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PARADOXES IN GLOBAL CLIMATE MITIGATION ACTIONS

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Abstract

Scholars argue that if the planet is to be habitable, there is no other option except to slow the phenomenal pace of climate change. Meaningful climate mitigation actions are the best way to control it. Due to global pressure, lawmakers took numerous mitigation measures to limit the world average temperatures below 2°C over pre-industrial levels and still try to restrict the increase to 1.5°C. However, the steps failed to materialize their aspirations. This failure is frequently blamed on world leaders' paradoxical stances. Considering this backdrop, the study aims to investigate global leaders' paradoxes in climate mitigation actions. This qualitative study employed content analysis methods to achieve its goal

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by using United Nations Framework Convention on Climate Change and United Nations Environment Programme as primary sources and Intergovernmental Panel on Climate Change Reports, books, journal articles, and dissertations as secondary sources. This study reveals that global leaders prioritizing their economy, geopolitics, fossil fuel consumption, and business interests that encouraged them to behave paradoxically. This study recommends that world leaders should set aside conflicts of interest, prioritize climate justice and overcome the climate policy commitment-action gap. Otherwise, an authoritarian form of climate change will affect everyone regardless of economic or geographic status.

Keywords: Climate change, Climate mitigation action, Mitigation paradox, Climate justice, Net Zero.

1.1 Introduction

Anthropogenic climate change poses one of the most profound threats to human civilization. It has been characterized as an "existential threat" (Kumar, 2021, p. 1) and a "civilization-ending risk" (Parson, 2007, p. 161). With few exceptions, climatologists have consistently called on the global community to implement urgent and robust measures to mitigate the destructive impacts of climate change and safeguard both humanity and biodiversity. In response—after prolonged debate—world leaders adopted various adaptation and mitigation strategies. Yet, despite these efforts, political action has largely failed to match the accelerating pace of climate change, which continues to intensify.

This ineffectiveness has fueled widespread distrust among the public, media, businesses, and non-governmental organizations, culminating in what has been termed a "global implosion of trust" in climate policy (Rafaty, 2018, p. 107).

These failures prompt critical questions: Why is climate change worsening despite international commitments? Why have mitigation strategies fallen short? Are there underlying inconsistencies in the climate actions of global leaders? What approaches can effectively reconcile the discrepancy between climate mitigation pledges and their actual implementation?

As the climate crisis intensifies, growing evidence reveals a stark disconnect between the commitments of world leaders and the policies they actually implement. This research examines these contradictions in global climate governance, highlighting the persistent gap between rhetoric and action that undermines effective climate mitigation. By critically analyzing these disparities, the study aims to promote a more transparent, accountable, and impactful framework for international climate action.

1.2 Methodology

This research adopts a qualitative approach, employing the content analysis and deductive reasoning method to achieve its objective. Data were gathered from both primary and secondary sources. Primary sources include the *Emissions Gap Reports (EGR)* published by the United Nations Environment Programme (UNEP) and the decisions and declarations of the *Conferences of the Parties (COPs)* under the United Nations Framework Convention on Climate Change (UNFCCC). These sources offer direct insights into global climate governance and international policy commitments. The study particularly relies on the UNFCCC, the leading global platform for climate negotiations, and the UNEP, which plays a central role in coordinating the UN's environmental responses. In contrast, secondary sources provide contextual and analytical support. These comprise peer-reviewed journal

articles, academic dissertations, books, *Assessment Reports* of the Intergovernmental Panel on Climate Change (IPCC), and credible websites dedicated to climate change mitigation. Together, these sources form a comprehensive foundation for exploring the ethical dimensions of global climate politics.

For the purposes of this study, 'paradoxes' are conceptualized as the inconsistencies between the climate mitigation commitments articulated by global leaders and the concrete measures implemented to realize those commitments.

1.3 Climate Change Mitigation

Climate change mitigation entails lowering anthropogenic GHG emissions to protect ecosystems necessary for human survival. The IPCC states climate mitigation is "a human intervention to reduce emissions or enhance greenhouse gas sinks" (IPCC, 2014, p. 4). The UNFCCC describes climate change mitigation as "efforts to reduce emissions and enhance sinks" (N.d). Its mitigation actions include:

- Sustainable energy and transport;
- Smart energy utilization;
- Green industrial and sustainable agriculture policies; and
- Carbon sinks and sequestration.

