
**INDONESIAN CLIMATE DIPLOMACY: MANGROVE GOVERNANCE AND
IMPLEMENTATION OF THE PARIS AGREEMENT**

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Abstract

The Paris Agreement encourages developing countries like Indonesia to integrate environmental assets into global climate diplomacy strategies. This study aims to analyze how national mangrove governance has transformed into a strategic instrument for Indonesian climate diplomacy in supporting the implementation of the Nationally Determined Contribution (NDC) and Paris Agreement commitments. Using a descriptive qualitative method based on literature studies, this study analyzes secondary data through a constructivist theoretical framework, the concept of international environmental regimes, and the concept of climate diplomacy. The findings indicate that mangroves function as an effective pillar of climate diplomacy in attracting green funding and strengthening Indonesia's bargaining position in multilateral forums. However, its effectiveness is hampered by the gap between global diplomatic ambitions and domestic institutional regression resulting from the dissolution of specialized institutions that triggered mandate fragmentation and centralized bureaucracy. The top-down governance pattern also alienates the role of district, village, and community governments, resulting in low program sustainability at the grassroots level. This study concludes that structural reform through a multilevel governance model that includes decentralization of mandates based on legal regulations (UU/Perpres) and direct access to funding mechanisms is an absolute requirement to ensure the credibility of climate reporting and the integrity of equitable Indonesian climate diplomacy.

Keywords: Constructivism, International Environmental Regime, Climate Diplomacy, Mangrove Governance, Multilevel Governance.

INTRODUCTION

The 2015 Paris Agreement is a milestone in 21st-century global climate governance, setting a collective target of holding global temperature rise below 2°C and limiting it to 1.5°C (Change, 2025). Unlike previous

regimes, this agreement adopts a bottom-up approach through Nationally Determined Contributions (NDCs), which provide flexibility for countries to set mitigation targets based on national capacity (Delbeke et al., 2019). As a political mechanism, the Paris Agreement encourages a gradual increase in climate ambition through NDC updates every five years, making shared accountability central to its architecture (Regina et al., 2024). The active participation of developing countries in the Global South is now a determining factor in achieving the global net-zero agenda (UNEP, 2023).

Indonesia holds a strategic position as a middle power influencing the direction of climate policy through the G20, UNFCCC, and ASEAN forums (Rizky et al., 2023). Global trust in Indonesia hinges on its ability to translate international commitments into concrete domestic action, which is now being realized in the development of the National Development Planning (NDC) 3.0 (Patriella, 2025). The main instrument in this diplomacy is the mangrove ecosystem, covering approximately 3.36 million hectares—the largest in the world (FAO, 2023). As a blue carbon reservoir, Indonesian mangroves contain approximately 3.14 billion tons of carbon (17% of global reserves), with a higher absorption capacity than terrestrial forests (Rahman et al., 2024). The economic value of their ecosystem services, reaching USD 1.5 billion per year, makes them a strategic asset in international bargaining power (FAO, 2023).

Operationally, mangrove restoration has been integrated into the NDC through the FOLU Net Sink 2030 strategy (Rizky et al., 2023). This step involves the implementation of Measurement, Reporting, and Verification (MRV) for international emission validation (Arifanti et al., 2022a). However, these diplomatic ambitions clash with the realities of domestic governance. Indonesia's mangrove destruction reached 52% in 2016 due to land conversion and overlapping policies between terrestrial spatial plans (RTRW) and coastal spatial plans (RZWP3K) (Widayati, 2024). The fragmentation of mandates between the Ministry of Environment and Forestry (KLHK), the Ministry of Marine Affairs and Fisheries (KKP), and local governments creates structural barriers that threaten Indonesia's credibility at the global level. While many studies address ecological or legal aspects separately, there is a lack of studies that systematically link domestic governance dynamics to the legitimacy of Indonesia's climate diplomacy in multilateral forums.

