THE AMAZON AS A STRATEGIC ARENA FOR BRAZIL'S CLIMATE DIPLOMACY: FRAMEWORKS FOR COP30

DOI: 10.61623/cpe.en.v1n1.a03

Daiane Carolina Silva[1]
João Paulo Cândia Veiga[2]

Abstract

This article reframes the Amazon as Brazil's strategic diplomatic arena for COP30, applying complexity frameworks to enhance climate diplomacy. Using David Snowden's Cynefin, Estuarine Mapping, and Scaffolding approaches, we analyze how economic activities in the Amazon shape Brazil's international position. The research demonstrates that soy production, bioeconomy initiatives, and institutional reforms can be leveraged as diplomatic assets rather than merely domestic concerns. By distinguishing between fixed constraints and negotiable tensions in climate negotiations, Brazil can develop adaptive strategies that strengthen its credibility while advancing national interests. The paper proposes three strategic scenarios for COP30: Brazil as Global Mediator, Innovation Laboratory, or South-South Leader. We conclude that effective climate diplomacy requires creating conditions for beneficial emergence rather than rigid planning, positioning Brazil to transform the Amazon from a contested space into a platform for international leadership.

Keywords: Climate Change. International Relations. Environmental Diplomacy. Sustainable Development. Governance.

1 Master's student in International Political Economy and Climate Finance at the Institute of International Relations of the University of São Paulo (IRI-USP), with a focus on carbon markets, energy transition strategies and climate governance. Daiane has worked as a research assistant at institutions such as Santander Brasil and the School of Science Diplomacy and Innovation (INNSCID-USP), with experience in climate risk analysis, scenario modeling and international sustainability policies. E-mail: daiane.carolinari@usp.br.

2 Full Professor in the Department of Political Science at the University of São Paulo (USP) and Research Director of the Center for Artificial Intelligence (C4AI-USP). João Paulo works in the areas of environmental governance, human rights and artificial intelligence regulation, also coordinating research agreements with international institutions, including SIPA-Columbia University. Researcher at CNPq and the Jean Monnet Chair in Multinational Enterprises and Human Rights. E-mail: candia@usp.br.

A AMAZÔNIA COMO ARENA ESTRATÉGICA DA DIPLOMACIA CLIMÁTICA BRASILEIRA: *FRAMEWORKS* PARA A COP30

Resumo

Este artigo reposiciona a Amazônia como arena diplomática estratégica do Brasil para a COP30, aplicando *frameworks* de complexidade para aprimorar a diplomacia climática. Utilizando as abordagens de Cynefin, Mapeamento Estuarino e Scaffolding de David Snowden, analisamos como as atividades econômicas na Amazônia moldam a posição internacional do Brasil. A pesquisa demonstra que a produção de soja, iniciativas de bioeconomia e reformas institucionais podem ser aproveitadas como ativos diplomáticos, não apenas questões domésticas. Ao distinguir entre restrições fixas e tensões negociáveis nas negociações climáticas, o Brasil pode desenvolver estratégias adaptativas que fortaleçam sua credibilidade enquanto avançam interesses nacionais. O artigo propõe três cenários estratégicos para a COP30: Brasil como Mediador Global, Laboratório de Inovação ou Líder Sul-Sul. Concluímos que a diplomacia climática eficaz requer a criação de condições para emergência benéfica em vez de planejamento rígido, posicionando o Brasil para transformar a Amazônia de espaço contestado em plataforma de liderança internacional.

Palavras-chave: Mudança Climática. Relações Internacionais. Diplomacia Ambiental. Desenvolvimento Sustentável. Governança.

LA AMAZONÍA COMO ESCENARIO ESTRATÉGICO DE LA DIPLOMACIA CLIMÁTICA BRASILEÑA: *FRAMEWORKS* PARA LA COP30

Resumen

Este artículo replantea la Amazonía como arena diplomática estratégica de Brasil para la COP30, aplicando marcos de complejidad para mejorar la diplomacia climática. Utilizando los enfoques Cynefin, Mapeo Estuarino y Scaffolding de David Snowden, analizamos cómo las actividades económicas en la Amazonía configuran la posición internacional de Brasil. La investigación demuestra que la producción de soja, las iniciativas de bioeconomía y las reformas institucionales pueden aprovecharse como activos diplomáticos, no solo como preocupaciones domésticas. Al distinguir entre restricciones fijas y tensiones negociables en las negociaciones climáticas, Brasil puede desarrollar estrategias adaptativas que fortalezcan su credibilidad mientras avanzan los intereses nacionales. El documento propone tres escenarios estratégicos para la COP30: Brasil como Mediador Global, Laboratorio de Innovación o Líder Sur-Sur. Concluimos que la diplomacia climática efectiva requiere crear condiciones para la emergencia beneficiosa en lugar de una planificación rígida, posicionando a Brasil para transformar la Amazonía de un espacio disputado a una plataforma para el liderazgo internacional.

Palabras clave: Cambio climático. Relaciones internacionales. Diplomacia ambiental. Desarrollo sostenible. Gobernanza.

1. Introduction: Repositioning the Amazon in Global Climate Governance

The Amazon rainforest has traditionally been framed as a contested space between economic development and environmental conservation, with analyses often focusing on local impacts and national policies. This paper proposes a fundamental reframing: the Amazon as Brazil's primary diplomatic arena in global climate governance—a strategic asset for exercising soft power, building green credibility, and shaping international environmental norms ahead of the 2025 UN Climate Change Conference (COP30) in Belém.

