FINANCIALIZATION OF CLIMATE:
FLEXIBILITY, FRAGMENTATION, AND THE FEEDBACK LOOP

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ABSTRACT

FINANCIALIZATION OF CLIMATE:
FLEXIBILITY, FRAGMENTATION, AND THE FEEDBACK LOOP

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This thesis examines the financialization of climate governance as a political response to the persistent gap between scientific consensus and effective global climate action. It examines the shift from attempt at binding caps of the Kyoto Protocol to flexible, market-oriented frameworks under the Paris Agreement and the delegation of climate responsibility to financial actors and markets. Drawing on political economy, the thesis demonstrates that this financialized regime does not operate neutrally but entrenches existing global hierarchies. It shows how the technical and institutional demands of market-based climate governance favor states in the Global North with greater administrative capacity, financial resources, and bargaining power. Conversely, countries in the Global South face structural constraints, including high verification costs, debt vulnerabilities, and conditional finance, which limit their policy space and reinforce patterns of dependency. The study provides a detailed analysis of Article 6 of the Paris Agreement, illustrating its role converts "mitigation outcomes" into transactable claims. The thesis identifies a “climate-finance loop” wherein climate vulnerability further restricting the fiscal space necessary for adaptation and mitigation for the Global South. Ultimately, the research concludes that the current architecture

stabilizes policy fragmentation and perpetuates core-periphery asymmetries, suggesting that a just transition requires re-embedding climate governance in political decision-making rather than delegating it to market-based de-risking.

Keywords: Financialization of Climate, Global Climate Governance, Paris Agreement, Flexibility, Climate-Finance Feedback Loop

ÖZ

İKLİMİN FİNANSALLAŞMASI:
ESNEKLİK, PARÇALANMA VE GERİ BİLDİRİM DÖNGÜSÜ

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Bu tez, iklim değişikliğine ilişkin bilimsel uzlaşı ile etkili küresel iklim eylemi arasındaki süregelen uyumsuzluğa verilen siyasal yanıt olan iklim yönetişiminin finansallaşmasını incelemiştir. Kyoto Protokolü kapsamında bağlayıcı emisyon üst sınırları oluşturma girişimlerinden Paris Anlaşması çerçevesinde benimsenen esnek ve piyasa odaklı yapılara geçişi, iklim sorumluluğunun finansal aktörlere ve piyasalara devredilmesi sürecini incelemiştir. Siyasal iktisat yaklaşımından yararlanan tez, bu finansallaşmış rejimin tarafsız bir şekilde işlemediğini, aksine mevcut küresel hiyerarşileri pekiştirdiğini ortaya koymuştur. Piyasa temelli iklim yönetişiminin teknik ve kurumsal gerekliliklerinin, daha yüksek idari kapasiteye, finansal kaynaklara ve müzakere gücüne sahip Küresel Kuzey ülkelere avantaj sağladığı belirtilmiştir. Buna karşılık, Küresel Güney ülkelerinin yüksek maliyetler, borç kırılganlıkları ve koşullu finansman gibi yapısal kısıtlarla karşı karşıya kaldığı, bu durumun politika alanlarını daralttığı ve bağımlılık örüntülerini yeniden ürettiği tespit edilmiştir. Çalışma, Paris Anlaşması'nın 6. Maddesine ilişkin ayrıntılı bir analiz sunarak, bu maddenin "azaltım çıktıları"nın alınıp satılabilir taleplere dönüşme sürecinde rolünü incelemiştir. Tez, iklim kırılganlığının Küresel Güney için uyum ve azaltım politikaları açısından gerekli mali alanı daha da kısıtladığı bir "iklim-finans döngüsü"nü tanımlamıştır. Sonuç

olarak araştırma, mevcut mimarinin politika bölümlenmesine neden olduğunu ve merkez-çevre asimetrilerini sürdürdüğünü, adil bir dönüşümün ise iklim yönetişiminin piyasa temelli risk azaltma mekanizmalarına devredilmesi yerine yeniden siyasal karar alma süreçlerine dahil edilmesi gerektirdiğini ortaya koymuştur.

Anahtar Kelimeler: İklimin Finansallaşması, Küresel İklim Yönetişimi, Paris Anlaşması, Esneklik, İklim-Finans Geri Besleme Döngüsü

To my mother Nesrin, my father Metin, and my aunt Emel who have raised me
And to the memory of my dear uncle Kemal

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CHAPTER 1

INTRODUCTION

1.1. Overview and Objectives

There exists a robust scientific consensus regarding the causes and consequences of climate change. However, policy responses remain overwhelmingly insufficient. Within this context, finance-oriented instruments have emerged as the predominant framework of climate governance. This thesis examines the relationship between global policy orientation concerning the financialization of climate governance. It explores how the multi-layered policy making processes have led to the prominence of finance-compatible tools. And how these tools, in turn, affected the relations between the Global North and the Global South.

In this context the central research questions guiding this thesis are: How has the global political consensus on climate policy-making enabled the emergence of finance-centered governance tools, and how have these tools affected the nature of climate action especially with regards to existing hierarchical relations between the Global North and the Global South?

The analysis employs a political economy perspective interrogating the assumptions inherent in finance-led solutions and evaluating their distributional consequences at the global level. This thesis argues that financialization of climate issues entails deliberate political decisions, essentially shaping the governance responsibility with the defined stakeholders.

More specifically, the emergence of financialized climate strategies highlights a relative retreat by governments, driven by their disorientation and reluctance to tackle climate policy issues, leading to a reliance on market solutions to address the policy gap. The thesis pinpoints the absence of binding consensus has reinforced fragmentation and perpetuate asymmetries. 7In this scenario, financialization of

climate has been brought to the domain of governance as a form of dependent financialization. It asserts that the lack of a robust political consensus on binding climate obligations has facilitated the emergence of a "market-regulated climate constitution," wherein financial infrastructures coordinate climate action in lieu of stringent legal frameworks. At the same time, it demonstrates that this financialized regime does not function on an equitable basis. It presupposes substantial state capacity in measurement, regulation, and fiscal management and is embedded within a stratified international financial system. Due to uneven institutional capacity between core and peripheral capitalist states, this financialized regime eventually paved the way for ineffective flexibility and loopholes in climate governance. Therefore, the very instruments intended to mobilize climate finance also perpetuate fragmentation and exacerbate dependency, particularly for states situated at the periphery of the global economy.

The thesis integrates two distinct strands of literature. Firstly, it employs debates on financialization to conceptualize the translation of climate risks, mitigation outcomes, and "green" activities into financial assets, liabilities, and risk categories that are subject to pricing and trading. Secondly, dependency theory is applied to examine the re-tailored roles of state in climate action within a core-periphery structure, highlighting the unequal distribution of access to capital, expertise, and agenda-setting power. The concept of dependent financialization of climate governance emerges at the confluence of these perspectives, serving as the primary analytical lens of the thesis. The dependency theory is also utilized to come to terms with notion of the state capacity to elucidate the institutional and administrative prerequisites necessary for the design, implementation, and enforcement of climate policy within this context.

Based on this framework, the thesis pursues three interrelated objectives. The first objective is to analyze the evolution of economic and financial approaches to climate governance, with a particular focus on how the transition from binding caps to flexibility, markets, and disclosure has redefined the notions of ambition, responsibility, and compliance. The second objective is to evaluate competing theoretical explanations for the persistent gap between stated ambition and implemented action, demonstrating why a theoretical framework on dependent financialization provides a more compelling account than approaches that focus solely

on regime effectiveness or domestic preference formation. The third objective is to examine the feedback loop between global policy fragmentation and the institutionalization of financialized climate solutions. It traces the operation of climate governance through financial infrastructures and how this configuration perpetuates dependent forms of climate financialization in many regions of the Global South.

Throughout, the analysis interrogates not only how climate solutions are framed but also by whom and for what purposes. It scrutinizes who benefits and who is disadvantaged by a regime that equates credibility with "alignment" in financial portfolios, who possesses the capacity to define what is considered "green," "sustainable," or "transition-compatible," and who must adapt domestic development strategies to meet external metrics and eligibility criteria. In doing so, the thesis situates contemporary climate responses within a broader political economy of global inequality and structural dependence. The overarching aim is to develop a theory-driven critique of climate governance that elucidates why global climate action continues to falter and why solutions that appear pragmatic and market-compatible often entrench, rather than resolve, the very fragmentation and asymmetries they are intended to address. The overall methodology and structure of the thesis are presented in Section 1.6.

1.2. Scientific Basis

The global surface temperature averaged over 2011- 2020 reached approximately 1.1°C higher than the 1850 - 1900 baseline period. Larger increases have been observed over land (1.59°C) than over the ocean (0.88°C) in the same period (Calvin et al. 2023a). Each of the last four decades has been successively warmer than any decade since 1850 while, global surface temperature has increased faster since 1970 than in any other 50-year period over at least the last 2000 years. The last decade has been the hottest period the earth had experienced over the last 125,000 years (Masson-Delmotte et al. 2021) . This can be largely attributed to the heat trapping gas carbon dioxide (CO_2), which is at the level of 431 parts per million as of May 2025. Since the industrial revolution in the 18th century, human actions have caused a 50% rise in CO_2 in the air. Human-induced, that is Anthropocene, global warming averages around 1°C above the pre-industrial levels. Now, CO_2 levels are 150% higher than they were in

1750. This increase from human activity is greater than the natural rise that happened 20,000 years ago at the end of the last ice age. On the other hand, the second largest contributor to climate warming after CO_2 is methane, whose atmospheric concentration has more than doubled over the past 200 years and now stands at approximately 1935 parts per billion (NASA 2023).

The physical manifestations of climate change are widespread and rapid, including shrinking glaciers, loss of sea ice (e.g., Arctic Sea ice disappearing faster than anticipated), accelerating sea-level rise, and more intense heatwaves and extreme weather events such as droughts, fires, and floods.

Global mean sea level has increased faster since 1900 than over any preceding century in at least the last 3000 years (Masson-Delmotte et al. 2021) whereas climate change causes direct changes to water availability and quality biodiversity and ecosystems. Sea level rise is deeply intertwined with broader climate science and its profound effects on human and natural system (Watkiss et al. 2005). As ocean temperatures rise, water expands, melting of glaciers, ice caps, and ice sheets increases the volume of oceans. The melting of ice caps had been observed before in between ice-ages. This observation is sometimes misused by skeptics to challenge the scientific consensus on anthropogenic climate change. However, it fails to account for the unprecedented rate and scope of current warming. The Intergovernmental Panel on Climate Change (IPCC) projects sea level rise by 2100 relative to 1995-2014 to be much higher, depending on the GHG emissions scenario. According to IPCC over the next 2000 years, global means sea level will rise by about 2 to 3 meters if climate change is limited to 1.5°C. If not, if the climate change results in a 5°C increase in mean temperatures, it could rise by 19 to 22 meters. By 2050, the coastal zones will be vulnerable to sea level rise, and this will affect approximately 1 billion people, 200 million people might become climate refugees (Stern 2015).

Climate change comes with other caveats. The earlier onset of snowmelt is likely to disrupt seasonal water supplies. Intensification of the water cycle contributes to more extreme wet and dry events (i.e. floods and droughts). Higher temperatures directly affect atmospheric events, however these come at a cost of human lives indirectly. These changes have already compromised food security and affected water security,

hindering efforts to achieve Sustainable Development Goals. The warming of the atmosphere will reduce food security due to decrease in crop yields, agricultural productivity, fishing yields.

For instance, wheat and rice yields are expected to decrease by 6% and 10% respectively for every 1°C of global warming, and approximately half of the world's population currently experiences severe water scarcity for at least part of the year. Climate change also directly impacts public health, increasing the spread of vector-borne diseases, heat stress, and malnutrition (UNEP 2016).

Beyond environmental damage, climate change acts as a potent threat-multiplier for other issues like habitat loss, disease, and global security, creating serious risks of severe and prolonged conflict, especially due to forced migration. By 2030, over 100 million people worldwide could be pushed back into extreme poverty, and by 2050, 143 million people in vulnerable developing countries in sub-Saharan Africa, South Asia, and Latin America are expected to be internally displaced. Some estimates suggest the world could see 500 million climate refugees by 2050, primarily in Asia.

The potential for low-likelihood, high-impact outcomes, such as ice sheet collapse or abrupt ocean circulation changes, cannot be ruled out and are part of risk assessment, highlighting the immense uncertainty and potential for catastrophic, irreversible changes. Even a half-degree increase in global mean temperatures significantly amplifies extreme weather events. In this context, humanity is in danger of facing an increase of morbidity rates (Gardiner 2010). Human activities are already pushing climate change, biosphere integrity, biogeochemical flows, and land-system change beyond their safe limits, risking destabilization of the planet (Steffen et al. 2015).

The existing levels of GHG in the atmosphere, resulting from past emissions, are unlikely to raise the global mean temperature beyond 1.5°C on their own. However, GHG emissions show no signs of decreasing, which means the concentration of these gases in the atmosphere is set to rise, leading to higher temperatures. Some scientists anticipate that this could push global mean temperatures above 2°C. This not only impacts global temperatures but also affects the entire planetary climate system leading to substantial societal and environmental disruptions.

The scientific work on climate change has been building up the literature rapidly since the 1970s. The science of climate change has come to a consensus on the causes and possible impacts of it, yet a consensus on how to act against it or even a consensus of the existence of climate change on the public eye has not been reached. The choices and actions taken in this decade will have impacts now and for thousands of years, emphasizing that any further delay in concerted global action means missing a brief and rapidly closing window of opportunity to secure a livable and sustainable future for all.

1.3. From Science to Policy: A History of Global Climate Governance

IPCC has suggested a high correlation on climate change and human activities back in 2001, and scientist have been advocating for a reduction in emission in GHGs in the public eye since then (Owen and Hanley 2004). The discourse on climate change among climate scientists has changed drastically since then.

"It is unequivocal that human influence has warmed the atmosphere, ocean, and land. Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred" (Masson-Delmotte et al. 2021). When the scientist state something so alarming that does not leave any room for misinterpretation, they are effectively suggesting that the time for debate has passed. We have now entered the next phase, the one defined by implementation instead of deliberation. The challenge is no longer to ask whether action is necessary, but to determine how, where, and at what scale it must occur.

In the 1980s, the depletion of the stratospheric ozone layer appeared as a global environmental issue with geophysical characteristics akin to climate change. Similar to the problem at hand, worldwide emissions of ozone-depleting substances altered atmospheric composition. Within a decade, an effective global regime was established, with a framework convention initiated in 1985, a protocol established in 1987, and a series of amendments to this protocol. The widespread acclaim for this notable success in global environmental policy inspired the international community to adopt a similar approach to address climate change. The 1997 Kyoto Protocol specified greenhouse gas emission limits for 37 industrialized nations and transition economies, as well as the European Union (Bernauer 2013). The Kyoto Protocol was an important first step

in international climate policy. However, its design limitations, particularly the exclusion of major developing economies and enforcement challenges, underscored the complexities of global climate governance and ultimately paved the way for the different, universal approach taken by the Paris Agreement. The Paris Agreement, adopted by 195 countries on December 12, 2015, during the twenty-first session of the Conference of the Parties (COP21) to the United Nations Framework Convention on Climate Change (UNFCCC) (UNEP 2016). The Paris Agreement marks a crucial shift towards a universal and iterative framework for climate action. The agreement aims to achieve ambitious temperature goals through nationally determined contributions (NDCs) and a systematic process of regular review and enhancement. While it is praised for its broad engagement and facilitative structure, it still faces challenges related to the adequacy of ambition, financing for adaptation, and deeply rooted equity issues (Gardiner 2010). The world is far from making the big changes needed to keep the average temperature increase to 1.5ºC, as agreed by world leaders in the Paris Agreement of December 2015. The Paris Agreement does not strictly limit carbon emissions that cause climate change (Wainwright and Mann 2018). Political efforts to address global warming through international treaties are progressing at a pace far slower than what scientists deem necessary. Although there was a brief decline in GHG emissions during the COVID-19 lockdowns, they quickly resumed their upward trend, with the emission rate in 2020 increasing more rapidly than the average of the previous decade. Current national measures and pledges are significantly inadequate for maintaining a reasonable chance of limiting warming to 2°C (Stern 2015) . Projections indicate that policies in place by the end of 2020 will result in higher global GHG emissions by 2030 than those suggested by NDCs, highlighting an 'implementation gap,' and they forecast a global temperature rise of 3.2°C by 2100 without more robust policies.

So far, the countries have not made much progress in reducing carbon emissions. As greenhouse gas concentrations continue to rise, efforts to mitigate their impact remain largely aspirational, while financial support for adaptation is funneled through a limited set of conditional pathways. There has been a lot of discussions within the public about how to act against climate change. The human influence on climate change, which is now certain, is deeply embedded in economic structures and political interests. On the other hand, climate change is a global problem since it is caused by

the rising GHG concentrations in the atmosphere. This concentration does not depend on the location where the GHG is emitted. Climate change is also a global problem because its impacts are global, even though the effects are not evenly distributed among the regions and countries (Owen and Hanley 2004). One cannot isolate themselves from the adverse impacts of climate change, therefore a comprehensive solution necessitates the involvement of all countries.

Unilateral measures by any single country are insufficient to significantly alter the situation at hand. Therefore, concerted and cooperative corrective actions at the international level are imperative to address the issue. There is a growing consensus that climate change stands as the primary ecological, economic, and political challenge of the 21st century. However, this agreement exists alongside a very divided and hard-to-manage global system. Even if the parties involved recognize the global nature of causes and impacts of climate change creating a global policy agenda is a challenge. Effective climate change mitigation relies on achieving a global consensus.

However, resistance to a unified global approach persists, and it is gaining widespread political acceptance. The challenge does not stem from the question from "why should we take action" but instead from the question "how do we take action". The "how" of it refers to the ways in which the policies, regulations, technological changes. Moreover, and most important of all, it refers to how much should a party involved take on in terms of the burden. It is essential for nations to act, with each country's commitment reflecting its development level and emission rates. Nonetheless, low-income countries face financial constraints due to the high costs of clean energy, while wealthier nations encounter political resistance to the substantial expenses involved. Many developing countries are hesitant to make commitments that could hinder their growth. Moreover, despite international agreements to reduce emissions, the costly nature of clean energy has left countries unmotivated by the goals of the Kyoto Protocol (Arent et al. 2017).

Hence, the core issue stems from insufficient governance rather than a lack of information, technology, or financial resources when it comes to climate change. Yet, actions are still largely driven by national interests, economic incentives, and political discord. Although the atmosphere is a shared global resource, political unity on how

to protect it is lacking. The scientific consensus on climate change is strong, but responses remain fragmented. Policies often falter due to local economic challenges, corporate influence, or political expediency. The climate crisis highlights significant flaws in a system that prioritizes short-term objectives, relies on fossil fuels, and emphasizes economic growth. The Paris Agreement represented a significant achievement in international climate negotiations, yet its objectives have increasingly been pursued through use of economic instruments such as carbon pricing, emissions trading, and growth-centered adaptation strategies. This shift signifies a wider change, one that views climate policy through the perspective of cost-benefit analysis, efficiency, and growth priorities, often neglecting more profound issues of justice, accountability, and systemic transformation.

1.4. The Political Economy of Climate Action and Climate Inaction

Climate change presents a multifaceted global challenge with pervasive and significant economic consequences across all industries and regions. These impacts are systemic, not confined to isolated incidents and they influence diverse aspects of economic activity. Extreme weather events, such as floods, droughts, wildfires, and hurricanes, cause physical damage that disrupts infrastructure, reduces agricultural productivity, and increases costs related to insurance and reconstruction. For instance, global economic losses from natural hazards have averaged around $170 billion annually over the past decade, peaking at $300 billion in some years, and showing a rising trend since the 2000s. Projections indicate that damage rates from floods and tropical cyclones will increase through 2100, especially with more severe global warming (Fornino 2024).

From disrupted supply chains to reduced labor productivity due to heat stress, the economic consequences of climate change are both systemic and unpredictable, threatening macroeconomic stability, fiscal health, and long-term growth trajectories. However, incorporating climate change into economic models remains a persistent challenge. Standard models, such as Dynamic Stochastic General Equilibrium (DSGE) or Integrated Assessment Models (IAMs), often fail to account for the nonlinearities, tipping points, and profound uncertainties inherent in climate systems. These models typically assume equilibrium, rational expectations, and marginal damages,

significantly underestimating the risk of catastrophic outcomes. Furthermore, they struggle with long time horizons, discounting future impacts in ways that obscure intergenerational justice. Climate change also challenges the core of economic modeling by introducing tail risks, irreversibility, and complex feedback loops between the economy, politics, and the environment. Traditional models were not designed to manage these factors. In essence, we are trying to navigate a global crisis using tools meant for cyclical downturns, not existential shocks.

However, while early models projected relatively small impacts, estimating less than a 0.2 percentage point reduction in per capita global output due to climate change's effect on growth rates, more recent analyses indicate substantially larger potential economic damages. For instance, a 2021 analysis suggests that even if current climate pledges and targets are fulfilled, significant economic damage will occur, leading to a loss of global economic output of 11% relative to a world without climate change under a 2°C to 2.6°C warming scenario, and potentially up to 14% when accounting for multiplicative effects of unknown unknowns by mid-century. An unmitigated climate change scenario with above-average 3.2°C warming could result in losses up to 18% by mid-century, while the Network for Greening the Financial System (NGFS) "hot-house world" scenario indicates global GDP impacts of up to -10% by mid-century (Jessie Guo et al. 2021). The physical impacts also increase costs related to insurance and reconstruction, leading to significant increases in insurance claims and a seven-fold rise in global economic losses due to natural catastrophes over the last 40 years

Transition risks, arising from the global shift towards low-carbon economies, introduce another layer of complexity. These risks include the potential for large shifts in asset values, higher costs of doing business, and the creation of "stranded assets" such as fossil fuel deposits or coal reserves. This transition can lead to volatile energy prices and necessitate significant sectoral transformations, which will have distributional consequences for employment and economic structure (European Parliament 2018).

Nevertheless, the transition to a low-carbon economy is largely viewed not merely a net cost, but as an "investment", given the substantial co-benefits and the significant

role of the private sector. Strong and timely climate action is consistently shown to have much lower costs than weak or delayed action. Stabilizing greenhouse gas concentrations below 550 ppm CO_2 equivalent, for instance, is estimated to cost around 1% of world consumption or GDP. This action is considered a very good economic return, as the avoided damages from such stabilization are projected to be between 9% and 10% of world consumption or GDP (Stern 2015).

The challenge about the transition is that it is still costly, albeit less costly than the business-as-usual scenario in the long run. The economic costs are intertwined in historical responsibilities, as well as political decisions. Climate policy is inherently political. Decisions regarding who pays for adaptation and mitigation are deeply embedded in historical injustices, geopolitical power asymmetries, and contested narratives of responsibility.

The disparity between historical responsibility for GHG emissions and current vulnerability to climate change impacts is central to the discourse on climate justice. This disparity significantly affects the negotiation, structuring, and allocation of adaptation and mitigation funding. The "scandalous disproportionality" underscores that those responsible for the problem will not experience its full consequences, while those most affected did not contribute to its cause. Developed nations, particularly those in the Global North, account for the majority of historical GHG emissions and have reaped the benefits of high-carbon economic growth to attain prosperity. Meanwhile, developing nations, which are most affected by climate change, face greater geographical vulnerability, their economies rely heavily on climate-sensitive activities, and they have less policy space and less capacity to adapt due to limited wealth, technology, education, and infrastructure (Newell and Paterson 1998). This dynamic creates significant political tensions on the international stage, particularly within forums like the United Nations Framework Convention on Climate Change (UNFCCC) and the Conference of the Parties (COP) negotiations.

The principle of "common but differentiated responsibilities", enshrined in the UNFCCC acknowledges that industrialized countries bear a special responsibility due to their historical contribution and higher per capita emissions. The "polluter pays" principle is a key ethical argument for historical responsibility, suggesting that those

who caused the pollution should bear the cost. The principle of "common but differentiated responsibilities" is also recognized as an objective of the WTO. Yet, in practice, financial commitments from the Global North have frequently fallen short. A prominent example is the unfulfilled pledge by developed countries to mobilize USD 100 billion annually by 2020 for climate action in developing countries, a commitment initially made in Copenhagen in 2009 (Stern 2015).

Meanwhile, emerging economies are increasingly pressured to decarbonize without the "developmental breathing room" once enjoyed by industrialized nations, leading to resistance to legally binding emissions limits due to concerns about economic growth and poverty reduction. Moreover, those who contributed the least to climate change, countries of the Global South, are now disproportionately vulnerable to its effects geographically (Gardiner 2010).

A common framing of humanity's options in response to climate change is a triadic formula: "mitigation, adaptation, and suffering". Suffering is the most undesirable option. It means enduring the negative impacts that cannot be staved off by mitigation or adaptation. This is typically excluded from "value-neutral" policy discussions. The burden of suffering will not be distributed equally. Everyone will be affected by climate change, but those with the fewest resources for adapting will suffer the most. This disproportionately impacts communities in ecologically sensitive areas. The consequences of suffering are profound, including the displacement of millions of people by rising sea levels, leading to disruptive migrations into new territories with different languages and cultures.

Mitigation, that is proactive steps taken to reduce the pace and magnitude of climate changes by altering their underlying causes, primarily by reducing carbon emissions. Resistance from industrialized nations and powerful fossil fuel lobbies, which have systematically embedded their interests within state policies, often undermines ambitious climate mitigation policies. This resistance stems from concerns about economic costs, competitiveness, and the structural power of capital deeply rooted in capitalist societies (Newell and Paterson 1998). Domestic political constraints further complicate these efforts, as national governments in democratic systems must navigate electoral incentives, the influence of well-organized interest groups (particularly those

in energy-intensive industries), and institutional structures that can easily obstruct or delay policy implementation. Policy design itself is a realm of "rent management", where support for new, cleaner technologies may gain traction by creating new economic opportunities, "rents" in other words, rather than directly challenging existing high-carbon interests (Arent et al. 2017). Furthermore, pervasive fossil fuel subsidies globally perpetuate reliance on conventional energy sources and undermine the economic case for efficiency and renewables. Yet, eliminating these subsidies faces significant political hurdles due to entrenched interests and the absence of robust international legal frameworks for binding multilateral agreements. This situation creates a global collective action problem, where countries, particularly developing ones, have incentives to "free-ride" on others' mitigation efforts given their limited capacity and immediate development needs, resulting in inadequate overall global action and a critical gap between climate ambitions and actual implementation (Luterbacher and Sprinz 2001).

Adaptation, in the context of climate change, is defined as any adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities. This includes preparing for the consequences of climate change. Distinctions are made between "flow" adaptation (costs and benefits accrue in a single period) and "stock" adaptation (investment with upfront costs and benefits over multiple periods anticipatory (proactive) and reactive adaptations, as well as autonomous (spontaneous actions by individuals/businesses) and planned (government-supported) adaptations (Millner and Dietz 2015). The primary goals of adaptation are to enhance adaptive capacity, strengthen resilience, and reduce vulnerability to climate change, thereby contributing to sustainable development and ensuring an ample response to climate goals. However, benefits from adaptation are generally localized, unlike mitigation, which has global benefits. Furthermore, there are significant challenges and barriers to effective adaptation. These include limited resources, insufficient mobilization of finance (especially in developing countries), low climate literacy, lack of political commitment, and slow uptake of adaptation science. Major affluent countries, which are the main contributors to greenhouse gas emissions, are expected to take the lead in addressing this issue. However, these nations face minimal impact from climate change due to their strong

adaptive capacities, leading to reduced motivation for mitigation efforts and a preference for adaptation strategies (Bernauer 2013).

Adaptation, which was seen as a defeatist approach that would reduce the incentive for mitigation, had been excluded from the Kyoto Protocol. The Kyoto Protocol primarily served as a treaty focused on reducing greenhouse gas emissions. While the signatory parties recognized its importance, the protocol largely overlooked the aspect of adaptation. Politically, adaptation posed challenges due to its intrinsic link to financial considerations and the issue of historical responsibility. For the Paris Agreement, the issue took center stage on the agenda but was once again hindered by the United States' reluctance to engage in meaningful discussions on loss, damage and responsibility. These limitations within the existing adaptation framework continue to challenge the Paris Agreement. Although adaptation is a core component of the agreement, it lacks a coherent and actionable global adaptation plan. The agreement aims to "enhance adaptive capacity, strengthen resilience, and reduce vulnerability to climate change" (Article 7.1), yet it does not secure the necessary funding and political commitment. It further states that adaptation efforts will be "recognized" according to "modalities to be adopted." Despite the Paris Agreement remaining significant for political adaptation, the adaptation process is not explicitly detailed in the text, as the fundamental issues with adaptation in the UNFCCC negotiations are more profound. Political change has been impeded by the obstruction of affluent nations, particularly the United States, and resistance from developing countries, as exemplified by India (Wainwright and Mann 2018). Nevertheless, the Paris Agreement has provided renewed the political and legal momentum on the subject. Subsequent IPCC reports, notably AR6, have responded by presenting increasing evidence of adaptation implementation, its demonstrated effectiveness in various contexts, and its essential connections to sustainable development and resilience, while still emphasizing the ongoing challenges related to financing and addressing loss and damage, especially for the most vulnerable populations (Calvin et al. 2023b).

An actor's ability to influence negotiations such as those surrounding the Paris Agreement, is frequently associated with their superior access to economic resources. As a result, it was expected that the Paris Agreement would be viewed as a manifestation of existing power disparities. Historically, industrialized or developed

nations, often referred to as Annex I countries, have been responsible for the majority of historical GHG emissions and exhibit higher per capita emissions. This has facilitated their economic growth and prosperity. In contrast, developing countries, have contributed relatively little to historical emissions. This historical responsibility forms a core argument from developing countries, who argue it is unfair to ask them to bear the price of mitigation or adaptation without compensation. The acknowledgment of these unequal contributions and impacts directly shapes political decisions concerning climate action funding. Nevertheless, proponents of the existing system actively resist reforms that may adversely affect their interests. Consequently, this resistance results in the perpetuation of traditional policies that tend to favor less stringent or market-based "solutions" and the burdens of climate change are divided into two types of "costs": the "mitigation burdens", which are the costs associated with reducing GHG emissions, and the "adaptation burdens", which are the costs of managing unavoidable climate impacts (Zhang, 2009).

1.5. The Rise of Financialized Climate Solutions

In this context, a specific lexicon has emerged, highlighting terms like climate related financial risks and climate finance. This terminology replaces concepts such as justice, redistribution, or historical accountability with technical tools, investment options, and growth forecasts. The institutional shift towards financialized climate solutions is neither incidental nor without political consequences. It signifies a transformation in both the governance of climate issues and the methodologies employed. Historically, climate policy was perceived as a collective responsibility encompassing moral, historical, and ecological dimensions. However, it is increasingly viewed as a series of risks to be priced and managed through financial mechanisms.

The paralysis of global climate governance nowadays stems from the structural constraints of neoliberal multilateralism, rather than a lack of knowledge or capacity. Since the 1990s, international climate governance has increasingly relied on voluntary pledges, private-sector participation, and market-oriented policy tools. The institutional transition from the Kyoto Protocol's top-down targets to the Paris Agreement's bottom-up Nationally Determined Contributions marks a shift in governance design, from negotiated binding targets toward nationally defined

commitments. This has expanded flexibility but also weakened enforceability and redistribution. In practice, the framework bets on cooperation through incentives and alignment with national development strategies, while accountability is increasingly operationalized through measurement, reporting, and verification and through risk-based metrics rather than explicit historical responsibility.

Yet, this approach has failed to deliver the scale or speed of transformation required. The reliance on voluntary finance has produced chronic underfunding, particularly in adaptation and loss and damage. Market-oriented tools have often created perverse incentives and symbolic compliance rather than genuine decarbonization. A recurring feature of contemporary multilateral climate governance is the prioritization of flexibility and participation over enforceable burden-sharing. While this approach can broaden membership, it also makes ambition easier to defer and can amplify mistrust when costs and benefits are perceived as uneven. Climate policy is consequently channeled into technocratic domains such as metrics, disclosure, investment frameworks, and risk assessment. These tools, while not irrelevant, often displace explicit political bargaining over responsibility, redistribution, and power. The framing of climate change as a purely technical problem, often de-emphasizing its political and social dimensions, or the suppression of information about systemic risks, further hinders the necessary comprehensive and coordinated global response.

In essence, financial innovation becomes a political substitute for difficult conversations about equity, sovereignty, and historical accountability. In practice, climate finance flows often reflect existing hierarchies of power. conditional loans rather than grants, greenwashing-laden investments rather than structural reparations, and risk-transfer instruments designed more to protect investors than to empower affected communities. As a result, political reluctance to confront redistribution head-on has led to the proliferation of technical and financial mechanisms such as carbon markets, green bonds, ESG frameworks that obscure deeper structural questions.

Moreover, evolving definitions of terms like “sustainability”, “green initiatives”, and “climate-friendly policies” often alter the criteria, leading to confusion that can either diminish the urgency of climate action or make initiatives appear more successful than they truly are. This shift in terminology is evident in the transition from “global

warming" to "climate change", a change some believed would present a "more manageable and less emotional challenge", potentially reducing the sense of urgency (Castells-Quintana et al. 2015). Similarly, the concept of "sustainable development", despite defined by the policy objectives by the United Nations, is frequently perceived as ambiguous, subject to diverse interpretations by various stakeholders, which can lead to the prioritization of short-term economic growth over stringent environmental considerations. The fluidity in definitions often leads to policies, where significant reduction efforts are deferred to the distant future, sparing current generations immediate hardship but paradoxically encouraging accelerated fossil fuel extraction due to fears of future restrictions, a phenomenon known as the "green paradox" (Sinn, 2012.).

Market-based solutions and evolving definitions, while seemingly designed to foster global consensus, have inadvertently contributed to further fragmentation and, in some cases, inaction, effectively diluting the urgency of meaningful climate action and complicating genuine, unified progress. The initial fluidity in defining concepts like "sustainability" and "sustainable development" has long been recognized as a "catch-all catchphrase" that can be interpreted to mean "all things to all people", thereby limiting its impact and allowing for broad, sometimes vague, applications (Castán Broto et al. 2023). Institutions and firms redefine these terms to suit business models and risk appetites.

1.6. Methodology and Structure of the Thesis

This thesis adopts a qualitative approach rooted in political economy and institutional analysis. The research emphasizes tracing the evolution of concepts, policy narratives, and institutional changes through a detailed examination of key reports, academic literature, and international policy frameworks. The methodology is primarily interpretive and analytical, drawing insights from fields such as economics, political science, international relations, and climate ethics. It integrates perspectives from political economy, theories of financialization, and frameworks of climate justice to critically assess the underlying assumptions, interests, and power dynamics shaping current climate governance. Chapter II lays the theoretical groundwork, elaborating on key concepts such as financialization, climate justice, and governance, while

examining the limitations of mainstream economic modeling and their implications for climate action.