This study aims to analyze the influence of mangrove governance on the effectiveness of Indonesia's commitments to the Paris Agreement, highlighting institutional dynamics, multi-level implementation gaps, and opportunities for needed structural reforms. Theoretically, this research contributes to the study of international relations by emphasizing that climate

diplomacy is not solely determined at the negotiating table, but rather by actual management capacity at the national level. This research is structured as follows: (1) Literature Review and Conceptual Framework; (2) Research Methods; (3) Results and Discussion; and (4) Conclusions, which include closing remarks and recommendations.

THEORETICAL BACKGROUND

Constructivism Perspective

This research uses a constructivist perspective as the primary theoretical framework to understand how social structures, norms, and identities shape the interests and behavior of actors in international politics (Adler, 2005). Unlike the rationalist-materialist paradigm, which views state interests as fixed (given), constructivism argues that these interests are constructed through social processes, discourse, and interaction (Wendt, 1999). Alexander Wendt (1999) asserts that international reality, including anarchy, depends on the interpretation of states (anarchy is what states make of it), where identity is a causal factor determining action. Similarly, Nicholas Onuf (1989) in **World of Our Making** emphasized that the world of international politics is shaped through language and rules that create new meanings and social structures. Essentially, this approach rests on three assumptions: social reality is constructed, identities are formed through interaction, and norms have causal power in global behavior (Adler, 2005).

In the context of this research, constructivism is relevant to examining how the ideas and norms of sustainability and climate justice shape Indonesia's diplomatic policy within the COP forum and the implementation of the Paris Agreement. Indonesia's mangrove governance policy is not merely driven by material economic interests but is understood as a social process that shapes Indonesia's identity as a key actor in global climate governance. Indonesia's efforts to project an image as a responsible nation demonstrate that domestic policies and international diplomacy are instruments for constructing the nation's role and responsibility amidst the dynamics of global environmental norms.

The Concept of Environmental Regimes and Climate Diplomacy

An international regime is defined as a set of principles, norms, rules, and decision-making procedures that guide global actors on specific issues (Haggard & Simmons, 1987). In green governance, international environmental regimes such as the UNFCCC and the Paris Agreement operate through sustainable development norms and common but

differentiated responsibilities (CBDR) to reduce emissions (UNEP, 2023). State compliance with this regime is driven not only by material power but also by functional needs for funding, technology transfer, and international legitimacy (Haggard & Simmons, 1987). For Indonesia, the flexibility of the bottom-up Paris Agreement provides a diplomatic arena to highlight mangrove governance in its National Development Planning (NDC), while strengthening its bargaining position through coalitions such as the Mangrove Alliance for Climate.

Climate diplomacy is now an integral foreign policy instrument to balance national development interests with global responsibilities (Hristova & Chankova, 2020). This practice is multidimensional, linking formal negotiations with evidence of domestic policy implementation (UNEP, 2023). Indonesia utilizes climate diplomacy through mangrove governance to build a narrative as a responsible developing country while ensuring that mitigation efforts align with public welfare priorities (Hristova & Chankova, 2020). By positioning mangroves as a strategic asset in bilateral and multilateral cooperation, Indonesia asserts its tangible, measurable contribution to the international climate regime, thereby strengthening its legitimacy and leadership at the global level.

METHODOLOGY

This research uses a descriptive qualitative approach, which aims to describe a phenomenon in depth without manipulating the object of study. This approach was chosen because it aligns with the research objective of understanding how Indonesian climate diplomacy is realized through mangrove governance and the implementation of Paris Agreement commitments—a phenomenon involving meanings, processes, and interactions between environmental policies, international commitments, and domestic socio-political contexts that cannot be captured through quantitative approaches (Creswell, 2018).

The data sources used in this research are entirely secondary, obtained through library research. Secondary data include national and international scientific journals, official government and international agency reports, policy documents, and academic articles and publications relevant to the topics of climate diplomacy, mangrove governance, and Paris Agreement implementation. Data sources were selected selectively, considering their relevance to the research topic, the credibility of the institution or author, and the novelty of the information presented. The use of multiple sources also

allows for data triangulation, thus strengthening and comprehensive research findings (Creswell, 2014).