This analysis serves three strategic objectives that address the intersection of Amazon governance and Brazil's foreign policy ambitions:

- To strengthen Brazil's diplomatic influence at COP30 by identifying and reframing Amazon-based economic activities into internationally credible climate assets.
- To enhance Brazil's negotiation power by showcasing scalable, innovative bioeconomy models that align with global sustainability frameworks.
- To provide recommendations for institutional reform (e.g., ACTO) that enable Brazil to act as a regional leader in climate governance.

The timing of this analysis is critical. Because of the COP30, Brazil faces both unprecedented scrutiny and a historic opportunity to reposition itself as a climate leader. Simultaneously, the implementation of the EU's CBAM threatens to impact up to US$3.1 billion in Brazilian exports by 2026 (European Commission 2022; Confederação Nacional da Indústria 2023). These converging pressures demand a coherent diplomatic strategy that reconciles economic interests with climate commitments.

Brazil's approach to the Amazon has historically oscillated between assertions of sovereign control and acknowledgment of its global environmental significance. This tension was evident in the contrasting policies between 2019–2022, when deforestation increased by 59.5% (INPE 2023). Our paper argues for the emergence to capture the strategic opportunity: leveraging the Amazon as a diplomatic asset that enhances Brazil's international influence and capturing unprecedented levels of funding.

As Ambassador André Corrêa do Lago observes, "hosting COP30 in the Amazon represents more than symbolic geography—it's an opportunity to demonstrate Brazil's unique capacity to bridge North-South divides in climate negotiations" (Lago 2024). This bridging function is particularly

relevant as global climate governance faces increasing fragmentation between developed economies pushing for rapid decarbonization and developing nations emphasizing the necessary urgency of differentiated responsibilities and transition financing.

The proposed Protocol for Prevention of the Point of No Return, currently under discussion in preparatory meetings for COP30, exemplifies how Brazil can translate Amazon stewardship into diplomatic leadership. By hosting the conference in Belém, Brazil must position itself as an architect of new governance frameworks and accelerator and creator of funding mechanisms.

2. Analytical Framework: Applying Cynefin to Amazon Diplomacy

To navigate the complex interplay between domestic Amazon policies and international climate diplomacy, this paper employs the Cynefin Framework developed by Professor David Snowden. Cynefin offers a decision-making topology that distinguishes between simple, complicated, complex, and chaotic domains—each requiring different approaches to sense-making and action (Snowden & Boone 2007; Snowden 2021).

The Cynefin Framework is particularly valuable for climate diplomacy because it helps policymakers identify which challenges require established best practices, expert analysis, emergent patterns, or novel interventions. As Snowden explains, "Cynefin is about how we make sense of the world so that we can act in it," which aligns perfectly with the need for Brazilian diplomats to make sense of multifaceted Amazon challenges to act effectively both to avoid the previous errors of other COPs and to gain/leverage/create unprecedented levels of funding and partnerships in COP30.

2.1. Executive Dashboard: Mapping Amazon Challenges in the Cynefin Domains

Table 1. Executive Dashboard: Cynefin Mapping of Amazon Diplomatic Challenges

Domain	Characteristics	Amazon Examples	Diplomatic Approach
Simple	Clear cause-effect relationships; best practices apply	Monitoring deforestation via satellite	Showcase established systems; invite verification
Complicated	Cause-effect relationships require analysis; good practices apply	Certification systems for commodity chains	Engage experts; develop evidence-based positions

Domain	Characteristics	Amazon Examples	Diplomatic Approach
Complex	Cause-effect only visible in retrospect; emergent practices	Bioeconomy development; indigenous knowledge integration	Probe-sense-respond; create safe-to-fail experiments
Chaotic	No clear cause-effect relationships; novel practices needed	Sudden international crises (e.g., viral deforestation images)	Act decisively to stabilize; establish narrative control
Disorder	Unclear which domain applies	Cross-border issues with multiple stakeholders	Gather more information; move issue to appropriate domain

Source: Author, based on Snowden (2021).

This dashboard reveals that many of Brazil's most challenging diplomatic issues related to the Amazon fall within the Complex domain, where outcomes cannot be precisely predicted and emergent approaches are necessary. For instance, developing internationally credible bioeconomy models requires iterative experimentation rather than rigid planning. Conversely, technical aspects like deforestation monitoring systems operate in the Simple domain, where established practices can be showcased to build credibility.

Understanding which domain a challenge belongs to prevents the misapplication of approaches—such as treating complex bioeconomy development as if it were merely complicated, or responding to chaotic diplomatic crises with time-consuming expert analysis rather than decisive action.

3. Methodology and Criteria for Diplomatic Assessment

This analysis employs a mixed-methods approach tailored to evaluate the diplomatic implications of Amazon economic activities. Rather than focusing solely on local sustainability impacts, our methodology examines how these activities shape Brazil's position in international climate negotiations during the COP30 and how they affect its soft power resources.

The research draws on three primary data sources:

1. Policy documents and official statements from Brazilian diplomatic missions, the Ministry of Foreign Affairs, and multilateral climate forums (2019–2025).
2. Trade data from reports and regulatory frameworks related to environmental standards in key export markets, particularly the European Union's CBAM implementation timeline.

3. Case studies of bioeconomy initiatives with potential for international showcase at COP30, selected based on their scalability and alignment with global sustainability standards, despite their limitations.

