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PERCEPTIONS OF STRATEGIC ACTORS ON CLIMATE GOVERNANCE AND BIODIVERSITY PROTECTION IN THE AMAZON: EVIDENCE FROM COP30

PERCEPÇÕES DE ATORES ESTRATÉGICOS SOBRE GOVERNANÇA CLIMÁTICA E PROTEÇÃO DA BIODIVERSIDADE NA AMAZÔNIA: EVIDÊNCIAS DA COP30

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Abstract: This article examines climate governance and biodiversity protection in the Amazon as its central theme. The research problem concerns how the perceptions of strategic actors reveal tensions between international commitments and domestic implementation capacities. The objective is to analyze these perceptions regarding Brazil's engagement with the global climate agenda, drawing on a cross-sectional survey applied in person at the Green Zone of COP30, in Belém (PA), Brazil, in November 2025, with 89 respondents from the public sector, private sector, academia, and civil society. The theoretical framework draws on polycentric governance (Ostrom), neoliberal institutionalism (Keohane), and soft power (Nye). Results show that the prevailing assessment is one of partial progress toward Brazil's Paris Agreement commitments, with political-institutional barriers, economic pressures, land-use conflicts, and intergovernmental coordination failures, identified as the main obstacles. Brazil is perceived as participatory but with limited influence in international negotiations, reflecting a gap between external discourse and domestic performance. Bivariate analysis indicates that institutional affiliation moderately conditions these evaluations (Cramér's V = 0.328). The findings confirm that effective climate governance in the Amazon depends on the state's capacity to coordinate polycentric arrangements and overcome structural domestic constraints.

Keywords: Climate policies; Amazonian biodiversity; Polycentric governance; Soft Power

Resumo: *Este artigo tem como tema a governança climática e a proteção da biodiversidade na Amazônia. O problema de pesquisa investiga como as percepções de atores estratégicos revelam tensões entre compromissos internacionais e capacidades domésticas de implementação. O objetivo é analisar essas percepções sobre o engajamento do Brasil na agenda climática global, por meio de survey de corte transversal aplicado presencialmente na Zona Verde da COP30, em Belém (PA), em novembro de 2025, com 89 respondentes dos setores público, privado, acadêmico e da sociedade civil. O arcabouço teórico articula governança policêntrica (Ostrom), institucionalismo neoliberal (Keohane) e soft power (Nye). Os resultados indicam avaliação predominante de avanço parcial do Brasil no cumprimento do Acordo de Paris, com obstáculos político-institucionais, pressões econômicas, conflitos fundiários e falhas de articulação intergovernamental, como principais barreiras. O Brasil é percebido como ator participativo, mas com influência limitada nas negociações internacionais, refletindo incoerência entre discurso externo e desempenho doméstico. A análise bivariada indica que a área de atuação institucional condiciona moderadamente essas avaliações (V de Cramér = 0,328). Conclui-se que a efetividade da governança climática na Amazônia depende da capacidade estatal de coordenar arranjos policêntricos e superar entraves estruturais domésticos.*

Palavras-chave: *Políticas climáticas; Biodiversidade amazônica; Governança policêntrica; Soft Power.*

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1 INTRODUCTION

The Amazon is the largest tropical biome on Earth, storing approximately 120 billion tonnes of carbon and influencing precipitation patterns at a continental scale through its hydrological cycles. It therefore occupies a central position on the global environmental agenda (Becker, 2015; Albert et al., 2023).

Its relevance is not merely ecological: negotiations on climate and biodiversity inevitably pass through discussions of how deforestation and climate change operate synergistically, amplifying the risk of irreversible tipping points (Chan et al., 2023; Bulkeley; McFarlane, 2024; Franco et al., 2025). Governing this territory is, therefore, also governing a portion of the global climate system (Gupta et al., 2024; Fernandes; Artaxo, 2025).

The literature on global commons treats the Amazon as a natural system essential to ecological stability and human well-being (Gupta et al., 2024). Yet managing its protection requires multilevel governance arrangements that coordinate actors operating at different scales and with divergent interests. These arrangements take a polycentric form: multiple authority centres must not merely coexist, but be effectively coordinated (Lubell; Morrison, 2021).

Sustainability requires, on one hand, respecting the biophysical boundaries of the planet and, on the other, guaranteeing the minimum conditions for human dignity. SDG 17 operationalises this logic by establishing cross-sector cooperation as the foundation of global governance (Rodrigues et al., 2026; Biermann et al., 2022). Climate justice enters this framework as a regulatory principle: those who pollute more must assume more responsibility. Yet those who suffer most will also need more support, making international cooperation a necessary condition for any effective climate agenda (UN, 2026).

To analyse global governance, this study begins by revisiting three complementary theoretical frameworks. Polycentric governance, as formulated by Elinor Ostrom, frames climate action as the product of interactions among multiple decision-making centres at different scales. Robert Keohane's neoliberal institutionalism investigates how international regimes facilitate the coordination of collective action and minimise uncertainties. And the concept of *soft power*, elaborated by Joseph Nye, enables an interpretation of the normative and diplomatic dimension of Brazilian action. These three frameworks together enable a joint interpretation of climate governance that articulates institutional structure, territorial dynamics, and symbolic capital.

In terms of international commitments, Brazil has structured its NDC (Nationally Determined Contribution) with emphasis on the land use and forestry sector (LULUCF), responsible for the largest share of national emissions (Climate Analytics, 2025; Morrison et al., 2023). The PPCDAm (Action Plan for the Prevention and Control of Deforestation in the Legal Amazon), relaunched in its fifth phase in 2023, is the central instrument of this strategy: it combines enforcement, land tenure organisation, and the promotion of the bioeconomy as complementary fronts for deforestation control (Fernandes; Artaxo, 2025). In this sense, the Amazon emerges as the primary locus of Brazilian climate policy.

