Key policy recommendations for the same may include the following;

- Grant-Based Financing; a higher ratio of Grants vs Loans to avoid a debt trap in the Global South Countries
- Fastrack Disbursement of Finance; a more Simplified Approval Process (SAP) across all the funds to reduce the commitment and disbursement gap
- Local Readiness; increase investments in the Country Platforms, like the GCF Readiness Program, to help the countries manage funds directly rather than through different intermediaries
- Transparency and Accountability; improving transparency and accountability in the reporting of the finances





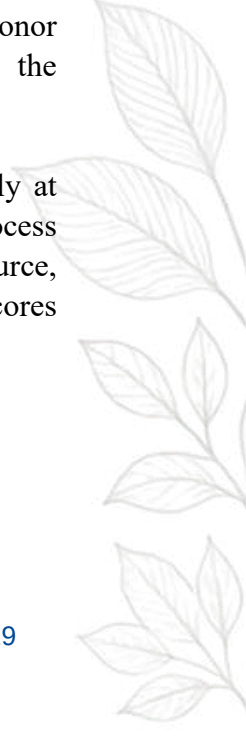
Conclusion

The evolution of global climate governance, as traced through the COP process, reveals not a linear progression toward effective mitigation, but a series of institutional adaptations shaped by competing imperatives of equity, efficiency, and political feasibility. While the architecture of climate governance has expanded significantly—from the legally binding Kyoto framework to the participatory Paris regime, the underlying tensions between developed and developing countries remain unresolved.

Carbon markets emerged as a central instrument not because they guaranteed emissions reductions, but because they provided a politically viable compromise. By allowing flexibility in how and where emissions reductions occur, mechanisms such as emissions trading enabled countries to meet targets at lower cost. However, these mechanisms also introduced significant challenges: issues of additionality, carbon leakage, and the commodification of emissions, which raise fundamental questions about whether they deliver real mitigation or merely redistribute emissions across space and time. The persistence of these mechanisms, even in the face of such critiques, nevertheless, underscores a critical insight: policy instruments in global climate governance are often selected not for their optimal effectiveness, but for their ability to accommodate divergent national interests.

Climate finance, in contrast, was designed to operationalize the principle of equity embedded in the doctrine of Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC). From the early project-based funding of the Global Environment Facility (GEF) to the institutionalization of the Green Climate Fund (GCF) and the \$100 billion commitment, the trajectory of climate finance reflects an increasing recognition of the need to support vulnerable countries. Yet, the gap between commitments and delivery remains substantial. The additionality problem, the dominance of loans over grants, and the persistent imbalance between mitigation and adaptation finance all point to a deeper structural issue: climate finance is governed by voluntary contributions within a system still shaped by donor priorities and national interests. As a result, even when aggregate targets are met, the distribution and accessibility of finance often fail to align with vulnerability and need.

The delayed inclusion of fossil fuels in the conversation, first explicitly appearing only at COP26, further illustrates the limits of the system. For over two decades, the COP process focused on managing emissions rather than directly addressing their primary source, reflecting the political sensitivity of confronting fossil fuel dependence. This underscores the extent to which power dynamics and





economic interests shape not only outcomes, but also the boundaries of what can be negotiated.

Looking forward, the challenge for global climate governance lies not in designing new mechanisms, but in addressing these structural constraints. Strengthening climate finance through greater emphasis on grants, improving access for vulnerable countries, and enhancing the integrity of carbon markets are necessary steps.

In this light, climate governance must be understood not as a technical problem of policy design, but as a political process of negotiation and compromise. The COP system has succeeded in building a universal framework for dialogue and coordination; its capacity to deliver measurable, transformative change remains contingent on the willingness of the states to move beyond mere consensus and toward more substantive commitments. Without such shifts, the system risks stabilizing at a level of action that is politically acceptable but environmentally insufficient.

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APPENDIX

APPENDIX I

A

AAU (Assigned Amount Unit)

A unit representing an allowance to emit one metric ton of CO₂ equivalent under the Kyoto Protocol. Distributed to Annex I countries based on their emission targets.