These data are analyzed through a diplomatic lens, focusing on how economic activities in the Amazon create opportunities or constraints for Brazil's climate diplomacy. This represents a departure from traditional sustainability assessments that prioritize local environmental impacts with envisioning the fulfillment of Brazil global climate targets.

3.1. Estuarine Mapping: Identifying Diplomatic Constraints and Opportunities

To structure our analysis of Brazil's diplomatic position, we employ Snowden's Estuarine Mapping framework (Snowden 2022). This approach helps identify which constraints are fixed (non-negotiable) versus which tensions are negotiable in international climate discussions during the COP30.

Estuarine Mapping is particularly suited to diplomatic analysis because it recognizes that some boundaries are firm (like physical tipping points in the Amazon ecosystem or legally binding international commitments), while others are fluid and subject to negotiation (like implementation timelines or technical specifications for compliance).

Table 2. Preliminary Diplomatic Risk Matrix Based on Estuarine Mapping

Constraint Type	Examples in Amazon Context	Diplomatic Implications
Fixed Constraints	- Scientific tipping points (17–20% deforestation threshold) - Ratified international commitments (Paris Agreement NDCs) - Constitutional protections for indigenous territories	Non-negotiable boundaries that must inform Brazil's position, where violations undermine credibility
Negotiable Tensions	- Implementation timelines for zero-deforestation commitments - Technical standards for commodity certification - Financing mechanisms for forest conservation	Areas where Brazil can exercise diplomatic creativity and build coalitions for unprecedented partnerships and climate funding levels.
Enabling Constraints	- Amazon Cooperation Treaty framework - Brazil's position as largest Amazonian country - COP30 host country status	Structural advantages that Brazil can leverage for leadership.

Source: Author, based on Snowden (2022).

This matrix reveals that Brazil's diplomatic strategy must work within certain fixed constraints while actively shaping negotiable tensions to its advantage. For example, while the scientific consensus on Amazon tipping points represents a fixed constraint, Brazil can negotiate how responsibility for preventing these tipping points is distributed among global actors through financing mechanisms and technology transfer. Using the Common but Differentiated Responsibilities Clause to call the developed nations—mainly USA, UK and western countries of EU—to pay for their historical responsibilities of carbon emissions.

3.3. Assessment Criteria: From Sustainability to Diplomatic Capital

Our analysis evaluates Amazon economic activities according to three diplomatic criteria:

1. Credibility Impact: How does the activity affect Brazil's perceived commitment to climate goals and, therefore, its credibility in international negotiations at COP30?
2. Leverage Potential: How can the activity be leveraged to advance Brazil's position on key negotiating points (e.g., climate finance, technology transfer)?
3. Coalition-Building Value: How can the activity help Brazil build and project alliances with other nations or blocs in the COP30 climate forums, in order to maximize the chances of acceptance and linkage of the ACTO reform proposals, such as the creation of the Amazon Climate Security Council?

These criteria shift the focus from purely domestic sustainability considerations to the international diplomatic capital that can be generated through strategic management and leverage of Amazon economic activities (Hochstetler & Viola 2022). In the following sections, we apply this analytical framework to examine how key economic sectors in the Amazon-particularly soy production and bioeconomy initiatives-shape Brazil's diplomatic position ahead of COP30, and how these insights can inform strategic scenarios for Brazilian climate diplomacy.

4. Economic Activities in the Amazon: From Local Extraction to Global Diplomacy

The economic activities in the Brazilian Amazon have traditionally been analyzed through the lens of local sustainability impacts or national

development priorities. However, this section reframes these activities as critical components of Brazil's diplomatic positioning in global climate governance. The region's economic profile presents both constraints and opportunities for Brazil's negotiating stance at COP30 and beyond.

The Brazilian Amazon currently operates at a significant trade deficit, importing more than it exports and creating a deficit of approximately R$ 114 billion (US$ 23.4 billion) with the rest of Brazil and international markets (World Resources Institute 2023). This economic reality contradicts the common perception of the Amazon as primarily an export-oriented resource frontier. Instead, it reveals an economy still struggling to generate value commensurate with its natural capital.

This trade imbalance has profound implications for Brazil's diplomatic positioning. On the one hand, it undermines arguments that environmental restrictions would significantly harm export revenues. On the other hand, it highlights the untapped potential for sustainable value chains that could be showcased at COP30 as models of green development.

The region's economic integration with global markets has been significantly shaped by China's growing influence. As Snowden (2021) notes in his Cynefin framework, such complex international relationships require adaptive approaches rather than rigid planning. The Science Panel for the Amazon (2022) documents how China has become Brazil's top export destination, with Amazon-sourced commodities—particularly soybeans and iron ore—dominating this trade relationship. Chinese financing has also supported major infrastructure projects in the Amazon, including the Belo Monte-Rio de Janeiro Second Transmission Line, with cumulative Chinese loans reaching US$ 28.9 billion in Brazil by 2020 (Science Panel for the Amazon 2022).

This economic relationship with China creates a complex diplomatic triangle between Brazil, China, and Western nations at climate negotiations. Brazil must balance Chinese demand for commodities with Western pressure, mainly from Europe, for environmental standards, which is a classic example of what Snowden's Estuarine Mapping (2022) identifies as negotiable tensions in the international relations arena.