The reinstatement of the PPCDAm yielded tangible early results. The combination of satellite monitoring by INPE (National Institute for Space Research) and the reactivation of the Amazon Fund produced a measurable decline in deforestation throughout 2023 (INPE, 2026; Morrison et al., 2023). This domestic performance also had a positive diplomatic dimension: by demonstrating implementation capacity, Brazil broadened its interlocutory space in international forums, where commitments unsupported by domestic results lose credibility (Rotella Braga; Duleba, 2024).

In 2025, Belém, an Amazonian city and capital of the state of Pará, hosted the world's largest climate conference, COP30. The symbolism of this event was strategic: it positioned the Amazon at the physical centre of the negotiations, reinforcing Brazil's geopolitical relevance in the international climate regime (UN, 2026).

Brazil's trajectory toward COP30 and this geopolitical prominence was not, however, linear. Between 2019 and 2022, environmental enforcement mechanisms were weakened and deforestation rates were high (Silva; Vinha, 2025; Souza, 2024). From 2023 onwards, a political reorientation reactivated control instruments, but structural tensions between economic expansion and conservation persist, making the implementation of environmental policies a process characterised by uneven progress and competing interests (Candido et al., 2023).

Neoliberal institutionalism offers an interpretive key for this scenario: as Keohane argues, international institutions and regimes reduce uncertainties, lower transaction costs, and facilitate coordination among interdependent states (Delgado, 2023). Climate regimes such as the Paris Agreement function, in this perspective, as structures that delimit expectations and distribute responsibilities without, however, ensuring that signatories fulfil their commitments. The findings of this study allow examination of precisely this gap between formal adherence and effective implementation (Araújo, 2025).

Understanding how strategic actors, public managers, researchers, private sector representatives, NGO members, and environmental journalists, interpret Brazil's performance

in this field is relevant both analytically and practically. Perceptions influence decisions, shape legitimacy narratives, and condition the effectiveness of policies (Cavalcante, 2025). Empirical literature on perceptions in the context of major multilateral events such as COPs remains limited, a gap this study seeks to fill.

The study articulates three analytical fields: (i) global governance and international regimes, with emphasis on neoliberal institutionalism; (ii) polycentric governance, which examines how multiple decision-making centres operate in the implementation of environmental policies; and (iii) research on the perceptions of strategic actors in the formulation and evaluation of public policies.

Within the field of International Relations, the dialogue with the *global environmental governance* literature focuses particularly on the tension between multilateral commitments and domestic state capacities. Climate governance in the Amazon emerges, from this perspective, as a multilevel field in which international norms, territorial dynamics, and actors' interpretations combine to produce (or inhibit) legitimacy and effectiveness.

Against this backdrop, the research problem guiding this study was formulated as follows: how do the perceptions of strategic actors reflect the tensions between international commitments and domestic capacities in Amazon climate governance, in the context of COP30?

Two hypotheses guide the analysis. The first proposes that the effectiveness of climate governance, in contexts of high socio-environmental complexity, depends on the state's capacity to coordinate polycentric arrangements, since formal adherence to international treaties does not substitute for this capacity. The second holds that the legitimacy and leadership of a country in the global climate regime result from coherence between external discourse and domestic performance: countries that promise more than they implement tend to lose influence in negotiations.

The article contributes to three areas of the literature. With regard to polycentric governance, it demonstrates that the multiplicity of decision-making centres does not, in itself, guarantee effective implementation, and that state coordination remains the critical point. In the field of international regime theory, it shows that adherence to multilateral agreements is necessary but insufficient: outcomes depend on internal institutional capacities. Finally, by incorporating the perceptions of strategic actors as analytical data, the study advances understanding of how legitimacy and leadership are built or eroded in the practice of climate governance.

The study's objective is to analyse the perceptions of strategic actors regarding Brazil's engagement with the global climate agenda and the protection of Amazonian biodiversity, drawing on a cross-sectional *survey* applied at the Green Zone of COP30, and thereby contributing to the interdisciplinary debate on environmental governance, public policy, and power dynamics in the Amazonian context.

By focusing on the perceptions of actors embedded in the climate governance field, the article engages with the literature on environmental elites and *global environmental governance*, demonstrating that the effectiveness of climate governance depends not only on global institutional arrangements, but also on how those arrangements are understood and operationalised by actors on Amazonian territory.

2 MATERIALS AND METHODS

STUDY DESIGN AND CONTEXT

The study adopts a quantitative, cross-sectional, descriptive-analytical design (Gil, 2022). Data were collected through a structured questionnaire administered in person and anonymously at the Green Zone of COP30, in Belém (PA), Brazil, in November 2025. Trained interviewers conducted the data collection; average completion time was 8 to 10 minutes. The target population included environmental professionals, researchers, and journalists present at the event.

RESEARCH INSTRUMENT

The instrument, titled *"Protection of Biodiversity in the Amazon"*, was developed as part of doctoral research affiliated with the Graduate Programme in Environmental Sciences at the Universidade do Estado do Pará (PPGCA/UEPA). Comprising 18 questions, the questionnaire was organised into three thematic blocks:

Block 1 – Respondent profile (Q1–Q4): primary area of practice, years of experience in environmental/climate topics, relationship with the Amazon, and state of activity/monitoring in the Legal Amazon.

Block 2 – Policies and perceptions (Q5–Q12): knowledge and use of climate policies, perception of Brazil's progress under the Paris Agreement, monitoring of international negotiations, Brazil's positioning, barriers to policy implementation in the Amazon (maximum

two options), most responsible sectors (maximum two options), respect for Amazonian specificities, and influence of international actors.

Block 3 – Actions and perspectives (Q13–Q18): participation in initiatives, most effective action, relationship between climate change and socio-environmental dimensions, most effective type of international action, most influential international actors (maximum two options), and Brazil's priority role in global environmental geopolitics.

