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Climate Governance in Multipolar Asia: Contestation or Cooperation

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ABSTRACT

Climate governance in Multipolar Asia is defined by an inherent and challenging duality: the region necessitates unified action to address existential environmental threats, yet its strategic landscape encourages institutional fragmentation and geopolitical rivalry. Asia, which is home to five of the world's largest greenhouse gas emitters, is simultaneously one of the most vulnerable areas globally. This study argues that climate action in the region exists in a dynamic and fragile nexus where targeted financial and technological cooperation mechanisms operate parallel to, but are continuously undermined by, strategic geopolitical contestation. While major Asian powers China, Japan, and the Republic of Korea have launched ambitious green finance and technology transfer programs, core regional institutions, particularly the Association of Southeast Asian Nations (ASEAN), frequently suffer from paralysis stemming from great power competition and consensus-based limitations. Consequently, the climate agenda relies heavily on non-state actors and bilateral initiatives to drive progress. Overall climate resilience is limited not by technical capability or financial capacity, but by persistent conflict over developmental equity, resource control, and strategic influence, suggesting that contestation remains the dominant force shaping the region's long-term environmental trajectory.

Keywords: Climate Governance, Multipolarity, Southeast Asia, Geopolitics, Green Finance, ASEAN, Technology Transfer.

Introduction

The Asia-Pacific region stands at a critical juncture, serving as both the epicenter of rapid global economic growth and a primary contributor to, and victim of, the accelerating climate crisis. The region accounts for approximately half of the world's carbon dioxide emissions and contains five of the largest greenhouse-gas-emitting countries globally (Alonso et al., 2021). This significant emission footprint contrasts sharply with the region's acute vulnerability, which includes intense heatwaves, devastating floods, and rising sea levels, rendering states like Myanmar, the Philippines, Thailand, and Vietnam among the most heavily impacted by climate-related fatalities in recent decades (Eckstein et al., 2019). The necessity for collective, ambitious climate action runs directly counter to the geopolitical reality of Multipolar Asia, where rising great power competition fundamentally complicates multilateral agreement and enforcement (Downs & Jones, 2021).

Multipolarity describes a fluid strategic environment in which several key state actors most notably China, India, Japan, and the Republic of Korea (ROK), along with the influential

strategic presence of the United States compete for political and economic influence. This competition inevitably shapes the architecture and efficacy of regional governance systems. Academic analysis concerning Asian environmental politics frequently appears within the broader contexts of International Relations or development studies, highlighting the need for dedicated focus on the highly diverse and complex governance systems found across the region (Simpson & Smits, 2024). These governance systems span from highly developed nations like Japan and Singapore to states near the bottom of the developmental scale, such as Laos and Myanmar. The heterogeneity of these political regimes, coupled with significant socio-economic diversity, necessitates a granular understanding of how environmental policies interact with national interests. Scholarly handbooks dedicated to environment and society across Asia and more specifically in Southeast Asia provide crucial foundational context for these complex, localized examinations (Hirsch, 2017).

The critical measure of the emerging multipolar order's stability and functionality is its ability to handle existential, shared human security threats such as climate change. If regional governance structures prove incapable of driving collective action against this universal challenge, it confirms that underlying geopolitical friction and contestation fundamentally override shared security interests. This paper, therefore, argues that climate governance in Multipolar Asia exists in a dynamic and fragile nexus where targeted financial and technological cooperation is continuously undermined by strategic geopolitical contestation. While cooperation thrives in siloed sectors (finance and technology), core issues of institutional cohesion, developmental justice, and resource security are persistently fractured, limiting the region's overall capacity for collective climate resilience.

The Architecture of Asian Climate Governance

Formal cooperation mechanisms exist extensively across the Asia-Pacific, beginning with the Association of Southeast Asian Nations (ASEAN). ASEAN cooperation on the environment is currently guided by the ASEAN Socio-Cultural Community (ASCC) Blueprint 2025, which envisions a sustainable, resilient, and dynamic community. This mandate focuses on key result areas such as biodiversity conservation, environmentally sustainable cities, sustainable climate practices, and sustainable consumption and production (ASEAN Secretariat, 2025). Specialized bodies like the ASEAN Working Group on Climate Change (AWGCC) are tasked with translating these high-level visions into regional policies, implementing measures, and promoting coordination with external Dialogue and Development Partners (ASEAN Secretariat, 2025).