4.1. Diplomatic Risk Matrix: Economic Activities and Climate Credibility

Table 3. Diplomatic Risk Matrix: Economic Activities

Economic Activity	Diplomatic Risk	Opportunity	Strategic Approach Options
Soy Production	EU CBAM and deforestation-free supply chain regulations threatening market access. It can also negatively impact Brazil's reputation of serious commitment with climate norms.	Amazon Soy Moratorium as a model for commodity governance.	Leverage existing agricultural land (600% potential increase without new deforestation) (FAIRR Initiative 2023).
Mining	Association with illegal operations and indigenous rights violations.	Research and explore critical minerals for the energy transition.	Transparent governance and certification systems
Timber	Illegal logging undermines climate commitments.	Sustainable forestry as carbon management. Integration with the recently regulated Carbon market.	Forest concession models with international verification and international standards such as ISSB.
Infrastructure	Chinese-financed projects perceived as environmentally damaging.	Green infrastructure showcases.	Realign with low-carbon development pathways.

Source: Author, based on Science Panel for the Amazon (2022) and FAIRR Initiative (2023).

This matrix reveals that Brazil's diplomatic credibility faces significant risks from certain economic activities, particularly those associated with deforestation or rights violations. However, each activity also presents opportunities for Brazil to demonstrate leadership in sustainable commodity production, potentially strengthening its negotiating position at COP30. The relationship between Brazil and the European Union exemplifies these dynamics, being "strongly marked by the trade-environmental agenda, having the Amazon Forest at its center" (Periódicos UFC 2023). This relationship has become increasingly complex with the implementation of the EU Deforestation Regulation (EUDR), which presents "substantial challenges for the logistics structure in the country" as exporters must "introduce traceability and segregation protocols up and downstream to make sure that no products

linked to deforestation are leaking into the corridors connecting Brazil to Europe" (ProTerra Foundation 2023).

5. From Domestic Production to International Scrutiny: Soy Production as a Case Study in Environmental Diplomacy

The expansion of soy cultivation into the Amazon began in earnest during Brazil's period of economic modernization (1960–1980), transforming the region into "an intense frontier of extractive economies" (Scielo 2022). This agricultural frontier expansion was supported by government policies and infrastructure development, creating what Becker (2007) termed a "frontier of mercantilization of nature."

Soy production in the Amazon represents a critical case study in how commodity production shapes Brazil's diplomatic position in climate negotiations. As Brazil's leading export product, soy creates significant economic leverage but also exposes the country to international pressure regarding environmental standards.

Today, this historical development pattern faces unprecedented international scrutiny. The EU's Carbon Border Adjustment Mechanism (CBAM) and Deforestation Regulation represent the most concrete manifestations of this scrutiny, potentially affecting Brazil's access to key export markets. As noted by ProTerra Foundation (2023), the implementation of EUDR requirements presents "substantial challenges" for Brazil's soybean supply chain, requiring new traceability and segregation protocols. This international regulatory pressure exemplifies what Snowden's Estuarine Mapping framework identifies as a "fixed constraint"—a non-negotiable boundary condition that Brazilian diplomacy must acknowledge rather than resist. Recognizing such fixed constraints allows for more productive engagement with "negotiable tensions" where Brazil might have greater influence.

The Amazon Soy Moratorium (ASM), established in 2006, represents Brazil's most successful example of commodity governance that aligns economic interests with environmental protection, despite its limitations and issues. The moratorium ensures that soy production in the Amazon region only occurs on existing agricultural land, preventing new deforestation for soy cultivation (FAIRR Initiative 2023).

From a diplomatic perspective, the ASM offers Brazil a potential counter narrative to criticisms of its environmental governance. International investors have explicitly stated: "We want to be able to continue sourcing from or investing in Brazilian soy industry, but if the ASM is not maintained, this will risk our business with Brazilian soy" (FAIRR Initiative 2023). This

market-based pressure creates diplomatic leverage that Brazil can utilize in climate negotiations. Moreover, the ASM demonstrates that environmental protection does not need to restrict economic growth. Current agricultural land in the Amazon has the capacity to increase soy production by an additional 600% compared to current figures (FAIRR Initiative 2023). This fact allows Brazilian negotiators to argue that the country can simultaneously meet global commodity demand while honoring climate commitments—a powerful position at COP30.

5.1. Diplomatic Strategies for Soy Governance

Table 4. Diplomatic Risk Matrix: Soy Sector

Diplomatic Risk	Fixed Constraints	Negotiable Tensions	Strategic Opportunity options
Market Access Restrictions	EU Deforestation Regulation implementation timeline	Technical definitions of "deforestation-free"	Propose Brazil-led certification system as a global standard or use an already known standard such as ISSB adapted to Brazilian reality.
Reputation Damage	International monitoring of deforestation	Attribution of responsibility in supply chains. And consideration of infrastructure and funding limitations.	Showcase ASM as a model for other commodities and regions.
Trade Disputes	WTO rules on environmental measures	Implementation methods and types of verification systems.	Lead South-South coalition on equitable environmental standards and the urgency of funding from North developed countries.
Investment Flight	Investor ESG requirements.	Metrics and reporting standards.	Develop sovereign green bonds tied to soy sustainability

Source: Author, based on Snowden (2022).

This matrix, based on Snowden's Estuarine Mapping approach, distinguishes between fixed constraints that Brazil must adapt to and negotiable tensions where diplomatic creativity can be applied. For example, while the EU's decision to implement deforestation-free requirements represents a fixed constraint, the technical definitions and verification methods remain negotiable.