So, climate change mitigation involves using renewable energy, improving energy efficiency (waste management, transportation, buildings, industries), adopting new technology or electrification (electric cars), changing individual lifestyles by driving less or changing one's diet, planting trees and other sinks, improving stove designs, adopting regenerative

farming methods, protecting and restoring forests and essential ecosystems, introducing a carbon tax, and emission trading.

1.4 Global Climate Mitigation Actions

The UNFCCC has played a pivotal role in shaping both national and subnational climate mitigation strategies while promoting transparency and accountability. Guided by the UNFCCC, the IPCC has conducted rigorous scientific assessments to determine the emissions reductions required to preserve a livable planet. Its First Assessment Report (1990) recommended a 60% reduction in anthropogenic greenhouse gases (GHGs), including a 15–20% cut in methane emissions. The Fourth Assessment Report (2007) further stressed that to limit global temperature rise below 2°C, developed nations must reduce emissions by 25–40% by 2020 and 80–95% by 2050 (Fei&Shuang-Qing, 2012, p. 213). In contrast, the UNEP projected that without deep and sustained reductions, global temperatures could exceed 2.9°C by the century's end, posing existential threats to planetary systems.

Responding to such projections, the UNFCCC set its ultimate goal as the stabilization of atmospheric GHG concentrations to avoid "dangerous anthropogenic interference with the climate system" (Article 2, UNFCC 1992, p. 9). Annex I countries were tasked with restoring emissions to 1990 levels and enhancing carbon sinks (Carlarne, 2010, p. 6). The Convention emphasized the need for legally binding emissions targets, while encouraging developing countries to address emissions from deforestation and promote sustainable forest management.

These principles were operationalized under the Kyoto Protocol through three market-based mechanisms: the Clean

Development Mechanism (CDM), Joint Implementation (JI), and Emissions Trading. In the first commitment period (2008–2012), Annex I countries agreed to reduce emissions by 5.2% below 1990 levels, with varying national targets. India and other Global South countries resisted binding obligations, urging developed nations to enhance their commitments (Kumar, 2007, p. 44). The Doha Amendment (2012) introduced a second commitment period (2013–2020), while developing nations continued engaging with the CDM for mitigation and carbon sequestration projects.

Following the Copenhagen Accord (2009) and the Cancun Agreements (2010), developed countries pledged economy-wide emission reductions by 2020, and developing nations introduced Nationally Appropriate Mitigation Actions, supported by international finance and capacity-building. Prior to the Paris Agreement (2015), all countries submitted Intended Nationally Determined Contributions. The Agreement, signed by 196 Parties, aimed to limit global warming to "well below 2°C," with efforts to restrict it to 1.5°C (decision 10/CP.21, p. 23), and integrated the REDD-plus framework for forest conservation and carbon enhancement.

In alignment with the Paris Agreement, countries have translated their NDCs into ambitious mitigation initiatives aimed at reducing GHG emissions and limiting global warming. These efforts reflect varying national contexts yet share a commitment to climate action. Key examples include:

- European Green Deal: The EU's strategy to achieve climate neutrality by 2050, promoting renewable energy, sustainable agriculture, and carbon border adjustment mechanisms.

- United States Inflation Reduction Act (2022): A major legislative effort targeting a 40% emissions reduction by 2030, emphasizing clean energy, electric vehicles, and green manufacturing.
- China's Carbon Neutrality Pledge: A pledge to peak emissions before 2030 and achieve carbon neutrality by 2060, supported by large-scale investments in renewables and a gradual shift from coal.
- India's Panchamrit Pledge: Announced at COP26, it includes achieving net-zero by 2070, expanding renewable capacity to 500 GW, and lowering emissions intensity, partially reflected in its updated NDC.
- UK Net Zero Strategy: A commitment to net-zero by 2050, with interim targets such as phasing out fossil fuel vehicles and expanding offshore wind and carbon capture technologies.