ACE (Action for Climate Empowerment)

A UNFCCC framework promoting education, public awareness, training, and participation in climate action.

C

CBDR-RC (Common but Differentiated Responsibilities and Respective Capabilities)

A foundational principle of international climate policy recognizing that countries have shared responsibility for climate change but differing contributions and capacities to address it.

CCCDM (Common Carbon Credit Data Model)

A standardized framework for reporting and tracking carbon credit data across markets to improve transparency and comparability.

CDM (Clean Development Mechanism)

A Kyoto Protocol mechanism allowing developed countries to invest in emission reduction projects in developing countries and earn carbon credits (CERs).

CER (Certified Emission Reduction)

A carbon credit issued under the CDM, representing one metric ton of CO₂ equivalent reduced or avoided.

COP (Conference of the Parties)

The supreme decision-making body of the UNFCCC, where member countries meet annually to negotiate climate agreements.

E

ERU (Emission Reduction Unit)

A carbon credit generated under Joint Implementation (JI), equivalent to one metric ton of CO₂ reduced.

ETS (Emissions Trading System)

A market-based mechanism that caps total emissions and allows entities to trade emission allowances.

EU (European Union)

A political and economic union of member states that plays a major role in global climate negotiations and operates the EU ETS.

F

FAR (First Assessment Report)

The first major scientific report by the IPCC (1990), which laid the foundation for global climate policy and led to the establishment of the UNFCCC.

FCCC (Framework Convention on Climate Change)

Refers to the UNFCCC, the international treaty forming the basis of global climate governance.

G

GCF (Green Climate Fund)

A major multilateral climate fund established in 2010 to support mitigation and adaptation efforts in developing countries.

GEF (Global Environment Facility)

A multilateral financial mechanism established in 1991 that provides funding for environmental projects, including climate change mitigation and adaptation.

GHG (Greenhouse Gases)

Gases such as CO₂, methane, and nitrous oxide that trap heat in the atmosphere and contribute to global warming.



I

INC (Intergovernmental Negotiating Committee)

The body established to negotiate the UNFCCC prior to its adoption in 1992.

IPCC (Intergovernmental Panel on Climate Change)

A UN body that assesses scientific knowledge on climate change and informs global policy decisions.

J

JI (Joint Implementation)

A Kyoto Protocol mechanism allowing developed countries to earn emission reduction units (ERUs) by investing in emission reduction projects in other developed countries.

L

LDCF (Least Developed Countries Fund)

A fund under the GEF supporting climate adaptation projects in least developed countries.

M

MDB (Multilateral Development Bank)

International financial institutions (e.g., World Bank) that provide financial support for development and climate-related projects.

N

NAP (National Adaptation Plan)

A country-driven process to identify medium- and long-term adaptation needs and strategies.

NBS (Nature-Based Solutions)

Approaches that use natural ecosystems to address climate challenges, such as forest conservation and wetland restoration.



NCQG (New Collective Quantified Goal)

A post-2025 global climate finance target agreed under the UNFCCC to replace the \$100 billion annual goal.

NDC (Nationally Determined Contributions)

Country-specific climate action plans submitted under the Paris Agreement outlining mitigation and adaptation goals.\

O

OECD (Organisation for Economic Co-operation and Development)

An international organization that tracks and reports climate finance flows among developed countries.

P

PACM (Paris Agreement Crediting Mechanism)

A UN-regulated carbon market mechanism under Article 6.4 of the Paris Agreement for generating tradable emission reduction credits.

R

REDD+ (Reducing Emissions from Deforestation and Forest Degradation)

A mechanism aimed at reducing emissions through forest conservation and sustainable management.

ROI (Return on Investment)

A measure of financial return used to evaluate the efficiency of investments, including climate finance projects.

S

SCCF (Special Climate Change Fund)

A fund under the GEF supporting climate-related projects in developing countries.

SFWG (Sustainable Finance Working Group)

A G20 initiative focused on aligning financial systems with sustainability goals.



SIDS (Small Island Developing States)

A group of countries particularly vulnerable to climate change impacts, especially sea-level rise.

U

UNEP (United Nations Environment Programme)

A UN agency responsible for coordinating global environmental activities and supporting climate policy development.