Brazil's diplomatic strategy for the soy sector should leverage the ASM as evidence of the country's capacity to balance commodity production with forest protection and environmental rules, despite the limitations and reforms periodically needed in ASM. At COP30, Brazil could propose expanding this model to other commodities and regions, positioning itself as a leader in sustainable commodity governance rather than a target of external pressure.

The inconsistent demand from Europe for non-GMO soybeans, which has "forced some farmers to sell their crops into the regular market, outside the sales under the non-GMO premium" (ProTerra Foundation 2023). This illustrates the complex market dynamics that Brazilian diplomacy must navigate. By acknowledging these complexities while demonstrating concrete solutions like the ASM, Brazil can strengthen its credibility in climate negotiations by, among other things, recognizing the characteristics of the complex domain with which the negotiation will happen: nonlinearity of the effects of the policies and reforms to be implemented, emergence patterns, the feedback loops, and unintended consequences. In the next section, we examine how bioeconomy initiatives can complement traditional commodity production to further enhance Brazil's diplomatic position at COP30.

6. Bioeconomy as Diplomatic Capital: From Local Value to Global Influence

The Amazon bioeconomy represents a critical opportunity for Brazil to transform its diplomatic positioning at COP30. Unlike traditional extractive activities, bioeconomy initiatives can simultaneously address climate commitments, social inclusion, and economic development—creating what Snowden (2021) terms "emergent patterns" that cannot be predicted from individual components but arise from their interactions.

The bioeconomy presents a classic example of what David Snowden (2022) identifies as a complex domain in the Cynefin Framework—where cause-effect relationships are only visible in retrospect. As he explains: "In complex systems, you can't predict the properties when parts start to interact with other parts… the reductionist error is to assume you can predict the properties from the properties of the individual parts" (Snowden 2022). This understanding fundamentally changes how Brazil should approach bioeconomy development as a diplomatic asset.

Traditional approaches to bioeconomy have focused on isolated projects or linear value chains. However, applying Snowden's complexity lens reveals that bioeconomy success emerges from the interaction between multiple "actants"—both human and non-human elements with agency in the

system. These include traditional communities, scientific institutions, market mechanisms, and the biological resources themselves. The Science Panel for the Amazon (2023) estimates the potential value of sustainable bioeconomy in the region at US$ 284 billion annually by 2050—but this potential can only be achieved through what Snowden calls "rich, local interactions" between these actants. Brazil's diplomatic opportunity lies in showcasing not just individual bioeconomy projects, but the emergent governance systems that allow sustainable value creation at scale. This represents a shift from promoting specific products to demonstrating systemic solutions—a powerful position in climate negotiations.

Table 5. Exective Dashboard: Bioeconomy Finance and Investment

Domain (Cynefin)	Bioeconomy Challenge	Diplomatic Opportunity	Scaffolding Necessário
Complex	Benefit-sharing mechanisms for traditional knowledge and the people who extract the açai, cocoa and so on.	Position Brazil as architect of new global standards	Create "safe-to-fail" experiments in different biomes in Brazil.
Complicated	Scientific infrastructure for bio-based innovation.	Showcase Brazil-led research networks	Expert-driven analysis and capacity building.
Complex	Market access for sustainable products.	Propose certification systems at COP30	Distributed monitoring networks to detect emergent patterns.
Chaotic	Biopiracy and intellectual property disputes.	Decisive action to establish sovereignty	Novel governance frameworks for genetic resources.

Source: Author, based on Snowden (2021, 2022).

This dashboard, structured according to Snowden's Cynefin domains, reveals that most bioeconomy challenges fall within the complex domain—requiring what Snowden calls a "probe-sense-respond" approach rather than predetermined solutions to problems that are not even fully known by most decision and policy makers. As he notes, "In a complex system, you want simulation or stimulation before you apply a model" (Snowden 2022). This insight suggests that Brazil's diplomatic strategy should emphasize creating conditions for bioeconomy emergence rather than prescribing specific pathways. So, below we consider three bioeconomy initiatives that demonstrate Brazil's capacity to manage complexity through what Snowden terms "distributed

sense-making"—engaging diverse perspectives to detect patterns that no single actor could identify:

Açaí Value Chain Transformation: The evolution of açaí from local staple to global superfood illustrates Snowden's concept of "proximity" in complex systems. By maintaining close connections between producers, processors, and markets, the açaí industry has developed governance systems that balance commercial success with ecological sustainability. The Amapá State Payment for Environmental Services system has channeled US$ 12 million to extractivist communities, creating what Snowden would identify as an "energy gradient" that makes sustainable harvesting more economically viable than forest conversion (ProTerra Foundation 2023).

Biocosmetics Innovation Network: The Amazon Biocosmetics Innovation Network exemplifies Snowden's principle that "none of the actants must have knowledge of the whole" for emergence to occur. Rather than centralizing decision-making, the network distributes agency across scientific institutions, community cooperatives, market actors and indigenous communities. This distributed approach has resulted in 27 new bioactive compounds entering commercial development since 2020, with benefit-sharing mechanisms ensuring returns to traditional knowledge holders (Science Panel for the Amazon 2022).

Sustainable Timber Management: Community-based timber management in the Tapajós National Forest demonstrates Snowden's concept of "scaffolding"—creating stability within a system while allowing for adaptation. The forest concession model provides clear boundaries (scaffolding) while allowing communities to develop context-specific harvesting practices. This balance has reduced illegal logging by 71% in participating areas while increasing community income by 43% (FAIRR Initiative 2023).