To support mitigation, climate finance has been central. Article 11 of the UNFCCC (1992) laid the groundwork for financial assistance, further elaborated by COP decisions. The Global Environment Facility (GEF), serving five multilateral environmental conventions, established the Least Developed Countries Fund and the Special Climate Change Fund in 2001. The Climate Investment Funds (2008) introduced the Clean Technology Fund and the Strategic Climate Fund, supporting over 370 projects in 72 countries. The Pilot Program for Climate Resilience, also launched in 2008, promoted sustainable agriculture, resilient infrastructure, and early warning systems.

The first major commitment to climate finance came during COP15 in Copenhagen (2009), with developed nations

pledging US$30 billion for 2010–2012 (Chowdhury, 2012, p. 6), reaffirmed at COP16 in Cancún. These funds targeted Least Developed Countries, Small Island Developing States, and African nations. COP18 acknowledged progress and called for the timely fulfillment of outstanding commitments. By May 2011, 21 developed countries and the European Commission had committed US$28.14 billion (n.d.1).

A landmark outcome of COP15 was the creation of the Green Climate Fund (GCF), targeting US$100 billion annually by 2020. As of July 2020, US$10.3 billion had been pledged by 49 contributors (Munira et al., 2021, p. 4), and by August 2022, GCF-1 had received around US$10 billion. Articles 9, 11, and 19 of the Paris Agreement reaffirm the duty of developed nations to support climate-resilient development in the Global South. Since 2016—deemed the "year of green finance" (UNEP, 2017)—international efforts have aimed to align financial systems with sustainability goals, with funds now channeled through an increasingly complex, multilayered global financing architecture.The structure and governance of these financial flows are elaborated in various provisions, including Article 11(5) of the UNFCCC, Article 3 of the Kyoto Protocol, and the frameworks of the Copenhagen Accord and Paris Agreement. Table 1 below outlines the principal multilateral sources of climate finance for mitigation and their respective contributions.

Table 1: Multilateral funds mainly focused on mitigation (as of December 2022)

Fund	Fund focus	Pledge (USD m)	Approval (USD m)	Disbursement (USD m)	No. of Projects approved
Amazon Fund	Mitigation - REDD	1288.23	719.69	528.89	103
BioCarbon Fund	Do	349.89	107	0	5
Central African Forest Initiative	Do	478.76	182.24	182.24	11
Clean Technology Fund	Mitigation - General	5404.31	5315.54	1721.64	148
Congo Basin Forest Fund	Mitigation - REDD	186.021	83.11	58.91	37
Forest Carbon Partnership Facility - Readiness Fund	Do	466.54	311.24	253.47	46
Forest Investment Program	Do	735.86	573.73	249.18	48
Global Environment Facility (GEF4,5,6,7)	Multiple (adaptation, mitigation, cross cutting)	4052.99	4087.76	1632.18	834
Global Climate Change Alliance	Multiple	1332.90	898.97	214.33	109
Global Energy Efficiency and Renewable Energy Fund	Mitigation-General	281.50	223.59	89.07	19
Green Climate Fund (GCF IRM)	Multiple	10322.03	6721.72	807.84	505
Green Climate Fund (GCF-1)	Multiple	9998.25	836.36	11.52	66
Partnership for Market Readiness	Mitigation - General	131.46	82.35	63.02	42
Scaling-Up Renewable Energy Program for Low Income Countries	Mitigation - General	765.62	600.99	108.09	64
UN-REDD Programme	Mitigation - REDD	329.04	323.52	315.56	35

Source: Adapted from “The Funds - Climate Funds Update,” Climate Funds Update, October 31, 2018 (https://climatefundsupdate.org/the-funds/).

Several developed countries have complemented multilateral mechanisms with bilateral climate finance initiatives aimed at supporting mitigation and adaptation in developing nations. Japan leads globally through its Hatoyama Initiative, mobilizing approximately US$5.3 billion since 2008 via public funding and commercial loans. Germany follows with US$270.9 million disbursed through its International Climate Initiative, while Australia ranks third, having provided US$66.1 million since 2007 under the International Forest Carbon Initiative. This program strengthens forest carbon monitoring, particularly in Papua New Guinea and Indonesia, to curb deforestation (Chowdhury, 2012, p. 10). Other donors, such as the United Kingdom, the United States, and Norway, have also launched targeted bilateral programs aligned with global climate goals.