Single-choice questions predominated; three items allowed selection of up to two alternatives (Q9, Q10, and Q17).

DATA COLLECTION PROCEDURES AND ETHICAL CONSIDERATIONS

Data collection was in-person, anonymous, and voluntary. As this constituted public opinion research with unidentified participants, the study falls within the exemption categories established in Art. 1, sole paragraph, of CNS Resolution 510/2016, which waive registration in the CEP/CONEP system. Ethical precautions were nonetheless observed: the form began with a presentation text stating the research objective, guaranteeing anonymity, indicating the estimated completion time, and affirming the participant's right to withdraw at any time; no personally identifying data were collected (Amaral Filho, 2017; Almeida; Silva; Novaes, 2026).

Coding and database

Responses were recorded directly in an electronic spreadsheet and coded according to a pre-defined data dictionary. For multiple-selection questions, separate binary variables were created (e.g., q9_obstaculos_1 and q9_obstaculos_2). Coding followed closed categories: Q1 (area of practice: 1 = Government, 2 = Private, 3 = NGO, 4 = Academia, 5 = Journalism, 6 = Other); Q9 (barriers: 1 = Funding, 2 = Intergovernmental coordination, 3 = Social participation, 4 = Land-use conflicts, 5 = Economic pressure, 6 = Lack of data/monitoring); Q18 (Brazil's role: categories of leadership in nature-based solutions, biodiversity guardian, mediator, among others).

Statistical analysis strategy

Analysis was conducted in two stages: (i) univariate descriptive and (ii) bivariate, to test associations between profile variables and perception variables (Creswell; Creswell, 2017; Creswell; Poth, 2018).

Descriptive analyses

Absolute and relative frequencies were calculated for all categorical variables. For multiple-selection items, frequencies were computed by individual marking, respecting the two-choice limit per respondent (Groves, 2025).

Association tests

The chi-square test of independence (χ^2) was applied to contingency tables, reporting the test statistic, degrees of freedom, *p*-value, and effect size (Cramér's *V*) (Agresti, 2023). Standardised residuals were inspected to identify significant deviations. In 2×2 tables with reduced expected frequencies, Fisher's exact test was applied (Camargo et al., 2026). *p*-values were adjusted using the Holm–Bonferroni method to control the type I error rate.

Sparsity treatment

Low-frequency categories were recoded minimally (aggregated into "Other"), preserving the interpretability of the instrument (Groves, 2025).

Software and reproducibility

All processing, analysis, and chart-generation steps were performed in Python (libraries *pandas*, *matplotlib*, *scipy.stats*, and *networkx*). Figures were exported in SVG and PNG (300 dpi).

Methodological limitations

The sample is non-probabilistic and convenience-based, restricted to participants at the COP30 Green Zone. This choice limits statistical generalisation but is consistent with the study's objective: to characterise the perceptions of those directly involved in the formulation and mediation of climate policies. The elite bias is, here, also a deliberate analytical strategy. The risks of social desirability bias and a tendency toward the internalisation of perceptions are nonetheless acknowledged, given the highly engaged context of COP30, in which factors may inflate positive assessments of international cooperation and global governance (Amaral Filho, 2017; Almeida; Silva; Novaes, 2026).

3 RESULTS

The data reveal a climate governance field marked by tensions between structure and agency, between formal commitment and real implementation capacity. The state retains perceived centrality as coordinator of climate action, but depends on a network of private, scientific, and international actors for policies to function. This pattern is consistent with

Ostrom's polycentric model: multiple decision-making centres coexist but yield results only when effective coordination mechanisms are in place among them.

The main barriers identified, including economic pressures on natural resources, land-use conflicts, and intergovernmental coordination failures, all point in the same direction: the problem is not a lack of information or technical knowledge. It is political-institutional. This analytical shift, from a technocratic reading to a political-economic perspective, aligns with critical environmental governance literature that treats territorial disputes and distributive conflicts as central explanatory variables of implementation failures.

The dominant perception of "partial progress" in fulfilling the Paris Agreement illustrates one of neoliberal institutionalism's central theses (Keohane): adherence to international regimes facilitates cooperation, but does not substitute for domestic institutional capacity. Brazil ratified the agreement, but the results depend on domestic variables that the regime does not control.

The perception that Brazil occupies a "participatory but insufficiently influential" position in climate negotiations has a direct reading through Nye's concept of *soft power*: international influence is not built by formal participation alone, but by the coherence between what is said in global forums and what is done in one's own territory. When domestic implementation is fragile, external discourse loses traction.

The analysis of the network of international actors reinforces this picture: multilateral organisations and developed countries occupy a central position in the structure of global climate governance (Schmitt, 2025). For developing countries like Brazil, the capacity for influence depends largely on access to financing, norm-setting, and coordination flows controlled by these actors. Barnett and Duvall have already demonstrated that power operates not only through direct control but through institutional structures that shape what is possible, a dynamic reflected in the collected data (Schmitt, 2025).

At the domestic level, the stated preference for local and regional public policies as the primary climate mitigation instrument (Maymone, 2025) indicates that, for these actors, effective climate governance is made on the territory, not in treaties. International cooperation is seen as necessary but insufficient without a solid domestic base to sustain it.

The heterogeneity of perceptions across sectors, captured by the bivariate analysis, indicates that assessments of Brazil's international positioning are not uniform: they reflect the institutional position of those who hold them. This confirms that climate governance is also a

field of interpretive contestation, in which government, academia, the private sector, and civil society produce distinct diagnoses about effectiveness, legitimacy, and leadership.

The high level of practical engagement among respondents, 79.8% have already participated in climate transition or biodiversity protection initiatives, signals accumulated technical and social capital in the Brazilian socio-environmental field. During periods of political instability, such as 2019–2022, this multisectoral base functioned as a resilience factor: the climate agenda does not depend solely on governmental decisions, but on the mobilisation capacity of networks that transcend the state. In sum, the data point to a persistent structural tension between international ambition and domestic capacity, and it is on this tension that Brazil's leadership in the global climate regime depends.