Chapter III traces the evolution of global climate governance from early multilateral attempts at binding regulation to the entrenchment of flexibility, market participation, and accounting infrastructures in the Paris Agreement. Particular attention is given to the legal and operational architecture of Article 6, including authorization procedures, registries, tracking systems, and the role of transparency frameworks that turn cooperative climate action into a technical market exercise. This chapter demonstrates that the shift from regulation to transparency not only reshaped incentives but also redefined the locus of climate governance, moving authority from political fora into technocratic and financial infrastructures.

Chapter IV analyzes how these institutional shifts are operationalized through financial markets. It examines how climate obligations are mediated through disclosure standards, taxonomies, sovereign issuance, sustainability-linked instruments, carbon markets, and prudential regulations that structure access to capital. The analysis shows that financialized governance produces uneven outcomes by embedding climate policy within existing macro-financial hierarchies and allocating climate risk through instruments that privilege asset holders and capital-rich countries.

Chapter V concludes by synthesizing the empirical and theoretical findings of the thesis. It evaluates whether a governance architecture anchored in financialization can deliver an equitable and ecologically coherent transition under conditions of growing geopolitical fragmentation and uneven vulnerability. The thesis closes by outlining pathways for future research, emphasizing institutional reforms that re-embed climate governance in political decision-making rather than delegating responsibility to markets.

CHAPTER 2

THEORETICAL FRAMEWORK OF FINANCIALIZATION, CLIMATE AND GOVERNANCE

This chapter elaborates on the theoretical framework that supports the thesis's central assertion: a fragmented, flexibility-first climate regime and the financialization of climate solutions constitute a mutually reinforcing feedback loop. It posits that financialization transcends mere market expansion, representing a reorganization of power wherein financial logics and actors reshape the state, public policy, and social reproduction. Building on this premise, the chapter contextualizes the financialization of climate within a historical trajectory of commodifying nature and enclosing public goods, demonstrating how climate risks and obligations are translated into financial concepts such as assets, liabilities, risk premia, and disclosure metrics. In doing so, it connects the abstract discourse of financialization to the specific mechanisms through which climate governance becomes comprehensible to investors and integrated into macro-financial hierarchies.

This chapter also incorporates considerations of state capacity and dependency into the analysis. It regards uneven institutional development, fiscal constraints, and verification capacity not as incidental weaknesses, but as structurally produced features of a world economy organized around core-periphery relations. From this perspective, climate financialization emerges as a mode of governance particularly appealing in contexts where states are constrained by debt, conditional finance, and limited policy space, and where responsibility for climate action is increasingly delegated to markets. The conceptual tools developed here—financialization, commodification of nature, double materiality, just transition, and the contested language of sustainability—provide the foundation for understanding why market-based climate governance tends to reproduce existing hierarchies rather than disrupt them.

2.1. Conceptualization of Financialization

Financialization is a widely debated and prominent concept. Although the term "financialization" is relatively recent, the process itself is not novel and has deep historical roots, unfolding since the early 20th century (Fasianos et al. 2016). It represents a complex and multidimensional process characterized by the growing influence and significance of financial markets, financial motives, financial institutions, and financial elites in the functioning of the economy and its governing bodies, both domestically and internationally. This phenomenon signifies a fundamental shift in the mechanisms of wealth accumulation and distribution, transitioning from traditional industrial production to financial activities (Epstein 2002). While certain scholars question its explicit theoretical contributions, others underscore its importance as a "form of domination", wherein finance permeates all facets of social life, thereby influencing power dynamics, production processes, and income distribution.

Conceptualizations of financialization typically align with two main perspectives. The first is concerned with the expansion of the financial sector's operations and influence. The second views financialization as a transformative phase within capitalism, fundamentally altering the relationship between finance and the real economy. This phenomenon is evident in the increasing volumes of financial assets and liabilities, the growing financial activities of firms and households relative to income, and a widening gap between banking and industrial capital. Finance is seen as surpassing its traditional intermediary role, with financial motives increasingly shaping real economic activity (Yalman et al. 2019).

The historical interpretation of financialization is also characterized by two predominant perspectives. One perspective perceives financialization as a long-term, evolutionary trend intrinsic to market development. From this viewpoint, financialization has persisted for centuries in various forms and intensities, influenced by ongoing financial innovations. This interpretation also accommodates periods of definancialization, during which the influence of finance diminishes under specific economic or regulatory conditions (Fasianos et al. 2016). In contrast, another perspective, particularly prevalent in heterodox economics, conceptualizes

financialization as a distinct stage of capitalism. According to this view, the current phase, often referred to as the "second financialization", originated in the 1970s or 1980s and continues to this day. It is characterized by deregulation, the predominance of financial markets, and the prioritization of shareholder value. This phase is perceived as closely linked with neoliberalism, functioning either as its economic core or as one of its defining components. However, some scholars contend that it does not represent an entirely new stage of capitalism but rather signifies a new phase within neoliberalism itself (Sawyer 2013).

While definitions of financialization vary, this thesis follows Epstein's broad framing of finance's growing dominance over economic and social life (Epstein 2002), complemented by Lapavitsas's view of financialization as a systemic transformation of capitalism over the last four decades, rooted in the altered behavior of fundamental agents of capitalist accumulation, including non-financial corporations, banks, and workers, leading to new forms of profit and a growing asymmetry between the sphere of production and the ballooning sphere of circulation, characterized by "financial expropriation" (Lapavitsas 2013).

Manifestations of financialization can be seen through corporations, financial institutions, households and the state. A key aspect of financialization is the expansion and dominance of the financial sector, as evidenced by its growing share of GDP and profits, establishing it as one of the most profitable sectors in advanced economies (Davis and Kim 2015). Non-financial corporations have also undergone significant transformations under financialization. The adoption of a shareholder value orientation has pressured firms to prioritize short-term returns and stock prices at the expense of long-term investment. Financing patterns have shifted as large corporations increasingly rely on internal resources and capital markets rather than traditional bank loans, developing their own financial operations in the process. Moreover, these firms increasingly pursue profits through financial channels, accumulating liquid assets and engaging in leveraged activities such as buy-outs. This has blurred the line between financial and non-financial spheres, embedding financial logic in corporate governance (Fasianos et al. 2016; Mavroudeas and Papadatos 2018). Households have been drawn into financialization through rising indebtedness and deeper exposure to financial markets. Debt-led consumption, mortgages, and

consumer credit have become widespread, making household balance sheets central to economic growth. This process is often described as financial expropriation, as financial profits are extracted directly from personal income, particularly in contexts of stagnant real wages and the retreat of public welfare provision. The financialization of everyday life has reinforced this trend, compelling individuals to adopt a financial mindset in areas such as housing, pensions, education, and healthcare, where services once publicly provided are increasingly commodified (Lapavitsas 2011).

The state has undergone a profound transformation due to financialization. While neoliberal discourse champions a "small state", the state has experienced a structural shift that integrates financial logic into its core operations. The concept of the financialization of the state captures this reconfiguration, where governments not only deregulate markets but also actively facilitate and engage in financial processes. This includes activities such as debt issuance, sovereign bond management, and the adoption of financial instruments to meet public funding needs. Fiscal policy has also evolved, with states increasingly managing sovereign debt through market-based practices, issuing bonds, and adopting private-sector financial strategies. Governments act as "risk managers in the service of investors", creating risk-free assets for markets and employing mechanisms such as public–private partnerships to guarantee private returns. In public–private partnerships, states provide substantial guarantees to attract financial capital for infrastructure and development projects, frequently socializing risks while privatizing gains (Bayliss and Saad-Filho 2017).

Financialization has also deeply penetrated social reproduction, altering welfare and public service provision. Public services have been transformed into assets through instruments like social impact bonds, illustrating how public policy is shaped by financial logics. This restructuring extends into social reproduction, as finance penetrates housing, pensions, education, health, and even water supply (Lapavitsas 2011). These have increasingly been commodified and financialized, with services often priced beyond the reach of low-income groups. This restructuring has systemic consequences. Social housing becomes residual, local governments face shrinking budgets under the rhetoric of decentralization, and public services are increasingly subordinated to financial motives (Yalman 2016).

The state facilitates this process by promoting market mechanisms and private-sector involvement while withdrawing from direct provision. Profitable ventures are transferred to private actors, while unprofitable risks are borne by the state. The socio-economic outcomes of these processes are profound. Financialization has exacerbated inequality by redistributing income and wealth toward capital and expanding the financial sector's share of profits. Short-termism in corporate and policy decision-making reduces incentives for productive investment, reinforcing structural vulnerabilities. The penetration of finance into public services and everyday life further entrenches commodification and exclusion, as cost recovery pricing and user-pays policies render essential services unaffordable for disadvantaged groups. These dynamics also undermine democracy, as governments prioritize market stability and investor confidence over social needs. Political options narrow, while supra-state agencies and global ownership structures diminish the accountability of decision-making (Saad Filho 2011).

In this context, the financialization of the state does not occur uniformly. States exhibit varying capacities to tax, borrow, regulate, and coordinate, which influences whether financial logics are assimilated, resisted, or strategically employed. This variation has significant implications for climate governance. In situations where external financing conditions and domestic institutional constraints restrict policy to growth-sensitive and credit-sensitive paths, maintaining coherence in climate policy becomes more challenging and more likely to be outsourced to technocratic, market-oriented instruments.

Notably, “stakeholders” are not neutral participants but actors with unequal bargaining power. Capital is not a monolithic entity. Different segments of capital encounter varying exposures to regulation and pursue distinct accumulation strategies. Under financialization, these conflicts are often managed through market-compatible compromises rather than explicit redistribution. In peripheral and semi-peripheral economies, this domestic contestation is further constrained by reliance on capital inflows, currency vulnerabilities, and the pressures of credit ratings and sovereign bond markets. These factors typically increase the emphasis on short-term credibility and restrict the policy space available for sustained, distributionally contentious climate action.

In sum, financialization is not merely the expansion of finance but a systemic transformation that reshapes corporations, households, and above all, the state. It integrates financial logic into governance and everyday life, produces rising inequality and recurrent crises, and manifests unevenly across the global economy, making it both a defining feature of contemporary capitalism and a central object of critique. Lapavitsas states that "financialization cannot be confronted without re-establishing the ideological primacy of the collective over the individual, and of the public over the private. It cannot be opposed without reasserting the superiority of the public interest over the profits and benefits of the individual. It cannot be reversed without accepting that public authorities have the right and the obligation to intervene in the economy in the interests of the many" (Lapavitsas 2013). In principle, climate change represented a critical juncture at which such a transformation could have taken place. Rather than prompting a reassertion of public authority over private profit, the governance response increasingly channeled climate action through market-design and financial instruments, thereby expanding opportunities for rent extraction and speculative activity. The climate crisis was increasingly reframed through financial logics, deepening the very dynamics it might have reversed. Building on these conceptualizations, the next section turns to the specific trajectory of climate financialization, where the structural dynamics of financialization intersect with the commodification of nature. In this thesis, financialization is examined as a distinct reconfiguration of power, coordination, and risk through financial logics and balance sheets. This conceptual framework will guide the subsequent analysis of the increasing articulation of climate governance through financial infrastructures and the interaction of this process with existing global hierarchies.

2.2. Financialization of Climate

2.2.1 Commodification of Nature

Financialization of climate represents a continuation of a longstanding historical process characterized by the commodification and enclosure of natural resources. For centuries, natural resources and ecosystems have been increasingly woven into the fabric of capital circuits. Economic systems have persistently transformed energy and materials, produced waste, and altered the natural environment, often overlooking

ecological realities by focusing primarily on monetary flows to measure economic activity. This commodification of nature is deeply rooted in the political economy of capitalism, where natural processes are progressively made secondary to the demands of accumulation and growth. This process fundamentally relies on exploiting nature as a source of raw materials and energy, and as a sink for waste (Xie and Cheng 2021). Since the Industrial Revolution, the global capitalist system has been fundamentally characterized by the reliance on fossil fuels, such as coal, oil, and natural gas. These energy sources have driven industrialization. However, they have also contributed to increasing greenhouse gas emissions, which now pose a significant threat to maintaining a habitable climate (Newell and Paterson 2010a).

Financialization presupposes and intensifies commodification. The first step toward financialization is to conceptually and legally transform an abstract, common global resource into a discrete, ownable, and tradable unit, a commodity. The case for climate financialization is distinct, however. The atmosphere is best understood as a global commons in which access is difficult to exclude, and emissions impose external costs across borders. Market-based climate instruments have translated aspects of the atmospheric sink into quantified entitlements that can be exchanged. In emissions trading and crediting regimes, the price attaches not to "the atmosphere" but to a legal claim, a permit to emit or a credited reduction/removal, recognized within a regulatory framework. The commodity is the allowance or offset unit, not climate itself. Distinctively, climate finance commodifies claims over an otherwise non-enclosable public sink.

The distinctive move is the integration of these claims into financial circuits, where allowances and credits become assets within portfolios, risk models, and speculative strategies. What circulates is not "climate" but finance built on quantified claims over the sink's absorptive function. This constitutes a twenty-first-century addition to Polanyi's fictitious commodities, as exchange-value is prioritized over the use-value of a stable climate system (Polanyi 1944; Fletcher 2012; Iskander and Lowe 2020).

2.2.2 Financialization of Climate

In line with the broader conceptualizations of financialization, this thesis situates climate financialization as a distinct yet interrelated trajectory within the evolution of

capitalism. Here, climate financialization denotes the reorganization of climate governance and policy around financial logics, including valuation practices, risk-based governance, and the channeling of climate action through investment vehicles and market infrastructures. While this does not invariably imply tradability, in areas such as emissions trading and crediting, it may involve the creation of standardized units and legal claims that are exchangeable. In peripheral and semi-peripheral states, climate financialization often takes the form of dependent financialization. In these contexts, climate governance is adapted to an unequal financial and institutional environment in which external standards, metrics, and expectations discipline domestic policy choices.

Dependent financialization specifies the source and direction of these processes in settings where financialization is driven less by endogenous state-led experimentation or internal market evolution and more by external pressures, global governance requirements and macro financial hierarchies (Akçay and Güngen 2022). In such contexts, states adopt financialized climate tools not primarily because they have sovereignly decided that markets are the best way to govern climate, but because participation in global climate governance and access to capital increasingly require conformity with financialized standards.

Climate markets, Article 6 mechanisms, sovereign green and sustainability-linked issuance, and climate-related prudential standards do not merely channel capital, however. They can also transmit and reproduce core-periphery hierarchies through financial channels by conditioning credibility, borrowing costs, and access to "investable" status on compliance with externally defined categories. The scope for states to deploy these instruments in line with domestic developmental and ecological priorities depends on their position in the international system and on the depth and configuration of state capacity.

This argument draws on a dependency lens. Dos Santos defines dependence as a condition in which "the economy of certain countries is conditioned by the development and expansion of another economy to which the former is subjected" (Dos Santos 1985). In this context, the pace and path of accumulation are shaped externally through financial conditions and governance expectations. Sunkel similarly

emphasizes the influence of external constraints on national development strategies, while Evans offers a concise structural formulation in which the rate and direction of accumulation are externally determined (Palat 2014; Johnson 1981; Ferraro and Hadley 2008; Evans 2018).

Climate financialization can be observed across related domains of climate issues, climate policy, and climate governance, although its intensity varies across instruments and jurisdictions. At the level of climate issues, certain aspects of climate change are translated into measurable indicators and projections, such as emissions trajectories, exposure measures, and scenario-based stress metrics, that are subsequently used in regulatory and investment decision-making. At the level of climate policy, some mitigation and adaptation measures are implemented through instruments that rely on price signals, private finance mobilization, and risk allocation, including disclosure frameworks, incentive schemes, and, in specific areas, market mechanisms. At the level of climate governance, these approaches are operationalized through institutional architecture that define categories and comparability, including reporting standards, taxonomies, and rules for crediting or trading where applicable. This thesis follows these interactions across levels where Chapter 3 examines the interstate legal–institutional layer in which Parties, as the formal subjects of NDCs, articulate commitments and procedural obligations, while implementation is increasingly delegated to market-oriented infrastructures that position investors, verifiers, and standard setters as de facto arbiters of credibility.

The integration of financial logic into climate governance, climate issues and climate policies extends beyond mere technical innovation. It represents a reconfiguration of governance, investment, and policy priorities in line with financial imperatives. Rather than being approached as primarily political, social, or ecological challenges, climate change and environmental issues are recast as matters of financial risk and opportunity to be priced, traded, and hedged. This transformation reflects the same structural dynamics described by Epstein and Lapavitsas: the reorientation of economic and social life around the imperatives of finance, and the subordination of productive and ecological concerns to the logic of finance and speculative accumulation. As climate risks are increasingly priced and securitized, responses are shaped less by collective political negotiation and more by the incentives of private investment and capital

accumulation. The result is not only a reframing of the climate crisis in terms of financial instruments and portfolio management, but also a deepening of the contradictions identified in critical political economy. Climate financialization extends commodification into new domains, generates dispossession by appropriating atmospheric functions as rent-yielding assets, and establishes asymmetries between those who profit from speculative instruments and those who bear the material consequences of climate crisis (Fletcher 2012; Topal 2019).

Financialization of climate is a political choice, a delegation of responsibility. The rise of financialized climate governance is a governance choice that reallocates responsibility from political decision-making to market infrastructures. In conditions of fragmented cooperation and distributive conflict, market-based instruments and risk-accounting frameworks become the lowest common denominator because they promise action without requiring enforceable obligations, upfront redistribution, or sustained fiscal commitment. This does not imply a single coordinated “plan”. Rather, it reflects how states and multilateral arenas respond to political deadlock by building rules, disclosure regimes, and creditworthy pipelines that translate climate objectives into investor-facing categories. In this sense, financialized climate policy functions as statecraft not because states withdraw from governance, but because they govern through metrics, guarantees, and tradable claims.

The shift towards market-compatible instruments is also indicative of domestic political economy dynamics. Climate policy inherently involves the concentration of costs and the redistribution of rents, thereby subjecting governments to conflicting pressures from various social groups and capital factions, each with differing levels of exposure to transition risks, energy prices, competitiveness, and credit conditions. In the face of these conflicts, policy development often results in a patchwork of partial measures rather than a cohesive strategy.

Consequently, governments are inclined to delegate the enforcement and implementation of policies to investor-oriented tools that are perceived as "neutral." This tendency elucidates why climate governance frequently manifests in the form of standards, templates, and verification procedures, as opposed to contested fiscal decisions. Structural asymmetries in domestic power relations and the global economy

are significant as they influence the feasibility, financing, and legitimacy of climate policies, as well as the distribution of adjustment costs.

Policy coherence fails not only because administrative capacity is uneven, but because states must arbitrate distributional conflict across social groups and capital fractions under external financial discipline, making market-compatible delegation a politically 'safe' default. In this context, state capacity should not be viewed merely as a generic administrative attribute but rather as a set of political and institutional capabilities. This encompasses the ability to articulate and implement collective developmental and ecological objectives amidst pressures from powerful interests and volatile financial conditions, and to maintain long-term commitments necessary for structural change and decarbonization. Additionally, state capacity has a fiscal dimension, specifically the ability to mobilize resources and absorb shocks. This fiscal capacity is unevenly distributed internationally due to variations in borrowing costs, access to external liquidity, and exposure to currency risk. Furthermore, state capacity relies on regulatory and legal capabilities to design and enforce rules, including those that discipline market actors, and the ability to preserve domestic policy space under conditions of asymmetric interdependence, creditor influence, and conditionalities. These dimensions interact with domestic coalition politics and external shocks, potentially widening the gap between formal sovereignty and effective sovereignty, which is understood here as the capacity to translate policy objectives into material outcomes (Singh 2023; Perry 2021; Amin et al. 1978; Hills 1994; Duria 2025).

Climate governance is a demanding test of all these dimensions. The contemporary climate policy architecture, including inventories, taxonomies, disclosure regimes, prudential standards, carbon pricing instruments, and registry systems, presupposes reliable data systems, cross-agency coordination, credible enforcement, and fiscal space for sustained investment. Where these capacities are limited or fragmented, climate policy is more likely to rely on externally defined templates, third-party verification, and market-oriented instruments, rather than domestically coordinated transformation.

In contexts where state capacity is limited, fragmented, or externally constrained, the delegation of authority becomes structural. Climate governance increasingly adopts

the form of imported frameworks and outsourced expertise, with consultants, verifiers, rating agencies, and standard setters serving as gatekeepers of credibility. Consequently, in peripheral and semi-peripheral states, climate financialization manifests as dependent financialization. Climate governance is tailored to an unequal financial and institutional environment, wherein external metrics, standards, and expectations impose constraints on domestic policy space.

Against this background, one could frame financialization of climate as a form of statecraft where financialization was initiated by a state dismantling the old structures of control and retreating from its traditional roles instead of a state building something new. This creates a power vacuum and a landscape of permissive incentives that financial actors are uniquely positioned to exploit, setting the entire process in motion. The state's "decision not to decide" is, in itself, a world-shaping political act.

While climate science, in conjunction with emerging technologies, holds promise, it is insufficient to independently drive a transition to clean energy. This transition necessitates "deliberate and global action" alongside effective international policies. However, achieving such global coordination has consistently proven challenging (Arent et al. 2017). Various jurisdictions and institutions have developed disparate approaches to climate finance, resulting in a complex and fragmented policy landscape. Historically, global climate policy has shown a strong trend toward neo liberalization, shifting from state-centered command and control to market-based solutions (Xie and Cheng 2021).

Moreover, the dichotomy between the "Global North" and "Global South" has been a persistent theme in international environmental negotiations since 1972, primarily driven by deep-rooted economic disparities. Developing nations have consistently associated global environmental challenges with international economic inequality, advocating for industrialized countries to assume the primary responsibility for environmental conservation.

This includes the transfer of technology and financial resources, ensuring that environmental initiatives do not impede their developmental rights (Sovacool and Linnér 2016). Notably, discussions on "adaptation" frequently focus on the necessity for impoverished populations to adapt, even though affluent social groups and

developed nations have historically contributed the most to consumption and emissions.

COP21 institutionalized NDCs as the core mitigation architecture. While Parties face procedural obligations of transparency and updating, the Agreement does not impose enforceable country-level emissions caps; mitigation ambition remains nationally determined. The framework also allows cooperative approaches, including market-based transfers of mitigation outcomes (Article 6), through which crediting and trading can occur. A critical reading is that this "soft law" and pledge-and-review design lowers the political costs of participation but makes burden-sharing and compliance more difficult to secure, encouraging implementation strategies that prioritize flexibility and market-compatible instruments over enforceable redistribution. In this context, the persistent gap between pledges and temperature goals interacts with long-standing North-South conflicts over finance and responsibility. The failure of developed countries to meet climate finance expectations has reinforced distrust and weakened cooperation within the UNFCCC process (Wainwright and Mann 2018).

Dependent financialization operates through a dense web of instruments and standards that are disproportionately designed, governed or validated in core jurisdictions. These include climate related disclosure regimes, green and sustainability linked bond frameworks, taxonomies of sustainable activities, sovereign ratings that incorporate climate risk, the legal and technical infrastructure associated with Article 6 of the Paris Agreement, and verification and accreditation systems that determine which projects and jurisdictions qualify for particular labels or finance. For many countries in the Global South, aligning with these devices is a precondition for being perceived as an "investable" climate destination, for avoiding rating downgrades linked to climate risk, or for accessing multilateral and private climate funds.

The mechanisms linking this architecture to dependency are accumulative. The conversion of climate risk into sovereign risk, facilitated by rating agencies and investor models, raises borrowing costs for nations that are both highly susceptible and have limited capacity to adapt. Higher borrowing costs diminish fiscal space and limit governments' ability to fund public investment in mitigation and adaptation from their own resources. Constrained fiscal space, in turn, heightens reliance on private capital,

blended finance, and project-based structures that aim to mobilize investment while maintaining public debt at manageable levels. These structures often socialize downside risk through guarantees and minimum revenue commitments, while privatizing upside gains through contractual protections and exit options. Therefore, compliance with increasingly complex disclosure, taxonomy, and alignment frameworks necessitates analytical and administrative resources that many states lack. This dependence on external consultants, verification bodies, and financial intermediaries grants external actors significant influence over the design of climate strategies, the prioritization of projects, and the interpretation of "alignment" with global climate targets in practice.

Against this background, governments started relying more on financial markets. This reliance is based on the "established background element, namely the financialization of the entire economy and of the public finance" (Viganò 2023). Climate finance has been seen as a bridge, connecting governments aiming to mobilize resources for significant investments with private enterprises that possess financial expertise and profit expectations.

Within the framework of neoliberal ideology, public officials are expected to remain neutral, allowing market mechanisms to function independently. Their responsibilities include regulation, providing "incentives", and establishing guidelines for information dissemination. Market-based solutions, such as carbon taxes, cap-and-trade schemes, carbon markets, green bonds, and carbon offsetting, have therefore proliferated. Catastrophe bonds enable states to transfer sovereign responsibility for climate risks to the market (Storm 2018). The state plays a pivotal role in establishing the legal and judicial frameworks that facilitate these markets, often reinforcing existing power hierarchies and allowing private actors to extend their influence into the public sphere through enclosure science. These market-based approaches are criticized for prioritizing profits over actual emission reductions, potentially exacerbating global inequalities, failing to address the root causes of climate change, and being inaccessible to the most vulnerable. They create compliance pathways that can delay emission declines, shifting the burden of responsibility and delaying the implementation of deep, aggressive measures consistent with climate science (Gilbertson 2021).

2.3. The Translation of Climate Issues into Financial Concepts

2.3.1 Double Materiality

The integration of financial logic into climate governance is a complex and often contradictory process, apparent in the frameworks that determine which risks and impacts are considered economically significant, as well as in the creation of new markets for carbon or green assets. Disclosure regimes and accounting standards serve as institutional mechanisms through which this subordination is implemented (Weston 2013). The concept of double materiality illustrates how climate-related claims are made meaningful within the financial sector.

Initially, materiality in corporate reporting, particularly in financial reporting, focused on information that could influence the decisions of primary users of financial statements, predominantly investors and other capital providers. This perspective, often termed “financial materiality” or the “outside-in” view, assessed how external environmental, social, and governance (ESG) factors generated financial risks and opportunities for the company, impacting its development, financial position, performance, cash flows, access to finance, or cost of capital over the short, medium, or long term (Shami 2024). Frameworks like those from the Task Force on Climate-related Financial Disclosures (TCFD) and the International Sustainability Standards Board (ISSB) primarily adopt this financial materiality perspective. The European Commission's 2019 “Guidelines on Reporting Climate-Related Information” formally introduced the explicit concept of “double materiality” (European Comission 2019). This concept was subsequently embedded in EU legislation, including the Non-Financial Reporting Directive and later the Corporate Sustainability Reporting Directive , supported by the European Sustainability Reporting Standards.

Double materiality is proposed as a framework designed to address the limitations of single materiality, yet its claims call for scrutiny. At its core, the concept of double materiality extends the materiality notion further. It encompasses not only the climate-related impacts on the company that may be deemed material but also the company's impacts on the climate (European Comission 2019). The strength of double materiality lies in its ability to offer a more comprehensive understanding of corporate performance by transcending the limitations of single materiality.

While single materiality traditionally focuses on the informational needs of investors and the impact of the external environment on a company's financial performance (the "outside-in" perspective), double materiality explicitly expands the scope to include the impact of a company's activities on society and the environment (the "inside-out" perspective). European Commission stated that this broader perspective acknowledges a wider range of stakeholders, such as citizens, consumers, employees, business partners, communities, and civil society organizations, whose interests extend beyond purely financial considerations (European Comission 2019).

However, despite broad consensus on its formal definition as encompassing both financial and environmental/social materiality, the essence of double materiality hinges on the interpretation of what truly constitutes a "material impact". This leads to significant ambiguity in its meaning and application. A weak conception of double materiality views environmental and social impacts as material primarily when they eventually manifest as financial risks for the company (Täger 2021).

This perspective, often termed the "idiosyncratic risk perspective" or "dynamic financial materiality", considers that environmental impacts could translate into financial risks through mechanisms such as legal liabilities, negative effects on a company's reputation, changes in consumer demand, or evolving market and public policies (Driver and ElAlfy 2023). European Commission's 2019 guidelines noted that as markets and public policies evolve in response to climate change, the positive or negative impacts of a company on the climate will increasingly translate into business opportunities and/or risks that are financially material. By collapsing impact materiality into financial materiality, this interpretation reinforces investor-centric reasoning. In practice, impacts on biodiversity or labor are translated only when monetized or scenario-modeled, reducing double materiality to a compliance issue.

The strong interpretation of double materiality departs from the confines of risk-based reasoning. It asserts that environmental and social impacts possess intrinsic value and may be deemed material even when they do not produce immediate or measurable financial consequences for the reporting entity. In this view, the significance of impacts is not reducible to their potential to generate liabilities, reputational harm, or profit opportunities. Rather, the very act of disclosing such impacts is considered

meaningful, because it acknowledges their importance for society and the environment independent of financial relevance (Boissinot et al. 2022).

This interpretation carries profound implications for the role of financial systems. By affirming that impacts are material in their own right, it challenges the dominance of financial logics and calls for a transformation of reporting practices into instruments that actively support ecological transition. Instead of treating sustainability disclosures as a means of shielding investors from risk, the strong conception of double materiality reframes them as a collective accountability mechanism. By advancing this interpretation, proponents seek to widen the scope of materiality beyond investor protection toward a broader conception of public interest. This approach not only revalues environmental and social impacts as ends in themselves but also implies a reorientation of financial governance. The strong conception thus highlights the political stakes of accounting and disclosure (Täger 2021).

Beyond its regulatory codification, the concept of double materiality has sparked extensive academic discourse. Some scholars perceive it as a technical enhancement of accounting practices, broadening the scope of materiality to encompass multiple stakeholders beyond investors (Shami 2024). Conversely, others view it as a more profound transformation, challenging the predominance of shareholder primacy and suggesting a shift toward an alternative form of capitalism where ecological and social considerations are not subordinate to financial returns (Pichler et al. 2020).

Nonetheless, the debate over double materiality is not merely an abstract academic discourse but one with significant implications. Within the broader context of financialization, the concept of double materiality highlights the complexities inherent in contemporary sustainability governance. On one hand, it offers the potential to integrate ecological and social considerations into the core definition of what is deemed “material” for corporate reporting. On the other hand, its formalization within European Union legislation and corporate practices poses the risk of subordinating these considerations to financial imperatives by converting them into quantifiable metrics that can be priced, traded, and securitized. This institutionalization of double materiality privileges actors with the infrastructure and resources to optimize to the metric. Double materiality thus establishes a technocratic equilibrium that stabilizes

the authority of financial intermediaries while displacing more radical debates about redistribution or structural change.

From a systemic perspective, proponents within financial transgovernmental networks have argued that double materiality offers a framework for understanding the two-way feedback loops between finance and climate. The INSPIRE Sustainable Central Banking Network, for instance, distinguishes three rationales for adopting double materiality: an idiosyncratic risk perspective (environmental impacts as indicators of firm-specific risks), a systemic risk perspective (environmental externalities creating systemic financial risks), and a transformative perspective (using accounting to realign finance with environmental transition goals) (Boissinot et al. 2022). The rationales presented highlight that double materiality extends beyond a mere disclosure principle, representing a contested domain concerning the prospective role of finance in environmental transition.

From a political economy perspective, the concept of double materiality exemplifies the broader dynamics of financialization. Initially, concepts that emerged as critiques of financial markets are subsequently absorbed into their frameworks and rearticulated as technical categories. What begins as a challenge to the limitations of disclosure frameworks ultimately becomes another metric for rating agencies, consultants, and financial intermediaries to commodify. The result is not a pluralistic accounting of value but rather a narrowing of impact into quantifiable terms. In this way, double materiality functions less as a progressive innovation than as a tool of depoliticization. It exemplifies how language performs political work by disciplining what counts as knowledge and what can be ignored. The following subsection extends this critique by examining the

2.3.2 Just Transition

The idea of a just transition originated in the 1970s from North American trade union movements in response to new environmental regulations that threatened jobs in polluting industries. It was initially conceived as a call to ensure that efforts to steer society toward a lower-carbon future would be underpinned by attention to issues of equity and justice (Newell and Mulvaney 2013). This included protecting the livelihoods of workers affected by and dependent on the fossil fuel economy and

ensuring that the costs of climate mitigation policies did not fall disproportionately on certain workers, sectors, or socio-economic groups, thereby exacerbating existing inequalities and undermining public support for climate action.

Over time, the concept widened beyond its labor roots to encompass energy and climate justice more broadly, including the realities of energy poverty, uneven exposure to climate impacts, intergenerational justice, and the need to ensure that new green jobs are decent jobs with living wages and protections. Today, it extends to vulnerable communities, small suppliers, and consumers as well as workers, and is framed through a human-rights lens that links equity, inclusion, and opportunity (Hizliok and Scheer 2024).

Institutionalization has been rapid and uneven. In 2015, the International Labour Organization (ILO) issued guidelines emphasizing social dialogue, social protection, and skills policies (ILO 2015). The preamble of the 2015 Paris Agreement explicitly acknowledges the necessity of a just transition and decent work. Subsequent Conferences of the Parties (COPs) have reaffirmed these principles, and at COP28, a work program was established to implement just transition pathways through international cooperation. In Europe, the concept has been operationalized through the European Union's Just Transition Mechanism and Fund, which allocates substantial resources to carbon-intensive regions for skills development, industrial transformation, and social infrastructure (European Comission 2025).

National strategies offer further examples: South Africa’s Presidential Climate Commission and framework; Canada’s task force for coal power workers and communities; Spain’s strategy and institute built around territorial agreements; Costa Rica’s incorporation of just transition into its NDCs and development plan through participatory processes. Development banks and climate-finance providers now regularly cite the agenda, and Just Energy Transition Partnerships with countries such as South Africa, Indonesia, Senegal, and Vietnam explicitly promise to make the coal phase-down socially fair, particularly for women and youth (United Nations 2025).

Policymakers synchronized institutionalization of just transition with financialization to offload distributive conflict onto markets. The policy mix of fiscal caps, state-aid controls, and MDB mobilization targets limits redistribution upfront and shifts conflict

into investor-facing risk tools later. Within contemporary climate policy frameworks, the idea of a just transition is often translated into policy instruments that are legible to financial and administrative systems. Justice is commonly expressed through compensatory measures, such as subsidies, retraining programs, and targeted support, intended to reduce distributional frictions and support implementation. While such measures can mitigate social costs and improve feasibility, this framing may also narrow the meaning of justice by prioritizing investability and administrative tractability over more contested questions of redistribution and power.

This helps to mitigate the risk of opposition and delays in achieving global net-zero goals (Hizliok and Scheer 2024). This aligns with broader neoliberal patterns of neutralizing conflict through market-compatible instruments.

International climate finance is currently heavily focused on implementing techno-economic transitions for low-carbon and climate-resilient practices, with little financial support specifically for ensuring socially, economically, and environmentally just outcomes. This perspective can encourage a narrower administrative uptake of just transition, including in many Global South settings, where the term is used to signal the financing and technical management of the low-carbon transition, rather than to foreground its socio-economic risks and distributive conflicts (Aaron Atteridge et al. 2021).