At the domestic level, numerous countries have established National Climate Funds to align international and national resources with climate priorities. These institutional mechanisms enhance coordination, transparency, and access to climate finance. Examples include the Amazon Fund (Brazil), Bangladesh Climate Change Trust Fund, Rwanda's National Climate and Environment Fund, the Guyana REDD+ Investment Fund, Indonesia Climate Change Trust Fund, Mexico Climate Change Fund, and the Philippines People's Survival Fund. These funds serve as critical platforms for translating global financial commitments into localized, effective climate actions.

1.5 Ethical Consideration in Formulating Climate Mitigation Policies

Ethical considerations are foundational to the formulation of climate mitigation policies, positioning climate change not merely

as an environmental or economic issue, but as a profound moral challenge (Jamieson, 2010, p. 150). Historical thinkers such as John Muir and Aldo Leopold laid the groundwork for environmental ethics by asserting humanity's duty to protect nature. From the 1970s onward, the rise of climate ethics has significantly influenced global policy dialogues, with the Organisation for Economic Co-operation and Development's endorsement of the 'polluter pays' principle marking a key shift toward moral accountability. International frameworks, particularly the UNFCCC and the Paris Agreement, have embedded ethical tenets—such as justice, equity, and responsibility—into climate governance. These frameworks notably emphasize the *Common But Differentiated Responsibilities* (CBDR) (UNFCC 1992, Article 3, p. 9) principle, which mandates that developed countries, due to their historical emissions and greater capabilities, shoulder a larger share of climate action, while allowing developing nations to pursue sustainable development. Further reinforcing this ethical paradigm, UNESCO's 2017 Declaration of Ethical Principles in relation to climate change articulates essential norms, including the prevention of harm, solidarity among nations and peoples, and the imperative of sustainable development. As such, ethical reasoning is not a peripheral concern but a critical foundation for the legitimacy, fairness, and effectiveness of global climate mitigation strategies.

1.6 Paradoxes in Climate Mitigation Actions

Despite these mitigation measures, anthropogenic climate change has increased instead of reduced. Global leaders' lack of consensus and paradoxical stance can be blamed for this failure, which is visible from a very early stage in the climate discourses.

1.6.1 Historical Commitments and Contradictions

Under the UNFCCC framework, Annex I nations were obligated to adopt national policies to mitigate climate change by reducing GHG emissions and restoring carbon sinks to 1990 levels (Carlarne, 2010, p. 6). The Association of Small Island States called for a 20% emissions reduction of 1990 levels by 2005 for industrialized countries (Article 3, UNFCCC 1992 draft Protocol). However, this proposal faced strong opposition from the Organization of Petroleum Exporting Countries (OPEC), which feared that ambitious mitigation efforts would reduce oil demand and harm their economies (Andresen, 1998).

This period exposed a fundamental tension between scientific urgency and geopolitical-economic interests. While the European Union and some Western European countries supported modest targets of 5–10% reductions by 2010, major developed nations—such as the United States, Japan, Australia, and Canada—resisted binding commitments. Instead, they shifted responsibility by calling for the inclusion of developing countries in emission reduction efforts, despite these countries' minimal historical emissions and limited capacities (Kumar, 2007, p. 42). This gap between rhetorical commitments and policy action underscored the inconsistencies in early climate governance, where short-term national interests often outweighed the ethical imperative for collective global action.

1.6.2 Kyoto Protocol and Its Inefficiencies

In response to growing global concern, developed countries adopted the Kyoto Protocol in 1997, committing to legally binding targets to reduce GHG emissions by an average of 5.2% below 1990 levels during its first commitment period (Gullberg, 2008, p.

164). However, a stark gap emerged between these commitments and actual outcomes. Instead of decreasing, global CO_2 emissions from industrialized nations accelerated—from a 1.3% annual growth rate in the 1990s to 3.3% between 2000 and 2006. Empirical evidence shows that GHG emissions rose by about 16% in the decade following the Protocol's adoption, undermining its foundational objectives (Fölster & Nyström, 2010, p. 223).

A key structural flaw of the Kyoto Protocol was its asymmetrical design: binding obligations applied only to developed countries, while developing nations were exempt. This selective burden-sharing sparked controversy. The United States, citing the economic implications and the exclusion of emerging emitters like China and India, rejected the treaty outright. The U.S. Senate preemptively passed the Byrd-Hagel Resolution in June 1997, opposing any agreement without binding commitments from developing countries. This episode highlights the disparity between global climate diplomacy and national political realities, underscoring the implementation paradox that continues to challenge climate governance.