Data collection techniques were conducted by searching, reading, and analyzing various relevant literature sources, both descriptive and analytical, to build strong, evidence-based arguments. Through this technique, researchers were also able to identify patterns, differing views, and policy trends that emerged in the context of mangrove management and the implementation of the Paris Agreement across time and across actors. Data analysis techniques were conducted through an interactive and continuous process, following the model of Miles and Huberman (2018), which includes three main stages: data reduction, data presentation, and conclusion drawing. Data reduction was carried out by selecting the information most relevant to the problem formulation and eliminating data that was not directly related to the focus of the study. The reduced data were then presented in the form of an analytical narrative that connects the empirical findings with the theoretical framework of constructivism, the international environmental regime, and climate diplomacy. From this process, systematic and academically accountable conclusions were drawn in accordance with the research objectives.

RESULT AND DISCUSSION

Post-Transition Institutional Dynamics: The Challenge of Fragmentation in Three Ministries

The Peat and Mangrove Restoration Agency (BRGM), established through Presidential Decree No. 1 of 2016 and expanded through Presidential Decree No. 120 of 2020, is a non-structural institution under the president to coordinate the acceleration of peat restoration and mangrove rehabilitation in priority areas. As an ad hoc institution, BRGM was designed to bypass bureaucratic red tape and rapidly respond to coastal degradation. However, its mandate is temporary and expires on December 31, 2024, resulting in the transfer of coordination functions to three technical ministries: the Ministry of Forestry (Kemenhut) for state forest areas, the Ministry of Maritime Affairs and Fisheries (KKP) for coastal areas of Other Use Areas (APL), and the Ministry of Environment (KLH) as the authority responsible for monitoring environmental standards and carbon inventories (Pusat, 2020). These three ministries currently stand on equal footing hierarchically, with no mandatory coordination mechanism binding them within a single, integrated operational framework (Jatmiko, 2025).

From a constructivist perspective, the transition of BRGM's mandate is not merely an administrative reorganization, but rather a shift in the country's interpretation of mangroves from a "national emergency" to a "routine sectoral issue." This phenomenon occurs as Indonesia is building its international identity as a global mangrove hub ahead of the 2025 UNFCCC COP30. Without a strong cross-sectoral coordinator, this new structure is prone to creating a silo mentality where each ministry operates with its own priorities, directly threatening the integrity of national data. A study by Bappenas (2023) found a real-life case where the same mangrove area was overlappingly claimed by two different ministries as part of their respective rehabilitation achievements. This data asynchronous situation creates a crucial gap that could hinder the fulfillment of Indonesia's Nationally Determined Contributions (NDC) commitments as mandated by the Paris Agreement. This duplication of claims creates a serious risk of double counting in the National Registry System for Climate Change Control (SRN-PPI), which threatens the credibility of Indonesia's NDC reporting to the UNFCCC (Kewilayahan, 2022). This fragmentation places Indonesia in a paradoxical position; Diplomatic ambitions in global forums are growing, but the gap between these narratives and actual domestic institutional capacity is widening (Finnemore & Sikkink, 2026).

This finding academically reinforces the argument that in the international environmental regime, the effectiveness of climate diplomacy depends not only on material power, but also on the consistency between adopted norms and actual domestic institutional practices. The uncertainty surrounding the BRGM's post-transition governance underscores the importance of applying the precautionary principle—as is common in complex wetland ecosystem management—to mitigate the risk of implementation failure due to an immature transition of authority (Alfajri et al., 2021). Within the framework of the international environmental regime, trust is a key prerequisite for compliance and sustainable cooperation within the global climate regime architecture. If not reformed through robust integration, this institutional uncertainty will weaken Indonesia's diplomatic bargaining position and reduce the strategic value of mangroves to merely an unsynchronized administrative burden.