In this context, the imbalance between the Global North and South is evident. Developed nations have the resources to allocate significant just transition funds to alleviate regional dissatisfaction. In contrast, most developing countries confront transition challenges with limited fiscal capacity, higher borrowing costs, and institutional constraints (Ghosh and Mguni 2025). Loan-centric climate finance packages, including several Just Energy Transition Partnerships, can exacerbate debt constraints and crowd out social investment. Although country ownership is a stated principle, critics note that it may still privilege donor priorities and narrow expert networks over broad-based domestic participation. International climate finance also remains skewed toward techno-economic interventions, with limited support for diversification, social protection, and long-horizon regional development. International climate finance remains skewed toward techno-economic changes,

offering insufficient support for economic diversification, social protection, and long-term regional development strategies (United Nations 2025). When offsets and land-based sequestration are utilized, there is a risk of perpetuating carbon colonialism, displacing communities, and replicating extractive practices under the guise of decarbonization (Cash and Swatuk 2022; Topal 2019). De-risking in the Global South can provide stable returns for financial institutions in the Global North without fostering sustainable local capacity or equity. As a result, those least responsible for historical emissions remain most susceptible to physical risks and social upheaval, with minimal safety nets.

This trajectory mirrors what has happened to double materiality. Both concepts originated as critiques meant to broaden responsibility beyond narrow financial metrics or firm-level cost minimization. Both have been institutionalized through disclosure regimes, investment frameworks, and de-risking narratives that stabilize market-based approaches. The result is an inclusionary vocabulary that expands procedural participation while leaving underlying power relations largely intact. Within this framing, just transition is frequently reduced to compensation and retraining packages, rather than treated as a political mechanism for negotiating ownership, value distribution along value chains, and control over productive assets. Similarly, the notion of double materiality is frequently relegated to a reporting framework, rather than being embraced as a directive to incorporate ecological constraints and social impacts into corporate strategy and capital allocation.

The concept of a just transition should not be dismissed as mere rhetoric, nor should financial instruments be considered ineffective. Instead, the fact that the current set of tools is designed to address symptoms while leaving the root causes unexamined should be addressed. A critical perspective reveals the distributional implications of the absorption of just transition into investment language. What is often seen as neutral risk management is, in reality, a political decision that favors asset holders over workers, creditors over debtors, and investors in the Global North over communities in the Global South. The paradox lies in the fact that the very notion intended to prioritize distributive justice may inadvertently perpetuate global inequality when implemented through the framework of financial governance. The language of justice is co-opted to legitimize a growth-dependent transition that preserves existing power

structures. To reclaim its radical essence, there is a need for substantial, binding, and concessional public finance, genuine social dialogue with codetermination, and public/community ownership models linked to labor standards and local value capture. Without these measures, the transition will merely mitigate the excesses of the current accumulation regime.

Both double materiality and just transition follow a similar trajectory. Each emerges from critiques of financialized and industrial capitalism and seeks to widen responsibility, but each is frequently rearticulated through disclosure, risk-management, and investment frameworks that re-embed these critiques within existing financial structures. Their radical potential is domesticated through disclosure regimes, investment frameworks, and de-risking narratives that are legible to finance rather than to society. If double materiality is the grammar through which responsibility is articulated, and just transition represents the promise of distributive justice, then the evolution of terms such as "green", "sustainable", and "climate-friendly" is the vocabulary through which these claims are legitimated and naturalized. The definitional politics of these terms is not an incidental matter of semantics but a central mechanism by which financialized climate governance reproduces itself while appearing to evolve. The next section examines the politics of meaning around these terms.

2.4. Contestation and Evolution of Sustainability Language

The conceptual vocabulary of climate policy has never been static, with climate narratives evolving since the 1970s and discourses changing over time. The terms "sustainable", "green", "climate-friendly", and "resilient" have journeyed through various institutions, sectors, and regions, gaining new meanings while discarding old ones. This semantic evolution is not just a minor discursive detail but a crucial element in shaping climate governance and finance (Kulaeva 2024).

The power of financial institutions, corporations, and governments to define what "sustainable" means carries significant implications for both the legitimacy of climate action and the allocation of resources. In this context, language is performative not merely descriptive. It is shaping the very framework of economic and political responses to ecological degradation. The "discursive construction of reality" becomes

a significant realm of power, where framing issues can influence whether action is taken or not standardized forms of communication can reinforce power dynamics by defining the terms of the debate and shaping how participants react within predetermined frameworks. Moreover, interpretations of scientific insights by political actors and the public, mediated by language, can legitimate or defend specific ways of life and policy choices regarding climate change (Hajer 2005).

The contemporary discourse on sustainability can be traced back to the Brundtland Report of 1987, which defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." At first glance, this definition seems to reconcile two seemingly opposed imperatives of the need for economic growth and the need for ecological stewardship.

However, this reconciliation has always been fragile. By anchoring sustainability to the language of "development", the Brundtland framework allowed institutions, particularly international financial institutions and development banks, to interpret sustainability in ways that align with continued growth and capital accumulation (Stern et al. 2014; Schenck 2008).

In subsequent decades, sustainable development became the dominant framework in global climate governance, in large part because its elasticity allowed it to accommodate competing interests, policy agendas, and institutional mandates. For some stakeholders, it signified ecological constraints, while for others, it represented business opportunities. Its flexibility facilitated widespread acceptance but also ensured ongoing debate, with critics arguing the term became "devoid of content" and a "soft" goal lacking a specific definition.

Indeed, sustainable development has been described as incoherent and riddled with contradictions (Schenck 2008). In practice, sustainable development frequently operated as a fig leaf term, permitting growth-oriented logics to persist while providing rhetorical support for environmental concerns. This ambiguity is particularly evident in the policies of multilateral development banks, which have consistently advocated for "green growth" as a strategy that reconciles ecological imperatives with the expansion of global markets (Gordon 2007).

As climate change has ascended the global agenda, the term “sustainable” has been accompanied by an abundance of related labels, including “green”, “climate-friendly”, “resilient”, “low-carbon”, and more recently, “net-zero aligned.” Each of these terms carries normative significance, yet none possesses a universally accepted definition. For instance, “green” may refer to anything from investments in renewable energy to marginal improvements in resource efficiency. Similarly, “resilience” can imply climate-proofing infrastructure in the Global North or shifting the burden of adaptation onto vulnerable populations in the Global South (Islam and Winkel 2017). This flexibility is not incidental. Ambiguous labels allow for political compromise as well as financial innovation. By broadening the semantic boundaries of what qualifies as “green” or “sustainable”, institutions create investable asset classes and expand the universe of climate-related financial products. The European Union's taxonomy of sustainable activities serves as an instructive example: despite its ambition to provide clarity, the inclusion of gas and nuclear as “green” has sparked controversy, illustrating how definitional battles are ultimately about power and legitimacy rather than neutral technical classification (Kedward et al. 2024).

The challenges in defining sustainability reflect the ongoing debates between weak and strong sustainability paradigms. The weak sustainability perspective posits that natural capital can be replaced with human or financial capital, as long as overall welfare is preserved. This view forms the basis of much mainstream climate finance, where investments in clean technology or efficiency improvements are considered sufficient compensation for ecological degradation. Conversely, the strong sustainability perspective contends that certain ecological thresholds are irreplaceable, necessitating that sustainability be assessed in terms of biophysical limits rather than monetary equivalents (Gómez-Baggethun et al. 2010). The weak-strong dichotomy parallels the debates on double materiality.

A weak interpretation centers the financial risks environmental changes pose to firms, while a strong interpretation underscores the intrinsic importance of ecological impacts, irrespective of their financial implications. Both debates highlight a fundamental tension on whether sustainability should be primarily framed in terms of risk management and financial stability, or in terms of ecological justice and systemic transformation.

The discourse surrounding sustainability terminology underscores notable geopolitical inequalities. In the Global North, expressions such as “green finance” and “climate-friendly investment” are frequently associated with prospects for innovation, competitiveness, and market expansion. In contrast, within the emerging and developing economies of the Global South, these terms are often linked to issues of conditionality, debt, and disproportionate vulnerability (Ghosh and Mguni 2025). Green finance typically manifests as foreign direct investment tied to global standards that may not correspond with local priorities. Similarly, the rhetoric of “resilience” often shifts the responsibility of adaptation onto communities already contending with structural inequalities, thereby transferring burdens rather than addressing fundamental causes (Bracking 2021). This divergence is evident in global negotiations. While actors from the North emphasize taxonomies, disclosure frameworks, and sustainable investment guidelines, those from the South advocate for concessional finance, debt relief, and recognition of historical responsibility (Cash and Swatuk 2022). Consequently, the language of sustainability becomes a contested arena for negotiation, where influential actors exploit semantic flexibility to legitimize their preferred policy pathways.

International Institutions have played a central role in codifying and institutionalizing sustainability language. By incorporating terms such as “green growth”, “climate resilience”, and “sustainable finance” into reports, frameworks, and lending practices, these organizations stabilize certain interpretations while marginalizing others (Kulaeva 2024). The rise of Environmental, Social, and Governance (ESG) investing exemplifies this dynamic. Initially, the “E” in ESG held promise for making progress on environmental issues for financial institutions and investors, intending to address environmental externalities.

However, in practice, its flexibility and unfixed definition, along with the lack of standardized methodologies for non-financial reports, have facilitated greenwashing and unrealistic expectations. This allows for a checklist approach where good performance on one issue, such as low-carbon product development, can strategically mask another, such as poor labor practices. Critics have even described ESG as a “feel-good scam” that enriches consultants and fund managers but does little for businesses, investors, or society (Pollman 2022).

What is presented as a technical exercise in measurement and classification is, in fact, a political process of boundary-setting. By defining "sustainable" in ways that are compatible with financial reporting and investment frameworks, institutions make decarbonization legible as an asset-allocation problem. This shifts implementation toward disclosure, benchmarks, and investable pipelines, which can sideline distributional and planning questions that are harder to price and securitize (Gough 2011).

To anchor this perspective in historical evidence, the following periodized part of this section examines the crystallization, transformation, and contestation of these terms over the decades. The evolution of sustainability terminology reflects an increasing global awareness of environmental risks and the progressive integration of these risks into economic governance and financial practices. From the 1980s to the present, concepts such as sustainable development, ecological modernization, green economy, resilience, net zero, ESG, climate finance, and just transition have been defined, expanded, and frequently contested by major institutions. This semantic trajectory has had substantial effects, as the language has not only described climate policy but has also facilitated the financialization of climate action through measurement regimes, taxonomies, market instruments, and risk frameworks.

The 1980s marked the establishment of the canonical definition of sustainable development through the Brundtland Commission's report, "Our Common Future", which conceptualized development as fulfilling current needs without jeopardizing the ability of future generations to meet their own needs. This report aimed to reconcile the arguments for limits to growth with those for poverty alleviation and economic expansion, thereby inviting both ecological and developmental interpretations (Sovacool and Linnér 2016). The concept of ecological modernization gained prominence simultaneously, suggesting that environmental protection and economic growth could be complementary through the integration of policies and technological advancements (Gough 2011). By 1988, global warming had become a significant issue on the international agenda, leading to the establishment of the Intergovernmental Panel on Climate Change (IPCC) to synthesize climate science for policymaking. During this period, early corporate social and environmental reporting began to emerge in certain sectors, with companies becoming aware of environmental concerns

and engaging in lobbying efforts around global environmental agreements (Weston 2013). The decade also witnessed the rise of the concept of a just transition within North American trade union activism, aimed at safeguarding workers in polluting industries facing stricter environmental standards.

In the 1990s, sustainable development and climate governance became more institutionalized. At the 1992 Rio Earth Summit, with participation of 171 national government delegations, many of which included heads of government, collectively endorsed the concept of sustainable development, albeit with varying interpretations of the term. The Conference endorsed Agenda 21, an extensive and detailed continuation of Brundtland's initiatives, which posited that global environmental challenges primarily stemmed from the excessive consumption and production patterns of wealthier nations.

However, it also advocated for increased economic growth across all nations to fund potential solutions. This summit led to the creation of the United Nations Framework Convention on Climate Change (UNFCCC) to facilitate the implementation of Agenda 21, with a particular focus on the roles of national and local governments. Sustainable development emerged as a universal discourse, encompassing both the Global North and South. Nevertheless, the wealthier nations eventually overlooked the global equity dimension that was central to Brundtland and her predecessors (Dryzek 2013).

The 1997 Kyoto Protocol set legal targets for developed countries and introduced flexible methods like emissions trading, the Clean Development Mechanism, and Joint Implementation. These methods turned emissions into tradable rights, starting global carbon markets (311 - 31.pdf.pdf). The World Business Council for Sustainable Development focused on corporate eco-efficiency and responsibility (Dey 2006). The Global Reporting Initiative started sustainability reporting by the end of the decade (Dimmelmeier 2023).

Sustainable development was often seen as integrating environmental concerns into existing policies without changing growth or consumption patterns. Insurance and financial sectors began to see climate risk, hinting at future partnerships between finance and climate policy. Overall, this decade marked the first decisive step in the financialization of climate action through market design.

During the 2000s, the discourse on climate change evolved from a primary focus on mitigation to include adaptation and systemic risk. Concepts such as green growth, green economy, and low carbon economy became prevalent, subsequently formalized by organizations such as UNEP, OECD, and the World Bank as strategies to harmonize economic development with diminished environmental risk (Death 2015). The Stern Review articulated the macroeconomic rationale for prompt action and underscored the costs associated with inaction, while also emphasizing the previously underrepresented aspect of adaptation (Stern 2006). The concept of resilience transitioned from environmental theory into climate policy, describing the ability of systems to absorb shocks and maintain functionality. The UNFCCC expanded the scope of climate finance to include public, private, and hybrid sources for both mitigation and adaptation.

During this period, green bonds and carbon-market activity expanded, supported by private-sector infrastructures for certification, verification, and standard-setting. At the same time, ESG became a practical organizing device for investors through ratings, indices, and disclosure templates that translated heterogeneous sustainability claims into comparable signals. Together, these infrastructures helped embed climate change in financial decision-making as a question of risk, eligibility, and portfolio allocation, with spillovers into policy discussions on disclosure and financial stability.

During the 2010s, climate policy and finance underwent significant consolidation. The Paris Agreement set temperature goals and promoted aligning financial flows with low greenhouse gas emissions and climate-resilient development. Simultaneously, the 2030 Agenda and the Sustainable Development Goals (SDGs) incorporated climate action into a broader sustainability framework (UNEP 2016). The Financial Stability Board launched the Task Force on Climate-related Financial Disclosures to standardize the reporting of climate-related risks and opportunities, while central banks and supervisors established the Network for Greening the Financial System to integrate climate considerations into prudential and monetary discussions (Jessie Guo et al. 2021). The European Union advanced an Action Plan on Sustainable Finance, developed a taxonomy, and later introduced a green bond standard (Luo et al. 2022). Net zero targets became the guiding horizon for corporate and financial commitments, and climate-resilient development redefined adaptation and mitigation within

developmental pathways. The planetary boundaries framework entered policy discussions as a reference to biophysical limits (Dryzek and Pickering 2019). The concept of a just transition gained prominence in policy debates as countries began incorporating it into national strategies, though implementation pathways remained unclear (Just transitions in national climate frameworks and climate policies - Experiences in alignment, planning and progress tracking.pdf). Concerns about greenwashing grew as Environmental, Social, and Governance (ESG) assets and sustainable debt markets expanded rapidly. The notion of double materiality gained traction, emphasizing the need to consider both financial risks from climate change and the real-world environmental impacts of firms and portfolios. Central banks and regulatory bodies began to assess climate-related risks to financial institutions, while the insurance sector documented increasing losses from climate-related catastrophes. This decade mainstreamed sustainable finance by embedding climate considerations into disclosure, risk assessment, and investment mandates across the financial system.

In the 2020s, vocabulary has evolved into infrastructure. Terms such as “green,” “sustainable,” “Paris-aligned,” “net zero,” and “transition” increasingly function as eligibility labels that condition access to finance rather than as loose descriptors. Taxonomies and disclosure standards operationalize these labels by specifying definitions, comparability requirements, and boundary rules. In regimes such as the EU taxonomy, “green” becomes a legally consequential category, assessed through screening criteria that combine technical thresholds with legal tests such as substantial contribution, do no significant harm, and minimum safeguards. In this sense, adjectives are converted into compliance criteria, and climate governance increasingly proceeds through category-making and definitional control.

The EU Taxonomy and the Corporate Sustainability Reporting Directive enforce a common language, requiring firms to communicate in terms of double materiality (Kammourieh and Vallée 2021b). Standard setters are moving towards global baselines that translate “sustainability” and “climate-related” into comparable reporting categories. Although sustainable finance is widespread, semantics remain flexible, encouraging these frameworks to attempt to fix vocabulary through definitions, metrics, and verifications. Codification Creating rules has led to many similar words and descriptions. Terms such as “net zero aligned”, “Paris aligned”,

"science-based", "nature positive", and "climate positive" are just additions to the semantic family of green. Each term is linked to a different benchmark and can lead to distinct loopholes. "Transition" has become the catchword for activities that cannot meet strict green criteria, creating a two-tier lexicon that distinguishes pure green from credible transition. "Shades of green" normalize gradations and allow financing for high-emitting sectors based on the promise of future improvement. In this context, the controversy has shifted from whether an activity is green to whether its plan is credible (Forsbacka 2021). "Greenwashing" has transitioned from activists' lexicon to a legal category, giving rise to anti-greenwashing guidance (Viganò 2023). Firms respond with a lexicon of credibility, integrity, verifiability, interim targets, capital expenditure plans, and phaseout schedules

The language of central banks and supervisors mirrors this evolution. The debate between greening finance for stability and financing green for policy support is a dispute over mandate semantics (Dikau and Volz 2021). Experiments in climate-related collateral, targeted lending, and system-wide stress testing teach markets how to speak risk-based alignment. The net effect is a decade in which words allocate, exclude, and discipline. "Green" narrows, "transition" widens, and "net zero" goals stretch across over a longer time period.

Over the past decades, terminology has functioned as a tool of governance. Terms such as "green", "sustainable" "resilient" have broadened the scope of investable assets, facilitated asset creation, and legitimized the conversion of environmental concerns into frameworks of financial risk and opportunity. By the same token, their flexibility has allowed for dilution of climate goals and strategic ambiguity, leading to criticism that financial expansion has been normalized at the expense of environmental integrity. The conceptual domain initiated by sustainable development has evolved into a complex lexicon that outlines the interaction between climate policy, markets, and states. This lexicon has facilitated financial innovation, generated new instruments, and mobilized capital. However, it has also sparked debates about meaning, adequacy, and justice. The shift from ecological modernization to taxonomies and central bank stress tests exemplifies the gradual integration of climate action within financial frameworks. The extent to which this integration accelerates concrete decarbonization or diffuses accountability depends on the specificity of

terms, institutional enforcement, real life decisions, rather than their rhetorical presence.

These temporal dynamics can be read as consistent with earlier discussions on semantic inflation, institutional boundary setting, and geopolitical asymmetries. The timeline is not intended to replace the central argument, but to illustrate how contested concepts can become stabilized through policy and market infrastructures over time. Across environmental economics and postcolonial literatures, one recurring concern is that sustainability discourse may shift emphasis away from distributive conflict by translating political questions into operational tasks, such as measurement, classification, and reporting.

In this framing, "sustainability" risks being treated primarily as a matter of metrics and accounting, which can reduce the visibility of disputes over power, inequality, and ecological limits. Relatedly, universalizing language may understate differentiated responsibilities and uneven vulnerabilities across countries and social groups. Climate justice actors, including movements from the Global South, have therefore raised concerns about the mainstreaming of terms such as "resilience" when it is used to prioritize adaptation narratives without comparable attention to reducing exposure, financing loss and damage, or addressing structural drivers of vulnerability.

Therefore language is not only descriptive, but can also be constitutive insofar as it enters rules, standards, and verification procedures. When climate objectives are increasingly articulated through "green finance" and "sustainable investment," governance often relies on taxonomies, disclosure standards, benchmarks, and assurance practices that shape what counts as credible, comparable, and financeable action. These devices can be useful for coordination, but they may also privilege comparability and risk-management logics, which can make distributional choices, public investment decisions, and questions of ownership less explicit in policy design. For the purposes of this thesis, the evolution and contestation of sustainability language is treated as part of the infrastructure of climate governance, because the interpretive flexibility of terms such as "sustainable," "green," and "resilient" has helped expand labeled instruments and integrate climate considerations into established financial practices. In turn, this linguistic flexibility has undermined the

magnitude of the climate crisis and diminished the urgency for transformative action. As this chapter has illustrated, the translation of climate issues into financial concepts extends beyond new metrics, disclosure frameworks, or instruments. It encompasses the power to define the language through which the crisis is comprehended.

In summary, the discussions in this chapter conceptualized financialization as a reorganization of economic coordination and public policy around financial logics, and it explained how climate governance becomes finance-legible through commodification, valuation practices, disclosure regimes, and verification infrastructures. It further argued that concepts such as double materiality, just transition, and sustainability labels are not only normative commitments but also operational categories whose meanings are shaped by the institutional settings in which they are implemented. Finally, it emphasized that these processes are uneven across the international system, because state capacity, fiscal space, and verification infrastructures condition whether countries set standards or adapt to externally defined ones. The theoretical framework developed here thus explains why financialized climate solutions are seen as “pragmatic” in fragmented conditions and why they are likely to perpetuate the asymmetries central to this thesis. The next chapter applies this framework to the evolution of multilateral climate agreements and the detailed legal and institutional architecture of Article 6 of the Paris Agreement.

CHAPTER 3

MARKETS' CLIMATE GOVERNANCE IN THE CONTEXT OF THE PARIS AGREEMENT ARTICLE 6

The previous chapter examined how financialization, double materiality and the evolving language of "green", "sustainable" and "net-zero" reconfigure the terrain on which climate policy is negotiated. It traced how regulators and standard setters, alongside central banks and supervisors, make climate governance finance-legible through the institutionalization of definitions and reporting rules such as taxonomies, disclosure standards, benchmarks, and supervisory practices so that climate objectives increasingly operate as measurable, comparable, and investable categories. Building on that analysis, this chapter reconstructs the evolution of markets as central institutions in climate governance and elucidates how this trajectory manifests the feedback loop between policy fragmentation and financialization identified in the thesis. It follows the transition from the early United Nations environmental regime and the Kyoto Protocol to the Paris Agreement design. The analysis reveals that this shift was a political response to distributional conflict, sovereignty concerns, and the reluctance of core states to accept enforceable obligations or large-scale redistribution.

In this context, market-based mechanisms and accounting infrastructures emerged as the most acceptable common denominator. The chapter then examines in detail how the legal and institutional architecture of Article 6 converts "mitigation outcomes" into transactable units, constructs registries and transparency frameworks to track them, and embeds financial logic at the core of cooperative approaches. By analyzing integrity rules, corresponding adjustments, baseline methodologies, and the design of non-market approaches, the chapter argues that Article 6 entrenches the Paris regime in a mode of governance that is formally universal yet substantively stratified. Capacity asymmetries, verification premiums, and currency hierarchies influence who can authorize, generate, certify, and trade units, and on what terms. In doing so, the

chapter demonstrates that the Paris architecture does not stand apart from the dynamics of financialization and dependency but is one of their key institutional sites.

3.1. The Evolution of Governance Paradigms

3.1.1. The Bretton Woods Institutions and United Nations Split

A central tension in modern climate governance lies in the institutional separation between macro-financial management (anchored in the Bretton Woods institutions) and environmental governance (located in the UN system), which has historically kept ecological damages outside core macroeconomic accounting and policy constraints. This misalignment is not accidental. It results from an institutional arrangement that entrusted the commanding heights of the global economy to the International Monetary Fund and the World Bank, while assigning social policy, humanitarian concerns, and environmental issues to the United Nations family. As a result, there is a structural division where finance and macroeconomic policy are shielded from ecological and social constraints, forcing environmental protection to contend with a pre-existing imperative for growth and capital accumulation (Weston 2013).

The Bretton Woods institutions, that is the World Bank and the International Monetary Fund (IMF), were established as custodians of the hard instruments of development, with mandates to oversee macroeconomic balances, conditionally provide foreign exchange, and finance development through a framework prioritizing stability, liquidity, and the restoration of growth. Decision-making within these institutions reflects weighted voting that entrenches the influence of the wealthiest creditor states.

The institutional message is clear, when macro financial stability is at stake, it takes precedence. States internalize this hierarchy, adjusting policies to satisfy market sentiment and official creditors, as access to external finance depends on it. In contrast, the UN system wields the soft instruments, convening, deliberating, and norm-setting on social development, human rights, and environmental protection. It does not control balance-of-payments lifelines or the terms of program lending. This asymmetry of tools results in an asymmetry of outcomes (Weston 2013; Yeldan 2009; Meirovich 2014). In practice, IMF and World Bank conditionality is organized around restoring growth and capital accumulation through expenditure cuts, revenue measures and

liberalization, with environmental goals treated as ancillary (FitzRoy and Papyrakis 2010).

While environmental objectives can be included, they do not replace the primary target function. Even when climate considerations are factored into project evaluations, the dominant criterion remains the project's financial viability in a global context where carbon is either undervalued or not valued at all. The political economy implications are well-documented in this context. Program design and development lending often align with the intensification of commodity exports, the construction of energy-intensive infrastructure, and financial liberalization, all of which heighten vulnerability to global price fluctuations. At the intersection of economic adjustment and ecological considerations, economic adjustment takes precedence (Weston 2013; Newell and Paterson 2010b).

The macro financial tools utilized by the Bretton Woods institutions have immediate and enforceable effects. Their programs can either suspend or restore market access, and their endorsements can trigger private capital inflows or cause capital flight (Carraro et al. 2018). In contrast, environmental governance within the United Nations system lacks similar leverage, relying instead on commitments, reporting, and moral persuasion, which leads to distributional effects. The conditionality and standard-setting preferred by creditors often compress demand in debtor economies, shifting the adjustment burden onto wage earners and public goods, while entrenching export profiles dependent on material and energy output. The literature consistently highlights a systemic tendency to transfer income from poorer to wealthier nations. Whether through interest rate differentials, value-chain positioning, or the terms embedded in stabilization and structural reforms, the balance favors capital-rich states. The UN's environmental discussions do not counteract these flows, as they do not govern the channels through which they occur (Weston 2013; Dryzek and Pickering 2019)

Mainstream economic theory views climate change as a negative externality. Practically, this means that the damages it causes are not included in the accounts crucial for program design and performance evaluation. National accounts mainly concentrate on marketed output, overlooking the depletion of natural assets and the

degradation of environmental sinks, both of which hold significant economic value. Similarly, firm-level accounts ignore costs that are not monetarily quantified. When environmental goods are either not priced or priced below their true social cost, private incentives tend to systematically encourage overexploitation. However, the mere introduction of pricing mechanisms does not inherently resolve this issue. Valuation remains inherently contestable, relying on disputed assumptions regarding damages, uncertainty, discounting, and distribution. Moreover, it may inadvertently normalize ecological harm by reframing ecological limits as tradable, payable costs. Consequently, there is a persistent underinvestment in natural capital and a continual mismeasurement of welfare. Addressing these omissions would likely reduce measured output in advanced economies, and even more so in regions with higher extractive intensity. Nonetheless, such adjustments rarely form the basis of the macro-financial conditionality that influences policy (Nordhaus 2021; Owen and Hanley 2004; Bolton et al. 2020; Sinnott-Armstrong and Howarth 2005).

The monetary and ecological hierarchies are two aspects of the same systemic order. States with reserve currencies secure inexpensive external financing and set standards that influence global portfolios. In contrast, peripheral states face higher funding costs, increased volatility, and a procyclical dependence on a limited export base. This monetary asymmetry is based on and perpetuates unequal flows of materials and energy from the periphery to the core. This arrangement supports what critical scholars describe as an imperial mode of living in the core, where high consumption levels are maintained by a disproportionate appropriation of global resources and sinks. Environmental regulations that challenge this pattern face the formidable barrier of macro-financial primacy. When ecological limits become pressing, they are reframed as issues of competitiveness or balance-of-payments rather than as binding constraints requiring strategic planning (Svartzman and Althouse 2022; Harlan et al. 2015).

The United Nations' principles of universality and one-country-one-vote confer legitimacy on climate norm-setting but do not create enforceable claims on capital or assured fiscal space for transition. Pledges and frameworks require financing, technology, and time, yet the mechanisms that determine these inputs reside elsewhere. As long as environmental commitments are negotiated in a forum lacking control over liquidity provision, crisis management, or large-scale development

finance, they remain subordinate to institutions that possess such control. The United Nations can coordinate and illuminate issues but cannot mandate the reallocation of risks and returns across sovereign balance sheets (Weston 2013; Arent et al. 2017; Viganò 2023).

Markets serve as the mechanism through which ecological objectives must be pursued, as the institutions governing the commanding heights delineate the feasible set. Instruments such as carbon pricing, green taxonomies, sustainability disclosures, and project-level safeguards are implemented to integrate environmental objectives into a macro-financial framework that was not originally designed for such purposes.

In instances where these tools conflict with economic growth revival or external-account repair, they are adjusted. Conversely, when they offer the potential to reconcile ecological concerns with economic accumulation, they are readily adopted. Therefore, this settlement directs climate policy towards instruments that convert nature into assets and risks comprehensible to financial systems, rather than towards planning that begins with biophysical limits and allocates financial resources accordingly.

3.1.2. The Kyoto Protocol: From Fixed Caps to Flexible Markets

The Kyoto Protocol, negotiated in 1997, marked the first attempt to enforce quantified limits on greenhouse gas emissions for developed countries. Its framework highlighted an inherent tension within market-based climate governance (Nordhaus 2021; Sinn 2012). The Kyoto Protocol marked the first major attempt to translate climate mitigation into legally binding, quantitative targets for industrialized countries. To oversee these commitments, the Marrakesh Accords of 2001 formally established a Compliance Committee consisting of Facilitative and Enforcement branches. Despite these provisions, the efficacy of the regime remained politically constrained because there was no supranational authority with the legal power to impose sanctions on unwilling sovereign states. Because participation was fundamentally voluntary under the Westphalian system, countries could evade penalties by simply withdrawing from the treaty. Its architecture was fundamentally shaped by the tension between establishing a fixed environmental goal (the cap logic) and minimizing costs (flexibility mechanisms), a compromise that ultimately contributed to the cap's

erosion. While a binding cap promised environmental certainty, flexibility mechanisms were designed to minimize costs. This combination resulted in a tradable regime whose legal structure suggested control, yet its market instruments offered numerous opportunities for dilution (Joseph E. Aldy et al. 2003; Owen and Hanley 2004; Stern 2015; Dryzek et al. 2011).

The Kyoto Protocol's quantitative approach was grounded in the cap-and-trade principle. Annex I countries committed to legally binding targets based on a 1990 baseline, collectively aiming to reduce emissions by 5.2 percent below that level during 2008-2012. These targets were individualized and converted into tradable units. The basket approach included six greenhouse gases in carbon dioxide equivalent, providing a comprehensive accounting framework and the potential for least-cost abatement wherever marginal costs were lowest (Luterbacher and Sprinz 2001; Nordhaus 2008; Leal-Arcas 2012).

Flexibility mechanisms were introduced to lower compliance costs and garner political support. Emissions Trading allowed Annex I governments to exchange portions of their assigned emissions allowances. Joint Implementation enabled Annex I countries to generate Emission Reduction Units through projects in other Annex I jurisdictions, particularly in economies in transition where low-cost opportunities were abundant. The Clean Development Mechanism facilitated the creation of Certified Emission Reductions from projects in non-Annex I countries, offering a dual mandate of compliance flexibility for the North and sustainable development for the South. Both Joint Implementation and the Clean Development Mechanism produced offsets outside the capped domain. The Protocol stipulated that the use of these mechanisms should supplement domestic action; however, the concept of supplementarity remained ambiguous, and the Marrakech Accords did not impose binding quantitative limits (Chen 2025; Luterbacher and Sprinz 2001).

The integrity of the cap was compromised through three channels inherent in the regime. First, baseline selection and allocation resulted in a structural surplus. Using 1990 as the baseline year generated substantial volumes of so-called “hot air” in economies in transition, notably Russia and Ukraine, whose emissions had significantly declined after the early 1990s. These allowances did not represent actual

abatement and could be sold to countries facing binding constraints, enabling compliance without new reductions. Modeling and market experience indicated that the resulting permit supply, relative to diminished demand, could drive the effective carbon price toward zero (Stern 2015; Owen and Hanley 2004).

Second, the mechanisms for participation and enforcement were insufficient in maintaining scarcity or credibility. The United States did not ratify the treaty, effectively removing the largest potential source of demand from the market. Major developing emitters, such as China and India, were not subject to quantified caps under the differentiation principle of the Kyoto Protocol, a condition the United States had previously identified as necessary for domestic ratification. The compliance regime lacked adequate enforcement power. Canada's withdrawal in 2011, despite being significantly above its target, underscored the ineffectiveness of penalties and the limited deterrent effect of prospective make-good obligations (Dryzek et al. 2011; Stern 2015; Gardiner 2011).

Third, the offset complex was beset by persistent integrity issues. Additionality was central to the system but proved challenging to establish against counterfactual baselines. Evidence accumulated indicating that a substantial portion of CDM and JI volumes were non-additional or over-credited. Estimates suggested that between 40 and 70 percent of CDM projects were fraudulent or non-additional. A 2016 assessment found that 85 percent of reviewed CDM projects, and a similar proportion of CERs available between 2013 and 2020, had a low likelihood of being additional. JI performance was also problematic, with approximately three-quarters of first-period offsets failing additionality tests, resulting in several hundred million tons of higher global emissions than reported. When non-additional credits are used to meet a cap, global emissions increase in absolute terms (Cash and Swatuk 2022; Owen and Hanley 2004; Weston, 2014).

Domestic trading systems based on Kyoto accounting principles intensified these vulnerabilities. During its initial phase, the European Union Emissions Trading System faced over-allocation. The practice of free allocation, relying on inflated or self-reported baselines, led to an excess of allowances. As a result, prices dropped from double-digit euro levels to nearly zero in 2007. Subsequent phases struggled to absorb

surpluses and manage demand shocks caused by macroeconomic downturns while grandfathering deep-seated vested interests and maintained a design that favored accommodation over substantial emissions reductions (Dryzek et al. 2011; Stern 2015).

Thus, the Kyoto Protocol institutionalized a hybrid approach. While the language of caps and binding commitments suggested control, the market mechanisms intended to reduce costs resulted in oversupply, weak demand, and an offset pipeline that often failed to achieve genuine reductions. The outcome was a regime that priced a significant amount of paper carbon while leaving the actual emissions trajectory largely unchanged. This result aligns with the broader pattern outlined in this chapter. Market instruments were positioned as governance tools, yet their operational logic perpetuated loopholes, deferred obligations, and normalized compliance without fostering transformation (Weston 2013).

