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Article

Transforming global commitments into local actions: governance challenges in implementing the climate agenda

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This article analyzes the local implementation of Brazilian diplomatic agreements in the field of climate change, with special emphasis on the role of subnational actors in this process. The research adopts a qualitative approach, using a multiple case study method, analyzing projects developed by five subnational Investment Promotion Agencies (IPAs) in different states and municipalities of Brazil: Invest SP, Invest Rio, Invest Minas, Invest Paraná, and Invest Piauí. Over the past few years, these agencies have focused on strategically attracting sustainable foreign investment and aligning their initiatives with the United Nations (UN) 2030 Agenda. The results highlight the fundamental importance of IPAs as intermediary structures that connect the public and private sectors, facilitating the financial viability and practical execution of projects related to the global climate agenda. The analyses, based on 37 in-depth interviews and documentary analysis, identify best practices and highlight persistent difficulties in interactions among different levels of government, revealing complex challenges for multilevel governance.

Keywords: Brazilian foreign policy, investment promotion agencies, climate change, multilevel diplomatic governance, public policy implementation.

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Transformando compromissos globais em ações locais: os desafios de governança na implementação da agenda climática

Este artigo analisa a implementação, em âmbito local, dos acordos diplomáticos brasileiros na área de mudanças climáticas, com ênfase especial no papel desempenhado por atores subnacionais nesse processo. A pesquisa adota uma abordagem qualitativa, utilizando o método de estudos de casos múltiplos, aprofundando-se na análise de projetos desenvolvidos por cinco Agências de Promoção de Investimentos (APIs) subnacionais em diferentes estados e municípios do Brasil: Invest SP, Invest Rio, Invest Minas, Invest Paraná e Invest Piauí. Ao longo dos últimos anos, essas agências têm focado na atração estratégica de investimentos estrangeiros sustentáveis, buscando alinhar suas iniciativas com a Agenda 2030 da Organização das Nações Unidas (ONU). Os resultados destacam a importância fundamental das APIs como estruturas intermediárias que conectam os setores público e privado, facilitando a viabilização financeira e a execução prática de projetos relacionados à agenda climática global. As análises, fundamentadas ao longo de 37 entrevistas em profundidade e em análise documental, identificam boas práticas e evidenciam dificuldades persistentes na interação entre os diferentes níveis de governo, revelando desafios complexos para a governança multinível.
Palavras-chave: política externa brasileira, agências de promoção de investimento, mudanças climáticas, governança diplomática multinível, implementação de políticas públicas.

Transformar compromisos globales en acciones locales: los desafíos de gobernanza en la implementación de la agenda climática

Este artículo analiza la implementación, a nivel local, de los acuerdos diplomáticos brasileños en el área de cambio climático, con especial énfasis en el papel desempeñado por actores subnacionales en este proceso. La investigación adopta un enfoque cualitativo, utilizando el método de estudios de casos múltiples, profundizando en el análisis de proyectos desarrollados por cinco agencias de promoción de inversiones (API) subnacionales en diferentes estados y municipios de Brasil: Invest SP, Invest Rio, Invest Minas, Invest Paraná e Invest Piauí. A lo largo de los últimos años, estas agencias se han centrado en la atracción estratégica de inversiones extranjeras sostenibles, buscando alinear sus iniciativas con la Agenda 2030 de la Organización de las Naciones Unidas (ONU). Los resultados destacan la importancia fundamental de las API como estructuras intermedias que conectan los sectores público y privado, facilitando la viabilidad financiera y la ejecución práctica de proyectos relacionados con la agenda climática global. Los análisis, fundamentados en 37 entrevistas en profundidad y en análisis documental, identifican buenas prácticas y evidencian dificultades persistentes en la interacción entre los diferentes niveles de gobierno, revelando desafíos complejos para la gobernanza multinivel.
Palabras clave: política exterior brasileña, agencias de promoción de inversiones, cambio climático, gobernanza diplomática multinivel, implementación de políticas públicas.