UNFCCC (United Nations Framework Convention on Climate Change)

The primary international treaty governing global climate negotiations and cooperation.

W

WMO (World Meteorological Organization)

A UN agency that provides scientific expertise on weather, climate, and atmospheric conditions.

APPENDIX II

UNFCCC Annex I and Annex II Countries:

This appendix lists countries classified under **Annex I** and **Annex II** of the United Nations Framework Convention on Climate Change (UNFCCC), which form the basis for differentiated responsibilities under the Convention.

Annex I Countries

Annex I includes **industrialized countries and economies in transition (EITs)** that have specific commitments under the Convention and the Kyoto Protocol.

Industrialized Countries

Australia
Austria
Belgium
Canada
Croatia
Cyprus*
Czech Republic
Denmark
European
Union
(formerly
European
Economic
Community)
Estonia
Finland France
Germany
Greece
Hungary
Iceland Ireland
Italy Japan
Latvia
Liechtenstein*
Lithuania
Luxembourg
Malta**
Monaco*
Netherlands
New Zealand

Norway
Poland
Portugal
Slovakia
Slovenia*
Spain
Sweden
Switzerland
Turkey
United Kingdom of Great
Britain and Northern Ireland
United States of America

Economies in Transition (EITs)

Belarus Bulgaria
Czech Republic
Estonia Hungary
Latvia Lithuania
Poland Romania
Russian Federation
Slovakia
Ukraine

Notes on Annex I

^a Countries marked with (a) are economies in transition (EITs).

*Countries added to Annex I by amendment entering into force on **13 August 1998** (Decision 4/CP.3).

** Malta added by amendment entering into force on **26 October 2010** (Decision 3/CP.15).

*** Cyprus added by amendment entering into force on **9 January 2013** (Decision 10/CP.17).

Annex II Countries

Annex II is a subset of Annex I, consisting of **developed countries responsible for providing financial and technological support to developing countries.**

Australia
Austria
Belgium
Canada
Denmark
European
Union
Finland
France
Germany
Greece
Iceland
Ireland
Italy

Japan
Luxembourg
Netherlands
New Zealand
Norway
Portugal
Spain
Sweden
Switzerland
United Kingdom of Great
Britain and Northern Ireland
United States of America

Note on Annex II

- **Turkey was removed from Annex II** by amendment entering into force on **28 June 2002** (Decision 26/CP.7).

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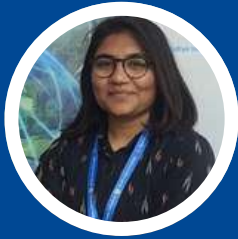
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Interdisciplinary Centre of Excellence on Climate Change, Green Transition and Sustainability

Aligned with SAU's mandate and its status as an international public university, the Interdisciplinary Centre of Climate Change, Green Transition and Sustainability is envisioned as a transboundary, scalable, impact-oriented platform to advance partnerships across South Asia, the Global South, and beyond. The Climate Centre integrates climate action, green transition and sustainability by connecting policy, practice and partnerships across disciplines and scales. Grounded in science, evidence and data, it responds to the interconnected impacts of climate change on lives and livelihoods, human and animal health, migration, conflict and food security.

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South Asian University (SAU)

The South Asian University (SAU) was conceived during the 13th SAARC Summit in Dhaka in 2005, following a proposal by the Prime Minister of India to establish a regional Centre of Excellence that would promote advanced teaching, research, and academic collaboration across South Asia. Established through coordinated efforts of SAARC governments and academic experts, SAU began functioning in 2010 and moved to its permanent residential campus in Maidan Garhi, New Delhi, in 2023. The Government of India funds the capital infrastructure, while SAARC countries jointly share operational costs. SAU offers UGC- recognized postgraduate and research-oriented programmes, with a strong emphasis on interdisciplinary scholarship, regional integration, and academic excellence. Its diverse student and faculty community represents the SAARC nations, fostering cross-cultural engagement and collaborative research on South Asian and global challenges.



Afghanistan



Bangladesh



Bhutan



India



Maldives



Nepal



Pakistan



Sri Lanka



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