3.1.3. From Regulation to "Transparency as Policy" During 2008-2015

The 2008 global financial crisis did not alter the macro-financial hierarchy described in the previous section, but it did change how that hierarchy was defended and how climate change could be articulated within it. The crisis challenged the prevailing belief in market self-regulation and brought financial stability to the forefront of global economic management. In response, new entities like the restructured Financial Stability Board (FSB) and the G20 Leaders' process were established to prevent another systemic collapse.

Within this reconfigured framework, climate change was increasingly framed less as an ethical or justice claim and more as a macro-financial risk, including threats to financial stability and the prospect of stranded assets. This reframing enabled climate issues to enter the core agenda of financial institutions through mandate-consistent categories of risk management, without requiring a shift in their underlying commitments to growth-oriented policy paradigms. This reframing was consistent with the traditional division of responsibilities between the Bretton Woods institutions and the United Nations system. As discussed in section 3.1.1, the Bretton Woods institutions remained anchored in a mandate to restore growth and capital accumulation. Following the 2008 financial crisis, the hierarchical relationship

between macro-finance and ecology largely remained intact. However, the language that sustained this hierarchy evolved. In United Nations climate negotiations, climate change was framed in terms of historical responsibility and differentiated obligations. Conversely, within the macro-financial sector, regulators and market participants increasingly conceptualized climate change as a matter of "financial risk" and "materiality," thereby rendering it manageable through mechanisms such as disclosure, stress testing, and portfolio reallocation. This redefinition holds significant implications for international climate governance, as it shifts the focus from distributive negotiations over obligations to the technocratic management of risk, favoring market-compatible solutions and limiting the scope for justice-oriented claims (Dryzek et al. 2011; Viganò 2023; Epstein 2018).

During the same period, the regulatory response to the financial crisis shifted from direct control over credit distribution to a focus on managing information. Post-crisis reforms improved capital and liquidity standards. However, the preferred approach to emerging challenges like climate change was through disclosure. This era marked the beginning of “transparency as policy”. Initiatives such as ESG reporting, carbon disclosure platforms, and FSB’s Task Force on Climate-Related Financial Disclosures (TCFD) created a framework that encouraged, and sometimes required, companies to disclose their exposures, strategies, and scenario analyses. The underlying belief was that better information would allow markets to accurately assess climate risk, hold underperformers accountable, and reward leaders, without the need for binding emissions limits or direct public planning of investment flows (Bolton et al. 2020; Dimmelmeier 2023).

This transparency agenda reinforces the macro-financial hierarchy established at Bretton Woods. Institutions responsible for crisis lending, liquidity provision, and macro-prudential standards define what constitutes relevant risk information and its reporting requirements. States adopt this hierarchy because their access to external finance and favorable market sentiment depends on it. In contrast, the United Nations' climate bodies continue to use soft tools: universal membership, one-country-one-vote procedures, and normative frameworks on responsibility and equity. These principles lend legitimacy to climate norms but do not create enforceable claims on capital or ensure fiscal space for low-carbon transitions. They do not dictate the distribution of

risks and losses across sovereign balance sheets (Dryzek et al. 2011; Bolton et al. 2020).

Disclosure requirements and market-based solutions are layered onto accounting frameworks that still treat environmental damage as an externality. Even when climate-related metrics are added, they do not alter the fact that national and firm-level accounts undervalue natural capital and systematically mismeasure welfare. Correcting these omissions would significantly reduce measured output in advanced economies and have an even more pronounced effect in resource-intensive regions. However, such corrections do not form the basis of IMF conditionality, World Bank lending, or G20 surveillance (FitzRoy and Papyrakis 2010; Sullivan 2018).

Between 2008 and 2015, climate governance became increasingly integrated into macro-financial oversight without altering its fundamental priorities. Carbon pricing schemes, green bond principles, sustainability taxonomies, and disclosure standards promised to align ecological objectives with capital accumulation, rather than subordinating finance to biophysical limits. This was the context in which the Paris Agreement was negotiated (Dryzek et al. 2011; Bolton et al. 2020).

Taken together, these trajectories explain why the Paris regime could only emerge as a disclosure-led, flexibility-first arrangement. The language of "material risk", "market signals" and "price-based instruments" that dominates contemporary climate finance does not appear out of nowhere; it consolidates a long history in which macro-financial priorities have systematically overruled ecological constraints.

The following section illustrates how the shift to Nationally Determined Contributions and voluntary cooperation under Article 6 built upon this post-crisis settlement, embedding flexibility and transparency at the heart of the climate regime while leaving the macro-financial hierarchy unchanged (Dryzek and Pickering 2019).

3.2. The Turn to Flexibility and NDCs Without Binding Caps

Building on this institutional history, this section analyses the Paris Agreement's choice of nationally determined contributions as a constitutional response to deadlock. It shows how flexibility redefines scarcity, shifts discipline from courtsxs to

spreadsheets, and creates the conditions under which the labels examined in the previous chapter become the primary currency of climate credibility.

3.2.1. Why States Chose Flexibility

The architecture of the Paris Agreement institutionalized flexibility as a strategic response to the limitations of a fixed-cap model. Negotiators recognized that a universal regime could not rely on uniform constraints, given the diverse development trajectories, energy compositions, institutional capacities, and political timelines of different countries. Nationally Determined Contributions (NDCs) were designed to accommodate this diversity by restoring policy discretion to national governments while maintaining the appearance of increasing ambition. The regime's commitment is procedural rather than quantitative. Parties are required to prepare, communicate, and maintain an NDC, updating it periodically. However, the content of the pledge is determined nationally, and the penalty for non-compliance is reputational rather than legal. This governance structure seems to maximize inclusivity and continuity of participation, even when domestic fiscal and political constraints are significant (Dryzek et al. 2011; Stua 2017; European Parliament 2018).

Sovereignty and heterogeneity are primary factors for this approach. NDCs enable governments to tailor targets and policy instruments to domestic constraints in the energy system, production structure, and administrative capacity. The formal language of “highest possible ambition” and “progression” reinforces an expectation of upward movement but does not impose a legally binding obligation to achieve a specific level of abatement by a specific year. This asymmetry is deliberate, allowing policymakers to navigate electoral cycles, sectoral veto players, and macroeconomic shocks without risking treaty violations. Flexibility also aligns with the enduring principle of common but differentiated responsibilities and respective capabilities. By permitting countries to articulate pledges based on national circumstances, the regime acknowledges uneven historical responsibility and state capacity, thereby reducing the entry cost for states whose mitigation strategies must be sequenced with poverty reduction, energy security, and industrial policy (Bel and Teixidó 2020; Schneider and La Hoz Theuer 2019; Edmonds et al. 2021). This design decision also addresses fiscal and macro-prudential realities. Binding caps necessitate costly transition plans that demand

sustained public expenditures and quasi-irrevocable commitments to infrastructure, regulation, and balance-sheet support. Many sovereign entities struggle to credibly pre-commit to these paths when debt burdens are substantial, inflation risks are prominent, and growth prospects are weak. The budgetary arithmetic of rapid decarbonization is particularly challenging for emerging and developing economies that face multiple development needs and rely on imported capital and technology (Bel and Teixidó 2020; Schneider and La Hoz Theuer 2019; Zhang 2009).

Flexibility reduces the likelihood that climate commitments become triggers for fiscal stress. It allows for cost-containment mechanisms and target forms that provide certainty on marginal cost at the expense of certainty on environmental quantity. Indexed or intensity targets adjust with the economic cycle, thereby mitigating the risk that an economic downturn or an energy price shock leads a country into non-compliance. Where unconditional ambition is unaffordable, conditional pledges linked to support flows convert part of the mitigation plan into a contingent liability on external finance rather than an immediate charge to the sovereign balance sheet (Bel and Teixidó 2020; Fuessler et al. 2019).

Coalition maintenance reinforced these choices. A uniform cap would have fractured the coalition by re-inscribing the Kyoto divide and by making participation contingent on domestic ratification constraints in major economies. The NDC model reduces the legal burden to broaden participation. It shifts pressure away from courts and toward disclosure regimes, peer scrutiny, and market intermediaries. Compliance becomes a matter of credible reporting, national implementation, and the willingness of investors, auditors, and verification platforms to reward or penalize trajectories. This relocation was not an afterthought; it was the cost of bringing all major emitters into a single procedural framework without demanding identical instruments or identical levels of effort ex ante (Dryzek and Pickering 2019; Joseph E. Aldy et al. 2003; Stua et al. 2022).

Flexibility, therefore, enhances political feasibility rather than guaranteeing environmental certainty. It replaces enforceable scarcity with a dynamic process that emphasizes participation and relies on iterative adjustments. In practice, this approach preserves fiscal and policy flexibility for sovereign entities and aids in coalition

management, while shifting the focus of discipline to measurement, disclosure, and third-party evaluation. The following section illustrates how this shift re-politicizes baselines and metrics, concentrating power in the hands of verifiers, rating systems, and platforms. This has implications for ambition inflation, monitoring burdens, and a tendency to seek the most plausible label rather than the most stringent outcome (Blum and Lövbrand 2019; Schneider and La Hoz Theuer 2019; Bel and Teixidó 2020).

3.2.2. How Flexibility Changes Incentives

Eliminating enforceable scarcity and penalties transformed their nature instead of eradicating the relevant constraints. Rigid compliance was replaced by more flexible mechanisms such as disclosure, benchmarking, and market-based credibility. Delivery systems become more flexible, intermediated, and easier to reconfigure in response to domestic political or macroeconomic constraints. Three incentive shifts ensue. In a pledge-and-review framework, targets gravitate towards metrics that are effective in public discourse and resistant to ex post falsification. Emissions intensity, relative baselines, and conditional tiers enable governments to assert increasing ambition while retaining maneuverability (Blum and Lövbrand 2019; Bel and Teixidó 2020; Melnick and Smith 2025).

The conditional component of many Nationally Determined Contributions (NDCs) serves as a release mechanism during shocks and as a bargaining tool in climate-finance negotiations. It protects budgets when revenue declines or borrowing costs increase, and it transforms higher ambition into a contingent promise that can be exchanged for support (Bel and Teixidó 2020).

When binding caps are weak or absent, the binding constraint often moves to classification. Taxonomy alignment, “green/transition/Paris-aligned” labels, and Article 6 authorizations become signals used by regulators, investors, and intermediaries to sort assets and borrowers, influencing funding conditions and the cost of capital. Issuers and intermediaries respond by optimizing to pass screens rather than reducing absolute emissions. In practice, credibility is increasingly mediated by private verifiers and rating providers, a theme developed in this thesis later (Ahonen et al. 2022; Stua 2017).

3.2.3. Re-Politicalization of Measurement and Recentralization of Gatekeeping

Flexibility does not eliminate control. Instead, it shifts it to the domain of measurement. The transparency framework enhances the spread of indicators, baselines, and sector templates across various disclosure regimes, taxonomies, and voluntary standards. For administrations with limited capacity, this leads to reporting fatigue and diverts scarce technical personnel from implementation to compliance. In practice, those who design spreadsheets, templates, and platforms effectively set the agenda. Methodological decisions regarding baselines, additionality, and attribution incorporate contestable assumptions that can significantly influence outcomes. When verification relies on self-reported data and accounting rules remain fragmented, the likelihood of over-reporting climate relevance increases. The more complex the dashboard, the greater the advantage for entities with robust data infrastructure and consulting support. Power shifts from legislators and line ministries to auditors, ratings providers, and platform operators who determine which fields are significant and how they are populated (Stua 2017; Oh 2023; Blum and Lövbrand 2019; Obergassel 2016).

In a disclosure-led regime, the main challenge shifts from negotiating fixed quotas to negotiating the criteria themselves. The entity that defines “baseline”, “additionality” and “Paris-aligned” also determines value, eligibility, and ultimately the distribution of rents. The current framework translates climate performance into a hierarchy of metrics and scenarios, a process that is inherently non-neutral. Technical decisions about what to measure, how to aggregate, and which counterfactual to adopt embed distributive claims while appearing purely methodological. As the legal significance of quotas diminishes, the contest over measurement becomes the principal political arena through which scarcity, credit, and legitimacy are allocated (Stua 2017; Blum and Lövbrand 2019; Schneider and La Hoz Theuer 2019).

The same emissions trajectory can appear compliant or non-compliant depending on the accounting framework. Transitioning from production-based to consumption-based inventories shifts responsibility across borders without altering physical decarbonization. Opting for net rather than gross measures encourages reliance on sinks and credits, whose integrity depends on additionality tests that are intrinsically counterfactual. Selecting sectoral coverage and system boundaries alters the burden

distribution within an economy. Even when a single headline number is agreed upon, conversion rules perform the critical work. Global Warming Potentials rely on judgments about time horizons and substitution that necessarily favor certain gases and abatement pathways over others (Joseph E. Aldy et al. 2003; Kreibich and Obergassel 2018a; Dziwok and Jäger 2024; Calvin et al. 2023c).

A market-driven climate regime requires shared classificatory languages that translate heterogeneous activities into comparable units of risk and opportunity. Consultancies, accounting networks, rating agencies and data vendors increasingly supply these languages through taxonomies, scenarios and reporting templates that define what counts as material, comparable or Paris-aligned.

As these frameworks are embedded in disclosure rules, investment mandates and prudential guidance, their authors acquire de facto agenda-setting power in climate governance without a corresponding expansion of public accountability (Blum and Lövbrand 2019; Demekas and Grippa 2021; Stern et al. 2014).

3.2.4. Consequences for Delivery and Equity

Under the post-Paris NDC regime, flexibility has produced a market-regulated climate constitution. Scarcity is less anchored in negotiated caps and more mediated through eligibility for labels, indices, collateral frameworks, and accounting rules. Compliance is operationalized through reporting, verification, and methodological gatekeeping rather than penalty-backed adjudication, and distribution is shaped by opaque technical choices rather than explicit burden-sharing agreements.

This does not depoliticize climate governance. It relocates politics into expert infrastructures that are difficult to contest democratically. As enforcement shifts from legal frameworks to informational paradigms, private and para-public intermediaries such as standard-setters, auditors/validators, ratings providers, index compilers, and taxonomy designers emerge as de facto governors. In this setting, the integrity of baselines, the rigor of additionality, the comparability of ratings and the accountability of taxonomies become decisive levers through which value, risk and responsibility are allocated across sectors and between the Global North and South (Dryzek et al. 2011; Blum and Lövbrand 2019; Viganò 2023).

This shift is not accidental. Since Paris mechanism relies on nationally determined commitments and largely procedural oversight, it delegates delivery to domestic policy packages and to transnational implementation channels, including climate finance, disclosure, and carbon market infrastructures. As a result, states remain the primary agents responsible for delivery, but the assessment and disciplining of credibility increasingly runs through intermediaries that translate pledges into measurable, comparable, and investable categories.

The post-Paris framework enhances universal participation and transparency, while significantly reducing reliance on negotiated, penalty-backed scarcity. Parties to the Agreement maintain control over ambition and timing through the design of Nationally Determined Contributions (NDCs), with the regime's oversight being primarily procedural, focusing on reporting and review. This approach broadens diplomatic inclusivity but also shifts the responsibility for credibility from externally enforced quantities to domestic implementation by governments and the technical systems of reporting, accounting, and review that make progress discernible. Equity is compromised when verification authority, data infrastructures, and standard-setting power are concentrated in major financial centers, as these entities influence which evidence is deemed credible and which claims become financeable. In contexts where NDCs are weakly enforceable and domestic political constraints are significant, governments may rationally prioritize signaling over costly implementation, resulting in a persistent gap between stated objectives and the concrete policy measures necessary for decarbonization (Stua 2017; Michaelowa et al. 2019; Clive L. Spash 2016).

This delivery gap is amplified once credibility becomes a precondition for access to finance and market participation. Intensity targets, non-binding sectoral pledges, or distant net-zero targets are easily communicated but lack efficacy as commitment mechanisms. In contrast, measures such as taxes, bans, performance standards, and public investment programs necessitate administrative capacity, legislative effort, and fiscal resources. The regime design tends to favor the former and permits the postponement of the latter. This framework also incentivizes alignment in presentation over policy coherence. Pledges can be revised or reframed with often limited reputational consequences, while implementation must navigate veto points across

ministries, overlapping mandates, and budgetary constraints. Capacity limitations exacerbate this situation. In contexts where staffing, data systems, and interagency coordination are inadequate, authorities are drawn into cyclical reporting and event-driven preparedness at the expense of long-term transition planning. The result is a delivery risk inherent in the regime design rather than an anomaly (Stern 2015; Melnick and Smith 2025; Falkner 2016).

As fixed caps evolve into disclosure, the main scarcity shifts to the credibility of labels. Fragmented taxonomies and transition classifications create opportunities for compliance through narrative. Definitions of terms like green, sustainable, or transition-aligned vary across jurisdictions and market platforms. This diversity complicates comparisons and encourages optimization to meet criteria rather than reduce absolute emissions. When the requirement is to show a direction of progress, incremental adjustments may be presented as alignment, even if overall trajectories remain misaligned with budgetary goals. This logic also applies to financial instruments (Minas 2022; Jessie Guo et al. 2021).

The market-regulated regime is not neutral to initial conditions. Data infrastructures, MRV systems, modeling expertise, and legal services are concentrated in the core economies. Peripheral issuers must purchase access to this infrastructure through audits, verifications, and external reviews. This verification premium increases transaction costs and acts as a barrier to participation. Where public administrations already face limited capacity, the proliferation of templates and indicators leads to reporting fatigue and shifts agenda-setting to those who design the spreadsheets and platforms. Financing terms perpetuate these asymmetries (Kunreuther et al. 2015; Okereke et al. 2009; Samuwai and Hills 2018).

Disclosure-led risk assessment transmits climate and policy shocks into spreads and collateral values. Transition-exposed firms and sovereigns encounter tighter financing conditions precisely when investment should accelerate. In the Global South, currency hierarchy, shallow capital markets, and exposure to volatile inflows exacerbate this effect. Adaptation projects that yield public and humanitarian benefits struggle to meet private return thresholds, yet these projects are of the highest urgency. Where concessional funding is scarce and non-concessional debt fills the gap, debt

vulnerabilities deepen, and fiscal space for transition narrows. Distributional effects extend beyond prices into participation (Cash and Swatuk 2022; Monasterolo 2020; Gasparini and Tufano 2023).

In this framework, justice is not only about who pays and who benefits, but also about who defines the evidence that structures these decisions. Methodological choices can profoundly impact overall outcomes. Equity weighting schemes, baseline conventions, and attribution windows can alter the assessed effort and need by a significant margin. Procedural justice is compromised when these decisions occur within private or semi-public infrastructures that offer limited representation for vulnerable groups. Distributive justice is weakened when eligibility for green labels and collateral frameworks affects access to capital more than historical responsibility or adaptive need. As a result, flexibility leads to a market-regulated climate constitution, where distributive effects depend on opaque methodologies rather than negotiated quotas. Delivery relies on the credibility economy of labels, opinions, and indices. Equity hinges on access to verification infrastructures and the ability to navigate evolving taxonomic screens. Together, these dynamics widen the gap between promise and performance and reinforce the Core-periphery divide under the guise of transparency (Luterbacher and Sprinz 2001; Blum and Lövbrand 2019; Neumann 2023; Bracking 2021).

3.2.5. How Flexibility Creates Loopholes

The flexible, disclosure-led regime opens multiple avenues for expressing ambition without delivering commensurate mitigation. These mechanisms do not exhaust the full set of loopholes. However, they capture recurring ways in which Parties and relevant intermediaries can preserve room for maneuver within the Paris architecture. The post-Kyoto regime expands participation and relies heavily on procedural obligations, transparency, and nationally determined pledges, which creates scope for ambitious commitments on paper while leaving delivery contingent on domestic political costs, administrative capacity, and the discipline of reputational and market responses. The five mechanisms below specify where delivery can fail across three sites. First is the regime design choices that privilege procedural oversight over enforceable scarcity. Second is Parties' domestic political incentives and capacity

constraints, and the third one is the credibility infrastructures, that is MRV providers, standards and taxonomy designers, ratings/index firms, verifiers, registries, and finance actors that translate pledges into investable classifications (European Parliament 2018; Harrison and Sundstrom 2007).

Conditional elements within nationally determined contributions enable countries to set ambitious goals while linking the most challenging actions to future financial, technological, or capacity-building support, thus preserving political flexibility. In situations where funding conditions, eligibility criteria, and timelines are undefined, conditional tranches act as budgetary escape mechanisms and negotiation tools. The risk of non-delivery shifts from the pledging government to donors, MDBs, technology holders, and private firms, whose commitments are not synchronized and are weakly enforceable. Similarly, technology transfer remains discretionary, with intellectual property concentration and selective dissemination placing the initiative in the hands of firms and agencies in advanced economies. Historical experiences with project-based cooperation have shown that promised transfers often fail to materialize at scale. The overall effect is one of postponement, as governments claim alignment in the present while embedding implementation dependencies on future external resources, which are uncertain in terms of timing, cost, and content (Carraro et al. 2018; UNEP 2016; Worker and Palmer 2021).

Flexibility in applying metrics allows for target adjustments without changing physical outcomes. Governments can choose intensity targets over absolute caps supports expansion plans by allowing total emissions to rise with output while simultaneously enhancing recorded performance. Production-based inventories allow governments in consuming countries to report domestic improvements even as imported, embodied emissions increase. Shifting from economy-wide to sectoral or partial-gas coverage lets governments highlight success in preferred areas, while high-impact sources remain insufficiently constrained. Policymakers often favor renewable support schemes that distribute visible benefits to constituencies and avoid direct conflicts with fossil fuel interests. These instruments can boost recorded ambition and mobilize allies, yet they may leave overall emissions trajectories largely unchanged if the underlying carbon price signal and absolute quantity constraints remain weak (Joseph E. Aldy et al. 2003; Arent et al. 2017).

Once credibility affects eligibility for finance, procurement, and market access, the governance problem shifts from what is pledged to how claims are classified, verified, and priced. Within a regulatory framework that prioritizes disclosure and market validation, credibility is shaped by taxonomies, ratings, second-party opinions, and registries.

There is a notable scarcity of favorable labels. The proliferation of standards and voluntary principles creates opportunities to adopt permissive definitions. Fragmented methodologies, contested thresholds, and transition categories allow for incremental changes to qualify for preferential treatment. Issuers focus on meeting screening criteria rather than reducing absolute emissions (Demekas and Grippa 2021; Oliver Yébenes 2024).

Offsetting translates compliance into a financial transaction. When verifiers, registries, and host-country authorization processes fail to ensure additionality and avoid double claiming, recorded compliance can coincide with increased global emissions (UNEP 2016). These mechanisms follow logically from the constitutional choice to prioritize participation and disclosure over binding caps and penalties. Conditionality defers action to an indeterminate future. Metric switching reframes outcomes without reducing the aggregate budget. Baseline engineering capitalizes on available accounting flexibility. Label arbitrage channels funds toward the easiest classifications rather than the most challenging decarbonization efforts. Offset substitution transforms reduction efforts into credit acquisitions, sustaining domestic levels. The cumulative effect is a delivery system that may appear ambitious in reports while structural emissions decline too slowly, with distributional consequences that mirror pre-existing core-periphery asymmetries (Arent et al. 2017; Nordhaus 2014; 2021).

The result is a regime in which states can be incentivized to prioritize narratives, metrics, and eligibility for favorable classifications alongside, and sometimes ahead of, stringent absolute emissions pathways. Flexibility does not eliminate politics. It repositions distributive conflict into the technical arenas of baselines, indicators, taxonomies, conditionality, and crediting rules, which are arenas that later sections connect to the financialization of climate governance. Article 6 is where these

dynamics are formalized, as mitigation outcomes are converted into tradable units embedded in a measurement- and verification-intensive architecture.

3.3. Legal and Institutional Architecture of Article 6

The Paris Agreement embeds flexibility in a system of pledges, review, and disclosure that is binding in process rather than in outcomes. This reformulation reduced the entry costs of universal participation by allowing Parties to calibrate ambition to heterogeneous energy systems, developmental priorities, and fiscal constraints. It also reorients governance away from negotiated quotas backed by penalties and toward the production, reporting, and assessment of information on targets, policies, and emissions trajectories. In practice, this architecture tends to sustain broader participation by leaving governments greater discretion over the timing, sequencing, and domestic distribution of mitigation measures, while increasing expectations around transparency and review (Stern 2015; European Parliament 2018).

This approach is not neutral. It shifts the conflict locus from headline targets to the measurement choices that determine perceived ambition. This shift re-politicizes accounting, as decisions between gross and net emissions, production and consumption measures, and narrow or broad sectoral coverage become decisive political acts. These decisions allocate distribution and responsibility without explicitly naming either.

Article 6 internationalizes these logics. It establishes cooperative approaches and a UNFCCC-governed mechanism that facilitates the transfer and use of mitigation outcomes across borders. Corresponding adjustments are required to prevent double counting. The promise is lower aggregate cost and the prospect of higher ambition.

The risk is familiar. If baselines, additionality tests, and accounting conventions are permissive, the mechanism will replicate the pathologies of previous offset regimes on a larger scale. Contests over the share of proceeds for adaptation and the scope of adjustments are not mere technical noise. They are distributional conflicts over who pays, who sells, and who determines the rules of tradable compliance (Wainwright and Mann 2018; Clapp et al. 2018).

3.3.1. Article 6 in the Paris Framework

Article 6 of the Paris Agreement establishes the legal framework for voluntary collaboration in implementing Nationally Determined Contributions (NDCs). It provides a comprehensive structure that enables Parties to engage in international carbon market mechanisms and non-market strategies, extending beyond purely domestic efforts. This collaboration is specifically intended to support the achievement of the long-term temperature goals outlined in Article 2, recognizing the collective inadequacy of current NDCs. Article 6 has three interconnected components. Article 6.2 facilitates cooperative approaches involving internationally transferred mitigation outcomes. Article 6.4 establishes a mechanism under the authority of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement. Article 6.8 emphasizes non-market approaches. Together, these provisions delineate the permissible methods for generating, transferring, and utilizing mitigation outcomes within and in relation to the NDC framework (Stua et al. 2022; Elidrisy 2024).

The introductory section of Article 6 outlines three overarching goals intended to guide all cooperation under these provisions. The first goal is to enable greater ambition in mitigation and adaptation efforts. This objective is often highlighted as a key distinction from the Kyoto Protocol, where project and market mechanisms were primarily justified by reducing compliance costs for a select group of industrialized nations. Under the Paris Agreement, all Parties have NDCs, and the official justification is no longer merely cost reduction but an increase in overall effort. Greater ambition is understood as a scenario where cooperation results in lower global emissions than would have occurred if Parties had pursued their NDCs solely through domestic actions. In theory, reducing the marginal cost of abatement through international cooperation should make it politically easier for governments to propose more ambitious NDCs in future cycles. Cooperation can either enable higher ambition or create “hot air”, depending on NDC design and enforcement (Obergassel 2016; Fuessler et al. 2019; Edmonds et al. 2021; Kreibich and Obergassel 2018a).

The second objective focuses on promoting sustainable development, which is not just an additional consideration but is consistently emphasized in Article 6. The mechanism established under Article 6.4 is explicitly defined with a dual purpose: (i)

to contribute to the mitigation of greenhouse gas emissions and (ii) to support sustainable development. The broader text of the Paris Agreement also underscores the intrinsic link between sustainable development and climate action. In practice, this objective is politically contested (Stua 2017; Olsen et al. 2018).

The third objective is the protection of environmental integrity. In the context of market mechanisms, environmental integrity implies that international transfers should not result in higher global emissions than if Nationally Determined Contributions (NDCs) had been achieved through domestic action alone. This depends on whether the units generated and traded represent additional and accurately quantified emission reductions (Stua et al. 2022).

Article 6 is embedded entirely within the logic of Nationally Determined Contributions. It does not create new, separate ceilings but provides instruments for reallocating mitigation outcomes across Parties against the backdrop of their self-determined pledges. This is a fundamental difference from the Kyoto regime. All Parties have now pledged to engage in mitigation efforts. However, these commitments vary significantly in form, scope, and rigor. Some are defined as absolute economy-wide limits or budgets, while others are set as targets for emissions intensity, deviations from business-as-usual scenarios, sector-specific coverage, or a mix of mitigation and adaptation elements. The timeframes and base years also differ. Under the Kyoto Protocol, flexibility mechanisms were nested within a quantified cap for Annex I Parties, so markets operated inside an agreed scarcity constraint. Under the Paris Agreement, cooperative approaches are nested within heterogeneous, self-determined NDCs without a shared ceiling, so the same market instruments now function in an environment where scarcity is endogenous to national pledges (Minas 2022; United Nations 2015; Obergassel 2016; Weston, Del 2014; Mathur and Mohan 2015).

Consequently, Article 6 is expected to function in a highly diverse environment, directly affecting accounting. To ensure that mitigation outcomes can be transferred internationally without increasing global emissions, accounting rules must be robust enough to track these movements across various NDC formats. Proposals to limit the use of Article 6.2 to Parties with absolute, economy-wide targets reflect concerns that,

without such restrictions, the system may not prevent unit inflation and inconsistent treatment of efforts. The political compromise in the Paris outcome defers these issues to future guidance and practice, yet the structural tension remains (Schneider and La Hoz Theuer 2019; United Nations 2015).

The Paris Agreement's ambition mechanism requires Parties to communicate successive NDCs that represent a progression beyond the current one and reflect their highest possible ambition. A five-year cycle of communication and a periodic global stock take are designed to align domestic pledges with the temperature goals over time. Article 6 is formally linked to this ratcheting framework. Cooperative approaches and the mechanism under Article 6 aim to facilitate higher ambition by reducing costs and enabling Parties to pursue mitigation opportunities they might not have otherwise exploited. For this to be credible, two conditions must be met. First, the availability of international transfers must not replace the need to expand the scope and rigor of domestic NDCs. Second, the rules governing transfers must ensure that mitigation outcomes counted towards one Party's NDC are not simultaneously counted elsewhere. In this setting, disputes about baselines, additionality and corresponding adjustments are not marginal technicalities, but conflicts over whether flexibility will once again be allowed to erode effective scarcity and weaken the disciplining function of the regime (European Parliament 2018; UNEP 2016; Wainwright and Mann 2018).

This is where the relationship between Article 6 and NDC accounting becomes crucial. Avoiding double counting is not a technical afterthought but a core requirement. If both the transferring and acquiring Party are allowed to claim the same mitigation outcome towards their respective NDCs, reported progress will exceed actual abatement, thereby compromising environmental integrity. The solution adopted in the Paris rulebook is the requirement for robust accounting, operationalized through corresponding adjustments (Blum and Lövbrand 2019; Karanja 2024).

Article 6 of the Paris Agreement is both influenced by and contributes to the broader framework of flexibility and transparency within the Agreement. Participation in cooperation under Article 6 is explicitly voluntary, allowing Parties considerable discretion in deciding whether to engage, which cooperative approaches to adopt, and how to integrate these into their broader climate strategies. Article 6.2 embodies this

decentralized approach, permitting Parties to establish bilateral or plurilateral arrangements for the transfer of mitigation outcomes, in line with guidance adopted by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement. In contrast, Article 6.4 establishes a centrally governed mechanism under the authority and guidance of this body, overseen by a dedicated Supervisory Body. The coexistence of decentralized cooperative approaches and a centralized mechanism reflect the underlying compromise between those advocating for nationally controlled flexibility and those seeking stronger multilateral oversight to uphold sustainable development and environmental integrity (Minas 2022; United Nations 2015; Marcu 2017).

The enhanced transparency framework established in Article 13 serves as the primary mechanism for holding Parties accountable for the implementation of their NDCs and, by extension, for the use of Article 6. Parties engaging in cooperative approaches are required to report information on how these approaches promote sustainable development, ensure environmental integrity, and apply robust accounting.

3.3.2. Article 6.2 - Cooperative Approaches and ITMOs

Article 6.2 establishes a decentralized framework for bilateral or plurilateral voluntary cooperation, facilitating the transfer and utilization of Internationally Transferred Mitigation Outcomes (ITMOs) in relation to Nationally Determined Contributions (NDCs). This framework enables Parties to engage in cross-border mitigation activities through various instruments, such as linking Emissions Trading Schemes (ETSs) or creating crediting mechanisms. The structure of Article 6.2 is deliberately flexible, allowing Parties considerable latitude in designing their cooperative approaches, provided they adhere to the guiding principles of environmental integrity and robust accounting (Minas 2022; Obergassel 2016).

The implementation of this approach is already evident in mechanisms like Japan's Joint Crediting Mechanism (JCM) and Switzerland's bilateral agreements with partner countries. For instance, the JCM institutionalizes sustainable development assessment through both negative checklists (addressing areas such as human rights, environmental impact assessment, and pollution control) and positive checklists (highlighting potential contributions across 17 Sustainable Development Goals).

Internationally Transferred Mitigation Outcomes (ITMOs) are units representing quantifiable climate mitigation, that is emission reductions or removals, transferred between countries. These outcomes must be verified and additional and are defined as mitigation generated from 2021 onward. The use of ITMOs, whether toward the acquiring Party's NDC or for "other international mitigation purposes" (OIMPs) (such as use in the Voluntary Carbon Market or the Carbon Offsetting and Reduction Scheme for International Aviation), is voluntary but necessitates explicit authorization by participating Parties. This authorization requirement serves as a crucial mechanism for granting national prerogative and oversight, extending governmental control over public and private entities engaging in transfers under the Article 6 framework (Howard 2018; Oh 2023; Minas 2022).

To ensure robust accounting and uphold the integrity principle of avoiding double counting, Parties engaging in Article 6.2 must apply Corresponding Adjustments (CAs). CA is the core mechanism that requires a transferring Party to add the quantity of the transferred ITMO to its national emissions balance (or tally/target level), while the acquiring Party subtracts that quantity from its own (Minas 2022; Chen 2025).

A fundamental integrity constraint is the quality of the Internationally Transferred Mitigation Outcomes (ITMOs), given the significant risk of transferring "hot air" units, which is mitigation that would have occurred regardless. If ITMOs are generated against weak or above-business as usual NDCs, 6.2 can end up exporting 'hot air' rather than real mitigation. The integrity constraints attached to ITMOs therefore condense a broader conflict on whether cooperative approaches will operate as instruments of real scarcity or as a constitutional device that preserves flexibility, generates tradable volume and postpones structural mitigation (Schneider and La Hoz Theuer 2019; Fuessler et al. 2019; Michaelowa et al. 2019).