Critical Analysis: The Gap Between the Central Narrative and the Reality of the Site

Indonesia has successfully constructed a global identity as a mangrove hub in international forums, but this identity is fragile because it is built on a

regressive institutional foundation. This condition reflects the phenomenon of decoupling, where diplomatic narratives are disconnected from domestic practices on the ground. Alfajri et al. (2025) argue that the failure of wetland governance is often rooted in the neglect of regional "spatial politics," where the dynamics of land claims and customary authority create unique realities often overlooked by Jakarta's policies. The top-down governance model following the dissolution of the BRGM, which returned authority to Jakarta, proved inadequate for coastal ecosystems because the ministerial bureaucracy was tied to a rigid annual planning cycle (Arifanti, Sidik, et al., 2022). Similarly, Robertua et al. (2023), in their study of wetland governance in the Meranti Islands, asserted that the top-down approach has negative impacts because it leads to minimal public participation and ignores very specific local socio-economic characteristics.

In a multilevel governance framework adapted from Marks and Hooghe (2003), Alfajri et al. (2025) highlighted that the concentration of authority at the central level has created a systemic alienation of local actors, including in mangrove ecosystem management. This situation is exacerbated by the implications of Law No. 23 of 2014, which transferred coastal management authority to the provincial level, thereby severing district and village access to oversight mandates within their respective jurisdictions (Syahuri & Sitompul, 2020). Consequently, the phenomenon of "projected" mangrove planting to meet reporting targets has emerged, which, according to a study by Lovelock et al. (2022), results in seedling mortality rates reaching 40-80% due to the lack of permanent management by local communities. Fatimah's perspective on Actor-Network Theory (ANT) enriches this analysis by emphasizing the importance of interactions between human actors, such as coastal communities, and non-human actors, such as sediment, salinity, and tides.

When central policies ignore local agency and the dynamic biophysical conditions of mangroves, the organic network between humans and the ecosystem is disrupted. In this fragmented environment, the role of Civil Society Organizations (CSOs) is a crucial bridge in providing comparative data from the field. Learning from the dynamics of other wetlands, the presence of non-state actors can ensure that central policies remain aligned with socio-ecological realities at the grassroots level, which are often overlooked (Alfajri et al., 2019).

Alfajri et al. (2025) emphasize that without adequate fiscal support and legal mandates for village governments, the transition to mangrove conservation will be difficult due to the absence of incentives that favor local

communities. The bureaucracy's inability to respond to local dynamics—such as selecting appropriate mangrove species for sediment conditions—proves that technical decisions cannot continue to rely on the approval chain in Jakarta. Robertua et al. (2023) caution that without the involvement of local actors at the grassroots level, environmental programs will only create silent resistance that weakens the foundation of climate diplomacy from within. This theoretically reinforces the relevance of constructivism, which states that Indonesia's international identity is only valid if the actors who truly maintain the mangrove ecosystem feel ownership and responsibility for its sustainability (Finnemore & Sikkink, 2026).

Therefore, its identity as a global mangrove hub cannot be maintained if local communities are alienated from the governance system. Alfajri et al. (2025) concluded that recentralization of authority will only break the chain of accountability connecting coastal communities to strategic decision-making. Integrating local actors into multi-level governance structures is essential to ensuring that mitigation actions at the local level align with the Paris Agreement targets, while also providing real legitimacy for Indonesia's climate diplomacy on the international stage.

Transformative Solutions: Sovereignty-Based Governance Reform

This research proposes the concept of "site sovereignty" as a transformative solution, namely granting real political and economic rights to village and district governments to become primary actors, not merely technical implementers, in mangrove governance. This reform rests on two main pillars. First, reconstructing the legal mandate through amendments to the Regional Government Law or the creation of a specific wetland protection law that explicitly returns authority for managing the 0-4 mile tidal zone to district and village governments. Although Government Regulation No. 27 of 2025 concerning the Protection and Management of Mangrove Ecosystems provides a breath of fresh air, hierarchically, this instrument has fundamental limitations in addressing the mandate deadlock created by Law No. 23 of 2014 (Alfajri et al., 2025). This situation is exacerbated by a one-way communication pattern from the central government to the regions that often ignores local aspirations. Robertua et al. (2022) warn that environmental policies that ignore the voices of communities at the site level will lose their social legitimacy and are likely to fail in the long-term implementation phase.