1.6.3 Paris Agreement: Lofty Goals, Limited Impact

A similar paradox is evident in the implementation of the Paris Agreement. While the Agreement obliges all 196 Parties to limit global warming to well below 2°C—preferably 1.5°C—above pre-industrial levels, achieving this goal requires a 45% reduction in global emissions by 2030. Countries are required to submit and progressively enhance their Nationally Determined Contributions (NDCs), yet a critical evaluation reveals a significant gap between ambition and action. Scientific assessments indicate that, even if fully implemented, existing NDCs would only reduce global emissions by an estimated 5%–

10%, falling far short of the reductions necessary to meet Paris targets (UNEP, 2022; Davidson, 2021, p. 7302).

The UNEP Emissions Gap Report (2022, p. xv) highlights that by 2019, countries responsible for 65% of global emissions had either maintained or increased their emissions. Unconditional NDCs project a 2.6°C rise by 2100, while the most optimistic scenario—assuming full implementation of conditional pledges and net-zero commitments—still results in a 1.8°C increase. Current policies would lead to a 2.8°C rise unless immediate, deep emission cuts are enacted. This disparity underscores a fundamental paradox in climate governance: while global rhetoric champions climate ambition, policy implementation remains inadequate, fragmented, and inconsistent with the scale and urgency of the climate crisis.

1.6.4 The Net-Zero Paradox: Ambitious Pledges Amid Structural Incoherence and Policy Contradictions

Net-zero emissions—defined as the complete elimination or offsetting of carbon emissions by 2050—have become a central feature of national climate strategies. While only 24 countries had pledged net-zero targets by 2018, the number surged to 150 by 2021, covering roughly 89% of global emissions (Van Coppenolle et al., 2023, p. 48). Yet a major paradox persists: despite widespread adoption, current policies and NDCs lack credible pathways to meet these long-term goals (UNEP, 2022). Compounding this issue is the heavy reliance on carbon offsetting, particularly afforestation, as a core strategy. However, offsetting global emissions via tree planting alone would require approximately four billion acres of new forest—equivalent to all arable land on Earth or five times the size of India—raising severe ethical and logistical challenges, especially regarding global food security.

Additionally, this paradox is amplified by ongoing fossil fuel subsidies. Although all G20 countries have committed to phasing them out, many continue to support fossil fuel industries, undercutting renewable energy deployment. These contradictions expose the fragility of the net-zero framework and highlight the urgent need for systemic reform, transparent governance, and accountability to ensure that net-zero targets are more than symbolic gestures.

1.6.5 Fossil Fuel Subsidies Undermining Climate Goals

In 2022, 172 countries spent $7 trillion—7.1% of global GDP—on fossil fuel subsidies, surpassing global education spending and rivaling healthcare costs (Black, 2023). This contradicts their climate pledges, exposing a deep paradox: while committing to decarburization and net-zero goals, governments continue to finance fossil fuel use. Table 2 illustrates this contradiction from 2015 to 2022.

Table 2: Year-by-year fossil fuel subsidies in 172 nations

Year	Implicit subsidy in trillions.	Explicit subsidy in trillions.	Total subsidy in trillion
2015	$4.1	$0.4	$4.5
2016	$4.1	$0.3	$4.4
2017	$4.3	$0.4	$4.7
2018	$4.8	$0.6	$5.4
2019	$5.0	$0.6	$5.6
2020	$4.5	$0.5	$5.0
2021	$5.2	$0.7	$5.9
2022	$5.7	$1.3	$7.0

Source: Black, Parry, and Vernon (2023)

Despite a 2009 pledge to phase out "inefficient" fossil fuel subsidies, G20 countries—responsible for 80% of global carbon emissions—allocated a record $1.4 trillion in such subsidies in 2022, nearly double the previous year's amount (Bloomberg NEF& Bloomberg Philanthropies, 2023). Nations like Australia, Canada, and the United States significantly increased their support, while the UK, despite a minor reduction in 2019, continued substantial allocations. The top five contributors—China, the US, Russia, India, and Japan—accounted for two-thirds of global subsidies (Yale E360, 2020). This persistent subsidization starkly contradicts declared environmental goals.