3.3.3. Article 6.4 - The UNFCCC Mechanism

The mechanism outlined in Article 6, paragraph 4 of the Paris Agreement, referred to as the Sustainable Development Mechanism or Sustainable Mitigation Mechanism, is officially designed to succeed the Clean Development Mechanism (CDM) from the Kyoto Protocol. This market mechanism is centrally administered under the authority and guidance of the Conference of the Parties serving as the meeting of the Parties to

the Paris Agreement (CMA). The CMA's decision to adopt the Paris Agreement stipulates that the rules, modalities, and procedures for the A6.4M should be informed by the “experience gained with and lessons learned from” mechanisms such as the CDM. Analogous to the CDM, the A6.4M seeks to both reduce greenhouse gas emissions and promote sustainable development, maintaining a crediting system that issues units for emission reductions or removals that are genuine, quantifiable, long-lasting, and additional. It also upholds a multi-tiered governance structure, integrating international oversight with host Party approval of activities. Unlike the CDM, participation in the A6.4M is open to all Parties, not solely developing countries, and the mechanism is explicitly required to achieve an overall reduction in global emissions rather than merely serving as an offsetting tool. These characteristics represent a formal departure from the CDM's offset logic, yet they do not inherently address the incentive issues associated with crediting against self-determined targets (Stua 2017; Minas 2022; Olsen et al. 2018).

The Supervisory Body (SB) serves as the main institutional component of the A6.4M, operating under the authority and guidance of the CMA, to which it is accountable. Comprised of twelve members elected by the CMA, the SB's membership is distributed according to United Nations regional groupings. This structure replaces the CDM Executive Board, establishing a dedicated entity responsible for developing and implementing detailed rules within the parameters set by Parties. According to the established rules, modalities, and procedures, the SB is tasked with operationalizing the mechanism. Its mandate includes developing and approving methodologies, defining and updating standardized baselines, specifying the application of the share of proceeds, and determining the implementation of overall mitigation in global emissions within the mechanism's operation. The A6.4M also introduces an appellate and grievance process, enabling stakeholders, activity participants, and Parties to contest SB decisions. In terms of scope, the A6.4M permits the generation of mitigation outcomes through projects, programs of activities, and other types of activities approved by the SB. The SB is tasked with reviewing existing CDM methodologies for potential application under the new mechanism, often on a case-by-case basis, while the rules express a preference for standardized baselines to simplify implementation and expand coverage compared to project-specific baselines. This

simplification, however, concentrates significant discretion in the Supervisory Body's methodological choices, since baseline design will determine the volume and distribution of units generated under the mechanism (Stua 2017; Minas 2022; Chen 2025).

The provisions for sustainable development and revenue-sharing under Article 6.4 expand upon the formal requirements that were previously applicable under the Clean Development Mechanism (CDM). The Article 6.4 Mechanism (A6.4M) is crafted to encourage mitigation efforts that bolster sustainable development, necessitating that host Parties inform the Supervisory Body about how their involvement in the mechanism aligns with their national sustainable development goals. Unlike the CDM, where the definition of sustainable development was largely determined by host countries and later supported by a voluntary tool, the A6.4M framework requires the Supervisory Body to establish processes for implementing environmental and social safeguards. Activities under this mechanism must minimize and avoid adverse environmental and social impacts and include stakeholder consultation. Additionally, the mechanism incorporates a strengthened share of proceeds and an explicit requirement for overall mitigation (Oh 2023; Minas 2022).

The Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA) must ensure that a portion of the proceeds from A6.4M activities is allocated to cover administrative expenses and to assist developing country Parties particularly vulnerable to climate impacts in meeting adaptation costs. For adaptation finance, this share is represented by a five percent levy on A6.4 emission reductions at issuance, compared to the CDM's two percent levy. Furthermore, at least two percent of A6.4 emission reductions are to be canceled at issuance to contribute to an overall reduction in global emissions, rather than merely serving as a one-to-one offset.

These provisions respond to long-standing criticisms of the CDM's limited adaptation finance and zero-sum logic, yet they operate at the margin of a mechanism that still relies on crediting and trading, rather than on tightening underlying targets, to deliver equity and integrity. These modifications do not modify the fundamental incentive to maximize creditable volume within self-determined targets, which remains a defining characteristic of the Paris framework (Cash and Swatuk 2022; Forsbacka 2021).

3.3.4. Article 6.8 - Non-Market Approaches (NMAs)

The inclusion of provisions for Non-Market Approaches (NMAs) under Article 6, paragraph 8, is a vital element of the Paris Agreement's compromise text, specifically addressing the negotiating interests that oppose the full marketization of global climate initiatives. The framework for NMAs was primarily championed by the Like-Minded Developing Countries (LMDCs), who advocated for mechanisms beyond the confines of carbon trading logic. The political governance framework of Article 6 acknowledges that some Parties choose voluntary cooperation; the structure of the Article emerged as a compromise following a protracted "tug-of-war lasting years between proponents and detractors of market approaches to climate action". For those Parties ideologically opposed to the direct or explicit inclusion of markets in the final text, the framework for NMAs offered reassurance. NMAs enable Parties to implement their Nationally Determined Contributions (NDCs) in a manner that incorporates holistic and balanced approaches, consistent with the broader principles of sustainable development and poverty eradication. This recognition ensures that economic sustainability is not the sole consideration in addressing mitigation efforts, providing an alternative pathway for cooperation that circumvents the critique that commodifying carbon impedes the necessary transformative social change. Despite their explicit legal foundation in the PA text, Non-Market Approaches are characterized by conceptual ambiguity and institutional thinness compared to the market mechanisms of Articles 6.2 and 6.4 (Stua 2017; Stua et al. 2022; Minas 2022; Obergassel 2016).

NMAs are generally defined by exclusion, encompassing cooperative approaches involving two or more Parties where no transfer of Internationally Transferred Mitigation Outcomes (ITMOs) occurs in the implementation of NDCs. The scope of NMAs is exceptionally wide and integrative, aimed at enhancing mitigation and adaptation ambition, public and private sector participation, and coordination across instruments. Article 6.8 mandates that these approaches should holistically include mitigation, adaptation, finance, technology transfer, and capacity-building, as appropriate. The purpose of the subsequent framework defined in Article 6.9 is to promote these non-market approaches (Stua 2017; Obergassel 2016).

However, the institutional structure remains thin. Instead of establishing a centralized body like the A6.4 Supervisory Body, the work program for NMAs focuses primarily on clarifying how these approaches function through activities such as listing and working out examples and supporting the development of tools for the implementation, measurement, and monitoring of holistic and integrated approaches (Stua 2017; United Nations 2015).

In practice, Non-Market Approaches (NMAs) currently lag behind Articles 6.2 and 6.4 in terms of institutionalization and financial support due to their conceptual ambiguity and the intricate work required for their operationalization. Proponents of Article 6.4 have capitalized on its familiarity as the successor to the Clean Development Mechanism (CDM) to advance implementation details, whereas initial submissions on NMAs have primarily focused on the fundamental task of defining their nature (Obergassel 2016; Elidrisy 2024).

This foundational ambiguity presents ongoing challenges in implementation, particularly with respect to transparency and accountability, as a common understanding and operational guidelines are still necessary to ensure consistency across nations. Moreover, the political and economic landscape inherently favors market-based systems designed for cost-efficiency and quantifiable outcomes, such as Internationally Transferred Mitigation Outcomes (ITMOs), which explicitly direct financial investment flows (Cash and Swatuk 2022; United Nations 2015; Obergassel 2016).

Although NMAs aim to facilitate access to finance, technology transfer, and capacity building, they emphasize cooperation that is often non-monetary. The difficulty in quantifying outcomes and ensuring consistency in Measurement, Reporting, and Verification (MRV) for non-market actions, such as policy reforms or fossil fuel subsidy removals, constitutes a technical barrier, complicating their linkage to predictable, quantifiable financial instruments that drive market enthusiasm. Consequently, much of the initial work for NMAs has concentrated on the preliminary step of identifying relevant existing non-market instruments and exploring potential synergies with established climate finance channels, such as the Green Climate Fund (GCF) or the Adaptation Fund. As a result, NMAs remain formally recognized in the

Paris architecture but functionally peripheral, with most of the political and financial energy channeled into the tradable claims governed by Articles 6.2 and 6.4. The lack of institutional depth and limited resources indicate that the true political and financial focus of the Paris regime is still centered on tradable claims under Articles 6.2 and 6.4, rather than on non-market cooperation that might disrupt the macro-financial status quo (Obergassel 2016; Sovacool and Linnér 2016).

3.3.5. Political Compromises in the Glasgow Rulebook

The resolution of Article 6 rules at COP26 in Glasgow (2021) marked the culmination of extended negotiations, achieved through a nuanced balancing of divergent political priorities. The primary contention involved coalitions emphasizing environmental integrity and ambition, that is advocating for stringent accounting and minimal reliance on legacy credits, versus those prioritizing flexibility, market liquidity, and accommodating the interests of major developing nations concerning the transition of CDM units.

The Corresponding Adjustment (CA) debate was conclusively resolved in favor of integrity. CA was mandated for all authorized ITMO transfers, including those utilized for NDC achievement and OIMPs, irrespective of whether the activity fell within or outside the host Party's NDC scope. Nonetheless, the intricate issue of applying CA to diverse NDCs was only partially addressed, with the allowance of the “averaging” method for single-year targets being criticized as a potential integrity loophole. The dispute over CDM legacy was partially resolved by permitting a time-limited transition for Certified Emission Reductions (CERs) from projects registered post-January 1, 2013, effectively restricting the transfer of the most criticized vintage of units. However, the legality of carrying over non-transitioned CERs or Assigned Amount Units (AAUs) for use toward NDCs remains textually unresolved, though such practice is critically viewed as contravening the Paris Agreement’s normative expectation of ambition and progression (Ahonen et al. 2022; Minas 2022; Cook et al. 2024).

The Glasgow Rulebook established the financial mandates of the centralized A6.4M while deliberately exempting A6.2. The A6.4M was subject to mandatory levies for Overall Mitigation in Global Emissions (OMGE), achieved by canceling at least two

percent of A6.4ERs at issuance, and a mandatory Share of Proceeds (SoP) for adaptation, set at five percent levied on A6.4ERs at issuance. Conversely, A6.2 Parties were merely encouraged to deliver OMGE, reflecting a strategic compromise that favors market flexibility and autonomy for decentralized approaches. The final rulebook established these key requirements but left procedural ambiguities, notably the potential for transparency loopholes by allowing Parties to designate information as "confidential" during reporting. This differentiated structure, with varying integrity requirements, institutionalizes the fragmentation between market approaches while concurrently seeking to align them under a common framework (Cash and Swatuk 2022; Ahonen et al. 2022; Minas 2022).

In this architecture, cooperation is defined less by joint planning of real-economy transitions and more by the compatibility of accounting frameworks and unit definitions. The same terms that previous chapter identified as malleable signifiers such as "sustainable development", "environmental integrity" become legal hooks for markets, while the underlying financial hierarchy that shaped them remains intact. Collectively, Articles 6.2, 6.4, and 6.8 establish a climate framework where cooperation is mainly characterized by the trade of certified mitigation outcomes among diverse commitments. At this point, integrity constraints are not negotiated to impose a shared cap, therefore reproducing capacity gaps and North–South asymmetries. The result is a formally tightened regime that still preserves ample room for hot air and uneven application of levies, especially in decentralized 6.2 schemes.

3.4. Infrastructure for Transactable Claims

The following discussion is central to the argument of this chapter. The ability to convert mitigation into a financial claim, and to treat climate risk as a pricing parameter, rests on how these infrastructures classify, certify and circulate "mitigation outcomes".

While Article 6 establishes the legal framework, the developing infrastructure of authorizations, registries, and transparency regulations facilitates the conversion of mitigation into a tradable claim. This section examines how accounting logic, data standards collectively establish the informational prerequisites for climate finance to regard mitigation outcomes as assets and climate risk as a pricing parameter.

3.4.1. Authorizations and Corresponding Adjustments

The infrastructure for transactable claims under Article 6 is fundamentally rooted in national sovereignty. The use of Internationally Transferred Mitigation Outcomes (ITMOs) for Nationally Determined Contributions (NDCs) is voluntary and requires explicit authorization from the participating Parties. This authorization covers not only the use of ITMOs for NDC fulfillment but also for "other international mitigation purposes", such as the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) or the Voluntary Carbon Market. This provision grants governments formal oversight over public and private entities that generate or trade mitigation outcomes within their jurisdiction, effectively positioning national administrations as gatekeepers for cross-border climate claims. At the same time, the decentralized and voluntary nature of the design introduces institutional uncertainty. The rules regarding whether and how authorizations can be revised or withdrawn remain inadequately specified, and limited participation may compromise the consistency of the overall framework (Luterbacher and Sprinz 2001; Chen 2025).

Corresponding Adjustments (CAs) serve as the primary accounting mechanism intended to prevent double counting in a context where all Parties possess NDCs. CA operates as a form of double-entry bookkeeping. When an ITMO is transferred, the acquiring Party deducts the corresponding amount from its national emissions tally or target level, while the transferring Party adds the same quantity. This requirement applies to mitigation outcomes generated from 2021 onwards.

To maintain integrity, the same principle is expected to apply when ITMOs are authorized for other international mitigation purposes, ensuring that units cannot be simultaneously claimed against a national NDC and an external scheme. In cases where mitigation occurs in sectors outside the scope of the host Party's NDC, a tally-based approach is proposed, with adjustments recorded in a dedicated account even if the sector is not formally covered by the target. The Article 6.4 mechanism is frequently interpreted as a singular certification platform capable of accommodating various categories of mitigation activities, thereby intensifying the need for harmonized CA rules across all cooperative approaches (Cook et al. 2024; Schneider et al. 2019).

This architecture remains vulnerable to both operational weaknesses and political incentives. If CAs are not applied fully and transparently, double claiming is immediate, and global emissions rise above what reported progress suggests. The heterogeneity of NDC formats amplifies this risk. Differences in metrics, coverage, and time frames make it difficult to map multi-year reductions into single-year targets without loss of precision. The allowance of "averaging" methods for single-year NDCs illustrates the trade-off between administrative simplicity and accounting precision, rather than resolving the underlying integrity problem. Simplifying assumptions reduce administrative complexity but create room for accounting artefacts that erode environmental integrity (Luterbacher and Sprinz 2001; Cash and Swatuk 2022; Schneider and La Hoz Theuer 2019).

A further structural problem lies in the quality of the underlying units. Where a Party's NDC sits above business-as-usual projections, or where coverage remains partial, there is a strong incentive to generate and export non-additional reductions. CA can avoid simple double counting, but it cannot prevent the transfer of such "hot air". Estimates that large volumes of hot air embedded in current NDCs could be mobilized for trade imply that, in extreme cases, global mitigation efforts might be reduced by a substantial margin even when accounting rules are followed.

This is why additionality testing and conservative baselines become indispensable when ITMOs originate in weakly ambitious NDCs or in sectors outside their formal scope. Yet these safeguards rely on transparency. The continued possibility for Parties to classify key information as "confidential" under the Article 6.2 guidance creates a significant loophole. It allows gaps in the application of CAs and associated methodologies to remain hidden from external scrutiny, weakening confidence in the integrity of the emerging market architecture (Cash and Swatuk 2022; Michaelowa et al. 2019; Chen 2025).

3.4.2. Registries, Tracking Systems, and Avoidance of Double Counting

The operationalization of Article 6 requires an infrastructure of tracking systems to manage and assure the integrity of Certified Mitigation Outcomes (CMOs). This architecture relies on a multi-tiered system involving national registries to manage unit ownership, centralized UNFCCC Article 6 databases for coordinated reporting and

accounting information submitted by participating Parties, and specialized registries for the centralized A6.4 mechanism. This centralized tracking, including the potential for a Centralized Accounting Database (CAD), is necessary for reconciling diverse national accounting practices and verifying the consistent application of CAs.

Some authors describe this emerging infrastructure in terms of a prospective "Mitigation Alliance", that is a joint certification system that would link different transfer approaches under a single accounting logic. This remains a proposal rather than a settled institutional design, but it illustrates the tendency to imagine Article 6 infrastructure as a centralized certification backbone for diverse markets (Stua 2017; Howard 2018; Marcu and Rambharos 2019).

A primary function of this infrastructure is the prevention of double counting, a risk categorized into specific types. Double counting (usage/claiming), the most critical form, is where both the transferring and acquiring Parties count the same reduction toward their NDCs and is addressed by CAs. Double Issuance refers to the erroneous creation of the same unit multiple times by the registry, prevented by technical design. Over-issuance results from issuing units for reductions that are not real or additional, stemming from poor baselines rather than tracking errors. Finally, Double Use/Claiming for OIMPs is avoided by requiring CAs for mitigation outcomes authorized for uses like CORSIA or VCM (Ahonen et al. 2022; Hood 2019).

Integrity is defended by technical safeguards but remains susceptible to corrosive political incentives to inflate volumes. Key technical safeguards include mandatory Corresponding Adjustments, the standardization of metrics, and technical requirements for additionality, such as using conservative baselines and checking against national BAU scenarios. However, the bottom-up nature of the PA creates strong political incentives that threaten integrity.

The capacity of countries to generate and transfer "hot air" from lenient NDCs is the foremost risk, driven by the possibility of countries prioritizing mitigation revenue over stringent domestic targets. Furthermore, the political compromise that led to the Article 6 rulebook adopted in Glasgow, while crucial for consensus, utilized "constructive ambiguity". This ambiguity, particularly the potential for Parties to utilize a transparency loophole by designating reported information as confidential,

poses a significant threat to the efficacy of international oversight and the Technical Expert Review process.

The specific ways in which baseline choices, additionality tests and permanence rules interact with these incentives are examined in section 3.5 (Stua 2017; Schneider and La Hoz Theuer 2019; Minas 2022).

3.4.3. Finance Alignment and Transparency under Articles 2.1(c) and 9

Article 2.1(c) of the Paris Agreement, which mandates "making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development", establishes a profound informational alignment mandate. This requires standardized and credible data on mitigation outcomes to attract the trillions of dollars needed for climate action.

The rigorous quantification and certification infrastructure of Article 6 supports the assetization of mitigation outcomes into tradable units, effectively converting carbon capacity, an abstract public good, into a tradeable, quasi-private good with definable value. This process provides the basis for a potential new financial architecture, theorized as a "Low Carbon Bretton Woods" (Stua 2017; Bhandary et al. 2021).

The Paris Agreement's financial strategy, embodied in Article 9, shifts away from the direct public provision of resources toward "mobilizing climate finance from a wide variety of sources" (Carraro et al. 2018). This emphasis on mobilization inherently favors financial instruments capable of attracting private capital, such as loans and equity, over grants, which risks transferring financial and climate-related risks to developing countries (borrowers).

The pursuit of Article 2.1(c) alignment requires financial institutions to accurately price climate risk; in this context, climate risk is often translated into, and treated as, default risk on loans and investments. The Mitigation Alliance (MA) concept, for instance, proposes that the certified CMO unit becomes the reference currency for carbon, with enforcement mechanisms including monetary fees and rating systems.

This structure links the financial valuation of assets directly to the reliability and integrity of the underlying mitigation claims (Stua 2017; Christophers 2019).

3.4.4. Transparency Framework as Operating System

The Enhanced Transparency Framework (ETF) (Article 13) serves as the accountability operating system for the Paris Agreement, providing the necessary data foundation for Article 6 accounting. The ETF requires Parties using ITMOs to report comprehensive information on their transfers, adherence to environmental integrity, and application of Corresponding Adjustments through their Biennial Transparency Reports (BTRs). This mandatory reporting ensures clarity and tracking of progress toward NDCs (United Nations 2015; Fuessler et al. 2019).

The reported information is subjected to a Technical Expert Review (TER), which provides independent scrutiny of accounting practices and identifies areas of improvement for the Party, operating in a manner that is facilitative and non-punitive. The effectiveness of this system depends on the capacity of national MRV systems to generate verifiable data that can be integrated into the inventory reports reviewed under the ETF (Howard 2018; Bracking and Leffel 2021).

The transparency infrastructure facilitates the recursive interaction between public and private governance standards. Private standard-setters, having identified Article 6 as the "new home" for carbon offsetting, participate in the discursive legitimation of new market arrangements by stressing the need for robust rules and good governance. Private entities, such as the Gold Standard, update their standards to meet PA principles, implementing labels to distinguish credits that are authorized and subject to CAs, thereby bridging the voluntary market with the PA's compliance requirements. This alignment process extends governance expansion from the international sphere to private systems. Ultimately, the standardization and rigor required by the transparency framework produces "investable" climate data, satisfying the demand from financial actors for credible, quantified mitigation claims that provide certainty for investment decisions (Ahonen et al. 2022; Minas 2022).

The establishment of these technical and informational regimes thus becomes an anti-political strategy, managing controversy over resource allocation through strict, but still politically determined, measurement systems. Their trustworthiness, however, depends on the definitions of baselines, additionality, and unit quality. What appears as neutral infrastructure is therefore a key vector of financialization. By defining which

units exist, which information counts as “robust”, and which flows are considered “aligned”, this architecture privileges actors with the capacity to produce and audit climate data. The next section shows how these design choices systematically lean toward liquidity and rent creation rather than strict environmental outcomes.

3.5. Integrity Constraints and Structural Incentives

The international carbon market systems, especially those under Article 6 of the Paris Agreement, rely on complex rules and incentives. These determine if actions truly cut down global greenhouse gas emissions. Environmental integrity is believed to be maintained if international transfers keep global emissions the same or lower than without them. However, the experiences under the Kyoto Protocol and the current flexibility afforded by Nationally Determined Contributions (NDCs) highlight persistent challenges in maintaining this integrity (Schneider and La Hoz Theuer 2019).

3.5.1. Baselines and Counterfactuals

Creating a credible baseline scenario, often termed the business-as-usual (BAU) or reference scenario, is an essential technical requirement for any carbon crediting initiative. This scenario defines the hypothetical emissions level that would have existed without the mitigation intervention. In crediting mechanisms, the baseline measures the volume of emission reductions or avoided emissions achieved by an activity, serving as the standard against which additionality is evaluated. Developing a robust BAU scenario is inherently complex due to its reliance on projections of uncertain future variables such as international fuel prices, technological advancements, economic growth, and demographic changes. These projections are prone to unexpected economic crises or rapid technological shifts, which can quickly render initial forecasts inaccurate, resulting in a range of uncertainty rather than a precise emissions level (Michaelowa et al. 2019; Kreibich and Obergassel 2018a).

In the context of setting baselines, there is a prominent tension between maximizing the supply of credits and maintaining environmental integrity. When BAU emission projections are overly optimistic or exaggerated, they become less stringent than the actual likely emissions pathway, leading to the creation of fictitious surplus units

known as “hot air”. The transfer of credits derived from projects against inflated baselines ultimately undermines global climate efforts because it allows the buyer country to increase its emissions without a corresponding, real reduction occurring elsewhere. On the other hand, setting conservative baselines ensures environmental integrity by generating fewer credits than the strict technical reduction might suggest, thereby creating a buffer to account for uncertainties. However, critics warn that relying solely on conservative or ambitious baselines does not automatically ensure an overall increase in ambition, as this goal ultimately depends on the political decisions of the host country regarding how it utilizes the resulting mitigation potential (Michaelowa et al. 2019; Kreibich and Obergassel 2018a).

The choice of a baseline plays a crucial role in determining the number of credits generated and the economic benefits received by project participants. Higher baselines increase the potential for measuring emission reductions, thereby boosting the supply of certified mitigation outcomes. Historical data from the Kyoto Protocol mechanisms highlight the significant impact of inadequate baseline setting. For example, Joint Implementation projects generated large amounts of “hot air” when unforeseen economic downturns caused actual emissions to fall well below the projected business-as-usual (BAU) levels, thus compromising the environmental integrity of about 80% of the units issued under that mechanism (Michaelowa et al. 2019; Michaelowa and Hoch 2017).

For the land-use, particularly in initiatives like REDD+ (Reducing Emissions from Deforestation and Forest Degradation), baseline establishment has been controversial, mainly due to the initial lack of standardized methods for quantifying their mitigation impacts. Within the Clean Development Mechanism (CDM), baselines for afforestation/reforestation (A/R) activities were defined as the changes in carbon stocks that would occur without the project. The political complexity involved in determining these counterfactuals in biological systems adds to the challenges of integrating such activities into highly standardized crediting mechanisms (Stua 2017).

3.5.2. Additionality, Leakage, and Permanence

Additionality is a fundamental criterion for assessing the quality of carbon units, requiring proof that the mitigation activity would not have occurred without the

financial incentives or regulatory support provided by the market mechanism. It acts as a crucial safeguard for environmental integrity, as crediting non-additional activities can lead to increased global emissions when such credits are used to offset targets. The operationalization of additionality involves several analyses. Investment analysis requires demonstrating that the project's profitability is lower than a comparable business-as-usual scenario or fails to meet a predetermined financial hurdle rate, such as a payback period threshold (Stua 2017; Kreibich and Obergassel 2018a).

Alternatively, standardized approaches use technology metrics, such as market penetration rate thresholds, to classify an activity as additional. However, determining additionality is conceptually challenging, requiring the assessment of causality within complex socio-economic and policy contexts. The administrative burden and inherent uncertainty of these detailed assessments have resulted in excessive technicalities and bureaucratic processes under the Clean Development Mechanism (CDM), which also occasionally restricted access for smaller projects or those in least developed countries. Moreover, achieving absolute certainty in additionality is considered virtually unattainable in practice. This challenge is exacerbated under the Paris Agreement due to the introduction of diverse national climate policies and NDCs, which may overlap with or modify the additionality criteria for specific mitigation activities (Stua 2017; Michaelowa et al. 2019).

Leakage refers to the displacement of emissions from the mitigation activity boundary to an unregulated area. A prominent example is market leakage, where the subsidized use of low-emitting technologies through offsetting mechanisms reduces the overall costs of related goods or services, potentially leading to increased consumption and subsequent emission growth that negates the initial reduction. Such market effects are frequently unaccounted for in existing crediting mechanisms, resulting in an overestimation of unit quality (Schneider and La Hoz Theuer 2019).

Permanence is an important factor for ensuring the integrity of mitigation outcomes, particularly for land-use and nature-based carbon removal projects. Unit quality is assured only if the emission reductions are permanent or if explicit provisions are in place to address the risk of reversal (non-permanence). Failure to ensure the long-term sequestration of carbon renders the claimed mitigation outcomes temporary, thereby

compromising the environmental integrity of the units (Schneider and La Hoz Theuer 2019).

3.5.3. Liquidity vs Environmental Integrity

A fundamental tension exists between the need to create liquid, fungible units that can sustain a broad carbon market and the necessity of enforcing stringent, context-specific integrity criteria. High-quality carbon markets require units that are interchangeable and easily tradable. However, ensuring the uniformity of these units is complicated by the diverse and varied events that underlie their creation (Stua et al. 2022; Schneider and La Hoz Theuer 2019).

The pressure to enhance liquidity often leads to the adoption of generous baselines and weakened additionality standards, effectively compromising environmental value for market volume. Relaxing additionality tests reduces administrative and transaction costs that deter investment, thereby addressing market lockouts and increasing the supply of available credits. Nonetheless, this trade-off directly results in the issuance of low-quality credits, which may not represent genuine emission reductions, consequently undermining environmental value (Stua et al. 2022; Schneider and La Hoz Theuer 2019; Kreibich and Obergassel 2018a). The history of the Clean Development Mechanism, already discussed in section 3.1.2, illustrates how the pursuit of liquidity through generous baselines and weak additionality can generate large volumes of low-quality units, eroding the environmental meaning of the carbon price (Cash and Swatuk 2022).

3.5.4. Integrity Trope vs Structural Incentives

Policy discussions often treat “environmental integrity” as a technical deficit that can be corrected by successive upgrades in standards, methodologies and review procedures under Article 6. This integrity trope suggests that the main problem lies in imperfect rule design, rather than in the structural incentives created by a bottom-up, market-regulated regime. These incentives are not accidental aberrations. They follow from a constitutional choice to accept heterogeneous, self-determined targets and to use trading as a cost-containment device, even when this creates systematic headroom for the export of low-quality units (Oh 2023; Schneider and La Hoz Theuer 2019).

A critical issue emerges when emission outcomes are derived from countries or sectors where mitigation targets are either less stringent than business-as-usual scenarios (containing “hot air”) or fall outside the scope of the NDCs entirely. In these cases, the transferring country lacks a direct economic or compliance incentive to ensure the quality and additionality of the units being sold. If the transferred units are non-additional or contain “hot air”, the transferring country's ability to meet its weak NDC target remains unaffected, thereby creating a perverse incentive to sell low-quality units for profit, ultimately increasing global emissions (FitzRoy and Papyrakis 2010).

This structural flaw, where market rewards precede the assurance of environmental quality, cannot be entirely rectified by technical rules alone. Consequently, environmental integrity remains a contested issue, not a resolved technocratic solution. Parties hold divergent views on fundamental issues, such as the extent of centralized oversight required for integrity and sustainable development under Article 6.2. Some countries advocate for multilateral governance structures accountable to all Parties, citing the deficiencies observed in decentralized systems. Others emphasize national sovereignty and flexibility, arguing for country-level determination of criteria. This political controversy extends to the very definition of integrity.

While some define integrity narrowly as no increase in global emissions, others call for an “overall mitigation in global emissions” that achieves net reductions, which remains a politically divisive issue. The resulting governance architecture operates within this flexible, market-regulated regime where incentives for ambitious NDCs and unit quality often conflict with the goal of maximizing tradeable volume (Ahonen et al. 2022; Schneider and La Hoz Theuer 2019; Obergassel 2016).

The challenge of maintaining environmental integrity is akin to attempting to weigh water using a sieve. The desire for flexibility and speed (liquidity/volume) necessitates the adoption of a coarse mesh (weak standards and uncertain baselines), inevitably allowing some of the valuable substance (genuine mitigation) to slip through and be counted as worthless units (hot air or non-additional credits). True integrity requires a much advanced, more restrictive mechanism, but that strictness directly conflicts with the structural desire for a high-volume, cost-efficient market (Schneider and La Hoz Theuer 2019).

Integrity, therefore, emerges as a moving goalpost rather than a fixed standard. The demand for "enhanced standards" is frequently echoed in policy discussions. However, the prevailing framework continues to incentivize lenient baselines, insufficient additionality, and interchangeable units. This tension is pivotal to this thesis's argument. Within a system that prioritizes flexibility and governed by market mechanisms, environmental integrity transcends a mere technical issue and becomes a distributional concern, directly affecting who is permitted to assert "green", "aligned", or "Paris-consistent" status. In this setting, integrity becomes a managed variable in a market for climate claims, rather than a hard constraint anchored in the remaining carbon budget, which is precisely how flexibility and financialization converge to keep the regime liquid while structural mitigation remains slow (Stua 2017; Stua et al. 2022).

3.6. Political Economy of Article 6 and Climate Markets in the context of Global North-South

The functioning of international climate market mechanisms, particularly those facilitated by Article 6 of the Paris Agreement, is fundamentally shaped by historical and persistent core-periphery dynamics, resulting in significant distributional asymmetries across the Global North and South. Negotiations over international environmental cooperation, persistent since 1972, are thus deeply entrenched in the economic inequality characterizing the post-colonial global economy, with the Global South consistently demanding that environmental issues be linked to international economic disparities (Bel and Teixidó 2020; Sovacool and Linnér 2016).

Climate finance frequently functions as a mechanism for capital accumulation and uneven development, necessitating a rigorous analysis of the outcomes of these flows of capital and power. Although the Paris Agreement advocates for universal participation, the practical implementation of flexible mechanisms presents significant challenges. These challenges pertain to capacity, equitable rent capture, financial stability, and the prioritization of mitigation over adaptation. The same factors that influence trade, investment, and sovereign debt also determine participation in carbon markets, including the terms of engagement and the implications for domestic development trajectories (Arent et al. 2017).

Article 6 is officially presented as a cooperative mechanism aimed at reducing the global cost of mitigation. However, it operates at the convergence of four distributional fault lines. Firstly, the concentration of methodological, legal, and administrative expertise in the Global North creates systematic entry barriers and verification premiums for the Global South. Secondly, the distribution of rents from low-cost mitigation is highly contested, often resulting in dynamics that can be characterized as carbon colonialism. Thirdly, the increasing reliance on disclosure-driven climate risk assessment and climate-aligned ratings interacts with currency hierarchies and existing debt burdens, potentially exacerbating financial subordination. Lastly, the structure of Article 6 is inherently focused on mitigation, whereas the most urgent needs in many regions of the Global South pertain to adaptation and loss and damage, which cannot be easily addressed through market mechanisms (Forsbacka 2021; Brown et al. 2023; Gifford and Sauls 2024).

3.6.1. Capacity Asymmetries and Verification Premiums

The technical framework of Article 6 demands advanced administrative, legal, and methodological capabilities, yet these are unevenly distributed across regions. Expertise in areas like baselines, additionality, verification protocols, and registry design is largely concentrated among a select group of core governments, multilateral institutions, large consultancy firms, and specialized verifiers. Conversely, many developing countries face fundamental challenges, such as limited staffing, fragmented data systems, inadequate domestic monitoring, reporting, and verification infrastructure, alongside competing fiscal and developmental priorities. These disparities are not incidental but rather mirror broader differences in state capacity, research and development systems, and policy space between core and peripheral positions in the global economy (Arent et al. 2017; Calvin et al. 2023c). Under project-based mechanisms like the Clean Development Mechanism, these disparities translated into high fixed transaction costs and strict accreditation hurdles for peripheral issuers, reinforcing the advantage of actors with established legal, technical, and bureaucratic capacity (Sovacool and Linnér 2016).

These characteristics are likely to persist, and in some respects intensify, under Article 6. The shift toward scaled-up, policy-based cooperation increases the complexity of

baseline setting and additionality determination rather than reducing it. Ensuring environmental integrity through independent verification introduces an additional verification premium that disproportionately affects capacity-constrained jurisdictions. In cases where domestic institutions lack the expertise to design and apply methodologies, host governments and project proponents must rely on external consultants and foreign verifiers. This dependence increases costs and allocates interpretative authority over what constitutes robust climate action to actors primarily based in the core. Funding that would enable experts from developing countries to participate meaningfully in review processes is modest relative to the overall scale of transactions and, in many cases, insufficient to bridge the gap. While guidance documents and legal toolkits can be disseminated, without sustained institutional support, they do not eliminate the structural disadvantage (Stua 2017; Ahonen et al. 2022).

The cumulative impact reveals a distinct pattern of project clustering in "middle" countries, which are marked by relatively high emissions, essential bureaucratic capacity, and a level of familiarity that appeals to investors. This pattern was already apparent in the Clean Development Mechanism, where most projects and credits were concentrated in a few large emerging economies.

In contrast, the least developed countries, especially those in Sub-Saharan Africa, attracted minimal activity despite having significant mitigation potential and pressing development needs. In these regions, emissions baselines were often lower, institutional systems weaker, and perceived country risk higher, which reduced the expected returns on project-based crediting.

Only countries that were already attractive investment destinations could leverage their bargaining position to impose conditions like minimum state ownership of projects or taxes on credit revenues.

For other countries, the combination of complex eligibility requirements, high fixed transaction costs, and limited domestic expertise makes Article 6-type cooperation largely aspirational unless substantial, predictable, and long-term capacity building is implemented (Stua 2017; Oh 2023; Chen 2025).