Beyond ASEAN, broader regional economic frameworks also provide the structural background for climate discussions. The Regional Comprehensive Economic Partnership (RCEP), anchored by ASEAN members, China, Japan, and South Korea, establishes the world's largest trading bloc (RCEP Secretariat, 2020). While primarily focused on trade, RCEP provides the necessary economic network upon which green trade, cross-border infrastructure, and shared industrial policy collaboration can be built (Chatham House, 2021). However, the efficacy of these formal structures is not solely determined by their existence, but by their mandated political leverage and enforcement capacity in the face of divergent state interests.

Regional Financial and Development Organizations

Financial and development organizations often demonstrate greater effectiveness in resource deployment compared to political bodies constrained by consensus. The Asian Development Bank (ADB) plays a central and strategic role, specifically prioritizing climate change adaptation and resilience, alongside the promotion of clean energy and green development across Asia and the Pacific (ADB, 2024). ADB's primary goal is poverty reduction through

environmentally sustainable growth, providing financial assistance through loans, grants, and technical assistance. Critically, ADB is an accredited entity for the Green Climate Fund (GCF), enabling it to deploy resources for a wide range of projects focused on both mitigation (such as energy access, sustainable transport, and energy efficiency) and adaptation (including water security, infrastructure resilience, and early warning systems) (GCF/ADB, 2023).

Other high-level forums also contribute to shaping the regional governance outlook. The Asia-Pacific Economic Cooperation (APEC), under the stewardship of members like the United States and Peru, promotes policies leading to shared prosperity and sustainable economic growth (APEC Secretariat, 2024). APEC facilitates policy directions through long-term strategies, such as the Putrajaya Vision 2040 and the Aotearoa Plan of Action, which underpin future-generation policies alongside present-day trade and economic growth initiatives (APEC, 2021). The functional success of ADB and APEC often stems from their focus on quantifiable, results-oriented financial instruments and technical mandates, which allows them to operate more effectively outside the direct political constraints that often paralyze consensus-based institutions like ASEAN.

Sub-State and Non-State Actors: The Compensatory Role

The limitations of inter-state institutional capacity in Multipolar Asia have amplified the importance of actors operating outside traditional governmental frameworks. Climate action from sub-state and non-state actors (NSAs) including subnational governments, major corporations, cities, and non-governmental organizations holds significant potential to close the "emissions gap" between current Nationally Determined Contributions (NDCs) and the ambitious action necessary to meet global climate targets (Hale, 2018). These actors contribute to governance by pioneering new business models and policies, facilitating knowledge exchange, and building political support for increased climate ambition (Hale, 2018).

The post-Paris regime, institutionalized under the United Nations Framework Convention on Climate Change (UNFCCC), reflects this trend by creating institutional structures to engage and coordinate NSAs formally (Hale, 2018). A practical example of this shift is the Independent Global Stocktake (iGST) Southeast Asia Hub, established by non-state actors from countries including the Philippines, Thailand, Vietnam, and Indonesia (iGST SEA Hub, 2023). The iGST Hub aims to actively involve NSAs in analyzing and assessing the region's progress toward the Paris Agreement goals. These actors are crucial for translating global policy outputs into concrete regional and national actions, supporting the complex NDC updating process, and increasing accountability and transparency among Southeast Asian governments (iGST SEA Hub, 2023). In a region where geopolitical splits and state-level paralysis frequently stymie official progress, the robust bottom-up action driven by NSAs acts as a critical compensatory mechanism, preventing total stagnation in regional climate efforts.

Vectors of Contestation in Climate Governance

The cooperative frameworks described above exist alongside pervasive structural friction that frequently halts substantive progress. These contestations stem from divergent national interests, the legacy of economic history, and the interlinkage between environmental control and strategic security.

Geopolitical Friction and Institutional Paralysis

The fundamental challenge to regional cooperation lies in the nature of regional decision-making. ASEAN's institutional reliance on consensus norms allows major geopolitical splits, especially those related to the competing influence and priorities of China and the United States, to effectively slow and stymie progress on climate and other key issues (Downs &

Jones, 2021). This structural weakness leads to fragmentation and limited enforcement capacity within the bloc, illustrating a critical lesson: institutional cohesion is an essential safeguard against external strategic pressure (ISS, 2023).

This institutional vulnerability is readily exploited. China's increasing use of "grey-zone tactics" in regions like the South China Sea highlights regional governance vulnerabilities. These tactics include reports of Chinese actors acquiring strategically placed land in the Philippines and intimidating local communities, symbolically reinforcing territorial claims while simultaneously making these areas unusable for locals (ISS, 2023). Such actions underscore how institutional weaknesses can be leveraged for geopolitical gain, transforming environmental security disputes into manifestations of great power rivalry. The geopolitical environment introduces systemic insecurity, suggesting that collective climate action will remain severely constrained until regional institutions can find mechanisms to overcome consensus-based inertia.