1. INTRODUCTION

In recent decades, the international landscape has undergone profound and accelerated changes, characterized by contradictory movements of globalization and deglobalization, regional integration and disintegration, as well as tensions between universalism and nationalism. While the post-Cold War period was more conducive to cooperation and the articulation of national interests at the global level, the past ten years have been marked by a growing dichotomy and polarization. This scenario has hindered the construction of convergent agendas among nations and weakened international alliances and institutions.

Complexity has intensified with the rise of multiple actors – including subnational ones – that, not always in a coordinated manner, operate on a global scale. Recent studies demonstrate that, particularly within the scope of local climate action, municipalities face significant challenges in internalizing and implementing national and international policies, highlighting the need for multilevel governance and intergovernmental support (Maillet et al., 2025). In this context, the formulation, decision-making, and implementation of foreign policy can no longer be understood as exclusive

prerogatives of diplomats and Heads of State, in a monolithic, centralized manner and detached from conflicts of interest (Hudson & Vore, 1995).

This study assumes that foreign policy is the product of political choices involving negotiations, interest disputes, and various types of political interaction, thus requiring a multifactorial, multilevel, and interdisciplinary interpretation (Hill, 2003). Therefore, just as agenda-setting and the construction of States' international positions have involved the participation of multiple agents, the implementation stage of these policies also faces multiple challenges.

Although agreements are decided at the global level, their execution generally takes place at the local level (Morosini & Badin, 2015). This process is particularly evident in the context of climate change agreements, in which the commitments established internationally must be translated into concrete policies and actions at the national level (Hegger et al., 2012).

Thus, motivated by the need to understand how diplomatic agreements signed by Brazil in climate change have been implemented domestically, this article aims to investigate the role of subnational actors in this context. Brazil, as one of the key actors in international climate negotiations, has committed itself to ambitious targets that require the active participation not only of the federal government, but also of the business sector and local governments (Hochstetler & Viola, 2012). Therefore, one of the main challenges discussed in this article is the internalization of these international commitments. The central question is: how does foreign policy effectively become public policy?

To answer this question, it is necessary to analyze a process involving complex dynamics of federative coordination and the articulation of actors with different logics and interests, emphasizing the need for multilevel governance (von Lüpke et al., 2023). In dialogue with the analytical axes of the thematic dossier, this article examines how a multiscale network is structured that integrates governance, institutional capacities, and policy instruments in the translation of international climate commitments in Brazil (Oliveira, 2024). It is of interest to analyze the role of subnational Investment Promotion Agencies (IPAs) as intermediary structures in the translation of global goals into local actions, as well as the mechanisms through which the discourses and instruments of the international climate agenda are adapted, reframed, and operationalized within the specific territorial contexts of Brazilian states and municipalities.

In this context, the article seeks to deepen the understanding of how subnational IPAs emerge as crucial actors in implementing transition policies toward a low-carbon economy, facilitating the attraction of investments and promoting sustainable practices. According to Johnson et al. (2019), these agencies, in mediating between the public and private sectors, face significant challenges in policy coordination and implementation.

Thus, collaboration with international organizations, such as the World Association of Investment Promotion Agencies (WAIPA) and the United Nations Conference on Trade and Development (UNCTAD), become fundamental for sharing best practices and strengthening the institutional capacity of IPAs (Heilbron & Kronfol, 2020). In recent years, the agendas of these organizations have included specific initiatives such as promoting international forums for exchanging experiences, offering capacity-building programs in sustainable investments, and developing guides and tools for attracting green investments.

By exploring the mechanisms and processes of intragovernmental coordination, the article identifies not only best practices but also areas requiring improvement, providing a comprehensive overview of the challenges and opportunities in promoting sustainable investments in Brazil.

Furthermore, in a context in which the transition to a low-carbon economy demands multiscale governance arrangements, cooperation between levels of government and between the public and private sectors becomes central. By highlighting this need, the study reinforces the importance of strengthening federative coordination mechanisms to accelerate climate action in the country.