These cases represent what Snowden calls "safe-to-fail experiments"—initiatives designed to test approaches in complex domains where outcomes cannot be predicted. By showcasing these at COP30, Brazil can position itself not as having all the answers, but as having developed effective processes for navigating complexity—a more credible stance in climate negotiations.

The effectiveness of Brazil's climate diplomacy depends on institutional arrangements that can navigate what Snowden calls "multiple micro-hallucinations"—the diverse perspectives and interpretations that shape international climate governance. Rather than seeking consensus through traditional diplomatic channels, Brazil has the opportunity to design institutional scaffolding that enables emergent forms of cooperation.

7. Scaffolding Framework for Institutional Design

Snowden's Scaffolding Framework offers a powerful approach to institutional design for climate diplomacy. As he explains: "Scaffolding creates certainty within norms… an endoskeleton gives you more growth, an exoskeleton gives you less growth" (Snowden, 2022). This distinction is critical for Brazil's institutional strategy at COP30.

Traditional international institutions often function as exoskeletons—rigid structures that provide protection but limit adaptation. In contrast, Brazil can propose endoskeletal arrangements that provide stability while enabling evolution. This approach aligns with what Snowden identifies as natural decision-making patterns: "We've evolved to compromise in groups of seven or less, but not compromise in groups of more" (Snowden 2022). The Amazon Cooperation Treaty Organization (ACTO) represents a prime opportunity for applying this framework. Currently functioning as an exoskeleton—with formal structures but limited adaptive capacity—ACTO could be reformed as an endoskeletal institution that provides scaffolding while enabling distributed decision-making among Amazonian stakeholders.

Table 6. Negotiation Toolkit: Applying Estuarine Mapping to Institutional Design

Institutional Element	Energy Cost of Change	Time to Change	Strategic Approach
ACTO Governance Structure	High	Medium	Create a "lial area" where Brazil cannot change alone but can influence through coalition
Climate Finance Mechanisms	Medium	High	Focus on changing energy gradients to make sustainable options more viable
Monitoring Systems	Low	Low	Immediate investment in distributed local sensing networks
Indigenous Representation	Medium	Medium	Establish scaffolding that ensures participation without prescribing forms

Source: Author, based on Snowden (2022; 2023).

This toolkit applies to Snowden's Estuarine Mapping approach, which assesses constraints based on their energy cost of change and time to change. As Snowden explains: "The top right-hand side of that grid effectively is a

type of scaffolding… a set of actants which realistically can't change because it's too much energy or too much time" (Snowden 2022).

For Brazil's negotiators, this mapping reveals which institutional elements can be changed directly and which require indirect approaches. For example, while ACTO's governance structure has a high energy cost of change, Brazil can create what Snowden calls a "lial area"—things one person can't change but others can—by building coalitions with other Amazonian countries.

7.1. Moving to AIMS Framework for Amazon Governance

Snowden's AIMS framework (Actants, Interactions, Monitors, Scaffolding) provides a comprehensive approach to institutional design for Amazon governance:

Actants: Brazil's institutional architecture must recognize diverse actants beyond traditional stakeholders. As Snowden notes, "It's not just humans that have agency in the system" (Snowden 2022). This includes recognizing the agency of natural systems, indigenous knowledge, and even future generations in governance arrangements.

Interactions: Rather than focusing on formal structures, Brazil can design institutions that facilitate "rich, local interactions" between actants. The proposed Amazon Climate Security Council would create platforms for these interactions without prescribing outcomes.

Monitors: Effective governance requires what Snowden calls "distributed sensing systems"—networks for detecting patterns that no central authority could identify. Brazil's proposal for an Integrated Satellite and Community Monitoring System exemplifies this approach, combining technological monitoring with traditional knowledge.

Scaffolding: Institutional scaffolding creates stability while enabling adaptation. Brazil's proposed Multilateral Amazon Fund would provide financial scaffolding that enables experimentation without rigid prescriptions.

By applying the AIMS framework, Brazil can design institutions that manage complexity rather than trying to eliminate it—a more realistic approach to Amazon governance that enhances diplomatic credibility.

8. Strategic Scenarios for COP30: Navigating Complexity

As host of COP30, Brazil faces a complex diplomatic landscape characterized by what Snowden calls "multiple micro-hallucinations"—diverse perspectives

and interpretations that cannot be reconciled through traditional consensus-building. Rather than pursuing a single optimal strategy, Brazil can develop what Snowden terms "safe-to-fail experiments"—multiple approaches that test different pathways while managing risk.

Traditional scenario planning assumes that future states can be predicted based on current trends. However, Snowden argues that "in evolutionary theory, whatever has the lowest energy gradient is going to win" (Snowden 2022). This insight suggests that Brazil should focus on identifying and influencing energy gradients—the paths of least resistance in international climate politics—rather than trying to predict specific outcomes.

Applying Estuarine Mapping to COP30 strategy reveals three potential pathways, each with different energy gradients:

Brazil as Global Mediator: This pathway has a moderate energy gradient, building on Brazil's historical role bridging North-South divides. It requires investment in diplomatic capacity but leverages existing institutional capital.

Brazil as Innovation Laboratory: This pathway has a higher initial energy cost but potentially steeper returns, positioning Brazil as a testing ground for novel climate solutions. It requires significant investment in scientific and technological capacity.