The Politics of Historical Responsibility and Climate Justice

A major source of contestation in Asia's climate governance discourse is the dispute over historical responsibility and climate justice. History is crucial to these debates because the cumulative amount of carbon dioxide emitted since the start of the industrial revolution is tightly linked to the 1.2 degrees Celsius of warming that has already occurred (Carbon Brief, 2022). This historical context provides developing nations with a powerful moral and diplomatic lever. Laboratory experiments simulating climate mitigation bargaining have shown that appealing to the "shadow of history" is a successful negotiations tactic for poor countries (Banuri et al., 2022). When the historical causes of the climate problem are made explicit, low-income countries significantly reduce their mitigation contributions, while high-income countries contribute more to offset the reduction (Banuri et al., 2022). Although this shift benefits the welfare of low-income countries, textual analysis of the negotiation process reveals that making historical responsibility explicit increases tension and leads to more adversarial conversations (Banuri et al., 2022).

In practice, India's climate diplomacy is explicitly framed around promoting fairness and climate justice (Ratha & Barik, 2025). India asserts its position as a key player in multilateral negotiations by balancing international obligations with the imperatives of national development and economic sovereignty (Nachiappan, 2024). This diplomatic strategy includes pushing for the establishment of a global carbon market, which would allow developing countries to trade carbon credits and raise funds for sustainable development projects (Ratha & Barik, 2025). For Asian developing nations, the engagement in climate governance is fundamentally about successfully exploiting this moral high ground to secure adaptation and development resources from historical emitters.

Resource Geopolitics and Territorial Disputes

Climate-related infrastructure and resource management have become intrinsically intertwined with geopolitical control, transforming seemingly environmental issues into zero-sum security dilemmas. A prime example is China's large-scale dam construction on transnational rivers, notably the Mekong. This damming is widely perceived as granting China control over critical regional water systems, posing a profound, even existential, threat to downstream states like Vietnam (DNI, 2010). This pattern suggests that control over environmental infrastructure can be weaponized as a strategic lever.

The states most likely to contest this expanding influence are established regional powers with strong national identities and a history of competition, such as Vietnam and Indonesia (DNI, 2010, pp. 46–50). Indonesia, which often perceives itself as the natural leader in

Southeast Asia, finds itself at odds with China's ascent toward regional hegemony (DNI, 2010, pp. 46–50). The assertiveness demonstrated by China in both water management and territorial claims, which can intimidate local communities in strategically placed areas (ISS, 2023), elevates environmental governance to a matter of national security and sovereignty.

Governance Deficits and Developmental Trade-offs

Climate governance across Southeast Asia is complex and characterized by significant diversity, encompassing political regimes ranging from single-party systems (Vietnam), absolute monarchies (Brunei Darussalam), to presidential republics (Philippines) (Simms & Fick, 2022, pp. 1–18). Governing climate change in this environment is highly context-specific, determined by local political institutions and actors (Simms & Fick, 2022). A major functional challenge arises from fragmented governance structures and incomplete decentralization, where central bureaucrats often retain excessive power and resources (Nguyen et al., 2022). This dynamic undermines resilience building, particularly in secondary cities the fastest-growing urban centers in the Global South but those with the weakest capacity to address climate risks (Nguyen et al., 2022). Case studies show that policymakers often prioritize immediate economic growth over robust climate protection, contributing to the uneven distribution of climate risks across highly vulnerable populations (Simms & Fick, 2022, pp. 1–18; Nguyen et al., 2022). This structural weakness generates contestation across three classical political ecology dimensions: tensions between authoritarian and democratic governance models, the role of non-state actors versus centralized state planning, and conflicts between state regulations and market-driven climate action (Simms & Fick, 2022, pp. 1–18). The prevalence of governance deficits illustrates that climate action often fails not due to lack of intent, but due to misalignment of incentives and retention of power by central authorities. The study of India's environmental policy emphasizes how domestic political science theories relate to these local policy dynamics (Ciecierska-Holmes et al., 2020).

Pathways of Cooperation: Finance, Technology, and Targets

Despite the pervasive geopolitical friction, significant areas of operational cooperation persist, largely driven by economic necessity and technical specialization. These pathways are often successful because they frame climate action in quantifiable, depoliticized terms.