RESPONDENT PROFILE

Eighty-nine valid responses were obtained. The public sector accounted for the majority of respondents (41.6%), followed by the private sector (20.2%), civil society/NGOs (15.7%), and academia (13.5%). Environmental journalists represented 1.1% of the sample; 7.9% indicated other areas. Regarding experience, 78% have worked on climate topics for more than two years, of whom 22.5% for more than a decade. It is also relevant that 86.6% declared a direct or indirect connection with the Amazon, which confers strong territorial and thematic coherence to the sample.

KNOWLEDGE AND MONITORING OF CLIMATE POLICIES

The majority of respondents demonstrated simultaneous knowledge of national and international climate policies, an indicator of political-environmental literacy above average among sector professionals. The dominant perception regarding Brazil's progress under the Paris Agreement was "partial progress," followed by "limited progress": an acknowledgement of recent efforts, but with reservations about their sufficiency. Monitoring of international negotiations (COPs and CBD) was high, with most participants following them regularly or occasionally, reinforcing the informed and engaged profile of the sample.

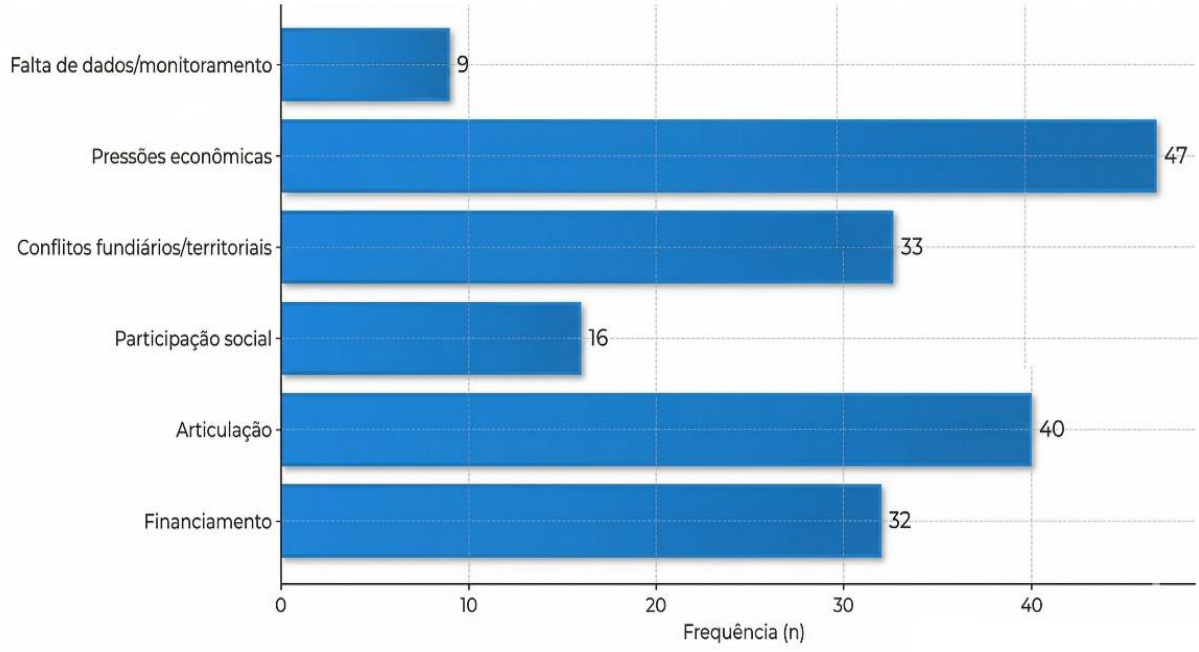
Perceptions of Brazil's international positioning

"Participatory but insufficiently influential" was the most frequent assessment of Brazil's positioning in climate negotiations, followed by "reactive to external demands." The "leadership" category was in the minority, a signal that even actors engaged in the field recognise the limits of the country's international projection in the recent period. The bivariate analysis (Bivariate analyses section) explores how these assessments vary according to respondents' sector of activity.

Barriers to climate policy implementation in the Amazon

Under a multiple-choice regime (up to two options per respondent), participants indicated the main barriers to climate policy implementation in the Amazon. As shown in Figure 1, economic pressures on natural resources led in mentions (n = 47), followed by lack of coordination among levels of government (n = 40), land and territorial conflicts (n = 33), insufficient funding (n = 32), low social participation (n = 16), and lack of data and monitoring (n = 9). The pattern is clear: barriers are structural and institutional, not technical.

Figure 1. Perceived barriers to climate policy implementation in the Amazon (Q9).



Source: Authors (2026)
Horizontal bar chart showing the absolute frequency (n) of selection for each barrier.
Respondents could mark up to two options.

The distribution reinforces the predominance of political-institutional and structural factors over technical-informational constraints. The “lack of data and monitoring” category received fewer than one-fifth of the mentions attributed to economic pressures, indicating that information deficits are seen as a peripheral, not central, problem by respondents.