To achieve these objectives, the article is structured to facilitate understanding of the core issues. Initially, it presents a theoretical debate on foreign policy as public policy, with an emphasis on the implementation stage and multilevel governance mechanisms. Next, attention turns to the role of investment promotion agencies and the performance of subnational actors in the climate agenda. After this discussion, the methodology used is detailed, and the empirical results of the research are described and analyzed. In the final considerations, the study highlights its limitations and proposes a thematic agenda intended to stimulate future investigations on the subject.

2. LITERATURE REVIEW

2.1 Foreign policy as public policy

Foreign policy, understood as the set of actions undertaken by a State in the international arena, has been the object of study for at least a century. Analysts have focused on understanding the impact of World Wars, the foundations for building peace in the international system, and the factors influencing State behavior. These issues remained priorities in the research agenda of the field until the mid-twentieth century. These interpretations, known as "general actor theories," conceive countries as unitary actors that act in a cohesive manner. In this sense, they disregard domestic variables such as leadership profile, institutional arrangements, political regime, and the relationship between branches of government (Hudson & Vore, 1995).

However, as early as the mid-twentieth century, this perspective was challenged, giving rise to a specific field of study known as Foreign Policy Analysis (FPA). By recognizing that both domestic factors and systemic dynamics influence States' positioning in the international system, FPA proposes an approach that considers foreign policy as the outcome of the interaction between these two levels (Hill, 2003; Hudson & Vore, 1995). This perspective understands foreign policy as a continuum in which the distinction between what is domestic and what is international becomes increasingly blurred (Hudson & Day, 2019).

In Putnam's (2019) theory of "two-level games," it is recognized that foreign policy decisions are influenced by both domestic and international pressures. Similarly, Neack (2018) emphasizes that foreign policy has become a dynamic and multifaceted field characterized by a network of complex interactions among multiple actors and different decision-making levels, demanding a more inclusive and collaborative articulation among agents. In the same perspective, Lentner (2006) stresses that the dichotomy between foreign policy and public policy has been eroded in practice, suggesting cross-fertilization between these two fields of knowledge.

Thus, the development and implementation of foreign policy require careful coordination between different levels of government as well as collaboration between state and non-state actors, an understanding broadly recognized in the literature (Baumann & Stengel, 2014; Higgott et al., 2000). In the Brazilian context, Milani and Pinheiro (2013) argue that the country has increasingly adopted

a public-policy perspective in its foreign policy, which contributes to consolidating this dimension as an essential component of national public policy. However, studies dedicated to understanding implementation dynamics are scarce, that is, the subsequent phase in which foreign policy unfolds into internal objectives and targets that require the participation of multiple actors (Smith et al., 2008). In this context, local government emerges as a key structure for the effective implementation of these policies.

2.1 Implementation of public policies: local capacities and multilevel governance

In recent decades, both theories of foreign policy and the field of public policy have undergone significant transformations, reflecting structural changes in social and global relations driven by the new dynamics enabled by advances in communication, transportation, and technology.

Specifically, regarding implementation of public policy, there has been a transition from a model that initially understood the process through a top-down approach, in which the agenda was orchestrated and defined by central actors, to a bottom-up model. The latter subverts this logic by recognizing implementation as a continuous decision-making process and by assigning a strategic role to "street-level bureaucrats" in the materialization of public policies (Lipsky, 2019).

The approaches that prevailed between the 1970s and 1980s had as their central concern understanding what occurred "in the middle of the road" between the policy formulation and implementation stages, since in practice policy execution frequently deviated from the goals and objectives initially established (Barrett, 2004). This explanatory dichotomy, characteristic of the first generations of implementation analyses, began to be challenged from the 1990s onward by new perspectives that explored decision-making processes in a more continuous way, overcoming the opposition between formulation and implementation. A relevant example of this shift is the Advocacy Coalition Framework (Sabatier & Waible, 2019).