Major Power Mitigation Ambitions and Decarbonization Models

The commitment to mitigation among Asia's major industrial powers provides a positive foundation for collective regional action. China has set a goal of carbon neutrality before 2060, while Japan and the Republic of Korea (ROK) have pledged the same goal by 2050 (Alonso et al., 2021; Chatham House, 2021). These commitments set ambitious regional targets.

China, despite being the world's top polluter (Zhang & Orbie, 2019), has rapidly mobilized state industrial policy to establish a comprehensive, multi-source energy system encompassing coal, gas, nuclear, and rapidly expanding renewable energy capacity (SCIO, 2024). China's wind and solar generation capacity has risen exponentially, more than doubling in the three years leading up to 2024 and surpassing coal capacity in early 2025 (Ember Energy, 2025, pp. 8–9). This rapidly accelerating clean transition model offers both technological competition and a necessary source of supply chain capacity for the rest of the region. Regional integrated action, such as cross-border electricity transmission and joint promotion of circular economy technologies, promises far greater collective impact than individual countries acting alone (Chatham House, 2021). Analyzing authoritarian states like China and their environmental challenges provides context for their policy implementation speed (Shapiro, 2016).

Green Finance Mobilization and Policy Coordination

Mobilizing the enormous capital required for Asia's transition is a key area of cooperation. The Asia-Pacific region requires an estimated \$1.1 trillion annually for mitigation and adaptation, facing a crippling investment shortfall of approximately \$800 billion (IMF, 2024, pp. 1–45). To bridge this gap, coordinated action is essential, leveraging fiscal policy as a key instrument to accelerate mitigation and adaptation efforts and ease the transition to a low-carbon economy (Alonso et al., 2021).

Governments are encouraged to establish clear climate strategies with strong institutional oversight, phase out distorting fossil fuel subsidies, and expand carbon pricing schemes to create fiscal space for sustainable investments (IMF, 2024, pp. 1–45). Strengthening macroeconomic management is also seen as essential to attract necessary private capital flows from fast-growing environmental, social, and governance (ESG) assets, which have historically been difficult for the region to access due to existing environmental performance gaps (IMF, 2024, pp. 1–45).

3.3. Technology Transfer Mechanisms

The concentration of climate innovation among Asia's industrial nations provides a strong basis for technology cooperation. Two-thirds of all high-value patented climate adaptation technologies between 2010 and 2015 were located in China, Japan, or the Republic of Korea, alongside Germany and the United States (Dechezleprêtre et al., 2020). However, the cross-border trade of adaptation-related patents remains heavily concentrated among high-income countries and China, suggesting adoption rates in developing nations lag behind (Dechezleprêtre et al., 2020).

To address this, specific instruments have been developed. The commitment under Article 6 of the Paris Agreement, which allows for the international transfer of mitigation outcomes toward NDCs, is designed to facilitate technology deployment in developing countries while helping developed countries meet their reduction targets (Korea Climate Change Research Institute, 2020). Furthermore, the Japan Fund for the Joint Crediting Mechanism (JFJCM), managed by the ADB, provides grants and technical assistance to implement advanced low-carbon technologies in eligible developing nations (Korea Climate Change Research Institute, 2020). The existence of these technical and financial mechanisms demonstrates that cooperation is most resilient when it is depoliticized and focused on measurable, tangible results. The ongoing diplomatic friction between Japan and Korea does not stop essential climate and security cooperation when the need is high (Lee, 2025).

Infrastructure and Connectivity Cooperation (The BRI Nexus)

China's Belt and Road Initiative (BRI) acts as a powerful, albeit strategically complex, vehicle for climate finance and infrastructure development across Asia (Lim & Tan, 2023). Chinese banks and institutions initiated by China are the main financial participants, directing investment toward climate-resilient infrastructure, renewable energy, and low-carbon transport (Green FDC, 2018). This approach successfully mobilizes significant international private investment, as evidenced by the oversubscription of BRI climate bonds issued by institutions like ICBC, which fund projects to mitigate energy shortages and cope with climate changes (Green FDC, 2018).

The recent China-ASEAN Free Trade Area (CAFTA) 3.0 also emphasizes a cooperative model grounded in mutual respect and shared prosperity, bolstering confidence in South-South cooperation across the Global South (Global Times, 2025). Crucially, while the BRI has often been critiqued as China-centric, more nuanced research highlights the significant agency of host states to maneuver BRI projects to work for their specific national interests (Lim & Tan,

2023). This shows that infrastructural cooperation is not purely top-down, but rather a complex, negotiated partnership, provided that recipient states maintain strong institutional capacity to articulate and enforce their developmental needs.