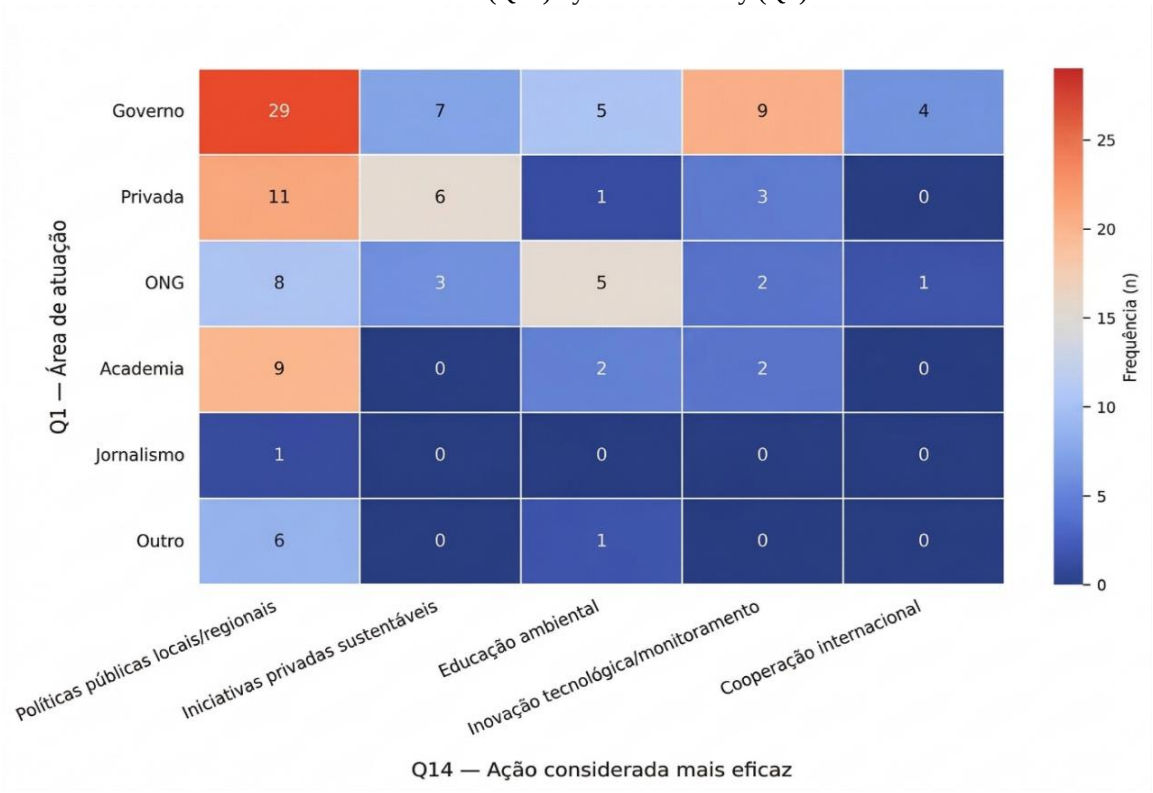
The challenge, therefore, is not one of knowledge, it is one of governance, interinstitutional coordination, and the resolution of distributive conflicts. Climate policy implementation in the Amazon founders on disputes over the use of territory and natural resources that no investment in monitoring can resolve alone (WWF-BRASIL, 2025).

Taken together, the observed pattern suggests that the main challenges to climate policy implementation in the Amazon are political-institutional in nature, centred on distributive conflicts, coordination weaknesses, and structural economic pressures, rather than stemming from technical or informational deficits.

Sectoral responsibility and engagement

Government was identified as the primary actor responsible for climate action in the Amazon, followed by the private sector; academia, civil society, and international organisations were positioned as complementary actors. Figure 2 details, by sector of activity, the choices regarding the most effective type of action. Local and regional public policies lead across all groups, with concentration among government respondents (n = 29), while sustainable private initiatives carry more weight among private sector respondents (n = 6) and technological innovation is more valued by government managers (n = 9). The pattern reflects state centrality with recognition of multisectoral complementarity.

Figure 2. Distribution of choices regarding the most effective type of action to reduce climate impacts in the Amazon (Q14) by area of activity (Q1).



Fonte: Authors (2026)
Heatmap showing the absolute frequency (n) of selections for each Q14 category within each Q1 group; cells annotated with observed values

On the basis of Figure 2, the centrality of territorial public policies as the preferred strategy across all sectors is confirmed. Market instruments and technological innovation are valued, but as complements, not substitutes, to direct state action.

The polycentric governance perspective (Ostrom, 1990) offers an appropriate analytical framework for this pattern: multiple authority centres (at local, regional, and national scales) coordinate decisions in a relatively autonomous yet interdependent manner. This arrangement favours the creation of adaptive rules and territorial self-governance. The notion of the "tragedy of the commons" (Hardin, 1968) remains relevant as a reference point for what is at stake when regulation fails: individuals maximising individual benefits at the expense of shared resources, a pattern historically documented from studies of aquifers in 1960s California and today applicable to the dynamics of Amazonian biodiversity use (Ostrom; Ostrom, 1965; Fisher; Leifeld, 2019; Lubell; Morrison, 2021; Cashore; Bernstein, 2023).