The second pillar is fiscal justice through strengthening the Ecological Fiscal Transfer (EFT) instrument, known domestically as TAPE, TAKE, and TANE. This step aims to shift the paradigm from centrally controlled project-

based funding to regionally managed ecological performance-based incentives, synchronized with the direct access mechanism for international climate funding through the BPD LH (Regional Environmental Management Agency) so that funds from the Green Climate Fund (GCF) and the World Bank can be injected directly at the grassroots level as performance-based payments (Roselin et al., 2024). Alfajri et al. (2025) emphasize that strong fiscal decentralization is an absolute requirement for local governments to have the financial capacity to carry out mangrove protection functions independently without having to rely on rigid central budgeting schemes. Evaluations of the BRGM program indicate that funds arriving at the grassroots level in some cases only reach 30-40% of the total budget (Dhanya, 2025), a condition that poses an obstacle to achieving ecosystem restoration targets.

Complementing these pillars, governance reform also requires a ground-based digital accountability system, such as the MANDARA (Mangrove Damage and Restoration Analysis) platform and the MonMang system, which combines satellite imagery with field reports (Mardiansyah, 2026). Fatimah et al.'s (2023) perspective in the context of wetland governance highlights that the integration of digital technology can help mitigate information asymmetries between the central government and local actors, thus making mangrove ecosystem monitoring more transparent and participatory. The effectiveness of this digital-based monitoring will be further strengthened if supported by strategies from local non-governmental organizations (NGOs). As evidenced in wetland governance at the regional level, organized local action can independently make significant contributions to global climate change control targets (Zahran & Alfajri, 2023).

In the proposed model, this system is directly linked to the TAKE and TANE transfer mechanisms through an automatic auto-block feature. This means that if mangrove cover degradation is detected beyond a threshold, the transfer of ecological funds to that region is suspended until field verification is conducted. This mechanism creates a strong negative incentive for local governments to ensure the preservation of mangrove areas within their territories.

This reform contributes to the development of the concept of multilevel governance in developing countries, demonstrating that effective governance is not simply administrative decentralization, but rather decentralization accompanied by fiscal guarantees and real legal certainty for local actors. The most strategic dimension of this system is its ability to produce data that can be independently verified by international partners, thereby strengthening Indonesia's climate diplomacy bargaining position.

This synergy ensures the credibility of reporting emissions data from the ground level, making Indonesia's implementation of the Paris Agreement no longer merely a diplomatic narrative but a globally verified mitigation action. By linking legal, fiscal, and technological dimensions within a single integrated framework, this model ensures that mitigation efforts at the ground level are truly ecologically sound and sustainable (Alfajri et al., 2025; Fatimah et al., 2023). The effectiveness of this model is reflected in the strategies of local NGOs, which are able to integrate forest governance with global climate change control efforts through measurable actions at the provincial level (Alfajri et al., 2023).

Implications for Climate Diplomacy: Building Credibility from the Bottom Up

These findings collectively demonstrate that the sustainability of Indonesia's climate diplomacy depends heavily on the quality of its domestic governance. Indonesia's claim to be a global mangrove hub currently rests on institutional foundations vulnerable to regression post-BRGM transition. Within a constructivist framework, a country's identity within the international regime is not determined solely by declarations in global forums, but rather by the consistency between diplomatic narratives and the realities of restoration on the ground. A centralized MRV system—in which mangrove carbon stock data is collected and processed exclusively by the Jakarta bureaucracy without the involvement of coastal actors—is inherently vulnerable to doubts about its accuracy. A CIFOR study (2021) showed that differences in mangrove carbon stock measurement methodologies across government agencies can result in estimates differing by up to 40%. This directly threatens the credibility of blue carbon credits in bilateral trade schemes with Japan, South Korea, and Singapore through the ITMO mechanism (Darusman et al., 2022).