The paradox deepens with political behavior: in the UK, officials met more frequently with fossil fuel representatives than with renewable energy advocates, undermining climate action (UNEP, 2022). Governments continue to artificially lower fossil fuel prices, worsening the gap between promises and practice. Additionally, the $100 billion annual climate finance pledge made at Copenhagen and reaffirmed in subsequent COPs is widely criticized as insufficient. Experts argue this amount represents only a fraction of the funds required to meet the 2°C target, further highlighting the disconnect between rhetoric and meaningful climate action (UNEP, 2015).

The financial sector has also been marked by significant paradoxes, particularly after the COP26 agreements. Despite pledges from fossil fuel producers and around 450 financial institutions under the Glasgow Financial Alliance for Net Zero to reduce emissions, many continue investing heavily in fossil fuel projects. Since the Paris Agreement in 2015, the 60 largest banks have committed $3.8 trillion to fossil fuel financing, while the World Bank has invested over $1 trillion in fossil fuel ventures,

undermining efforts to decarbonize (Carrington & editor, 2021).

The mitigation paradox is further evident in global leaders' actions, which prioritize business interests over environmental sustainability. Khan (2024, pp. 164-74) highlights how, in addition to subsidizing fossil fuel companies, leaders actively protect corporate interests by denying climate science and appointing climate skeptics to key positions. These actions not only delay climate policy implementation but also perpetuate fossil fuel subsidies. By placing economic interests above effective climate action, these decisions significantly contribute to the rapid rise in carbon emissions.

1.6.6 The Paradox of Climate Policy: Ambitious Targets vs. Inconsistent Action

Despite ambitious climate commitments, countries like the United Kingdom, France, Germany, Norway, and Japan illustrate a recurring paradox between stated goals and actual outcomes. The UK's 2008 Climate Change Act set an 80% emission reduction target by 2050 (Whitmarsh, 2011, p. 690), alongside pledges to cut transport emissions by 44% between 2016 and 2030. Yet Prime Minister David Cameron's 2014 remark to "get rid of all the green crap" exposed a sharp retreat from earlier promises (Berny&Rootes, 2018, p. 953). Similarly, France's President Sarkozy initially promoted environmental reforms but reversed course during the 2009 economic crisis, declaring "the environment, that's enough" (Berny&Rootes, 2018, p. 953), highlighting how economic pressures often override environmental priorities.

Germany's Action Programme aimed to cut emissions 40% by 2020, supported by Energiewende policies. However, emissions rose post-2009, coal production increased, and climate targets weakened under a new coalition (Nachmany et al., 2015; Newell & Paterson, 1998). Japan also struggles to align policies with its 2030 goals (Selby, 2019, p. 479). Norway continues to promote oil extraction despite climate pledges, with politicians vowing to extract "every drop" (Selby, 2019, p. 483). Even the EU, despite setting 20% and 40% reduction targets for 2020 and 2030, is off track (Selby, 2019, p. 479). These cases reveal a persistent gap between climate ambition and implementation, underscoring the need for stronger political resolve.

1.6.7 Leadership Paradoxes in Climate Mitigation

The leadership paradoxes of major emitters like the United States, China, Russia, and India expose the contradictions between ambitious climate commitments and actual policies. In 2014, the U.S. and China, as the top two GHG emitters, announced significant climate goals, including China's pledge to peak emissions by 2030 and the U.S. commitment to a 20% emissions reduction by 2025 (Nachmany et al., 2015). However, both countries missed the 2019 UN Climate Action Summit, which set targets of 45% emissions reductions by 2030 and carbon neutrality by 2050. This gap between climate rhetoric and action is further reflected in the U.S., where President Biden's climate incentives were contradicted by the approval of an $8 billion oil extraction project in Alaska (Illuminem, 2023). Similarly, China's promise of carbon neutrality by 2060 is undermined by its continued investment in coal plants and fossil fuel infrastructure through initiatives like the Belt and Road (Illuminem, 2023).