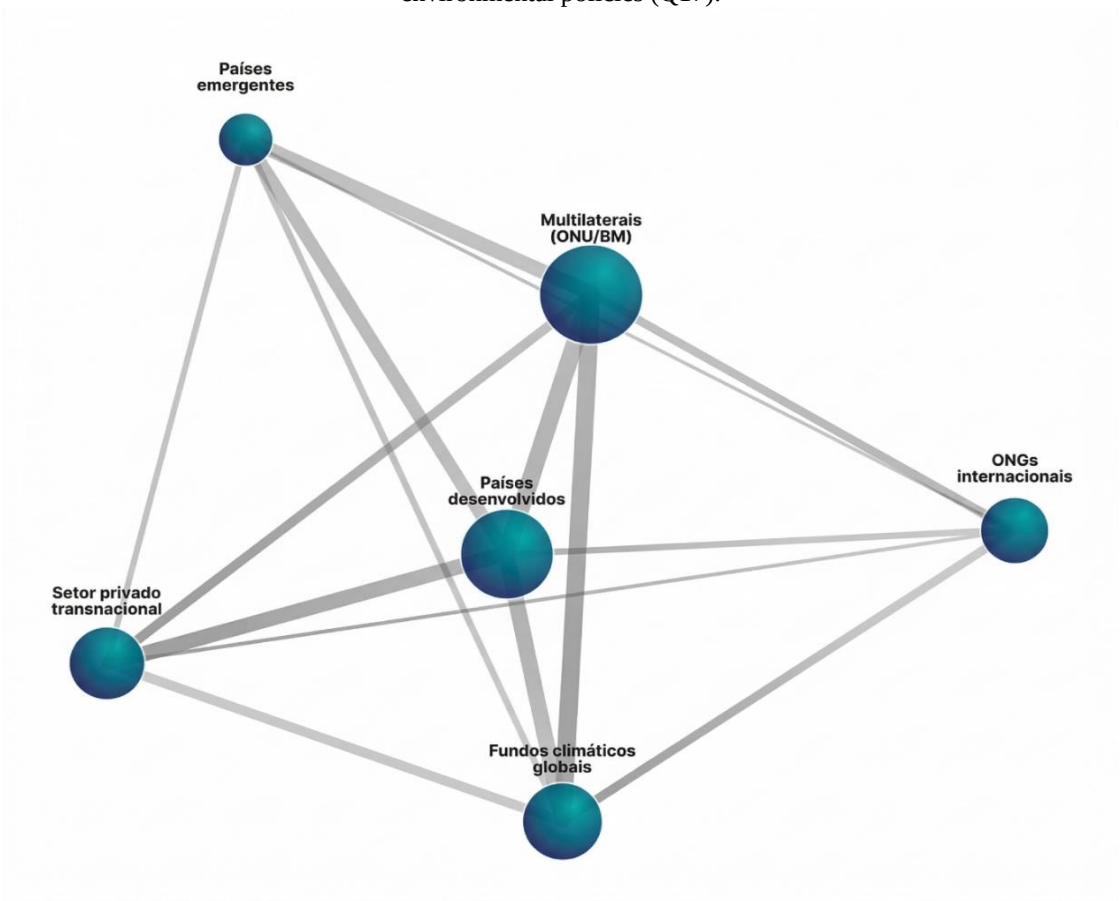
Analytically, the results indicate a configuration of polycentric governance with state centrality, in which the state acts as primary coordinator but depends on articulation with the private sector, the scientific community, and civil society for the effectiveness of its actions.

This pattern reinforces that effective climate governance results not only from formal structures, but from the real capacity for coordination among actors with distinct institutional positions and interests.

Assessment of international policies and external influence

Figure 3 presents the co-occurrence network of international actors considered most influential (Q17), revealing how respondents perceive the architecture of global climate governance and Brazil's place within it.

Figure 3. Co-occurrence network of international actors considered most influential in Amazon environmental policies (Q17).



Fonte: Authors (2026)

Nodes represent actor categories, with size proportional to selection frequency (n); edges indicate co-occurrence between actors selected by the same respondent (display threshold: co-occurrence ≥ 2), with thickness proportional to the number of co-occurrences.

The influence of international actors on Amazon environmental policies is assessed in predominantly positive terms, although a considerable proportion of respondents classify it as neutral, indicating recognition without unconditional endorsement. The co-occurrence network

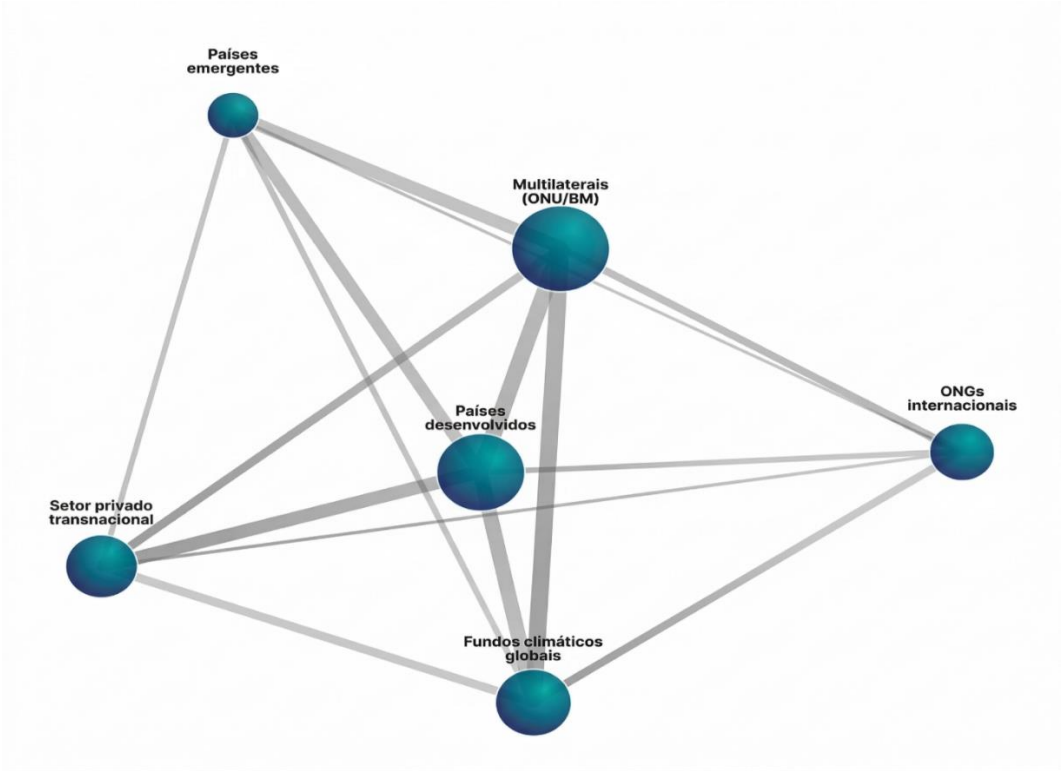
(Figure 3) makes the architecture of this field visible: multilateral organisations (UN/World Bank) occupy the centre of the network, with the highest selection frequency and greatest connection density. Developed countries and global climate funds form a second nucleus, articulated around the same organisations, suggesting that financing, norm-setting, and coordination operate as an integrated system.