3.6.2. Rent Capture and Carbon Colonialism

Market-based mitigation mechanisms can lower compliance costs relative to some regulatory alternatives under specific design conditions. They also create markets for allowances and credits, which introduces new rent-allocation questions about who receives units, who captures trading and verification fees, and who benefits from price movements. A carbon market that permits inexpensive abatement in one area to replace more costly abatement elsewhere generates rents, which are defined as risk-adjusted above-normal returns, for those who can mobilize low-cost mitigation and convert it into tradable units. The main question is who captures these rents. Ideally, host states and local communities should benefit from selling mitigation outcomes. However, in practice, a significant portion of the value generated throughout the chain, from project design to the final use of units, is often captured by project developers, financial intermediaries, and buyers, many of whom are based in the Global North (Newell and Paterson 2010b; Dryzek et al. 2011).

Assetization is central to this process, as mitigation outcomes are transformed into certified units that can be owned, traded, and used for compliance or "alignment" purposes. This transformation creates opportunities for consultants, lawyers, verifiers, and traders to extract value from their control over the technical and contractual infrastructure. Under Kyoto-era mechanisms, intermediaries specialized in preparing project design documents, developing baselines, managing the approval process, and arbitraging price differences across markets. Host states with strong bargaining power, such as large emerging economies, could mandate state participation in projects, introduce taxes on credit exports, or impose local-content and co-benefit requirements. Smaller or more indebted countries generally had weaker bargaining positions and less scope to influence revenue-sharing arrangements (Stua 2017; Oh 2023; Stua et al. 2022).

These dynamics become even more problematic when carbon markets expand into land use and forestry. Commodifying forest carbon and treating it as a standardized asset risks reproducing patterns of resource extraction in which land and ecosystems in the Global South are reorganized to serve the mitigation and reputational needs of external buyers. Where tenure systems are contested, carbon projects can lead to new

forms of enclosure that displace local communities, restrict access to land and water, or subordinate customary rights to formalized property regimes tailored to investor expectations. The language of mutual gains through conservation and sustainable development often obscures conflicts over land control and livelihood security, particularly where information about the long-term implications of projects is asymmetrically distributed between local actors and external sponsors (Cash and Swatuk 2022; Xie and Cheng 2021).

Critics characterize these patterns as carbon colonialism, as they enable high-emission consumers and firms in the Global North to maintain carbon-intensive lifestyles while outsourcing both the physical mitigation activities and their associated social and ecological costs to the Periphery. Offsetting schemes permit buyers to continue emitting by purchasing credits that signify emission reductions elsewhere, typically in regions where abatement is more cost-effective and political resistance is less pronounced. Mitigation thus becomes another resource frontier. The commodity in question extends beyond timber, minerals, or agricultural products to include "carbon space" and the regulatory capacity of peripheral states (Newell and Paterson 2010b; Blum and Lövbrand 2019; Stern 2015).

The risk is that, rather than fostering structural transformation in both host and buyer economies, Article 6 mechanisms may reinforce a pattern in which the South is compensated with credits and often modest revenue transfers, thereby limiting its own development options so that the North can postpone substantial decarbonization efforts domestically. This risk is amplified by the Bretton Woods monetary-financial hierarchy described in Section 3.1.1, wherein external financing is costly and balance-of-payments constraints are binding, governments have stronger incentives to monetize mitigation outcomes and land-based sinks, while reserve-currency economies have greater room to defer costly domestic adjustment.

3.6.3. Debt, Currency Hierarchy, and Climate Risk Pricing

In the post-Paris period, a growing share of macro-financial regulators, standard-setters, and central banks has framed climate change as a source of financial risk, motivating governance through disclosure regimes, scenario analysis, and climate risk assessment frameworks. As these infrastructures diffuse, investors, lenders, and

rating/analytics providers increasingly incorporate proxies for physical and transition risks into valuation and credit decisions, although uptake and rigor vary across jurisdictions and asset classes. On the sovereign side, climate exposure and transition policy credibility are more frequently discussed within fiscal and debt-sustainability debates, particularly where external financing conditions are sensitive to perceived risk. This disclosure-driven regime operates within an international monetary system marked by a hierarchy between hard and soft currencies and substantial pre-existing debt stocks in many developing countries. Climate-aligned ratings and climate spreads act as mechanisms through which vulnerability and perceived misalignment are translated into borrowing costs (Carraro et al. 2018; Stua et al. 2022; Xie and Cheng 2021).

Empirical research shows that sovereigns in emerging and developing economies tend to incur a premium on their debt when perceived as highly exposed to climate impacts or as lagging in transition policies, whereas this relationship is weaker or statistically insignificant for advanced economies. This asymmetry reflects the underlying currency hierarchy and investors' tendency to withdraw from jurisdictions perceived as risky. As climate risk becomes an additional dimension of country risk, financial markets may respond with pro-cyclical capital withdrawal from carbon-intensive or physically vulnerable economies, precisely when investment in adaptation and low-carbon infrastructure is most critical (Carraro et al. 2018; Dafermos 2025; Jessie Guo et al. 2021).

These dynamics interact with the already elevated weighted average cost of capital that characterizes low-carbon investment in many developing countries. Political and regulatory uncertainty, shallow domestic financial markets, and macroeconomic volatility increase required returns for private investors. Efforts to de-risk projects through guarantees, blended finance, or project-specific subsidies often transfer contingent liabilities onto host governments while ensuring relatively stable profit streams for financial institutions in the Core. Debt-for-climate swaps and related instruments are proposed as partial remedies, yet they continue to operate within a framework in which climate action is expected to be financed largely through debt instruments that may entail policy conditionalities. Article 6 is entangled in this financial architecture in two ways. First, the promise that internationally transferred

mitigation outcomes and units generated under Article 6.4 can unlock private capital relies on the assumption that certified mitigation outcomes will function as reliable reference assets in climate-aligned portfolios. Second, the broader Paris framework, particularly Article 2.1(c) and the shift in Article 9 from an emphasis on providing finance to mobilizing it, has already inclined climate finance toward loans and market instruments rather than grants. For countries with limited fiscal space, this implies that participation in Article 6, or in associated "Mitigation Alliance"-type arrangements, may involve assuming additional foreign-currency liabilities in exchange for uncertain mitigation revenue. Without structural reforms to the international financial system and a significant expansion of concessional finance, there is a substantial risk that climate-related borrowing will exacerbate existing debt vulnerabilities rather than alleviate them (Stua 2017; Karanja 2024; Clive L Spash 2016; Stua 2016).

3.6.4. Adaptation, Loss and Damage, and the Limits of Market Logic

The North-South dynamics related to Article 6 cannot be fully understood by focusing solely on mitigation. For many peripheral economies, especially the least developed countries and small island developing states, the main concern is survival in the face of increasing climate impacts. As a result, adaptation and loss-and-damage finance are central to their climate agendas. However, these priorities do not align smoothly with the market logic that underpins Article 6. Mitigation can be standardized through baselines and units, making it suitable for crediting and trade. In contrast, adaptation is diverse and context-specific, often resisting standardization and monetization without losing its essential value. Moreover, loss and damage emphasize irreversible harms and displacement, directing governance towards issues of responsibility and compensation that are not easily reducible to price signals or crediting frameworks. In this context, global climate finance has predominantly favored mitigation-oriented projects, while adaptation remains relatively underfunded, and dedicated loss-and-damage finance is only beginning to emerge in partial and fragmented forms. The returns on many adaptation investments are primarily social and humanitarian rather than commercial, limiting their appeal to profit-seeking investors and reinforcing reliance on concessional finance. Insurance instruments extend private contracting into climate risk management, yet they typically operationalize risk through pricing and coverage conditions rather than acknowledging historical responsibility or ecological

debt; they address future losses for premium payers more than they compensate for past emissions by high emitters (Blum and Lövbrand 2019; Okereke and Coventry 2016; Bel and Teixidó 2020; Falkner 2016).

In cases where climate shocks are covariate and affect entire regions, the actuarial basis of insurance is strained, and premiums rise beyond the reach of the most vulnerable. Article 6 contains limited provisions acknowledging this imbalance. The share of proceeds from the Article 6.4 mechanism is mandated to support adaptation in particularly vulnerable developing countries, with the levy set higher than under the Clean Development Mechanism. Non-market approaches under Article 6.8 are formally intended to facilitate access to finance, technology transfer, and capacity building for mitigation and adaptation. These elements respond to long-standing demands from the Global South, yet they remain politically contested and institutionally thin. Extending the share-of-proceeds concept to bilateral and plurilateral transfers under Article 6.2 has been resisted by many developed countries and market actors, citing concerns that it would increase costs and reduce demand for units. Even where levies are agreed upon, the revenue base is volatile, as it depends on the continued operation and liquidity of offset markets. Consequently, adaptation support is contingent on a system that simultaneously permits continued emissions elsewhere (Stua 2017; Sovacool and Linnér 2016; Zhang 2009).

The equity implications are substantial. Vulnerable nations have consistently framed adaptation finance and loss and damage as issues of justice, rooted in the principles of common but differentiated responsibilities and ecological debt. When adaptation is primarily funded through minor levies on mitigation markets, and when loss and damage are addressed, if at all, through mechanisms that individualize risk rather than assign responsibility, the underlying political conflicts are shifted into technocratic discussions on tariffs, eligibility criteria, and project pipelines. The increasing prominence of Article 6 in the operationalization of the Paris Agreement thus contrasts sharply with the persistent underfunding of adaptation and loss and damage finance. A regime that heavily relies on market mechanisms to achieve mitigation, while leaving adaptation funding dependent on residual levies and discretionary pledges, risks perpetuating and exacerbating the core-periphery divide that has characterized the climate crisis from its inception. In summary, the mitigation-centric approach of

Article 6 is insufficient to address the accumulated justice deficit since the 1970s and is more likely to exacerbate it (Stua 2017; Bel and Teixidó 2020; Wainwright and Mann 2018; Adaman and Madra 2012).

3.7. From Mitigation Outcomes to Financial Claims

The previous sections examined how the Paris regime constructs and governs "mitigation outcomes" as transactable claims. This section traces how these claims penetrate sovereign financing instruments and how the classificatory vocabularies discussed in the previous chapter are operationalized as gatekeeping mechanisms within bond markets, ESG metrics, prudential frameworks, and voluntary offset markets. The aim is to identify the main channels through which a flexibility-first architecture is translated into balance-sheet exposures, spreads, and eligibility constraints.

3.7.1. Sovereign Green and Sustainability-Linked Bonds

Sovereign green bonds and sustainability-linked bonds are key mechanisms for converting Nationally Determined Contribution (NDC) narratives and Article 6 mitigation outcomes into financial instruments. Green bond frameworks typically align eligible expenditures with national climate strategies, long-term decarbonization pathways, or specific NDC components. Sustainability-linked bonds often tie coupon adjustments to key performance indicators related to emissions intensity, renewable capacity, or the proportion of low-carbon investments. In both cases, terms like "Paris alignment", "consistency with the NDC", or "compatibility with a net-zero trajectory" are included as contractual categories within bond documentation rather than as public planning obligations (Forsbacka 2021; Karanja 2024).

This structure creates a stacking problem. A single renewable energy program can simultaneously contribute to the host country's NDC, serve as a basis for generating Article 6 units, and be presented as the use of proceeds or KPI for a sovereign green or sustainability-linked bond. Without strict and transparent regulations, there is nothing to prevent the stacking of labels and the multiplication of accounting entries against a single physical intervention. In aggregate, this enables multiple claims on the same ton of emissions avoided while the underlying physical trajectory changes little,

if at all. The regime permits this outcome because scarcity is defined in terms of units and labels rather than an aggregate carbon budget (Forsbacka 2021; Wainwright and Mann 2018).

The distinction between use of proceeds and sustainability-linked structures further illustrates how flexibility in metrics reshapes incentives. Use of proceeds green bonds promise earmarking rather than an aggregate emissions trajectory. As long as disbursements comply with a taxonomy that defines “green” expenditures, the sovereign remains free to expand high-carbon activities elsewhere in the budget. Sustainability-linked bonds, in principle, tie the cost of capital to climate performance, yet the KPIs frequently rely on intensity measures, partial sectoral coverage, or distant reference years. Coupon step-ups are often modest in size relative to the sovereign's overall interest bill and do not force structural change, particularly for high-income issuers with deep markets (Carraro et al. 2018; Neumann 2023; Forsbacka 2021).

For many emerging and developing economies, the primary attraction of these instruments is continued market access and signaling of policy credibility rather than a binding constraint on development choices. In this configuration, climate performance becomes a pricing feature rather than a hard limit. The “greenium” associated with labeled bonds is typically small and uneven, more visible for core sovereigns than for peripheral ones, yet it shapes expectations about what constitutes responsible debt management. Rating agencies and ESG providers integrate NDC narratives, participation in Article 6, and the existence of credible bond frameworks into country risk assessments. Sovereigns can therefore enhance their perceived alignment, and sometimes their spreads, by refining frameworks and disclosures even when actual decarbonization remains incremental. This is one of the channels through which a market-regulated climate constitution transmits climate governance choices into sovereign finance conditions (Dennis 2022; Neumann 2023; Nordhaus 2021).

3.7.2. Climate Risk Metrics, Sovereign Spreads, and Procyclicality

The increasing use of climate-related ESG indicators in sovereign risk analysis strengthens the link between the Paris-era information infrastructure and sovereign financing conditions. Climate-related indicators are now part of bond indices, exclusion lists, and rating methodologies, either as separate pillars or as modifiers of

existing risk scores. The point is not that these tools are uniform or coherent across providers, but that they increasingly mediate how sovereign “climate credibility” is rendered legible to global investors. Nationally Determined Contribution (NDC) ambition, the presence of a credible transition plan, participation in Article 6, and reported physical vulnerability are often mapped into composite indicators used to summarize climate exposure and transition credibility for investors.

These metrics are built upon the same diverse and contested data landscape discussed in earlier sections. In contexts where inventories, Article 6 accounting, and disclosure regimes are fragmented or dependent on external consultants, sovereigns in the Periphery can face wider risk premia because data gaps and fragmented reporting increase model uncertainty for analysts, ratings providers, and investors.

Climate vulnerability or perceived policy misalignment can lead to wider spreads, even when historical responsibility is minimal and adaptation needs are significant. For reserve currency issuers and core financial centers, the same indicators often appear to have a weaker effect on borrowing costs, consistent with the buffering role of reserve-currency status and deep domestic markets. This dynamic can be procyclical, in the sense that worsening risk assessments tighten financing conditions and reduce fiscal space precisely when investment needs rise. As transition and physical risks materialize, or as assessment methodologies become more stringent, capital tends to move away from jurisdictions deemed vulnerable or misaligned.

The effect is most pronounced where domestic markets are shallow and where sovereigns rely on external portfolio flows. Precisely when public investment in adaptation and low-carbon infrastructure should accelerate, risk premia increase, maturities shorten, and policy space contracts. In a disclosure-led regime, climate risk is priced as credit risk, and the cost of that risk is disproportionately borne by states already disadvantaged by global monetary hierarchies.

ESG metrics thus serve as an additional gatekeeping layer that can exacerbate the asymmetries analyzed in section 3.6 rather than ameliorating them (Monasterolo 2020; Melnick and Smith 2025; Schneider and La Hoz Theuer 2019; Bel and Teixidó 2020; Ameli et al. 2021).

3.7.3. Carbon Credits and the Market Ecology: Article 6 and the Voluntary Carbon Market

The formal architecture of Article 6 and the voluntary carbon market form two interconnected yet distinct ecosystems of credits and labels. Article 6 units are integrated within the Paris Agreement framework, subject to corresponding adjustments and reporting under the Enhanced Transparency Framework. In contrast, voluntary credits are issued under private standards, driven by corporate net-zero commitments and reputational strategies, and have historically operated outside the compliance systems of the UNFCCC. Since the Paris Agreement, voluntary standard setters have sought to brand some of their units as "Paris aligned" or "Article 6 compatible", particularly when host governments authorize them and apply corresponding adjustments. Other units remain in a non-authorized category, usable for voluntary claims but not incorporated into NDC accounting (Ahonen et al. 2022; Cook et al. 2024; Gifford and Sauls 2024).

This differentiation creates a hierarchy of credits. Authorized and adjusted units are positioned at the top as a presumed high-integrity tier, marketed as scarce and more expensive. Non-authorized credits occupy a lower tier that is cheaper and more abundant, yet often based on weaker baselines, uncertain additionality, or questionable permanence. The same structural incentives that shape baselines and additionality under Article 6 apply here, frequently with even less public oversight. Corporations can continue to claim "carbon neutrality" or progress towards net-zero by purchasing such units, even when host states also count the underlying activities toward their domestic trajectories. The risk of de facto double claiming remains high, particularly when transparency provisions are weak or when information is shielded as confidential (Cook et al. 2024; Owen and Hanley 2004).

Private standard setters function as quasi-public regulators within this market ecosystem. They define eligible project types, methodological rules, monitoring requirements, and labels that signal "high integrity" or "Paris compatibility". Their decisions determine which mitigation outcomes can be monetized and whose claims will be considered credible by investors, consumers, and rating agencies. In practice, they mediate between state-based accounting under Article 6 and private demand for

offsets. This position confers significant agenda-setting power without the democratic accountability associated with public authorities. The proliferation of overlapping labels and quality tiers multiplies opportunities for arbitrage and relabeling, allowing high-emitting firms and countries to stretch net-zero narratives while postponing deep structural change (Kammourieh and Vallée 2021a; Demekas and Grippa 2021; Dimmelmeier 2024).

3.7.4. Taxonomies and Labels as Gatekeepers

Throughout this chapter, taxonomies and labels consolidate the classificatory efforts. Terms previously identified in the previous chapter as contested signifiers, such as "green", "sustainable", "transition" or "Paris aligned" are now formalized into screening criteria that regulate access to capital. Regulatory taxonomies, portfolio alignment methodologies, internal bank classifications, and index inclusion rules transform these labels into operational categories. Assets and projects that meet the relevant criteria become eligible for green bond frameworks, inclusion in sustainable funds, preferential treatment in certain prudential contexts, or more favorable investor mandates. Conversely, those that do not meet these definitions encounter higher spreads, shorter maturities, or outright exclusion (Kammourieh and Vallée 2021a).

This gatekeeping function is both potent and uneven. Jurisdictions and issuers with the capacity to generate robust climate data, commission external reviews, and navigate evolving standards are better positioned to secure favorable labels. In contrast, where data systems are weak or methodological debates remain unresolved, projects may be excluded from the eligible universe even when their contribution to mitigation or adaptation is significant (Stern 2007).

Divergence across taxonomies and ratings further complicates the situation. The treatment of gas and nuclear in the European taxonomy, the emergence of "transition" categories, and the coexistence of multiple ESG scoring methodologies create opportunities for label arbitrage and optimization. Issuers and intermediaries can select the most permissive standard that still satisfies a sufficient share of investors, while headline statistics on "aligned" finance grow more rapidly than actual decarbonization (Neumann 2023; Stern 2007).

In aggregate, taxonomies and labels complete the transition from scarcity defined by negotiated caps to scarcity defined by eligibility for favorable classifications. They operationalize the market-regulated climate constitution that has emerged from the Paris settlement. Access to affordable capital and central nodes of the financial system is increasingly mediated by metrics and labels whose content is determined by a limited set of public and private institutions. Chapter IV revisits this shift to reconstruct the causal mechanism through which flexibility, financialization, and classification interact to produce a climate governance regime that stabilizes participation while entrenching core-periphery hierarchies and delaying structural mitigation (Stua et al. 2022; Forsbacka 2021).

The analysis presented in this chapter examines the transition from binding caps to flexible, disclosure-based governance has redefined climate policy as an issue of managing transactable claims rather than enforcing collective obligations. Article 6 and its associated infrastructures are pivotal to this transformation. They not only facilitate “cooperative approaches” but also establish a stratified ecology of markets, standards, and intermediaries, where access to verification capacity, legal expertise, and deep capital markets becomes a significant source of advantage. This institutional design directs mitigation efforts into forms that are comprehensible and valuable to finance, while largely leaving questions of redistribution, historical responsibility, and structural vulnerability unresolved. In this manner, the Paris regime exemplifies the core argument of the thesis: policy fragmentation renders finance-compatible governance attractive and feasible, and finance-compatible governance, in turn, stabilizes fragmentation by rewarding those best equipped to operate within its technical and legal constraints.

CHAPTER 4

FINANCIAL INFRASTRUCTURE OF CLIMATE GOVERNANCE

Contemporary climate governance operates through an expanding financial infrastructure that assigns value, risk, and credibility to climate action. Previous analyses have demonstrated how scientific urgency has been translated into a regime characterized by flexibility, disclosure, and private finance, reflecting longstanding tensions over responsibility and sovereignty. The preceding chapter illustrated the transition from Kyoto's binding caps to the Paris regime, which reorganized climate governance around flexibility, disclosure systems, and market-based infrastructures. It elucidated how Article 6, transparency rules, and sustainable finance frameworks collectively embed financial logics into climate policy and how these instruments rely on institutional capacities that are unevenly distributed across the international system.

The current focus is on how this regime functions in practice and how its institutional architecture shapes the possibilities for climate action for states differently positioned within global financial hierarchies. This chapter examines climate governance as a political-economic system that governs through financial instruments, metrics, and intermediaries instead a neutral funding framework. The central argument is that finance has become the primary coordinating mechanism of the regime, defining what constitutes ambition, determining who can mobilize resources, and reinforcing asymmetric power relations between states. Financial tools structure developmental choices, discipline governments through ratings and market access, and embed climate commitments within a broader macro-financial hierarchy while their primary aim should be to fill funding gaps.

The analysis proceeds by demonstrating how the increasing reliance on taxonomies, disclosure frameworks, sovereign risk assessments, and de-risking mechanisms produces a climate architecture that presupposes high administrative and fiscal capacity. Where these capacities are uneven, the regime is experienced very

differently. High-capacity states internalize and shape the rules, while low-capacity and structurally subordinate states encounter them as external constraints that limit their policy space and tie climate planning to the priorities of investors, multilateral creditors, and verification bodies. In this sense, the financialization of climate governance becomes a mechanism through which dependency is reproduced. The chapter therefore situates contemporary climate governance within the broader framework developed earlier on state capacity, dependency and dependent financialization. It shows how financial logics enter at precisely the points where political consensus is thin, public institutions are fragmented, or developmental goals are contested. The institutional design of climate finance stabilizes fragmentation by substituting financial coordination for political agreement, and by directing climate action through channels that mirror the wider core-periphery hierarchy of the international financial system. This diagnosis prepares the ground for the final chapter, which draws out the implications of this configuration for the future of climate politics and for the prospects of more equitable forms of global climate action.

4.1. From Consensus Gaps to a Market-Regulated Climate Constitution

The global climate regime has addressed persistent consensus gaps by establishing a "market-regulated climate constitution", wherein financial infrastructures replace binding political agreements rather than resolving underlying conflicts. Building on previous chapters' analysis of fragmented climate governance and the translation of ecological concerns into financial concepts, it demonstrates how flexibility, transparency, and disclosure are structured to render climate commitments governable through markets rather than direct public authority. The transition from the Kyoto Protocol to the Paris Agreement represents a significant reconfiguration in the production, enforcement, and controversy of climate obligations. The primary causal mechanism involves the transformation of a persistent political impasse over binding emission caps into a regime where climate action is predominantly mediated through markets, accounting infrastructures, and disclosure mechanisms. Previous chapters examined how the post-war division of labor in global governance, coupled with the political abdication due to lack of global political consensus on how to take action against climate change with prolonged rise of financialization, impeded the imposition of stringent ecological limits on macro-financial decision-making. In this context,

climate change has been progressively reframed as an issue of risk management, investment, and pricing, rather than one of redistribution and binding constraints. For this thesis, this is the crucial pivot. The regime responds to distributive conflict by converting it into problems of market coordination and risk management. This is precisely the move that allows financialization to operate as a mode of climate governance rather than as a neutral channel for funding pre-agreed obligations.

Within this framework, the Paris Agreement does more than relaxing obligations. It relocates the main levers of influence. Universal, legally binding caps are replaced by nationally determined contributions that are voluntary in substance and binding primarily in procedure. Simultaneously, the Agreement intensifies the assetization of mitigation outcomes through Article 6 and establishes a comprehensive infrastructure of accounting, certification, and transparency within the Enhanced Transparency Framework. Scarcity no longer emerges from a singular global cap but from the scarcity of units, projects, and activities that satisfy the integrity and eligibility criteria necessary for recognition in carbon markets and climate finance. Compliance is enabled through reputation and access to capital rather than intergovernmental sanctions. Authority shifts towards those who design and control standards, taxonomies, and disclosure rules. The outcome is a market-regulated climate constitution that maintains financial imperatives while subordinating ecological limits to the logics of eligibility and financial risk (Oh 2023; Stua et al. 2021).

4.1.1. Institutionalizing the Split Between Macro-Finance and Ecology

The challenge of incorporating climate constraints into global governance is partly stems from the institutional settlement of the post-war period. The Bretton Woods institutions were charged with managing the “hard instruments” of macroeconomic policy, external balances, and development finance, operating under weighted voting rules that concentrated authority within a select group of high-income nations. In contrast, the United Nations system was assigned “soft instruments”, such as social policy and environmental issues, governed by one-country-one-vote procedures. This hierarchical structure insulated macro-financial institutions from ecological constraints, ensuring that economic growth and capital accumulation remained their primary objectives (Weston 2013). It became the structural precondition that allows

climate obligations to be recast as technical add-ons to a growth-first macro regime rather than as constraints on capital accumulation.

Trade and financial regimes further reinforced this separation. The World Trade Organization often viewed environmental measures as potential trade barriers. Structural adjustment and conditional lending promoted fiscal consolidation and liberalization, while narrowing domestic policy space for ambitious climate action. The shift from fixed to floating exchange rates and the liberalization of capital flows enhanced the capacity of financial markets to discipline governments that deviated from orthodox policies (Weston 2013; Stua 2017).

Climate governance emerged within this complex regime. Environmental bodies had to navigate around institutions whose mandates prioritized growth, trade, and financial stability, rather than enforcing ecological limits. Proposals that explicitly linked climate and macro-finance often acknowledged this asymmetry, for instance, by conceptualizing atmospheric carbon-absorbing capacity as an exhaustible resource that could be managed through financial instruments while remaining compatible with trade rules. The fundamental division between financial authority and ecological oversight persisted, shaping what was politically and institutionally feasible once the UNFCCC and the Paris process began (Weston 2013; Epstein 2018).

4.1.2. From Kyoto's Caps to Paris's Flexibility and Disclosure

The Kyoto Protocol represented an effort to establish binding constraints within the existing hierarchical framework. Theoretically, Kyoto Protocol's approach combined a strict cap with flexible instruments. However, in practice, the regime proved to be politically fragile and environmentally ineffective. The binary division between Annex I and non-Annex I parties allowed rapidly growing economies to remain without binding obligations, which fueled opposition in key industrialized states. Additionally, large quantities of "hot air" were generated by generous allocations to economies in transition, further undermining the integrity of the system by allowing compliance on paper without necessitating structural change (Clive L Spash 2016; Stern et al. 2014).

In response, the Paris Agreement abandoned the universal cap-and-trade logic, introducing a hybrid model based on Nationally Determined Contributions (NDCs).

The move from Kyoto to Paris can be read as a shift from an explicit but fragile attempt at binding caps to a regime in which participation and flexibility are secured at the price of weakening the link between law and a global carbon budget. Under the Paris framework, each party defines its own targets, policies, and timelines, and is required to submit, maintain, and update an NDC that reflects progression and the highest possible ambition. The Agreement is binding on procedures of planning and reporting but not on the achievement of specific emission levels. Compliance is defined in terms of participation in the transparency regime rather than adherence to fixed quotas. Ambition is supposed to increase through an iterative pledge-and-review cycle anchored in the Global Stocktake. This move secured near-universal participation, but at the cost of weakening the connection between the treaty and any scientifically derived global budget. It also created a governance space in which credibility and ambition depend on the quality of information and on how far national pledges can be rendered legible for markets and financial actors (Stua 2017; Falkner 2016; Schneider and La Hoz Theuer 2019). This transformation establishes a governance framework wherein credibility, ambition, and fairness are increasingly determined by the ability to generate information, meet transparency requirements, and make national trajectories comprehensible to markets. Flexibility addresses the diplomatic impasse by transferring the responsibility of discipline from treaty law to financial infrastructures and sovereign risk assessments. Through the lens of dependency and state capacity, this transfer means that the practical meaning of "ambition" depends less on legal entitlement to carbon space and more on the ability to generate information, satisfy evolving benchmarks, and remain attractive to investors located in the core of the financial system.

4.1.3. Article 6 and the ETF as Mechanisms of Market-Mediated Scarcity

Article 6 and the Enhanced Transparency Framework give operational form to this new logic. Article 6 and the Enhanced Transparency Framework translate Paris's flexibility into a system where scarcity is no longer imposed by a single cap but emerges from complex rules about what counts as a valid unit, a credible pathway or an eligible activity. Article 6.2 allows parties to use internationally transferred mitigation outcomes for their Nationally Determined Contributions (NDCs) or other international mitigation goals. Article 6.4 creates a central mechanism that produces

units from projects and programs. In both cases, mitigation outcomes are standardized as tons of CO_2 equivalent and transformed into tradable units. The Enhanced Transparency Framework requires detailed reporting on emissions, progress toward NDCs, and cooperative approaches, forming the informational backbone of this architecture (Oh 2023; Cook et al. 2024).

In the absence of a single global cap, scarcity is reconstructed through integrity and eligibility rules. The value of units depends on their compliance with requirements related to corresponding adjustments, additionality, baselines, leakage, and permanence. Corresponding adjustments are especially important because they prevent the same reduction from being counted in more than one inventory. Only mitigation outcomes that pass these filters can generate units recognized under the Paris regime. The same logic extends beyond compliance markets. Sustainable finance taxonomies and classification systems identify which activities qualify as "green" or "transition" and thereby determine access to climate-aligned capital. Scarcity is thus defined by the capacity to meet demanding technical and legal standards rather than by a fixed quantity of permits (Stua et al. 2021; Blum and Lövbrand 2019; Rossati 2021).

This system intensifies the assetization of climate action and concentrates the gatekeeping. Producing units that comply with Article 6 rules or align with high-integrity labels requires methodological expertise, legal capacity, and data that are unevenly distributed. Actors in major financial centers and in the Global North are better positioned to design standards, certify projects, and capture the associated rents. The governance of mitigation is mediated through certification and accounting, and control over these infrastructures becomes a central source of authority in climate politics, reproducing the existing asymmetries and inequality between the Global North and the Global South. Consequently, the capacity for mitigation is contingent upon access to methodological expertise, legal resources, and data, all of which are distributed unevenly. Those who possess the ability to design and implement integrity filters effectively gain de facto authority over defining what constitutes real mitigation and determining which entities can capitalize on it, thereby perpetuating the core-periphery disparities explored within the dependency framework. In other words, the design of Article 6 is not only about avoiding double counting and environmental

fraud. It also determines who can convert climate action into financial assets at scale, and on what terms. That is a central concern of dependent financialization, because it links the technicalities of integrity rules to the distribution of rents and bargaining power between core and peripheral states.

4.1.4. Enforcement Through Accounting, Disclosure and Market Access

The final element of the causal mechanism involves shifting enforcement from intergovernmental sanctions to financial discipline. The Paris Agreement's implementation and compliance mechanism is designed to be facilitative and non-punitive, lacking the authority to compel states to meet their Nationally Determined Contributions (NDCs). Instead, leverage is applied through the transparency regime and the integration of climate information into financial decision-making processes.

The Enhanced Transparency Framework requires all parties to submit Biennial Transparency Reports and undergo technical expert review using standardized tables and methodologies. These reports not only support the Global Stocktake but also directly inform the activities of investors, rating agencies, development banks, and central banks. Climate-related financial disclosure frameworks and scenario analyses, as advocated by entities like the Task Force on Climate-related Financial Disclosures and the Network for Greening the Financial System, convert physical and transition risks into balance-sheet categories. Taxonomies and labeling schemes define which activities are considered environmentally sustainable and influence portfolio allocation. Border Carbon Adjustment Mechanism of the European Union and climate clubs link trade conditions to climate performance (Karanja 2024).

In this setting enforcement takes the form of differentiated access to finance and the pricing of risk. Countries and firms that are perceived as misaligned with climate goals or exposed to unmanaged climate risks face higher borrowing costs, lower credit ratings and restricted access to some markets. Those that can demonstrate alignment and produce high-quality climate data attract cheaper capital and gain entry to high-integrity markets. Actors that control accounting standards, taxonomies, verification methodologies and disclosure rules therefore acquire disproportionate influence over what is recognized as valid climate action and which development paths remain financially viable. Climate policy becomes a field governed by the anticipation of

financial penalties and rewards rather than by direct legal coercion (Demekas and Grippa 2021). From this point onward, the central enforcement question in climate governance becomes who has the capacity to live with, shape, or resist financial discipline. The rest of the chapter traces the consequences of this shift for states that occupy very different positions in the global financial hierarchy.

Collectively, these dynamics expose how unresolved conflicts over binding obligations have resulted in a market-regulated climate constitution. The historical division between macro-finance and ecology, the transition from Kyoto's caps to Paris's flexibility, the construction of market-mediated scarcity under Article 6, and the relocation of enforcement into accounting and finance form a coherent mechanism. This mechanism reinforce fragmentation and perpetuate existing hierarchies while framing climate governance as a matter of transparency, eligibility, and risk management rather than binding ecological limits.

4.2. Institutional and Structural Effects

The market-regulated climate constitution, as reconstructed in the previous section, not only shifts enforcement to markets, accounting infrastructures, and disclosure mechanisms but also redefines the entities capable of exercising authority over climate policy. This is achieved by transforming technical measurement systems, taxonomies, and prudential tools into apparatuses of control.

The institutional effects of these processes are cumulative. Firstly, measurement infrastructures and scenario tools redefine what is recognized as “mitigation” and what is logical to investors. Secondly, sustainable finance taxonomies and disclosure regimes alter “green” or “aligned” status into an access condition for capital. Thirdly, prudential interfaces inside central banking and supervision bring climate concerns into financial stability mandates in a way that reflects the existing design of the macro financial regime and the expectations placed on these institutions. This reinforces the regime's financialized nature rather than displacing it. Collectively, these mechanisms structure coordination, credibility, and path dependence within the Paris regime, while perpetuating core-periphery hierarchies (Carraro et al. 2018). These institutional effects are significant for political economy as they determine the credibility and terms of participation in climate governance. The extent to which climate governance is

mediated through these infrastructures tends to favor states and actors with pre-existing informational, regulatory, and financial advantages, thereby reinforcing disparities in capacities. The argument presented here posits that these infrastructures are not merely neutral background conditions that facilitate implementation. Instead, they serve as the primary channels through which the market-regulated constitution, as described in the preceding section, is translated into tangible hierarchies of access, authority, and vulnerability. In this regard, they act as core components of dependent financialization, not auxiliary details.