The predominant studies of recent decades, often classified as fourth-generation theories, have focused on understanding formulation and implementation not as separate stages but as interconnected processes involving multiple layers, decision-making levels, and a diversity of state and non-state actors throughout the different phases of these dynamics (Lotta, 2019). Hill and Hupe (2003) also highlight the concern of these studies with issues such as multilevel governance, state capacity, institutional arrangements, and the instruments used in implementation.

In the context of Brazilian federalism, some studies have focused on understanding how implementation unfolds when policy outcome responsibilities are decentralized. Abrucio (2010) underscores the importance of constructing complex institutional arrangements to ensure political coordination, given that, in practice, a "compartmentalized federalism" without consortia-based responses is observed. Arretche (2004) points to a certain naivety in studies on public policy implementation, arguing that decentralization may lead to diverse outcomes depending on how competencies are distributed across different levels of government and on the administrative capacity of municipalities.

In this regard, Bichir (2011) highlights the importance of political coordination and local institutional capacities in the implementation of decentralized public policies. Gomes (2009) identifies strategies that may be adopted by the federal government to promote national policies and encourage desired behaviors among subnational entities, including: (1) rules that restrict spending autonomy;

(2) rules that objectively define the responsibilities of each federative entity in specific areas; and (3) rules that create incentives to promote desired behaviors in local governments.

In turn, Bovens (2007) highlights the principles of public accountability. The definition of guidelines for the structuring of governance models, as well as the establishment of premises for coordination among agents, constitutes fundamental elements for the implementation of formal control and accountability mechanisms. In this context, objectivity in the allocation of responsibilities and transparency in resource allocation allow for effective monitoring of results at different levels.

2.2 Investment promotion agencies

Investment Promotion Agencies (IPAs) are important actors in the implementation of public policies related to attracting foreign investment and promoting local economic development. They act as intermediaries between the public and private sectors, facilitating interaction between investors, governments, and local businesses (Dupasquier et al., 2012). To fulfill these objectives, IPAs possess a variety of instruments at their disposal, such as tax incentive programs, support in obtaining licenses and permits, assistance in identifying investment opportunities, and the organization of events and trade fairs to promote networking between investors and local entrepreneurs. In addition, these agencies frequently offer consulting services and technical support to ensure that investments are carried out efficiently and sustainably (UNCTAD, 2014).

Although in the past IPAs were usually national entities, a growing number of subnational governments – such as states and municipalities – have created their own IPAs to fill gaps left by federal entities (Meyer & Nguyen, 2020). In this context, Albuquerque et al. (2015) highlight that subnational IPAs have become increasingly popular due to their greater ability to identify and meet the specific needs of their territories. Particularly in countries with vast and highly diverse geographies, such as Brazil, having subnational IPAs that represent the interests of their region can make their initiatives more aligned with local needs and, therefore, more effective (Marcovitch & Dallari, 2014).

From a sustainability perspective, subnational IPAs have also been at the forefront of promoting investments oriented toward sustainable development and the transition to a low-carbon economy (Olsen & Zusman, 2014). In this discussion, UNCTAD (2020) notes that IPAs may play a crucial role in this area by developing strategies to attract greener investments within their sphere of influence.

On the other hand, subnational IPAs face a range of challenges. Among the main challenges to be overcome are the need for coordination, and even competition, among different levels of government and with other IPAs; the capacity to attract and retain foreign investors; the ability to align the investments attracted with sustainable development policies; and their capacity to seek and diversify sources of funding (Heilbron & Kronfol, 2020; Pietersen & Bezuidenhout, 2015; Sauvant, 2016).

3. METHOD

3.1 Scope of Research

At the macro level, the objective of this research is to understand how a foreign policy becomes a public policy, that is, how the commitments assumed by the country in the international arena are internalized and implemented within the domestic context. As a scope delimitation, the field of climate change was adopted, given that Brazil has stood out in international negotiations on the topic since the United Nations Conference on Environment and Development (Eco-92), held in Brazilian territory, up to more recent events, such as COP30 held in Belém in 2025 and the selection of climate change as the central theme of the G20 meeting in Brazil in 2024.