The transnational private sector, international NGOs, and emerging countries appear at the periphery of the network,w recognised actors, but perceived as complementary rather than structuring. This pattern points to a structural power asymmetry: Brazil's capacity for influence in the global climate regime depends, in part, on its insertion into financing and coordination networks controlled by external actors, making domestic performance all the more decisive as a basis for credibility.

Priority actions and Brazil's role

Figure 4 presents respondents' expectations regarding Brazil's priority role in global environmental geopolitics (Q18) and the actions considered most effective for reducing climate impacts in the Amazon.

Figure 4. Priority role attributed to Brazil in global environmental geopolitics (Q18).



Source: Autors (2026)
Bar chart showing the absolute frequency (n) of selection for each alternative.

Local and regional public policies lead as the most effective action (Q14), followed by technological innovation and monitoring, with international cooperation in third place. This hierarchy is consistent with earlier results: direct territorial governance is prioritised over mechanisms dependent on external coordination. Cooperation is recognised as necessary, but insufficient without a solid domestic base.

Regarding Brazil's priority role in global environmental geopolitics (Figure 4), the most frequent response was leadership in nature-based solutions (n = 54), more than twice the second option, biodiversity guardian (n = 22). More conventional roles, such as sovereignty defender (n = 10), North–South mediator (n = 10), and South–South cooperation promoter (n = 9), received low endorsement. The pattern is clear: respondents see Brazil as having greater legitimacy when anchored in tangible environmental assets, not in abstract diplomatic roles.

Analytically, this set of results indicates a functional decoupling between the domestic and international levels of climate governance, in which effectiveness is attributed to internal territorial instruments while external leadership is conditioned on the capacity to offer environmental solutions grounded in natural assets. This decoupling points to a central challenge: broadening Brazil's international influence requires, above all, demonstrating consistency and concrete results in the management of Amazonian territory.

Bivariate analyses

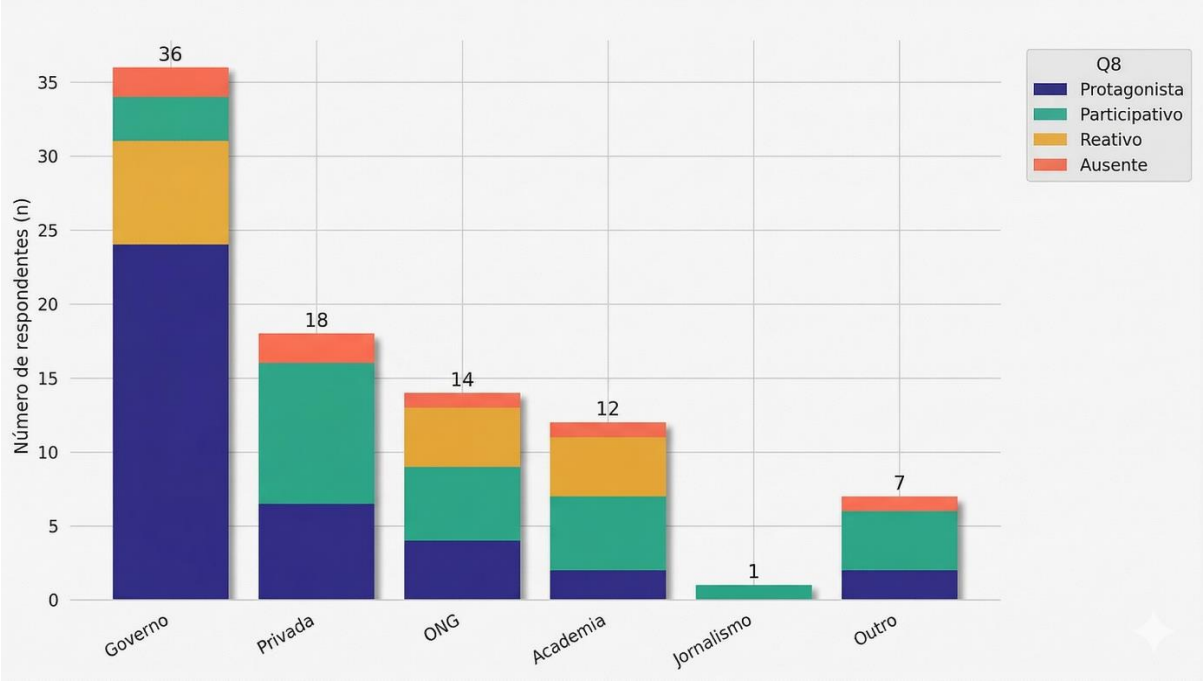
Results indicate a statistically significant association between area of activity (Q1) and perception of Brazil's positioning in international climate negotiations (Q8) ($\chi^2(8) = 18.987$; $p = 0.015$), with a moderate effect size (Cramér's $V = 0.328$). Significance was maintained after Holm–Bonferroni correction (adjusted $p = 0.045$), reinforcing the robustness of the finding against type I error control in multiple comparisons.

Inspection of standardised residuals (Figure 5) reveals differentiated patterns among groups, indicating that academic respondents display a higher relative propensity to classify Brazil as "participatory," while public and private sector respondents are comparatively more concentrated in lower-leadership categories ("reactive" and, to a lesser extent, "absent"). This contrast evidences a perceptual asymmetry between institutional fields, with systematic variations in assessments of the country's international role.

The other tested associations (time of activity × participation in initiatives, and area of activity × assessment of international influence) did not remain significant after correction for

multiple comparisons, suggesting that these profile variables do not exert a robust differentiating effect on the perceptions investigated.

Figure 5. Association between respondents' area of activity (Q1) and perception of Brazil's positioning in international climate negotiations (Q8)



Source: Authors (2026)
Stacked bar chart showing the count of respondents (n) per Q8 category within each Q1 group.