4.2.1. Measurement Infrastructures as Sites of Control

The architectural framework discussed in Chapter 3 is based on the idea that robust, standardized metrics can replace the need for binding caps. Under Article 6 and the Enhanced Transparency Framework, mitigation outcomes must be measured against baselines, scenarios, and indicators that are inherently counterfactual and uncertain. There is no single "true" reference path for future emissions. Baselines depend on assumptions about economic growth, energy prices, population trends, and technological change, as well as judgments about which policies are considered given and which are deemed "additional" (Kreibich and Obergassel 2018b).

Thus, the core of the system is not a cap but a modeled counterfactual. Establishing a crediting baseline for an Article 6 activity or determining whether a pathway is "Paris-aligned", requires complex modeling and scenario design. In practice, this means that the choice of scenarios, parameters, and functional forms is crucial in determining the extent of mitigation counted, its location, and its cost. However, since these methodologies encode specific views of welfare, discounting, and burden sharing, methodological decisions that seem technical are, therefore, deeply political, as they determine which types of projects generate units and which trajectories are deemed credible. This reliance on modeling and quantification concentrates agenda-setting power in expert and technocratic bodies (Edmonds et al. 2021; Michaelowa et al. 2021).

(Bel and Teixidó 2020)Institutions that develop methodologies, design scenarios, and set baselines, including specialized consultancies, verification firms, standard-setters, and international organizations, define the parameters within which states and private

actors must operate. Deciding which principles, indicators, and processes will be recognized as "sustainable development" determines whether non-GHG impacts are substantively considered or reduced to checklists (Averchenkova et al. 2019).

Similarly, strict baseline rules are necessary to prevent "hot air" from re-entering the system through inflated business-as-usual projections, yet the capacity to design and defend stringent methodologies is heavily skewed toward actors with legal, technical, and modeling resources. In this context, measurement becomes a locus of authority rather than a neutral precondition for climate governance. Actors that control accounting standards, certification protocols, and disclosure rules determine what appears in inventories and registries, what qualifies as a mitigation "outcome", and which trajectories are perceived as compatible with the Paris goals.

This measurement regime facilitates coordination by providing a shared grammar for carbon accounting, but it also structures whose expertise is valued and which forms of knowledge are marginalized (Oh 2023; Dryzek et al. 2011; Michaelowa and Hoch 2017). This implies that the control over baselines, scenarios, and methodologies serves as a form of agenda-setting power. Actors possessing the capability to design and advocate for these tools influence the geography and profitability of mitigation efforts, whereas those lacking such capacity are compelled to adapt to reference paths established by others.

This dynamic reproduces the asymmetries in state capacity and reinforces dependent financialization. In this thesis, measurement infrastructures are conceptualized as strategic nodes within the framework of dependent financialization. By transforming disparate modeling expertise and legal resources into unequal claims regarding what constitutes credible mitigation, these infrastructures anchor climate policy to a hierarchy of knowledge and authority that reflects the broader core-periphery structure.

4.2.2. Taxonomies, Benchmarks and Disclosure as Gatekeeping Devices

The second layer of institutional influence arises from sustainable finance infrastructures that transform these measurements into binary or graded conditions for access to capital. As illustrated in Chapter 2, the transition to "green" and "sustainable"

finance has resulted in a surge of labels, indices, and ratings designed to align portfolios with climate goals. Within the Paris Agreement framework, these tools have become central gatekeeping mechanisms rather than peripheral elements.

Taxonomies, such as the EU Taxonomy, convert broad climate objectives into detailed lists of eligible activities and thresholds. Benchmarks and portfolio alignment tools and "net-zero" indices, compare financial exposures to reference pathways derived from models. Disclosure frameworks, including climate-related financial reporting codes, require firms and financial institutions to disclose their exposure, strategies, and targets in standardized formats. Together, these instruments make classification and transparency prerequisites for investment. Qualifying as "green" or "Paris-aligned" becomes the entry ticket to favorable funding and participation in climate-branded markets (Dimmelmeier 2024; Dryzek and Pickering 2019; European Central Bank 2024).

This system inevitably creates path dependence. Early definitions of what constitutes "green" or "aligned", developed by coalitions of investors, ESG providers, and standard-setters, form an installed base that subsequent regulation tends to build upon rather than overturn. Once categories, thresholds, and templates are embedded in disclosure rules, benchmarks, and supervisory expectations, they become difficult to revise without disrupting markets. Control over taxonomies and benchmarks thus confers epistemic and material power.

Private data providers and rating agencies, whose metrics are now utilized by regulators and central banks, act as de facto norm-setters. Development banks and climate-finance facilities frequently rely on their frameworks to screen projects and assess "readiness" in borrowing countries. Market actors that position themselves as guardians of "high-integrity" labels can define unit quality in voluntary and compliance markets, determining which credits are compatible with Article 6 rules and which are relegated to a low-value segment (Dimmelmeier 2024).

In practice, this means that actors in major financial centers are better positioned to shape eligibility criteria, while project developers in the Global South must absorb the costs of verification and certification to access scarce climate finance. Simultaneously, the credibility of the entire system depends on these same gatekeeping structures.

Fragmented metrics and opaque methodologies fuel accusations of greenwashing. In response, public authorities increasingly move to standardize disclosure and align private standards with official criteria. This reduces some inconsistencies but also strengthens the connection between climate governance and financial market infrastructures, reinforcing the centrality of financial intermediaries in the definition and enforcement of climate action. From a dependency perspective, this concentration of definitional power is decisive. Jurisdictions with deep capital markets and data infrastructures can hard-wire their preferences into taxonomies and benchmarks, while states with weaker capacity participate mainly as rule-takers. To preserve access to labelled capital, they are pushed to adjust their development strategies to externally defined categories of "green" and "aligned".

4.2.3. Climate Governance Within Central Banking and Supervision

The third dimension of institutional and structural impact involves integrating climate governance into central banking and financial supervision through prudential interfaces. As explored in Chapter 2, central banks and supervisors are increasingly acknowledging climate change as a source of both physical and transition risks to the financial system. Within the Paris Agreement framework, this acknowledgment does not transform them into decarbonization agencies. However, they reposition them as risk managers within a financialized climate regime.

The Network for Greening the Financial System (NGFS) exemplifies this trend by developing standardized climate scenarios and guidance for incorporating climate risk into financial stability monitoring. Scenario-based climate stress tests translate long-term physical and transition risks into projected losses and capital shortfalls, thereby identifying potential vulnerabilities in the portfolios of banks and insurers. These exercises enhance awareness and equip supervisors with tools to demand improved risk management practices. They also establish a shared set of scenarios that increasingly shape how both public and private entities conceptualize "orderly transition", "disorderly transition", or "hot-house world" trajectories. Central banks can also exert influence through their balance sheet and collateral policies. By adjusting eligibility criteria or haircuts for assets used in refinancing operations, or by considering brown penalizing and green supporting factors in capital regulation, they

can influence funding conditions in a climate-sensitive manner. Even minor adjustments in collateral frameworks can impact sovereign and corporate borrowing costs, as they signal what the central bank deems acceptable long-term risk and what it considers vulnerable to potential stranded-asset dynamics (NGFS 2024).

However, these prudential interfaces have distinct limitations. They operate under mandates that prioritize price stability and financial stability, rather than the achievement of absolute emission reductions or distributive justice. Risk-based approaches remain anchored in single materiality, focusing on risks to banks and markets rather than on the impacts of financial decisions on the climate system. Stress tests and scenario tools face significant uncertainty, data gaps, and model dependence, which limit their effectiveness as precise steering mechanisms. Collateral and capital tools can marginally adjust relative prices but cannot, by themselves, close the mitigation gap created by insufficient NDC ambition or the absence of robust fiscal and industrial policies (NGFS 2021).

In this context, prudential tools function as a bridge rather than a solution. They incorporate climate risks into the existing macro-financial regime, compelling large financial institutions to account for transition and physical risks, but they do so by reinforcing the fundamental logic described in the previous chapter. Climate change is once again framed as a risk factor to be priced and managed, rather than as a constraint that should reshape the mandate and operational logic of financial authorities (NGFS 2019; FSB 2024).

Taken together, the measurement infrastructures, gatekeeping regimes and prudential interfaces examined in this section translate the consensus gaps and flexibility of the Paris regime into a dense web of technical and financial constraints. They facilitate coordination and produce signals of credibility, but they also lock in particular pathways, privileges and exclusions.

4.3. Implications for Sovereign-Finance and Distribution

Market based climate governance explored in the previous chapters reallocates vulnerability and policy space along pre-existing core-periphery lines. When climate risk and “alignment” are mediated through sovereign spreads, taxonomies, and

conditional finance, the costs of both transition and inaction are distributed through the hierarchies of global finance, rather than through an explicit burden-sharing framework. This section shifts focus from the institutional and epistemic mechanisms discussed in the previous chapters and sections to their distributional impacts on sovereign debt dynamics, fiscal capacity, and development strategy, as well as the feedback loop that ties climate vulnerability to future negotiating power. Sovereign spreads, fiscal space, and conditional climate finance are treated here as the macro-financial expressions of dependent financialization. They show how climate vulnerability is priced and governed through an inherited hierarchy of creditworthiness rather than through an explicit, negotiated regime of responsibility and redistribution.

4.3.1. Sovereign Debt, Climate Risk and Rating Exposure

The incorporation of climate metrics into sovereign risk assessment effectively translates physical and transition risks into differentiated borrowing costs, which are systematically elevated for countries of the Global South. Climate change adversely affects economic growth, damages productive capital, and necessitates recurrent emergency expenditures. When these impacts are processed through climate-aligned ratings and scenario-based valuation tools, they manifest as increased default risk and diminished debt sustainability.

Empirical research indicates that climate vulnerability is already correlated with significantly higher sovereign spreads for emerging and developing economies, whereas the effect on advanced economies is negligible. In essence, the same global physical shock is evaluated through a pre-existing hierarchy of creditworthiness that predates the Paris Agreement. By conditioning yields on climate policy shock scenarios and the perceived misalignment of a country's economy with agreed pathways, climate stress tests and “climate spread” methodologies institutionalize a premium on vulnerability and delayed transition. For many low-income and climate-exposed states, this results in procyclical dynamics. Extreme climate events and gradual climatic deterioration increase fiscal demands and deteriorate macroeconomic indicators. Climate-sensitive ratings subsequently elevate the cost of refinancing, further constraining investment in resilience and mitigation, which in turn exacerbates measured climate risk. What previous chapters identified as a shift from quotas to risk-

based financial discipline thus possesses a clear distributional aspect. The countries least responsible for cumulative emissions incur higher costs for capital access precisely because they are more susceptible to the consequences of a problem they did not create (Bel and Teixidó 2020).

4.3.2. Fiscal Space, Development Strategy and Conditional Climate Finance

In low- and middle-income countries that are highly vulnerable, the convergence of increased risk premiums and conditional climate finance constrains fiscal capacity and limits development strategies. Many of these nations entered the Paris Agreement era burdened with high public debt-to-GDP ratios, restricted tax bases, and urgent social needs. The fiscal position of these countries has been further compromised by climate impacts and global disruptions, such as the COVID-19 pandemic. Within this framework, the substantial public investment necessary for adaptation and low-carbon infrastructure directly competes with poverty alleviation, essential services, and productivity-enhancing expenditures (OECD 2025; Cash and Swatuk 2022).

Although international climate finance is intended to alleviate these constraints, its current structure often perpetuates them. A considerable portion of the financial flows that contribute to developed countries' climate finance commitments are loans rather than grants. These financial flows expand external debt and are frequently linked to specific policy packages, regulations, or project types that align with the preferences of donors and multilateral development banks. As demonstrated in earlier chapters, numerous countries have submitted Nationally Determined Contributions (NDCs) with a component achievable domestically and a more ambitious, conditional component reliant on external finance, technology transfer, and capacity building. This framework embeds dependency within the governance regime. Achieving the higher-ambition pathway necessitates alignment with external eligibility criteria and verification standards, directing limited fiscal resources towards activities that can be measured and certified to the satisfaction of creditors and climate funds.

Consequently, development options for the Global South become more restricted. These countries are compelled to adopt climate strategies and sectoral priorities that prioritize “bankability” over developmental coherence. Climate-linked borrowing and ESG-driven investor preferences integrate climate objectives within a risk and

creditworthiness framework. In contrast, countries of the Global North maintain greater flexibility to distribute transition costs over time, mobilize their domestic capital markets, and pursue industrial policies that connect decarbonization to competitiveness without external conditions.

4.3.3. Transmission of Core-periphery Hierarchies Through Prudential and Market Channels

The mechanisms outlined previously suggests that central banks of key currencies and regulators as well as financial intermediaries in major financial centers set the frameworks for climate-related disclosure, taxonomies, and portfolio alignment tools. Once these frameworks are incorporated into supervisory expectations, benchmark design, and official climate-finance facilities, they effectively become global standards. Countries of the Global South seldom participate on equal terms in their development, yet they must comply with these standards to gain or maintain access to capital.

Article 6 cooperation operates within this inequitable landscape. High-integrity implementation requires strict baselines, rigorous additionality tests, and the application of corresponding adjustments to prevent double counting. While these safeguards are ecologically essential, they are also technically complex and resource intensive. Host countries with limited administrative and modeling capacity must rely on external consultants, verifiers, and standard-setters, who are predominantly based in the core. This reliance increases transaction costs and effectively places interpretive authority over what constitutes a valid “mitigation outcome” outside the jurisdictions where projects occur (Newell and Paterson 2010c; Fairhead et al. 2012).

At the same time, purchasers of units, often from high-income countries or corporations, can demand their preferred standards and labels, leveraging superior bargaining power. These dynamics echo earlier critiques of “carbon colonialism”.

4.3.4. The Climate-Finance Loop and Reproduction of Asymmetries

The process laid out creates a climate-finance feedback loop that perpetuates asymmetries between countries over time. Climate vulnerability and limited fiscal capacity elevate sovereign risk premiums and restrict access to capital. The resulting

increase in financing costs hampers the ability of vulnerable nations to invest in adaptation and low-carbon infrastructure, thereby heightening their exposure to physical and transition risks.

This increased exposure subsequently influences ratings, spreads, and prudential assessments, thereby completing the loop. Simultaneously, the failure of advanced economies to provide adequate, predictable, and predominantly grant-based climate finance, and to fulfill long-standing commitments, results in the absence of compensatory transfers at scale.

Within this framework, the Paris Agreement's commitment to “making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development” intersects with an international financial system that allocates capital based on pre-existing hierarchies of currency, creditworthiness, and market power (United Nations 2015).

The outcome is not merely an unequal distribution of costs but a stratified transition pathway where ecological limits are mediated through financial risk management, and the promise of cooperation is continually filtered through considerations of credit risk, investor confidence, and eligibility. This architecture does not necessarily predetermine outcomes for the future, and there remains potential for countervailing initiatives such as debt relief, grant-based adaptation finance, and more ambitious interpretations of common but differentiated responsibilities. However, unless these neutralizing forces are encouraged, the climate-finance loop reconstructed here is likely to be cemented (Schneider and La Hoz Theuer 2019; Gazzotti et al. 2021).

4.4. Dependent Financialization, State Capacity and the Architecture of Climate Governance

The preceding chapters have clarified how climate change has been transformed into a fragmented governance regime, marked by nationally determined contributions, disclosure requirements, and the mobilization of private finance, with markets emerging as key institutions of climate governance. When viewed alongside the theoretical discourse on state capacity, dependency, and dependent financialization in Chapter II, as well as the reconstruction of the Paris regime and Article 6 in Chapter

III, these developments represent a reconfiguration of enduring core-periphery hierarchies through new financial and institutional channels that assume high-capacity states while systematically constraining those lacking such capacity (Bracking and Leffel 2021; Kotchen 2020; Bracking 2021).

Climate governance presents an exceptionally rigorous test for the forms of state capacity outlined in the theoretical framework. Under the Paris regime, commitments are nationally determined, implementation relies on domestic institutions, and the credibility of the framework depends on detailed accounting, verification, and the ability to mobilize private finance at scale. Effective participation, therefore, presupposes advanced measurement infrastructures and data systems. States are expected to produce detailed greenhouse gas inventories, project future trajectories, and monitor implementation across sectors and regions. Monitoring, reporting, and verification frameworks depend on reliable statistics, digital infrastructure, and skilled personnel. These informational requirements favor states that already possess sophisticated statistical offices, environmental agencies, and regulators, while marginalizing those where such infrastructure is partial, donor-dependent, or fragmented (Dweck and Mazzucato 2025; Willems and Baumert 2003).

A similar asymmetry is evident in carbon accounting frameworks and sustainable finance taxonomies. Once climate governance is reframed through financial categories, classifying activities as “green”, “transition”, or “incompatible” with long-term goals becomes a prerequisite for access to climate finance and favorable regulatory treatment. Designing such taxonomies necessitates legal, technical, and political capacity to bind financial and corporate actors to definitions that reflect national priorities and ecological constraints. In contexts where state capacity is weak, taxonomies and benchmarks tend to be imported from external jurisdictions or heavily influenced by industry preferences. This can cement development paths that prioritize bankability over social and ecological needs, perpetuating the basic dependency pattern in which institutional templates designed in the core are adopted in the periphery as if they were neutral best practices. Regulatory and enforcement capacity further conditions the operation of the financial infrastructure of climate governance. Standards for emissions performance, energy efficiency, disclosure, and risk management remain largely symbolic if agencies cannot supervise compliance or

credibly sanction violations. In sectors where vested interests are powerful and adjustment costs are high, such as fossil fuels, construction, and heavy industry, weak enforcement permits continued investment in high-carbon assets under the guise of ambitious targets. In this context, climate instruments become part of a regime in which public authorities commit to market-compatible reforms while lacking the authority or organizational strength to confront domestic coalitions that benefit from delay. The gap between formal commitments and material change widens, and financial instruments serve to manage this gap rather than close it (Singh 2023; Perry 2021; Meckling and Nahm 2022; 2018).

The disparities in institutional capacity significantly influence the manifestation of financialization within the climate sector. In instances where public institutions lack the requisite capability to design and manage intricate policies, they often delegate essential functions to external entities. Consequently, consulting firms, verification companies, and multilateral agencies assume roles such as scenario modeling, regulation drafting, and compliance certification. Climate funds frequently channel resources through multilateral development banks or specialized agencies rather than national budgets, citing fiduciary concerns. This approach marginalizes domestic bureaucracies and restricts opportunities for developing sustainable administrative capabilities. What may appear as a technical solution to capacity deficits simultaneously consolidates external control over knowledge, standards, and implementation (Stua et al. 2022; Karanja 2024; Ciplet et al. 2022).

At the same time, the integration of climate risk into sovereign ratings and investment decisions imposes an additional layer of financial discipline on states with limited capacity. The mechanisms detailed in Chapter III, ranging from converting mitigation outcomes into tradable units to aligning finance with climate objectives, contribute to the metrics employed by rating agencies and asset managers. Countries that are highly vulnerable to physical climate impacts or perceived as lacking credible transition strategies face potential penalties through downgrades, increased risk premia, and reduced market access. For many states in the Global South this creates a vicious cycle of climate vulnerability and public debt. Climate vulnerability results in higher borrowing costs, compressing fiscal space and weakening the ability to invest in adaptation and mitigation, thereby reinforcing vulnerability and perceived risk.

Constrained fiscal space further compels these states to rely on private capital and externally designed financial solutions. In contexts characterized by shallow domestic financial systems and limited public revenues, green bonds, blended finance structures, and public-private partnerships become essential tools for “mobilizing” resources for climate-compatible development.

However, the terms for accessing these instruments are predominantly determined by investors and the mandates of international financial institutions. Eligibility criteria, risk-sharing arrangements, and expected rates of return reflect the preferences of global capital rather than democratically defined development strategies. As states internalize these criteria to remain “investable”, climate policy is filtered through the logic of bankability and debt service (Karanja 2024; Bracking and Leffel 2021).

Program conditionality reinforces this pattern. Countries experiencing external imbalances or debt distress often enter arrangements that necessitate fiscal consolidation, liberalization, and regulatory reforms aimed at enhancing the investment climate. Within such frameworks, climate objectives are integrated into macroeconomic conditionality or redefined primarily as opportunities to attract private investment. Public authorities are encouraged to socialize risk through guarantees and de-risking mechanisms, while expected returns accrue to private investors.

The capacity to direct credit towards projects that are socially and ecologically necessary but not commercially attractive is further diminished. What emerges is a configuration where the state manages downside risks on behalf of markets while relinquishing significant control over the direction of structural change (Perry 2021; Ciplet et al. 2022).

From this perspective, the financialization of climate governance transcends the mere expansion of financial markets into a novel policy domain. It is co-produced through the interplay of uneven state capacities, the dependency structures inherent in the global economy, and an institutional framework that prioritizes financial instruments as the default solution to implementation gaps. Instruments and standards, which may initially appear as pragmatic responses to funding constraints, also serve as mechanisms of dependent financialization. Climate commitments and developmental priorities are translated into metrics that are comprehensible to rating agencies, asset

managers, and international financial institutions (Dafermos 2025; Dweck and Mazzucato 2025).

The authority to interpret these metrics predominantly resides with actors situated at the core of the global financial system, while peripheral states are expected to internalize these assessments to secure access to capital. The resulting cycle links climate risk, sovereign risk, and fiscal constraint in a manner that intensifies dependency. Climate risk is converted into sovereign risk through stress tests, disclosure regimes, and market expectations. Sovereign risk elevates borrowing costs and tightens fiscal constraints. These tighter fiscal constraints increase reliance on private capital and financial instruments designed in and for core markets. The governance regimes associated with these instruments impose external metrics, standards, and conditionalities that further restrict domestic policy space. This cycle is what this thesis terms dependent financialization within the realm of climate governance. It connects the core-periphery hierarchies analyzed by dependency theory, the capacity differentials explored in discussions of state capacity, and the market-based architecture reconstructed in Chapter III. Viewed in this context, the shift towards finance is not merely a technocratic response to a global funding gap but a mechanism through which the institutional architecture of the climate regime stabilizes fragmentation and perpetuates asymmetric power relations between the Global North and the Global South. By presuming high-capacity states while systematically sidestepping and disciplining those lacking such capacity, contemporary climate governance constrains the ability of peripheral states to define and pursue their own climate and development priorities. The concluding chapter revisits this diagnosis and reflects on its implications for the prospects of more equitable and politically grounded forms of climate action.

CHAPTER 5

CONCLUSION

This thesis examines the organization and contestation of contemporary climate governance through financial logic. Even though the central multilateral treaty's emphasis on flexibility, transparency, and voluntary cooperation rather than binding caps is explored, this study does not focus on regime effectiveness or diplomatic bargaining in the sense of international relations. The analysis develops a political economy account of how a flexible, disclosure-based treaty design becomes governable through financial infrastructures, and how this configuration interacts with pre-existing macro-financial hierarchies between the Global North and the Global South.

Chapter I identified the climate crisis as both a physical reality and a political issue, characterized by persistent gaps between scientific diagnoses, policy commitments, and financial allocation. It reconstructed the scientific basis of global warming in order to show that inaction lies in the decisions of actors who choose how to respond to it, rather than the diagnosis of the problem. It then traced the evolution of global climate governance from early UN debates, through the Kyoto Protocol, to the Paris Agreement, highlighting how attempts to institutionalize binding constraints repeatedly ran into distributional conflicts, sectoral veto players, and North-South tensions.

This chapter was necessary to establish that contemporary climate inaction cannot be explained by a lack of knowledge or technological capacity. As a matter of fact, it arises from a configuration of interests and institutions that systematically downgrade ecological limits in favor of growth and competitiveness. By ending with the rise of financialized instruments under Paris, Chapter I provided the empirical and historical motivation for asking why market-compatible tools have become the preferred mode of climate response despite their limited track record.

Chapter II established the theoretical framework necessary to examine this issue. It integrated discussions on financialization, double materiality, just transition, and the evolution of sustainability language to conceptualize how climate change is translated into balance sheet categories. Financialization theory enabled the thesis to position climate governance within a broader reconfiguration of profit, power, and policy, wherein asset markets and risk management practices determine what constitutes a viable response. On the other hand, exploration of double materiality and just transition illustrated how responsibilities and distributional claims are redefined when climate change is perceived as a financial risk rather than a matter of historical responsibility. The analysis of the evolving meanings of "green", "sustainable", and "net-zero" demonstrated how these labels become institutional tools that can both enable and weaken constraints. Thus, Chapter II provided a vocabulary and set of causal mechanisms for understanding why market-based instruments appeal to policymakers and investors, and how they can simultaneously reinforce existing hierarchies and generate new forms of scarcity.

Chapter III translated this theoretical framework into a historical-institutional analysis of the evolution of markets as central institutions in climate governance. Beginning with the Bretton Woods-UN division, it demonstrated how macro-financial institutions were shielded from ecological constraints, influencing the subsequent structure of climate governance.

The chapter then scrutinized the Kyoto Protocol's experiment with caps and flexibility mechanisms, highlighting how issues of integrity, surplus allowances, and weak enforcement undermined the promise of binding scarcity. Building on this, it analyzed the Paris Agreement's shift towards flexibility, Nationally Determined Contributions, and the concept of "transparency as policy", before detailing the legal and technical infrastructure of Article 6, registries, and the Enhanced Transparency Framework. The objective of this reconstruction was to illustrate that what currently appears as a neutral market framework is, in fact, a specific constitutional arrangement that substitutes quantity-based discipline with information, eligibility, and market access as primary governance tools. This step was crucial for supporting the subsequent argument that climate governance has been reorganized around market-mediated scarcity, and that this reorganization is neither accidental nor distributionally neutral.

Chapter IV synthesized the various elements and advanced the central political economy argument of the thesis. Initially, it reconstructed the causal mechanism linking consensus gaps, flexibility, and the emergence of a market-regulated climate constitution, illustrating how enforcement is increasingly conducted through accounting rules, disclosure, taxonomies, and access to finance, rather than through legal sanctions. Subsequently, it analyzed the institutional and structural implications of this transition, with a focus on measurement infrastructures, the gatekeeping role of standard-setters, and the integration of climate metrics into central banking, supervision, and sovereign risk assessment. The chapter demonstrated how these prudential interfaces transmit climate concerns into sovereign balance sheets in highly uneven ways, thereby narrowing fiscal space and reinforcing core-periphery hierarchies. Finally, it examined the climate-finance loop, positing that market-regulated climate governance both reflects and reinforces asymmetries, and utilized this diagnosis to propose design principles. In doing so, Chapter IV clarified why incremental adjustments to existing market mechanisms are unlikely to achieve structural mitigation or climate justice, and why the appropriate domain of climate governance must be reclaimed as overtly political.

Collectively, these chapters illustrate that the financialization of climate policy is not an incidental by-product of technocratic innovation. It is the way in which the Paris architecture becomes operational in a world organized by balance sheets, macro-financial hierarchy and risk-based financial regulation. The key question is therefore how far the governance of climate is being filtered through financial categories, and with what distributive consequences. Ultimately, the core argument arises because the current framework channels climate ambition through financial logics, which are insufficient on their own to resolve distributional issues. The argument suggests that financial infrastructures can, at best, serve as channels for resource allocation and risk signaling. They cannot be the primary venues for societal decisions regarding the adequacy of mitigation efforts, the distribution of costs, or the acknowledgment of historical responsibility.

This thesis aims to contribute to existing literature in four ways. The thesis makes a conceptual contribution by integrating the literature on financialization with discussions on climate governance and sustainable finance. It approaches climate

policy as a complex domain where monetary hierarchy, balance-sheet expansion, and assetization are reconfigured. By highlighting mechanisms such as the assetization of mitigation outcomes, the framing of climate risk as a new domain for financial products, and the use of labels and taxonomies as access conditions, the thesis examines how climate change is interpreted through balance-sheet categories.

Secondly, the thesis provides an institutional and historical analysis of the evolution of markets into climate governance. Instead of viewing the Paris Agreement as a distinct departure from Kyoto, the analysis in Chapters II and III traces a longer trajectory beginning with the Bretton Woods-UN division between finance and ecology, progressing through the flexible mechanisms of Kyoto and the post-2008 shift towards transparency and investor-led initiatives, and resulting in a Paris framework where flexibility and disclosure are integral to the treaty design. Article 6 is interpreted not merely as a discrete "mechanism" but as a legal and institutional pivot through which mitigation outcomes are converted into tradable claims and linked to the Enhanced Transparency Framework and domestic policy instruments. This reconstruction aims to contribute to the political economy literature by demonstrating how treaty design choices and institutional compromises establish the structural conditions for financialization, without presuming that markets simply expand into a vacuum.

Thirdly, the thesis offers a distinct perspective on "measurement as power" in climate finance. The analysis of methodologies, scenarios, benchmarks, and prudential tools in Chapter IV reveals that the authority to define baselines, alignment metrics, and risk channels is a central site of political conflict. Control over these measurement infrastructures enables specific expert communities, rating agencies, and supervisory networks to influence what becomes visible, legitimate, and investable. Moreover, this extends beyond the typical critique of greenwashing, illustrating that even highly sophisticated integrity rules can entrench a particular political economy, one in which ecological limits are translated into model parameters, discount rates, and eligibility criteria that reflect the preferences and risk appetites of core financial actors.

A fourth contribution aimed at is the explicit connection of climate financialization to global inequality and sovereign finance. Chapter IV examines how climate-aligned

labels, ESG metrics, and climate spreads are incorporated into sovereign risk assessment and debt dynamics. The thesis demonstrates that climate risk is not solely a physical or technological issue but also a channel through which procyclical financial pressures are intensified. Climate vulnerability becomes a premium on borrowing costs for many low-income and middle-income countries, precisely those with the least fiscal capacity to undertake ambitious transitions or adaptation spending. By linking Article 6 cooperation, taxonomies, and prudential practices to sovereign debt, the thesis situates climate finance debates directly within the macro-financial hierarchy that distinguishes core and periphery.

On the other hand, political economy perspective adopted in this thesis is subject to certain limitations that need to be acknowledged. Firstly, the thesis prioritizes the global architecture and its principal institutional framework over detailed national case studies. It examines UNFCCC decisions, Article 6 rulebook provisions, yet it does not systematically explore how individual states incorporate these frameworks into domestic law or industrial policy. The national implementation of NDCs, the politics of fossil fuel producers, or the development of specific taxonomies and disclosure regimes in particular jurisdictions are addressed selectively and illustratively. A comprehensive account of these domestic challenges would necessitate further research.

Secondly, the thesis focuses on legal-institutional and macro-financial mechanisms. A micro-level analysis of investor behavior or firm-level decision-making is outside the scope of this work. Furthermore, the argument that markets tend to prioritize liquidity, risk management, and the protection of existing balance sheets is based on a combination of secondary literature and structural reasoning, rather than original quantitative analysis of financial flows.

Thirdly, the argument intentionally omits certain dimensions central to adjacent fields of study. Issues of regime effectiveness, bargaining strategies at specific Conferences of the Parties, or detailed compliance assessments are not directly addressed. They are considered in the background, as diplomatic compromises shape the legal text and implementation gaps influence financial risk. However, the thesis does not assess whether the Paris regime is “successful” in terms of emissions trajectories relative to

specific counterfactual scenarios. Its focus is on how institutional and financial architecture distributes risks and opportunities, rather than ranking outcomes against ideal models of cooperation.

Moreover, this thesis relies on documentary analysis and secondary sources rather than original fieldwork. It draws on UNFCCC documents, reports from multilateral institutions as well as academic literature from political economy, finance, law, and sociology. This method facilitates a broad reconstruction of the architecture but cannot fully capture informal practices, behind-the-scenes bargaining, or the everyday politics of implementation. Therefore, some of the mechanisms identified, such as the role of consultants and intermediaries in operationalizing Article 6 or the influence of specific rating agencies, could be further demonstrated through qualitative interviews.

Finally, the analysis employs a stylized core-periphery framework to highlight structural hierarchies within the global economy. This abstraction serves to expose the interactions among monetary hierarchy, susceptibility to climate impacts, and bargaining power.

However, it inevitably downplays significant differences among countries in the Global South and Global North, such as the political dynamics of emerging powers, the influence of regional development banks, and the potential of South-South cooperation. Consequently, the thesis offers a framework for understanding inequality and hierarchy, rather than providing a comprehensive mapping of all variations within the global political system.

The political economy approach developed herein presents multiple opportunities for further empirical and conceptual work. One potential avenue involves an in-depth examination of specific Article 6 arrangements and their financial supporters. Case studies focusing on bilateral or club-based cooperative approaches could clarify the negotiation processes surrounding baselines, corresponding adjustments, and sustainable development assessments. These studies would also identify the actors responsible for verification and financing, as well as analyze the distribution of benefits and risks between host and acquiring countries. Such research would serve to test and refine the thesis's assertion that measurement infrastructures and eligibility rules operate as gatekeeping mechanisms.

Further research is needed on alternative models of climate governance that are less reliant on financial mechanisms. The thesis has outlined, at a high level, the significance of prioritizing integrity-first rules, imposing strict limits on offset substitution, adopting robust concepts of double materiality, and implementing democratic planning. Future research could examine specific institutional frameworks that embody these principles, such as non-market cooperative mechanisms under Article 6.8, regional public investment compacts, or climate policies that emphasize direct regulation, public ownership, and industrial policy over market-based approaches. Comparative analyses of such initiatives would facilitate the identification of conditions under which climate action can be reintegrated into political decision-making without merely perpetuating existing hierarchies.

Additionally, there is potential for further theoretical development at the intersection of climate political economy and critical macro-finance. The dynamics described in this thesis suggest that climate governance is emerging as a central channel through which the global monetary and financial order is both reproduced and contested. Future research could link this insight to discussions on reserve currency status, capital controls, debt restructuring, and proposals for new international financial instruments. This would illuminate the extent to which a just and effective climate transition is compatible with the current organization of global finance and where more radical institutional changes might be necessary.

In summary, the thesis suggests that the financialization of climate governance is neither incidental nor neutral. It serves as the primary mechanism through which a flexible, disclosure-based treaty design is operationalized within a hierarchically structured global economy. Recognizing this does not necessitate the rejection of all financial instruments or the insistence on a singular institutional blueprint. However, it does imply that debates about climate policy cannot be reduced to considerations of efficiency, risk management, or regime design.