Brazil as South-South Leader: This pathway has the lowest immediate energy gradient, building on existing relationships with developing nations. However, it may limit Brazil's influence with developed countries that control significant climate finance.

Rather than choosing a single pathway, Brazil can adopt what Snowden calls a "portfolio of safe-to-fail experiments"—testing elements of each approach while monitoring for emergent patterns of success.

Tabela 7. Painel de cenários estratégicos: aplicando Cynefin à COP30

Scenario	Cynefin Domain	Approach	Key Diplomatic Tools
Global Mediator	Complicated	Sense-Analyze-Respond	Expert-driven climate diplomacy; evidence-based positions
Innovation Laboratory	Complex	Probe-Sense-Respond	Distributed experiments; pattern detection; amplification of success
South-South Leader	Simple → Complex	Act-Sense-Respond	Established alliances; coalition building; solidarity mechanisms

Source: Author, based on Snowden (2021; 2023).

This dashboard applies Snowden's Cynefin Framework to strategic scenarios, recognizing that different diplomatic contexts require different approaches. As Snowden explains: "Understanding which domain a challenge belongs to prevents the misapplication of approaches" (Snowden 2021).

The Global Mediator scenario operates primarily in the complicated domain, where cause-effect relationships exist but require expert analysis. This approach leverages Brazil's diplomatic expertise but may struggle with truly new challenges.

The Innovation Laboratory scenario embraces the complex domain, where patterns can only be detected in retrospect. This approach acknowledges uncertainty and focuses on creating conditions for beneficial emergence rather than predetermined outcomes. The South-South Leader scenario begins in the simple domain of established relationships but must navigate the complex domain of diverse interests among developing nations. This requires what Snowden calls an "act-sense-respond" approach—taking action based on established patterns while remaining attentive to emerging dynamics.

Moving From Strategic Planning to Strategic Navigation: Brazil's approach to COP30 must move beyond traditional strategic planning to what Snowden calls "managing the evolutionary potential of the present" (Snowden 2022). This means creating conditions for beneficial emergence rather than trying to control outcomes.

Three principles can guide this approach:

Distributed Decision-Making: Rather than centralizing authority, Brazil can create what Snowden calls "small groups of roles" with decision-making authority. The proposed COP30 structure includes thematic working groups with autonomy to develop positions within broader parameters.

Safe-to-Fail Experiments: Brazil can design diplomatic initiatives as experiments rather than commitments, creating space for learning and adaptation. The proposed Protocol for Prevention of the Point of No Return includes mechanisms for iterative refinement based on implementation experience.

Human Sensor Networks: Brazil can establish diverse local monitoring systems to detect patterns in international climate politics. The proposed Diplomatic Intelligence Network would engage Brazilian embassies, civil society organizations, and academic institutions in real-time pattern detection.

By embracing complexity rather than trying to eliminate it, Brazil can develop a more adaptive and effective approach to COP30 diplomacy.

9. Conclusion: Aligning Domestic Strategy with Global Leadership

Brazil's approach to the Amazon represents a critical test of its capacity to align domestic policies with international climate leadership. By applying complexity frameworks to this challenge, Brazil can develop more effective strategies for both domestic governance and international diplomacy. The Amazon is neither a purely local management challenge nor simply a global environmental concern—it is a complex adaptive system that requires what Snowden calls "changing the environment so that desirable behaviors can emerge" (Snowden 2022). This perspective shifts focus from trying to change individual actors to creating conditions where sustainable practices become the path of least resistance.

Brazil's diplomatic strategy for COP30 must therefore focus on three priorities:

1. Creating Scaffolding for Sustainable Development: Brazil can design institutional arrangements that provide stability while enabling adaptation. The proposed reforms to ACTO exemplify this approach, creating what Snowden calls "certainty within norms" while allowing for contextual innovation.
2. Establishing Distributed Monitoring Networks: Rather than relying on centralized monitoring, Brazil can develop distributed systems for detecting patterns in both ecological and diplomatic domains. The proposed integration of satellite monitoring with indigenous knowledge systems exemplifies this approach.
3. Managing Energy Gradients: Brazil can identify and influence the paths of least resistance in both domestic policy and international negotiations. The proposed Sovereign Sustainability-Linked Bonds might create financial incentives that align economic interests with forest conservation.

Therefore, far from abstract models, these frameworks provide Brazil's diplomacy with adaptive infrastructure. They enable faster response to uncertainty, more resilient coalitions, and leadership in climate complexity. Our article has demonstrated that Brazil's economic activities in the Amazon are not merely environmental or developmental issues, but critical instruments of foreign policy. In preparation for COP30, it is essential that Brazil's diplomatic strategy abandons rigid, static planning and instead embraces an adaptive approach grounded in complexity science. Drawing on the frameworks of Dave Snowden—particularly Cynefin, Estuarine Mapping, Scaffolding, and

the AIMS model—this work proposes a new paradigm: diplomacy by system design, not by aspiration.

The core insight from Snowden's philosophy is that effective behavior, whether diplomatic or institutional, does not emerge from changing beliefs or mindsets, but from altering the structural constraints within which agents interact. This shift is fundamental for Brazil's climate diplomacy. Rather than imposing solutions or projecting leadership through declarations, Brazil must cultivate environments where strategic behaviors—such as coalition-building, transparency, or soft-power alignment—emerge naturally. This demands a clear understanding of which situations require expert knowledge (complicated), where experimentation is needed (complex), and where urgent intervention must occur without delay (chaotic). The Cynefin framework offers this navigational clarity, allowing diplomats and policymakers to distinguish domains and act accordingly.