Also, as a scope delimitation, the research sought to deepen the understanding of the strategic role played by investment promotion agencies at the local level in implementing policies for the transition to a low-carbon economy, facilitating the attraction of investments and promoting sustainable practices. The cases selected for in-depth analysis were Invest SP, Invest Rio, Invest Minas, Invest Paraná, and Invest Piauí (Table 1), which made it possible to build a comprehensive view of sustainability promotion practices adopted in different regions of Brazil. Although other agencies were interviewed throughout the research, these five stood out by presenting greater maturity and efficiency in implementing cross-cutting projects involving the climate agenda.

Invest SP, for example, has distinguished itself through initiatives aimed at attracting investments focused on renewable energy projects, while Invest Rio has concentrated its efforts on innovation and technology for urban sustainability. Invest Minas, in turn, has promoted investments in sustainable infrastructure, whereas Invest Paraná has developed public–private partnerships for clean energy projects. Finally, Invest Piauí, representing the Brazilian Northeast, has committed itself to attracting investments for sustainable agriculture and the development of renewable energies.

TABLE 1 CLASSIFICATION OF APIS

Agency	Year of Creation	Arrangement Type	General Scope	Governance Structure
Invest SP	2008	State Agency	Attraction of foreign investment, support for startups, promotion of innovation, development of industrial and agribusiness sectors.	Board of Directors with state government and private sector.
Invest Rio	2019	Municipal Agency	Promotion of investments in urban infrastructure, tourism, creative economy, in addition to innovation and technology.	Executive committee of the city hall and local entrepreneurs.
Invest Minas	2019	State Agency	Infrastructure development, mining, agribusiness, support for small and medium-sized enterprises, in addition to sustainability.	Board with specialists and state government.

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Agency	Year of Creation	Arrangement Type	General Scope	Governance Structure
Invest Paraná	2011	State Agency	Attraction of investments in sectors such as agribusiness, industry, technology, foreign trade, and clean energy.	Council with state government and private initiative.
Investe Piauí	2021	State Agency	Regional development, tourism, support for entrepreneurship, attraction of external investments and renewable energies.	Governmental and community advisory council.

Source: Elaborated by the authors.

The use of a multiple-case study approach, as proposed by Eisenhardt (1989), enables a robust and comparative analysis across different contexts and practices, facilitating the identification of patterns and significant variations. The selection of multiple cases also allows for an empirical approach that may lead to theory building or to the refinement of existing theoretical models (Santos & Eisenhardt, 2009).

As specific objectives, the research sought to: (1) map the commitments and targets assumed by Brazil in the field of climate change, as well as the government policies and programs defined to internalize these commitments; (2) understand the institutional arrangements and governance structures established in the domestic context; and (3) analyze the nature of projects developed with the support of IPAs by local governments aimed at fulfilling these commitments.

3.2 Data Collection and Processing

For data collection, 37 in-depth interviews were conducted, covering a variety of key actors in the field of sustainable investment promotion. In addition to representatives from the five IPAs selected for this case study, the interviews also included representatives from other governmental spheres directly related to the governance structures of these agencies.

Interviews with different subnational IPAs were fundamental to defining the cases examined in depth, allowing for the identification of institutional maturity levels and the degree of engagement with the climate agenda through concrete projects and initiatives. Additionally, these interviews contributed to a broader understanding of multilevel governance models and the challenges associated with federative coordination.

Furthermore, representatives of Brazilian IPAs with offices abroad, as well as international agencies from countries such as Portugal, Germany, France, Switzerland, Sweden, and South Korea, were consulted with the aim of identifying whether new themes or insights would emerge from actors operating in international contexts. This broad perspective also enabled benchmarking regarding the implementation of sustainability projects by investment promotion agencies, allowing for an assessment of the comparative maturity of Brazilian agencies in relation to international examples.