Synthesis: The Multipolar Nexus and Future Resilience

Climate governance in Multipolar Asia is structurally defined by the co-existence of technological leadership and geopolitical rivalry. This inherent duality means that the region is technologically capable and financially active, yet its cooperative efforts are continuously stalled by strategic friction. The most successful cooperative pathways are those that successfully frame climate action in economic and technical terms, utilizing specific instruments like the JFJCM (Korea Climate Change Research Institute, 2020), ADB green lending (GCF/ADB, 2023), and China's specialized climate finance mechanisms (Green FDC, 2018). Conversely, climate contestation dominates political security issues, developmental justice disputes, and the stability of regional institutions (Downs & Jones, 2021).

Every major power uses climate action whether through financial vehicles like the BRI (Lim & Tan, 2023) or diplomatic leverage via climate justice (Ratha & Barik, 2025) to advance strategic influence. This means that even seemingly cooperative acts contain elements of subtle contestation or competition for regional leadership. China's climate leadership presents a particularly sharp contradiction: it is both the world's necessary and powerful partner in energy transition (Ember Energy, 2025, pp. 8–9) and the primary source of resource security conflicts (DNI, 2010, pp. 46–50).

The critical implication for Multipolar Asia is that developmental and climate resilience remains hostage to great power competition. When regional governance faces critical climate-induced challenges, such as integrating policy in decentralized environments (Nguyen et al., 2022) or managing transboundary disputes, the geopolitical security dilemma frequently overwhelms the shared interest in collective survival.

Policy Implications for Maximizing Cooperative Efforts

To mitigate the structural influence of contestation, several policy adjustments are required to reinforce the existing pathways of cooperation:

1. **Enhancing Institutional Resilience:** Regional bodies must move beyond the inertia imposed by rigid consensus models when confronting existential threats. ASEAN, for instance, could adopt layered decision-making structures or mechanisms that allow a “coalition of the willing” to advance critical climate policies, thereby insulating essential actions from major geopolitical vetoes (Downs & Jones, 2021).
2. **Prioritizing Sub-State Action:** Governments must actively engage sub-state and non-state actors in the NDC process (iGST SEA Hub, 2023). Leveraging the innovation of cities and corporations helps bypass fragmented central bureaucracies and incomplete decentralization, achieving implementation speed and effectiveness that centralized state planning often lacks (Hale, 2018; Nguyen et al., 2022).
3. **Mitigating Dependency Risks:** Developing nations receiving large-scale climate infrastructure financing (e.g., via BRI) must build robust institutional agency to critically assess external financing (Lim & Tan, 2023). This ensures that climate infrastructure serves genuine national resilience goals rather than enabling foreign strategic control over critical resources, thereby preventing developmental dependencies from evolving into acute geopolitical vulnerabilities (DNI, 2010, pp. 46–50).
4. **Codifying Climate Justice Mechanisms:** While historical responsibility creates tension (Banuri et al., 2022), its codification into functional financial transfer mechanisms,

such as global carbon markets, offers a sustainable and morally grounded pathway for resource mobilization, allowing developing countries to monetize their mitigation efforts (Ratha & Barik, 2025). General scholarship on environmental politics provides a framework for these complex state-society-market tensions (Harris & Lang, 2015).

Conclusion

The analysis reveals that climate governance in Multipolar Asia is defined less by a trajectory towards either pure contestation or pure cooperation, and more by a fragile and persistent duality. The region is characterized by world-leading technological capacity, ambitious national targets, and vibrant non-state engagement that drives adaptation and mitigation through specific financial and technical conduits. These cooperative mechanisms, particularly in green finance and technology transfer, are often successful because they have been functionally depoliticized, operating on the basis of economic returns and scientific efficiency. However, the effectiveness of these cooperative efforts is fundamentally constrained by escalating strategic contestation. Geopolitical rivalries paralyze institutional capacity, resource security issues are weaponized, and deep-seated disputes over historical responsibility fuel adversarial negotiating environments. The ultimate determinant of success for Asia's climate agenda remains the ability of states to decouple climate security from the ongoing great power competition for influence. Achieving genuine regional resilience requires policymakers to consistently prioritize collective environmental security and risk mitigation over individual strategic or developmental advantages, transforming the current dualistic structure into a unified, enforcement-driven framework for collective action.

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