Russia and India also face leadership paradoxes. Despite pledging carbon neutrality by 2060, Russia's continued reliance on oil and gas development raises questions about its commitment. India's goal of sourcing 50% of electricity from non-fossil fuels by 2030 contrasts with its increasing dependence on coal and objections to phasing out fossil fuel subsidies at the 2021 Glasgow Summit (Maslin et al., 2022). These contradictions highlight the broader challenge of translating climate commitments into meaningful action, revealing how entrenched fossil fuel interests hinder global climate progress and undermine the potential for effective climate governance.

1.7 Strategies for Addressing the Mitigation Paradox

To effectively address the mitigation paradox—wherein ambitious climate objectives coexist with deep-rooted fossil fuel dependency—a comprehensive and ethically grounded strategy is imperative. This approach must integrate legal, financial, technological, and civic dimensions to resolve the structural and moral contradictions inherent in global climate politics.

Strengthening Governance and Legal Accountability: National governments must align domestic policies with international climate commitments by eliminating fossil fuel subsidies, enforcing stringent emissions regulations, and significantly expanding investments in renewable energy infrastructure. The establishment of robust legal frameworks, supported by mechanisms such as an International Environmental Court, is essential for ensuring legal enforceability and addressing violations of climate obligations. Furthermore, reforming multilateral institutions like the UNFCCC to enhance representation, transparency, and operational efficiency will contribute to a more just and effective global climate regime.

Reforming Global Financial Systems for Climate Justice: A critical component of overcoming the mitigation paradox is restructuring global financial systems to support sustainable transitions. This includes promoting climate finance mechanisms such as green bonds, sustainability-linked loans, and divestment from high-emission industries. Ensuring the equitable distribution of funds—particularly to climate-vulnerable nations—is vital to upholding principles of climate justice and facilitating meaningful adaptation and mitigation in developing regions.

Bridging the Technological and Digital Divide: Equitable access to clean and efficient technologies must be a global priority. Bridging technological and digital divides requires technology transfer, capacity building, and the removal of structural barriers such as intellectual property constraints. Cross-sectoral partnerships between governments, the private sector, academia, and civil society can accelerate innovation, improve climate resilience, and promote sustainable development, particularly in the Global South.

Mobilizing Civic Participation and Ethical Action: Addressing the mitigation paradox also demands active civic engagement. Individual and collective actions—such as ethical consumption, responsible investing, community advocacy, and environmental activism—play a crucial role in transforming societal norms and pressuring institutions to act. Public awareness and behavioral change are indispensable for fostering a culture of sustainability and accountability.

Ethical Foundations for Climate Action: Philosophical frameworks rooted in intergenerational justice, global equity, and moral responsibility offer a critical ethical foundation for climate policy. These paradigms underscore the normative urgency of

transformative climate action by framing climate change as not only a technical or economic issue but a profound moral challenge. Embedding these principles into climate governance can guide more equitable, inclusive, and durable solutions to the mitigation paradox.

1.8 Conclusion and Recommendation

Emission reduction remains the most effective strategy to combat climate change. However, despite numerous international agreements, progress has been hindered by industrialized nations and corporate interests prioritizing economic benefits over environmental sustainability. These actors often undermine meaningful action by rejecting historical responsibility, promoting climate skepticism, and protecting vested interests. This includes continuing fossil fuel subsidies, underfunding climate finance, and setting unrealistic goals, such as net-zero by 2050, without credible implementation strategies.

This contradiction illustrates a broader pattern of political duplicity that obstructs global climate progress. The world's dependence on fossil fuels makes rapid emission reductions economically and socially disruptive, especially for developing nations. Without equitable transition mechanisms, these nations face greater challenges in reducing emissions and adapting to climate impacts. Therefore, while urgent action is necessary, it must be structured around principles of justice, equity, and resilience to ensure that no country is left behind.

An effective climate response requires globally coordinated efforts backed by robust governance, ethical leadership, and evidence-based policymaking. Governments must pass comprehensive legislation, allocate financial incentives, and

invest in sustainable infrastructure. Additionally, high-emitting industries in the private sector must be held accountable through enforceable regulations, contributing meaningfully to mitigation efforts. International cooperation is also essential, especially for transferring knowledge and technology to vulnerable and developing countries. Ultimately, addressing climate change is an ethical imperative that requires unified, inclusive, and sustained action to protect both the planet and future generations from irreversible environmental damage.

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