The analysis of the interviews, combined with a diverse range of other data sources, enabled the mapping of the network of actors involved in the promotion of sustainable investments, as well as their connections and interactions. All interviews were recorded with participants' authorization,

totaling 1,567 minutes, which were subsequently transcribed and analyzed. Table 2 summarizes the interviewees' positions, their respective agencies, and the duration of the interviews.

TABLE 2 INTERVIEWS

Interviewee Number	Position	Agency	Interview Length (minutes)
1	Institutional Affairs Executive Manager	SPNegócios	52min
2	Chief Operating Officer for the Middle East and North Africa	InvestSP Dubai	62min
3	Chief Operating Officer for the United States of America	InvestSP Nova Yorque	62min
4	Chief Operating Officer for the Middle East	ApexBrasil Dubai	34min
5	Chief Operating Officer for Europe	InvestSP Munique	55min
6	Director of Investments and New Business	SPNegócios	68min
7	Chief Operating Officer for the European Office	ApexBrasil Bruxelas	54min
8	International Operations Manager	InvestSP	46min
9	CEO	Invest Paraná	42min
10	Advisor for Strategic Affairs	Prefeitura do Rio de Janeiro	25min
11	Director	Invest Recife	63min
12	Project Director	Invest Lisboa	47min
13	Investment Attraction Director	Invest Minas	42min
14	Superintendent	Secretaria de Desenvolvimento Econômico do Estado da Bahia	48min
15	Director of Territorial and Sectoral Development	Secretaria de Desenvolvimento Econômico e Trabalho de SP	59min
16	Public Policy and Government Management Analyst	Secretaria de Desenvolvimento Econômico e Trabalho de SP	59min
17	Trade Officer	InvestSP Xangai	42min
18	Head of Innovation	Sebrae	49min
19	Competitiveness Coordinator	Secretaria de Desenvolvimento Econômico do Estado de São Paulo	57min
20	International Relations Advisor	Superintendência de Relações Internacionais do RJ	20min

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Interviewee Number	Position	Agency	Interview Length (minutes)
21	Head of Business Development and Innovation	Invest Piauí	41min
22	CEO	Invest Rio	50min
23	Undersecretary of Economic Development and Innovation	Secretaria de Desenvolvimento Econômico, Inovação e Simplificação do Rio de Janeiro	50min
24	Communications Analyst	Divisão de Cooperação Internacional Sebrae	60hr
25	Another Communications Analyst	Divisão de Cooperação Internacional Sebrae	60hr
26	Economic Development Director	Invest Salvador	44min
27	Economist	Secretaria Municipal de Desenvolvimento, Emprego e Renda de Salvador	44min
28	International Relations Coordinator	Invest Rondônia	45min
29	Special Advisor	Secretaria de Negócios Internacionais de SP	34min
30	Investment Manager	ApexBrasília	30min
31	Commercial Representative	KolnBusiness	57min
32	Coordinator of the Digital Commission of the France-Brazil Chamber of Commerce	Business France	44min
33	Market Analyst	KOTRA	47min
34	Innovation and Startups Program Manager	Swiss Nexx	26min
35	Senior Sustainability Analyst	EKN Sweden	39 min
36	Senior Sustainability Analyst	EKN Sweden	39 min
37	Rio2030 Advisor	Secretaria de estado do Ambiente e Sustentabilidade	50 min
Total			1746 min

Source: Elaborated by the authors.

The analysis process was conducted systematically through content analysis and iterative coding. The interviews were progressively transcribed and coded, which allowed for the assessment of the advancement of theoretical saturation, understood as the absence of new themes or insights relevant to the research objectives (Guest et al., 2006). Analysis of the three previously defined categories – (1) normative instruments, (2) governance and institutional arrangements, and (3) public-private partnerships – revealed recurring patterns and a lack of significant new elements after a certain point in the data collection process.

Thus, with the aim of reinforcing the identification of saturation, we interviewed representatives of international IPAs to verify whether new themes emerged. In this case, the absence of substantive new codes in the interviews reinforced the robustness and empirical sufficiency of the analyzed material.