In the specific case of the government sector, it is observed that, although the "leader" category concentrates the highest absolute frequency, response distribution is more heterogeneous compared to other groups, including relevant presence in the "reactive" and "participatory" categories. Comparatively, this indicates that, even among state actors, there is no full consensus on Brazil's international positioning, suggesting an internally fragmented perception.

The effect size (V = 0.328) indicates that area of activity exerts substantive, though not determinant, influence on the perceptions analysed, reinforcing the interpretation that such perceptions are socially situated and dependent on respondents' institutional positioning. This result constitutes empirical evidence of structural heterogeneity in assessments of Brazil's international insertion.

The other tested associations, between time of activity and participation in initiatives, and between area of activity and assessment of international influence, did not remain statistically significant after correction for multiple comparisons, indicating the absence of a

robust effect from these variables. This pattern suggests that the central differentiating factor lies not in individual experience or engagement level, but in the institutional position occupied by actors in the climate governance field.

The bivariate analysis qualifies earlier findings: the perception of participation with limited influence is not homogeneous, but varies systematically according to sector of affiliation. This perceptual fragmentation is consistent with the structural barriers identified in the Barriers to implementation section and with the polycentric configuration of the Sectoral responsibility section. More than attesting to divergences of opinion, the result indicates that different institutional positions produce distinct diagnoses about state climate leadership capacity, which has direct implications for the formulation of policies that must be perceived as legitimate by heterogeneous audiences.

4 DISCUSSION

The data confront a common premise in climate policy: that international commitment is a sufficient condition for producing results. It is not. Effectiveness depends on the state's real coordination capacity and on overcoming domestic structural barriers. The findings qualify the polycentric governance literature by indicating that multiple decision-making centres expand response potential, but do not guarantee effective implementation, especially in territories of high socio-environmental complexity such as the Amazon.

The results also challenge the neoliberal institutionalist perspective. International regimes reduce uncertainties and create conditions for cooperation, but have limits when domestic institutional capacity is insufficient to internalise them. The dominant perception of partial progress in fulfilling the Paris Agreement points to this gap: economic pressures, land-use conflicts, and intergovernmental coordination weaknesses function as filters between international norms and local practice.

The value respondents place on territorial public policies points toward a practical conclusion: solutions based on local management and multilevel governance are perceived as more effective than centralised approaches. This evidence engages with the environmental governance literature by highlighting that articulation across scales (global, national, and subnational) is not merely desirable, but necessary for concrete results.

The perception that Brazil is participatory but with limited influence illuminates a specific dimension of *soft power*: influence does not derive from presence, but from credibility. To participate in climate forums without demonstrating domestic consistency is to participate

without weight. International legitimacy emerges, from this perspective, as a relational resource built or destroyed by the coherence between what is said and what is implemented.

By incorporating the perceptions of strategic actors as analytical data, the study contributes to a more complete understanding of public policy effectiveness. Perceptions are not merely subjective reactions, they shape decisions, distribute legitimacy, and condition what is politically viable. Integrating them into climate governance analysis means recognising that institutions operate in interpretive, not merely normative, contexts.

In theoretical terms, the data support the proposition that Amazon climate governance must be understood as a simultaneously institutional, territorial, and interpretive process. State capacities, polycentric arrangements, and actors' readings interact in the production of results, and none of these elements, in isolation, is sufficient to explain the observed patterns.

Concrete advances in climate governance therefore demand more than renewed international commitments. They require the building of institutional capacities, coordination across scales, and the incorporation of territorial and social dimensions into public policies. The climate agenda Brazil needs is simultaneously global in its ambitions and local in its instruments.

5 FINAL CONSIDERATIONS

This study investigated how strategic actors perceive climate governance and biodiversity protection in the Amazon. The central finding is that the effectiveness of environmental policies is not a direct function of international commitments: it depends on domestic institutional capacities and on the territorial dynamics within which policies must operate. The first hypothesis is confirmed: in contexts of high socio-environmental complexity, state coordination of polycentric arrangements is a necessary condition, adhering to the Paris Agreement without resolving land-use conflicts, economic pressures, and intergovernmental fragmentation does not produce the expected results. The second hypothesis also finds support in the data: the dominant perception that Brazil is "participatory but insufficiently influential" indicates that leadership in the global climate regime is conditioned on the coherence between discourse and domestic practice. Without such coherence, environmental *soft power* loses credibility.

From a theoretical standpoint, the study advances on three fronts. Polycentric governance expands climate response potential, but does not guarantee effectiveness: state

coordination remains the critical node. Neoliberal institutionalism explains how climate regimes organise cooperation, but does not capture why domestic implementation fails even when formal adherence exists. And the incorporation of strategic actors' perceptions as an analytical variable reveals that legitimacy and leadership are built relationally, not merely institutionally.

The integration of institutional, territorial, and interpretive dimensions leads the article to understand environmental governance as a relational process: formal arrangements alone are insufficient when the actors who operate them hold divergent diagnoses about their effectiveness and legitimacy.

At the practical level, the findings have direct implications for Brazil's climate agenda. Regaining leadership in future COPs requires demonstrating consistent domestic results: maintaining deforestation targets, strengthening the PPCDAm, and expanding the Amazonian bioeconomy as a replicable model. In the field of climate finance, mechanisms such as the Amazon Fund and direct access to multilateral funds depend on the existence of solid multilevel governance structures. Without them, resources arrive, but implementation fragments. International credibility is not built in Belém or Dubai: it is built on the territory.

The study has known limitations: a non-probabilistic sample, a context specific to COP30, and possible social desirability bias. Future research may broaden the scope through longitudinal and comparative approaches across different conferences and national contexts, which would allow for the identification of more stable patterns and more precise causal mechanisms regarding what actually conditions the effectiveness of climate governance.

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