In contrast, an MRV system that involves coastal communities as active monitoring agents would generate data from thousands of independent observation points, which is fundamentally more difficult to manipulate. By implementing the "sovereignty on the ground" model, Indonesia can position itself as a pioneer in socially just climate action. Like other wetland ecosystem governance principles that emphasize the importance of integrating environmental protection and local community well-being, this model offers a solution where mangrove-based mitigation and social justice for fishers are not trade-offs, but rather two sides of the same coin (Alfajri et al., 2025). This approach provides a relevant solution for Global South countries facing a

similar dilemma between international pressure to protect coastal green belts and domestic needs to improve the well-being of local communities. This is the paradigm of "bottom-up credibility"; the strength of Indonesia's arguments in international forums is built on the concrete capacity of thousands of sovereign coastal villages to effectively and impactfully preserve their mangroves.

The academic contribution of this research lies in offering a new paradigm in the study of climate diplomacy: that an archipelagic nation's international credibility is not built on rhetoric at the COP podium, but rather on the quality of inclusive, verifiable domestic mangrove governance. Without consistency between the internationally constructed identity of the mangrove hub and the implementation of policies in coastal areas, environmental diplomacy will become merely a symbolic instrument that loses its effectiveness (Finnemore & Sikkink, 2026). This synchronization will determine whether Indonesia can meet the ambitions of the Paris Agreement through credible and inclusive climate action. These findings open up further research on how this site sovereignty model can be replicated in other blue carbon ecosystem contexts to strengthen developing countries' bargaining power within the global climate regime.

CONCLUSION

This study concludes that national mangrove governance has transformed beyond a domestic ecosystem issue into a crucial climate diplomacy instrument for Indonesia in constructing a strategic identity as a leader in Nature-based Solutions (NbS) at the global level. Through a constructivist lens, the mangrove ecosystem serves as an asset that generates bargaining power, enabling Indonesia to attract international green funding and strengthen its leadership within the Paris Agreement regime. However, the findings indicate that the effectiveness of this diplomatic instrument is seriously hampered by the sharp decoupling between narrative ambitions on the international stage and institutional regression at the domestic level. The fragmentation of mandates following the BRGM transition to sectoral ministries has created a rigid, top-down governance pattern prone to sectoral egos, ultimately threatening the credibility of Indonesia's Nationally Determined Contributions (NDC) reporting due to the dual risk of data claims and asynchronous carbon stock reporting from the field to the national level.

Theoretically, this study proves that the effectiveness of an archipelagic nation's climate diplomacy is not determined by the strength of its rhetoric at the COP, but rather by the quality of its domestic governance, which serves as

the primary foundation for the credibility of its international identity. Referring to a multilevel governance perspective, the current failure of mangrove governance is rooted in a weak legal mandate for local authorities and a lack of fiscal support that directly impacts actors at the grassroots level. As with global wetland management principles, neglecting the agency of village governments and coastal communities will only position local communities as administrative objects without real executive authority. This situation emphasizes that without consistency between the internationally constructed identity of the mangrove hub and the reality of implementation in coastal areas, Indonesian environmental diplomacy is vulnerable to losing its political and academic legitimacy. Therefore, Indonesia's success in sustainably fulfilling its Paris Agreement commitments depends heavily on a transformation towards a "grassroots sovereignty" model that synergizes local mitigation actions with global ambitions through a transparent, credible, and inclusive system.

The sustainability of Indonesia's climate diplomacy requires structural reforms through regulations that strengthen mechanisms for direct access to funding at the grassroots level to realize the concept of inclusive grassroots sovereignty. The government needs to immediately integrate ecological fiscal instruments (TAPE, TAKE, TANE) with digital monitoring systems such as MANDARA and MonMang, involving independent multi-stakeholders—including research institutions, academics, and civil society organizations—as data verification agents at the grassroots level. This step is crucial to ensure the accuracy of emissions data in Paris Agreement reporting and mitigate the risk of double counting, which could damage Indonesia's international credibility. Given the limitations of this literature study, further research needs to explore the political economy dimensions of blue carbon trading through field studies to examine the impact of carbon monetization on real welfare and the potential for agrarian conflict in coastal communities. This policy transformation is crucial to ensure that climate diplomacy is not merely a symbolic instrument in global forums, but rather a foundation for ecosystem conservation that is socially just and has strong legitimacy at the grassroots level.

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