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A. TURKISH SUMMARY / TÜRKÇE ÖZET

Bu tez, mevcut iklim yönetişimini belirleyen kurumsal ve politik dönüşümleri finansal mantıklar üzerinden açıklayan bir siyasal iktisat analizi sunmaktadır. Hareket noktası, iklim krizinin yalnızca bilimsel ve çevresel bir sorun değil aynı zamanda derin biçimde politik, kurumsal ve dağıtımsal bir mesele olmasıdır. Mevcut iklim bilimi, küresel ısınmanın nedenleri ve sonuçları konusunda güçlü ve tekrarlanan bir mutabakata ulaşmış olmasına rağmen, devletlerin ve piyasaların verdiği yanıtlar bu bulguların gerektirdiği ölçek ve hızın belirgin biçimde gerisinde kalmaktadır. Çalışma, bu açığı bilgi ya da teknoloji eksikliği ile değil, bağlayıcı ve yeniden dağıtım odaklı küresel bir mutabakat inşa edilememesi ve bu boşluğun finansal araçlar, piyasa uyumlu çözümler ve raporlama-şeffaflık altyapıları ile doldurulması üzerinden açıklamaktadır. Bu çerçevede, finansal araçların yükselişi, yalnızca "finansman" sağlayan teknik bir yan ürün değil, iklim yönetişiminin kurumsal mimarisini dönüştüren siyasal tercihler bütünü olarak kavramsallaştırılmaktadır. Politik parçalanma/bölümlenme ile finansallaşma, karşılıklı olarak birbirini besleyen bir geri besleme döngüsü oluşturmaktadır. Parçalanma, "bağlayıcı yükümlülükler olmadan eylem" vaadi taşıyan piyasa uyumlu araçları teşvik etmekte, bu araçların yarattığı finansal altyapı ise küresel iklim yönetişimindeki parçalanmayı pekiştirmektedir. Sonuçta ortaya çıkan sistem, karbon salımı azaltımını yavaşlatan, eşitsizlikleri derinleştiren ve merkez–çevre hiyerarşilerini yeniden üreten bir piyasa-temelli iklim anayasasıdır.

Giriş bölümü, iklim değişikliğinin bilimsel temelini ayrıntılı biçimde yeniden kurarak, iklim krizinin aciliyeti ile siyasal tepki arasındaki kopuşu görünür kılmaktadır. Yükselen ortalama sıcaklıklar, artan aşırı hava olayları, okyanus ısınması, deniz seviyesi yükselişi ve ekosistem tahribatı, geri dönüşü zor eşiklerin hızla yaklaştığını göstermektedir. Buna rağmen, küresel emisyonlar kalıcı biçimde azaltılamamış olup, Paris Anlaşması'nın 1,5-2°C hedefleri ile mevcut politika kombinasyonu arasındaki uçurum kapanmamıştır. Bu kopuşun nedeni, tarihsel sorumluluk, yükümlülük paylaşımı, kalkınma ve egemenlik gibi konularda kalıcı ve çözülmemiş siyasal

gerilimlerdir. Bu nedenle iklim yönetişiminin temel sorunu, "ne yapılması gerektiği"nin bilinmemesi değil, "kimin, ne kadar bedel ödeyerek, hangi hızda harekete geçeceği" sorusunun siyasal olarak çözülememesidir.

Bu çerçevede tez, Kyoto'dan Paris'e uzanan küresel iklim yönetişimi mimarisini tarihsel bir süreklilik içinde ele almaktadır. Kyoto Protokolü'nün bağlayıcı hedeflere dayalı tasarımına rağmen uygulanması, başta Küresel Kuzey–Güney ayrımı olmak üzere dağılımsal çatışmalar, kalkınma öncelikleri ve sanayi lobilerinin direnci nedeniyle sınırlı kapsama ve zayıf yaptırıma sahip bir rejime dönüşmüştür. Paris Anlaşması ise, evrensel katılım karşılığında bağlayıcılıktan, sabit kotalardan ve güçlü yük paylaşımı mekanizmalarından geri adım atarak, ulusal katkı beyanları, esneklik, şeffaflık ve gönüllü işbirliğini merkeze alan yeni bir paradigma üretmiştir. Bu dönüşüm, iklim politikasında hukuken bağlayıcı kısıtlardansa, piyasaların işleyişi ile uyumlu, yatırımcıya "öngörülebilir bilgi" sağlayan bir esneklik-şeffaflık kombinasyonunu ön plana çıkarmaktadır.

İkinci bölüm, finansallaşmanın genel dinamiklerinin yanı sıra bu dinamiklerin mekânsal ve kurumsal olarak eşitsiz dağılımı hususunda bağımlılık temel alınarak bir kavramsallaştırma yapılmaktadır. Küresel ekonominin merkez–çevre yapısı içinde çevre ülkeler, yüksek borçlanma maliyetleri, daralmış mali politika alanı, kırılgan para birimleri, sınırlı düzenleyici kapasite ve uzmanlık açığı gibi etkenlerle, finansallaşmış iklim rejiminin kurallarını tanımlayan değil, bu kurallara uyum sağlamak zorunda kalan konumlardadır. Böylece "iklimin bağımlı finansallaşması", piyasa temelli iklim araçlarının, finansman açığını kapatmanın ötesinde, egemenlik, kalkınma stratejisi ve politika alanı üzerinde kısıtlayıcı etkiler yaratan bir yönetişim formu olduğunu vurgulamaktadır.

Finansallaşma, bu tezde devletin, firmaların ve hanehalklarının davranışlarının; refah devletinin, kamu hizmetlerinin ve kalkınma stratejilerinin; daha genel olarak da sosyoekonomik düzenin, finansal göstergeler, bilanço mantığı ve risk yönetimi pratikleri etrafında yeniden örgütlenmesi olarak ele alınmaktadır. Bu çerçevede, şirketlerin ve hanehalklarının giderek daha fazla borçlanma, varlık fiyatları ve finansal getiriler üzerinden konumlandığı; bankacılık sermayesi ile sanayi sermayesi arasındaki mesafenin açıldığı, finansın geleneksel aracılık rolünü aşarak reel ekonomi

üzerinde yönlendirici hâkimiyet kurduğu belirtilmektedir. Tarihsel literatürde bir tarafta finansallaşmayı uzun vadeli piyasa gelişiminin içsel eğilimi olarak yorumlayan çizgiye, diğer tarafta 1970'ler ve1980'lerden itibaren oluşan "ikinci finansallaşma" evresini vurgulayan heterodoks yaklaşımlara referans verilmektedir. Bölüm, bu iki okuma arasındaki gerilimi kullanarak, finansallaşmayı müstakil bir tarihsel dönem olmanın ötesinde, devletin ve sınıflar arası ilişkilerin yeniden biçimlenmesine yol açan, kriz eğilimlerini ve eşitsizliği derinleştiren yapısal bir dönüşüm olarak kavramsallaştırır.

Sonrasında devlet kapasitesi ve bağımlılık eksenine odaklanılmıştır. Devletlerin vergi toplama, borçlanma, düzenleme ve koordinasyon kapasitelerindeki asimetriler tesadüfi zayıflıklar olarak değil, merkez-çevre ilişkileri etrafında örgütlenmiş dünya ekonomisinin yapısal ürünü olarak ele alınmaktadır. Borç dinamikleri, koşullu finansman ve daralmış politika alanı gibi faktörler, özellikle çevresel ve yarı-çevresel ekonomilerde, finansal mantıkların kamu politikası üzerinde belirleyici hâle gelmesini teşvik etmektedir. Bu koşullar altında, iklim yönetişiminin piyasa uyumlu, teknokratik ve büyüme-duyarlı araçlara delege edilmesi daha olası hâle gelmekte; iklim politikası, açık yeniden dağıtım tartışmalarından ziyade kredi notları, risk primleri ve yatırımcı güveni kavramları üzerinden şekillenmektedir. Bölüm, finansallaşmanın bu açıdan yalnızca "finansın yükselişi" değil, aynı zamanda devletin hareket alanını, toplumsal koalisyonları ve iktidar ilişkilerini yeniden yapılandıran eşitsiz bir süreç olduğunu vurgulamaktadır. Bu bakış açısı, iklim değişikliğini de, giderek artan biçimde, "fiziksel bir sınır" olmaktan ziyade "yönetilmesi gereken finansal bir risk" ve "varlık sınıfı" hâline getiren süreçler olarak incelemektedir.

İklimin finansallaşması, doğanın metalaştırılması ve kamusal alanın çevrilmesi sürecinin devamı olarak ele alınmıştır. Tarihsel olarak doğanın enerji, hammadde ve atık yutağı olarak kapitalist birikim döngülerine eklemlenişi özetlenmekte olup, fosil yakıtlara dayalı büyüme modeli ve ekolojik sınırların aşılması iklim krizi bağlamında okunmaktadır. Bu çerçevede, atmosferin küresel bir müşterek olarak niteliği, piyasa temelli iklim araçları aracılığıyla hukuki ve sayısal iddialara dönüştürülmektedir. Emisyon ticareti ve kredi mekanizmalarında fiyatlanan "ürün" belirli bir düzenleyici çerçeve tarafından tanınan izinler ya da karbon azaltımı kredileri ve tahsislerdir, dolayısıyla metalaştırılanın atmosfer değil, atmosferin yutak kapasitesi üzerinde

kurulan hukuki hak iddiaları olduğu vurgulanmaktadır. Kredilerin ve tahsislerin portföyler, risk modelleri ve spekülatif stratejiler içinde dolaşıma sokulması, iklim alanının finansal piyasalara dahil edilmesinin ayırt edici niteliği olarak sunulmuştur.

"İklim meselelerinin finansal kavramlara tercümesi" başlığı altında, bölüm bu tarihsel ve kuramsal tartışmayı somut kavramlar düzeyine odaklanılmıştır. İklim riskleri, azaltım sonuçları ve "yeşil" faaliyetler; varlık, yükümlülük, risk primi, senaryo, stres testi ve açıklama metrikleri gibi kategoriler üzerinden finansal dil içinde yeniden tanımlanmaktadır. Bu noktada "çift yönlü önemlilik" kavramı, iklimle ilgili bilgi setinin finans sektörü açısından nasıl anlamlı hâle geldiğini açıklayan bir çerçeve olarak ele alınır.

Klasik "finansal önemlilik" yaklaşımının yatırımcıların kararlarını etkileyebilecek bilgiyi merkeze aldığı, dolayısıyla dışsal çevresel ve toplumsal etkileri yalnızca şirketin nakit akışları, değerlemesi ya da sermaye maliyeti üzerinde risk oluşturduğu ölçüde dikkate aldığı belirtilmektedir. Çift yönlü önemlilik ise teorik olarak hem iklimin firmaların üzerindeki etkilerini hem de firma faaliyetlerinin iklim ve toplum üzerindeki etkilerini kapsamaya dönük daha geniş bir sorumluluk çerçevesi olarak sunulmaktadır. Ancak bölüm, bu kavramın uygulamadaki muğlaklığına dikkat çekerek, "zayıf" yorumda çevresel ve toplumsal etkilerin yalnızca nihai olarak finansal risklere dönüştükleri ölçüde "önemli" sayıldığını ve böylece eleştirel potansiyelinin yeniden yatırımcı-merkezli bir ufka çekildiğini göstermektedir.

Ardından "adil geçiş" kavramı benzer bir seyir izleyen ikinci örnek olarak ele alınmaktadır. Adil geçiş, tarihsel olarak emek, bölüşüm ve kırılgan kesimlerin korunması ekseninde geliştirilen normatif bir çerçeve iken, giderek raporlama standartları, risk yönetimi çerçeveleri ve yatırım stratejileri aracılığıyla kurumsallaşmaktadır. Böylece başlangıçtaki radikal eşitlik ve yeniden dağıtım talepleri, finansal açıdan "yönetilebilir" risk kategorilerine indirgenmektedir.

Bölüm, çift yönlü önemlilik ile adil geçişi birlikte okuyarak, her iki kavramın da finansallaşmış ve sanayileşmiş kapitalizm eleştirilerinden doğduğunu, fakat sıklıkla raporlama rejimleri, yatırım çerçeveleri ve "riski azaltma" söylemleri üzerinden mevcut finansal yapılara yeniden entegre edildiğini tartışmaktadır. Bu bağlamda,

finansal dilin sorumluluğu genişlettiği izlenimini verirken, fiiliyatta hangi etkilerin önemsenmeye değer görüleceğini yeniden tanımlayan bir filtre işlevi gördüğü tespit edilmektedir.

Bölümün kısmı, sürdürülebilirlik dilinin tartışılması üzerinden iklim yönetişiminin söylemsel boyutunu analiz etmiştir. "Sürdürülebilir", "yeşil", "iklim dostu", "dirençli" gibi kavramların 1970'lerden itibaren farklı kurum, sektör ve bölgelerde dolaşıma girerek anlam değiştirdiği, bu anlam değişiminin iklim yönetişimi ve iklim finansmanı açısından tali bir söylem meselesi değil, merkezi bir iktidar mekanizması olduğu belirtilmektedir. Brundtland Raporu'nun sürdürülebilir kalkınma tanımının görünüşte büyüme ile ekolojik koruma arasında uzlaşma sunduğu, fakat "kalkınma" diline yapılan vurgu nedeniyle özellikle uluslararası finansal kuruluşlar ve kalkınma bankaları tarafından büyüme ve sermaye birikimiyle uyumlu biçimlerde yorumlandığı gösterilmektedir. Takip eden yıllarda sürdürülebilir kalkınma söyleminin esnekliği, farklı çıkarları ve kurumsal gündemleri aynı şemsiye altında toplamasına imkân vermiş olup, ancak bu esneklik kavramın içeriğini yumuşatarak onu net yükümlülükler üretmekten uzak, çelişkilerle dolu bir üst başlığa dönüştürmüştür. Özellikle uluslararası kalkınma bankalarının "yeşil büyüme" ve benzeri stratejilerle sürdürülebilirlik dilini büyüme yanlısı bir çerçeve içinde yeniden tanımladığı vurgulanmaktadır. Bu nedenle sürdürülebilirlik söylemi, tezde, ekolojik kaygıları retorik düzeyde kabul ederken büyüme önceliklerinin sürekliliğini sağlayan, içeriği sürekli müzakere edilen bir alan olarak ele alınmaktadır.

Üçüncü bölüm, tezin kuramsal çerçevesinde geliştirilen finansallaşma, bağımlılık ve söylemsel dönüşüm tartışmalarını tarihsel-kurumsal bir analize taşıyarak piyasaların iklim yönetişiminde nasıl merkezi kurumlara dönüştüğünü ayrıntılı biçimde incelemektedir. Bölüm, iklim rejiminin bugünkü yapısını, tarihsel olarak şekillenmiş kurumsal ayrışmaların, egemenlik kaygılarının, dağılımsal çatışmaların ve özellikle Küresel Kuzey devletlerinin bağlayıcı yükümlülüklerden kaçınma tercihlerinin sonucu olarak kavramsallaştırır. Bu çerçevede, iklim yönetişiminin kurumsal mimarisi ile finansal mantıkların yakınlaşması, finansman açığını kapatmaya yönelik "pragmatik" bir çözüm olmanın yanı sıra mevcut parçalanmış politika ve yönetişim düzeninin kurumsallaştırılması ve eşitsiz güç ilişkilerinin yeniden üretilmesi olarak sunulmaktadır. Bölümün merkezinde bu dönüşümün tarihsel kökleri, kurumsal

biçimlenişi ve özellikle Paris Anlaşması'nın 6. Maddesi etrafında somutlaşan hukuki-teknik altyapı yer almaktadır.

Çalışma, iklim yönetişiminin Bretton Woods kurumları ile Birleşmiş Milletler sistemi arasındaki tarihsel ayrışma ve bu kurumsal ayrışmanın rastlantısal olmadığı vurgulanmaktadır. Bu, makroekonomik politika ve finans alanını ekolojik ve toplumsal sınırlamalardan yalıtarak büyüme ve sermaye birikimi hedeflerini önceliklendiren yapısal bir tasarım olduğu olarak tartışılmaktadır. Sonuçta ortaya çıkan şey, çevresel yönetişimin her zaman mevcut ekonomik düzenin öncelikleriyle mücadele etmek zorunda kaldığı, ekolojik maliyetlerin ise makroekonomik karar alma alanının dışına itildiği bir kurumsal dünyadır. Bu tarihsel ayrışma, iklim politikasının finansla eşit düzeyde siyasal ağırlığa sahip olamayan, yumuşak politika alanı olarak örgütlenmesine zemin hazırlamıştır.

Bu kurumsal yapı, Kyoto Protokolü döneminde geliştirilen bağlayıcı üst sınırlar ve yük paylaşımı girişimlerinin neden kalıcı ve siyasal olarak sürdürülebilir olamadığını anlamak açısından kritik önemdedir. Kyoto döneminde bağlayıcılık temelinde inşa edilmeye çalışılan rejimin, egemenlik kaygıları, dış ticaret ve rekabet baskıları, sektörel veto aktörleri ve merkez-çevre hattındaki tarihsel adalet tartışmaları nedeniyle tıkandığını ve kırılganlaştığını ortaya koyar. Bu başarısızlık deneyimi, Paris Anlaşması'nın tasarımına giden süreçte belirleyici olmuş; bağlayıcı üst sınırlar yerine esneklik, gönüllülük ve açıklama temelli bir mimarinin daha siyasal olarak kabul edilebilir olduğu sonucuna ulaşılmıştır. Tez, bu tercihi finansal mantıklarla uyumlu, piyasaların yönetişim kapasitesini güçlendiren bir kurumsal kayış olarak yorumlar. Paris Anlaşması'nın benimsenmesi bu nedenle yalnızca bir diplomasi başarısı değil, aynı zamanda iklim yönetişimini finansal altyapılar üzerinden yönetilebilir hâle getiren tarihsel bir kırılma noktasıdır.

Bu çerçevede, Paris rejiminde piyasa temelli araçların ve muhasebe altyapılarının neden "ortak payda" hâline geldiğini açıklanmaktadır. Bağlayıcı yükümlülüklerin yerini alan bu düzen mantığında, iklim eyleminin tanımlanması, ölçülmesi ve izlenebilirliği finansal sistemle uyumlu bilgi mimarileri üzerinden sağlanmaktadır. Buna göre, Paris rejiminin kurumsal odağı yalnızca ulusal katkı beyanları değil, bu katkıların hesaplanabilir, izlenebilir, karşılaştırılabilir ve devredilebilir çıktılara

dönüştürülmesini mümkün kılan altyapıdır. Bu dönüşüm, 6. Madde üzerinden kurumsallaşmıştır. Bu nedenle 6. Madde Paris rejiminin finansal mantıkla bütünleşmesini sağlayan kilit kurumsal alan olarak ele alınmıştır.

Ayrıntılı biçimde analiz edilen 6. Madde, "karbon azaltım çıktılarının" devredilebilir birimlere dönüştürülmesi sürecini hukuki, kurumsal ve teknik boyutlarıyla ele alınmıştır. Madde 6, iki düzlemde piyasalaşma yaratmaktadır: İlki, işbirliğine dayalı yaklaşımlarla uluslararası transfer edilebilir azaltım çıktılarını (ITMO) oluşturan sistemdir; ikincisi ise daha kurumsallaşmış piyasa benzeri mekanizmaları tanımlayan yapıdır. Bu yapı, bir yandan kayıt sistemleri, yetkilendirme süreçleri, karşılıklı düzeltme kuralları ve bütünlük ilkeleri aracılığıyla sıkı bir muhasebe disiplini kurmakta olup, diğer yandan bu disiplin sayesinde azaltım çıktıları üzerinde devredilebilir mülkiyet benzeri hak iddialarının oluşmasını mümkün kılmaktadır. Böylece, iklim eylemi yalnızca siyasî bir taahhüt olmaktan çıkıp finansal değerlere çevrilebilir, saklanabilir, sertifikalandırılabilir bir yapıya kavuşmuştur. Bölüm, bunun Paris rejiminin temel yönetişim biçimini belirlediğini ve finansal mantığı normatif bir yan araç olmaktan çıkarıp rejimin merkezine yerleştirdiğini vurgulamaktadır.

Bu süreç, "evrensel görünümlü ama maddi olarak katmanlı bir yönetişim" olarak kavramsallaştırılmaktadır. Paris Anlaşması evrensel katılıma imkan tanıyan esneklik çerçevesiyle biçimsel anlamda kapsayıcıdır ancak 6. Madde altında işleyen piyasa ve muhasebe altyapılarının oluşturulması, sürdürülmesi ve güvenilir veri üretmesi ciddi kurumsal kapasite gerektirmektedir. Bu nedenle, hangi ülkelerin karbon azaltım birimlerini yetkilendirebileceği, hangilerinin sertifikalandırabileceği, hangilerinin güvenilir düzenleyici ve denetim altyapısı sağlayabileceği eşit değildir. Kapasite eşitsizlikleri, veri üretim maliyetleri, doğrulama ücretleri ve finansal sistemle kurulan bağın gücü, bu piyasalara kimin hangi koşullarda katılabileceğini belirlemektedir. Bu kapsamda 6. Madde altında ortaya çıkan yapı, görünüşte işbirliğine dayalı olsa da fiiliyatta merkez ülkelerin belirlediği standartların dışında kalamayan, çevre ülkeleri daha bağımlı hâle getirebilen bir düzen doğurmaktadır.

Bölüm, Paris rejiminin finansal mimarisinin yalnızca 6. Madde ile sınırlı olmadığını, 2.1(c) ve 9. madde üzerinden çok daha geniş bir finansal uyum hedefi kurduğunu göstermektedir. 2.1(c), finansal akışların düşük karbonlu ve iklime dayanıklı bir

kalkınma patikasına uyumlu hâle getirilmesini zorunlu kılarak, iklim eyleminin nihai başarısını finansal sistemin yeniden düzenlenmesine bağlamaktadır. Bu düzen, güvenilir, karşılaştırılabilir ve sertifikalandırılmış azaltım çıktıları gerektirdiği için 6. Madde altında kurulan sertifikasyon ve varlığa dönüştürme altyapısını doğrudan güçlendirmektedir. Aynı zamanda, 9. madde ile kamu kaynaklarının doğrudan aktarımı yerine daha çok "mobilizasyon" mantığının benimsenmesi, özel sermayeyi çekecek finansal araçların öncelik kazanmasına ve riskin önemli ölçüde borçlanan ülkelere aktarılmasına yol açabilmektedir. Böylece finansal piyasalara eklemlenme, gönüllü bir politika tercihi yerine Paris rejiminin kurumsal gerekliliği hâline gelmiştir.

Bu finansal mimari, gelişmiş bir şeffaflık ve doğrulama altyapısı olmadan çalışamamaktadır. 6. Madde altında kullanılan tüm birimlerin, transferlerin, karşılıklı düzeltmelerin ve bütünlük kurallarına uyumun, iki yıllık raporlar ve teknik inceleme süreçleriyle izlenmesi zorunludur. Bu yapı, yalnızca devletlerarası bir raporlama sistemi değil, aynı zamanda finansal aktörler için "yatırım yapılabilir iklim verisi" üretmeye yönelik bir altyapıdır. Özel standart belirleyicilerin Paris prensiplerine uyumlu ürün ve etiketler geliştirmesi, gönüllü karbon piyasalarının Paris rejimine eklemlenmesi ve finansal sektörle normatif iklim yönetişimi arasında kurulan dolaşımlı ilişki bu çerçevede açıklanmaktadır.

Dördüncü bölüm, bu kurumsal çerçevenin finansal altyapı üzerinden nasıl işlediğini ayrıntılandırmaktadır. Önceki bölümde analiz edilen Paris rejimi ve Madde 6 mimarisini, küresel finansal düzenin işleyişiyle kesiştiği noktalarda ele alarak, iklim yönetişiminin giderek piyasa temelli finansal altyapılar üzerinden işleyen bir sisteme dönüştüğünü ortaya koymaktadır. Bu bölümde amaç, finansal ölçüm, sınıflandırma ve risk yönetimi araçlarının, iklim politikası üzerinde nasıl belirleyici hâle geldiğini ve bu süreçlerin merkez-çevre hiyerarşilerini hangi kanallardan yeniden ürettiğini göstermektir. Teorik çerçevede tartışılan "ölçüm olarak iktidar" vurgusu, burada somut kurumsal mekanizmalar ve piyasalar üzerinden açılmakta olup, iklimin finansallaşmasının yalnızca yeni ürünler tasarlanması değil, aynı zamanda hangi iklim eylemlerinin görünür, meşru ve yatırım yapılabilir sayılacağını belirleyen bir iktidar alanı olduğu incelenmektedir. İklimi finansal kavramlarla uyumlu hâle getiren altyapıların başında gelen etiketler, taksonomiler, ESG göstergeleri ve iklim uyumlu portföy araçları ele alınmaktadır. Bu araçlar, Paris Anlaşması'nın 2.1(c) maddesinde

yer alan “finansal akımların düşük emisyonlu ve iklime dayanıklı kalkınma patikalarıyla uyumlu hâle getirilmesi” hedefiyle birlikte düşünüldüğünde, bilgi üretim mekanizmaları olmanın yanı sıra erişim ve dışlama araçları olarak işlev görmektedir. İklim hedeflerinin yatırımcı açısından anlamlı, karşılaştırılabilir ve izlenebilir kategorilere çevrilmesi, “yeşil”, “geçiş”, “uyumsuz” gibi sınıflandırmalar üzerinden gerçekleştirilmektedir. Bu kapsamda hangi faaliyetlerin uygun finansman ve düzenleyici muamele göreceği, bu sınıflandırmalara bağlı hâle gelmektedir. Bu noktada, taksonomilerin ve etiketlerin “tarafsız teknik çerçeveler” değil, hangi sektörlerin, teknolojilerin ve coğrafyaların destekleneceğine dair siyasal tercihleri içeren kurumsal araçlar olduğu vurgulanmaktadır.

İkinci adımda, bu sınıflandırma ve ölçüm altyapılarının egemen borç piyasaları ve ülke risk değerlendirmeleri ile kesiştiği alan incelenmektedir. İklimle bağlantılı göstergelerin, artan ölçüde, ülke derecelendirmeleri, tahvil endeksleri, dışlanma listeleri ve sürdürülebilirlik endeksleri gibi araçların içine gömüldüğünü değerlendirmektedir. Ulusal katkı beyanlarının iddialı olup olmaması, geçiş planlarının “inandırıcılığı”, Madde 6’ya katılımın durumu ve fiziksel kırılganlık göstergeleri, egemen borç riskine ilişkin göstergelere entegre edilmekte; bu da iklim performansının kredi notları marjlar üzerinden fiyatlanmasına yol açmaktadır. Böylece iklim riski, özellikle kırılgan ve gelişmekte olan ekonomiler için, yatırımcı nezdinde daha yüksek risk primi, kısmen daralan finansman koşulları ve kısa vadeli uyum baskısı anlamına gelmekte olup, iklim politikası ile borç sürdürülebilirliği arasındaki gerilim derinleşmektedir.

Bu mekanizmaların, geçişin yapısal mimarisini katmanlı hâle getirdiğini savunulmaktadır. İklim kırılganlığı daha yüksek ve politika alanı sınırlı ülkeler, artan risk primi ve daralan finansman imkânları nedeniyle gerekli uyum ve azaltım yatırımlarına erişmekte zorlanmaktadır. Bu da bu ülkelerin fiziksel ve geçiş risklerine daha fazla maruz kalmasına yol açmaktadır. Artan kırılganlık, derecelendirme kuruluşlarının değerlendirmelerine ve denetim otoritelerinin ihtiyatlılık değerlendirmelerine yansıyarak, risk algısını daha da güçlendirmekte ve döngüyü tamamlamaktadır. Gelişmiş ekonomilerin uzun süredir vaat ettikleri ölçek ve nitelikte hibe ağırlıklı iklim finansmanı sağlamamaları, bu döngüyü dengeleyecek yeniden dağıtım kanallarının yetersiz kalmasına neden olmaktadır. Böylece ortaya çıkan yapı,

yalnızca eşitsiz maliyet paylaşımı değil, finansal risk yönetimi mantığı üzerinden katmanlı bir geçiş patikası üretmektedir.

Bu kapsamda, iklim-finans döngüsünü ayrıntılı biçimde yeniden kurulmakta ve bu "iklim-finans geri besleme mekanizması" olarak kavramsallaştırılmaktadır. Döngünün başlangıç noktasında iklim kırılganlığı ve sınırlı mali kapasite yer almaktadır. Bu iki unsur bir araya geldiğinde, egemen risk primleri ve sermayeye erişim maliyeti yükselmektedir. Artan finansman maliyetleri, kırılgan ülkelerin düşük karbonlu altyapıya ve uyum yatırımlarına yönelmesini zorlaştırmakta, hatta ertelenmesine yol açmaktadır. Yatırımların gecikmesi, söz konusu ülkelerin fiziksel risklere ve geçiş şoklarına daha yüksek düzeyde maruz kalmasına neden olmakta, bu durum da derecelendirme notlarına, piyasa algısına ve denetim otoritelerinin risk değerlendirmelerine yeniden yansımaktadır. Bu aşamadan sonra döngü, daha da yüksek risk primi ve daha da zayıflayan yatırım kapasitesi ile kendini pekiştiren bir yapıya bürünmektedir. İleri sanayileşmiş ekonomilerin iklim finansmanı taahhütlerini yerine getirmemesi ve hibe yerine borç ağırlıklı araçlara yönelmesi, döngünün dengeleyici unsurlardan mahrum kalmasına yol açmaktadır.

Borç hafifletme girişimleri, hibe ağırlıklı uyum finansmanı, iklim borcuna dayalı yeniden yapılandırma mekanizmaları ve "ortak fakat farklılaştırılmış sorumluluklar" ilkesinin daha iddialı yorumları gibi karşı ağırlık girişimlerinin bu döngüyü zayıflatma potansiyeli olduğu vurgulanmaktadır. Ancak mevcut durumda bu tür girişimler hem ölçek hem de süreklilik açısından yetersizdir. Dolayısıyla, iklim-finans döngüsünün tezde yeniden inşa edildiği biçimiyle, aksi yönde güçlü müdahaleler olmadığı müddetçe katılaşma eğilimi taşıdığı belirtilmektedir. Bu, Paris rejiminin finansal akışları uyumlulaştırma iddiasının, mevcut uluslararası finansal sistemin para birimi hiyerarşileri, kredi değerliliği ve piyasa gücü eksenlerinde işleyen tahsis mantığı ile kesiştiğinde, eşitsizlikleri yeniden üretebileceği anlamına gelmektedir.

Bu yapının "bağımlı finansallaşma" kavramsallaştırması ile nasıl ilişkilendiğini ortaya koyulmaktadır. Parçalı, ulusal katkı beyanlarına dayalı ve özel finansman mobilizasyonuna odaklanan Paris rejimi, yüksek kapasite varsayımına dayanan ölçüm, doğrulama ve finansal sınıflandırma altyapıları üzerinden işler hâle gelmiştir. Bu altyapılar, gelişmiş istatistik ofisleri, güçlü çevre ajansları, bağımsız denetim

kurumları ve gelişmiş sermaye piyasaları gerektirmektedir. Bu kapasiteye sahip olmayan ülkeler ise, hem standartların geliştirilmesi sürecine sınırlı katılabilmekte hem de bu standartlara uyum sağlamak için dış danışmanlara, doğrulayıcılara ve çok taraflı aracılara bağımlı kalmaktadır. Bu bağımlılık, kurumsal tasarımların çekirdek ülkelerce belirlenip çevrede "en iyi uygulama" kisvesiyle yaygınlaştırıldığı, klasik bağımlılık dinamiklerini hatırlatan bir mimari üretmektedir.

Sonuç bölümü, tezin bütün bulgularını bir araya getirerek, çağdaş iklim yönetişiminin siyasal ekonomi temelli bir teşhisini sunmaktadır. Çalışma, Paris Anlaşması'nın esneklik, şeffaflık ve gönüllü işbirliği vurgusunun, bağlayıcı emisyon tavanları ve yük paylaşımı mekanizmalarının yerine, finansal altyapılar üzerinden işleyen bir yönetişim modeli koyduğunu göstermektedir. Bu model, görünürde kapsayıcılık ve pratiklik sağlarken, gerçekte merkez-çevre hiyerarşilerini yeniden üretmekte, yüksek kapasite varsayımı üzerinden inşa edilen standartlar aracılığıyla çevresel ve yarı-çevresel ülkeleri disipline etmekte ve bu ülkelerin kalkınma stratejileri üzerindeki politika alanını kısıtlamaktadır. Finansal araçlar, iklim krizinin tarihsel sorumluluk, adalet ve yeniden dağıtım boyutlarını teknik risk yönetimi ve portföy optimizasyonu kategorilerine tercüme ederek, siyasal tartışmanın eksenini kaydırmakta ve sorunu "hangi projenin hangi etikete uyduğu" sorusuna indirgeme eğilimi sergilemektedir.

Tez, finansal altyapının tümüyle reddedilmesi gerektiğini savunmamaktadır. Finansal araçların, kaynak tahsisi, risk sinyallemesi ve belirli projelerin finansmanında oynadığı rolü kabul etmekte ancak finansal mantığın iklim yönetişiminin tek ve baskın paradigması hâline gelmesine itiraz etmektedir. Finansal altyapı, önceden siyasal olarak kararlaştırılmış adalet, yeterlilik ve yük paylaşımı ilkelerini uygulamaya destek olacak bir kanal olabilecektir.

Buna karşılık, hangi hızda karbon azaltımı yapılacağına, hangi toplum kesimlerinin hangi bedeli ödeyeceğine, tarihsel sorumluluğun nasıl tanınacağına ve iklim krizinin kalkınma hakkı ile nasıl bağdaştırılacağına ilişkin kararlar, finans modellerine devredilemeyecek kadar siyasal ve normatiftir. Tez bu bağlamda, finansal piyasaları iklim yönetişiminin "altyapısal yardımcı unsuru" olmaktan çıkarıp, iktidarın yeniden dağıtıldığı bir siyasal alan olarak kavramsallaştırmıştır. Bu çerçevede çalışma, geleceğe dönük tartışmalara üç eksen üzerinden katkı sunmayı amaçlamaktadır.

Birincisi, iklim yönetişiminin yeniden siyasal alana dönmesi, yani finansın, tartışma alanının merkezinden çevresine çekilerek, bağlayıcı yükümlülükler, yeniden dağıtım mekanizmaları, kalkınma hakkı ve tarihsel sorumluluk tartışmalarının tekrar başrole taşınması gerektiğini savunmaktadır. İkinci olarak, devlet kapasitesinin, özellikle Küresel Güney ülkelerinde, sadece teknik ve idari bir mesele değil, aynı zamanda mali politika alanı, düzenleyici özerklik ve dış baskılara rağmen uzun vadeli kamusal hedefleri sürdürebilme becerisi olarak yeniden düşünülmesi önerilmektedir. Üçüncü olarak, iklim finansmanının, yalnızca risk azaltımı ve yatırımcıyı ikna etme mantığına sıkışmayan, tersine borç sürdürülebilirliği, borç hafifletme ve iklim adaleti tartışmalarını içeren, daha bütünlüklü bir çerçeveye taşınması gerektiğine işaret edilmektedir.

Sonuç olarak tez, finansallaşma ve bağımlılık kuramlarını iklim yönetişimi bağlamında bir araya getirerek, Paris rejimi altında şekillenen piyasa temelli iklim mimarisinin neden kalıcı ve adil çözümler üretmekte zorlandığını açıklamaya çalışmaktadır. Mevcut yapının, iklim krizinin çözümü için gerekli dönüşümü hızlandırmak yerine, çoğu zaman parçalanmayı kurumsallaştıran, eşitsizlikleri yeniden üreten ve kamusal otoritenin sorumluluğunu piyasa mantığına devreden bir mekanizma hâline geldiğini göstermektedir.

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