Estuarine Mapping brings an additional strategic dimension by transforming how Brazil visualizes and prioritizes action. Instead of operating from ideologically fixed plans, the country can now read the diplomatic terrain as a dynamic estuary of constraints—some fixed, some negotiable, and others fluid. Trade rules, ESG regulations, indigenous demands, and international expectations are not obstacles to bypass, but currents to be read, navigated, and used. Diplomatic risk becomes a map, and diplomatic energy is spent where movement is most possible.

Meanwhile, the Scaffolding approach provides a method for implementation. Rather than assuming that institutions can be reformed instantly or that international alignments will automatically follow national declarations, Brazil must build diplomatic scaffolds—adaptive structures, safe-to-fail experiments, modular proposals—through which sustainable influence can be tested, evaluated, and scaled. These include, for example, traceability initiatives in the soy supply chain, regional certification systems, or ACTO reforms piloted through specific bilateral agreements.

Finally, the AIMS framework—comprising Actants, Interactions, Monitoring, and Scaffolding—ensures that the diplomatic strategy is grounded in operational reality. This model allows Brazil to clearly identify key actors (e.g., EU regulators, community cooperatives, Chinese importers), map how they interact within and beyond the Amazon, design monitoring systems (like dashboards and risk matrices), and embed the enabling constraints that foster emergence rather than enforcement.

In sum, COP30 should not be treated as a static destination but as a living experiment in adaptive diplomacy. Brazil has the opportunity to

convert localized Amazonian policies into international leverage, to translate environmental vulnerability into institutional credibility, and to demonstrate—through complexity-aware leadership—that governance in the 21st century is not about mastering outcomes, but mastering the conditions in which outcomes emerge.

Bibliography

Boulton, Christopher A., et al. "Evidence of Amazon Rainforest Dieback in CMIP6 Models." *EGUsphere*, 2022. https://egusphere.copernicus.org/preprints/2022/egusphere-2022-82/egusphere-2022-82.pdf.

Confederação Nacional da Indústria (CNI). "CBAM: o que você precisa saber sobre o mecanismo europeu de ajuste de carbono na fronteira." *Portal da Indústria*, 2023. https://noticias.portaldaindustria.com.br/noticias/internacional/cbam-o-que-voce-precisa-saber-sobre-o-mecanismo-europeu-de-ajuste-de-carbono-na-fronteira/.

European Parliament. "Carbon Border Adjustment Mechanism (CBAM)." *Legislative Train*, 2022. https://www.europarl.europa.eu/legislative-train/theme-a-european-green-deal/file-carbon-border-adjustment-mechanism.

FAIRR Initiative. "Amazon Soy Moratorium: Evaluation and Recommendations." *FAIRR*, 2023. https://www.fairr.org/article/amazon-soy-moratorium/.

Hochstetler, Kathryn, and Eduardo Viola. "Brazilian Climate Policy (1992–2019): An Exercise in Strategic Diplomatic Failure." *Formações OC*, 2021. https://formacoes.oc.eco.br/docs/Pereira&ViolaBrazilianDiplomaticFailure2021.pdf.

Lago, André Corrêa do. "First Letter from the President of COP30." *COP30 Brasil*, 2024. https://cop30.br/en/brazilian-presidency/letter-from-the-brazilian-presidency.

Lovejoy, Thomas E., and Carlos Nobre. "Amazon Tipping Point." *Science Advances* 4, no. 2 (2018). https://doi.org/10.1126/sciadv.aat2340.

MapBiomas. "Deforestation in Brazil: RAD 2023 Factsheet." *MapBiomas Alerta*, 2024. https://alerta.mapbiomas.org/wp-content/uploads/sites/17/2024/05/RAD2023_FACTSHEET_EN_FINAL_27-05-24.pdf.

Nye, Joseph S. *Soft Power: The Means to Success in World Politics*. PublicAffairs Books, 2005. https://www.wcfia.harvard.edu/publications/soft-power-means-success-world-politics.

ProTerra Foundation. *Challenges in Brazilian Soy Supply Chains*. ProTerra, 2023. https://www.proterrafoundation.org/news/challenges-in-brazilian-soy-supply-chains/.

Science Panel for the Amazon. *Policy Brief 2023: Land Market and Illegalities: The Deep Roots of Deforestation in the Amazon*. The Amazon We Want, 2023. https://www.theamazonwewant.org/spa-reports/.

Snowden, David. "About Cynefin Framework." *The Cynefin Co.*, 2021. https://thecynefin.co/about-us/about-cynefin-framework/.

Snowden, David. "Estuarine Mapping." *The Cynefin Co.*, 2022. https://thecynefin.co/estuarine-mapping/.

Snowden, David. "The Cynefin Framework." *Conversational Leadership*, 2015. https://conversational-leadership.net/cynefin-framework/.

Snowden, David, and Mary Boone. "A Leader's Framework for Decision Making." *Harvard Business Review* 85, no. 11 (2007): 68–76. https://hbr.org/2007/11/a-leaders-framework-for-decision-making.

World Resources Institute. "Amazon Economic Profile." *WRI Brasil*. https://wribrasil.org.br/pt/publicacoes/amazon-economic-profile.