In the subsequent stage, normative documents, institutional reports, and secondary data related to the topic (Table 3) were also analyzed, enabling data triangulation and strengthening the robustness of the results (Creswell & Clark, 2017). The entire process was reviewed by three different researchers, minimizing bias and increasing scientific rigor and the reliability of the conclusions (Yin, 2018).

TABLE 3 SOURCES OF SECONDARY DATA USED ON THE APIS

Source	Details	How it was used
Reports from International Institutions	UNCTAD: Frequent activities and organizations on sustainable investment projects among different API member organizations.	To understand sustainable services and support tools for the attractiveness and implementation of greener investments common to foreign APIs and supporting funding agencies.
	Inter-American Development Bank: support from funding agencies for sustainability projects.	
Subnational legal regulations and government plans	São Paulo: State Policy on Climate Change (Law No. 13,798/2009) and the São Paulo Energy Plan and the State of São Paulo's Climate Action Plan.	Constitutive tools of states and municipalities for the internalization of transnational sustainability issues that build the basis for analyzed projects of the APIs and their supporters.
	Rio de Janeiro (state): State Policy on Global Climate Change and Sustainable Development (Law No. 5,590/2010), in conjunction with the capital by Law No. 5,248/2011. The municipality also promoted the Sustainable Development and Climate Action Plan (PDS).	
	Minas Gerais: climate matter by Decree No. 45,229/2009 and the Minas Gerais Energy and Climate Change Plan.	
	Paraná: State Policy on Climate Change (Law No. 17,133/2012) and the State Plan for Climate Resilience and Sustainable Development.	
	Piauí: State Plan for Climate Change and Poverty Reduction (Law No. 6,140/2011).	

(Continue)

Source	Details	How it was used
Websites and official reports from subnational APIs and their official governments.	Invest SP, Agência Minas, Government of São Paulo, Rio de Janeiro City Hall, State News Agency (AEN), Government of the State of Paraná, Government of Piauí.	To understand the tools, objectives, and effectiveness of sustainable projects in their implementation by the analyzed subnational APIs through data, descriptions, and the effectiveness of selected sustainability projects.
News and Online Media	BNDES News Agency, World Bank, BDMG, BRDE, AbSolar, Renault Group, FIDA, Enel Brasil.	Description and scope of sustainability projects supported by the APIs and disclosed by governments and development and/or support institutions.

Source: Elaborated by the authors.

Thus, through the qualitative approach, it was possible not only to map critical interactions and connections among the actors involved from a comprehensive perspective, but also to highlight best practices and identify the critical success factors in the implementation of sustainability projects with the participation of the agencies.

4. RESULTS

4.1 Internalizing Brazil's International Commitments in the Global Climate Agenda

Environmental issues gained prominence on the multilateral agenda following the United Nations Conference on the Human Environment, held in 1972 in Stockholm. As a result of that meeting, 26 principles and an action plan with 109 recommendations were declared to mitigate the effects of environmental degradation (Paglia, 2021). It was in this context that the notion of economic development first appeared linked to environmental concerns. The goal was to solidify the emerging notion of common but differentiated responsibilities, ensuring that the commitments to be undertaken would not compromise the economic progress of countries, particularly developing nations (Lago, 2006).

Shortly thereafter, the Brundtland Report (*Our Common Future*), published in 1987 by the United Nations World Commission on Environment and Development, corroborated this approach by introducing the concept of sustainable development, which posits that development should meet the needs of the present without compromising the ability of future generations to meet their own needs (Wagner, 2023). The report also highlighted the need for a new global meeting to advance this agenda and emphasized the necessity of financial and technological support from developed countries to foster sustainability actions in developing nations (Simões-Coelho & Figueira, 2021).

In this regard, the 1992 Earth Summit (Eco-92), held in Rio de Janeiro, served as the venue where some of the most significant multilateral normative instruments were adopted, regulating and encouraging the actions of states, businesses, and society on the sustainable development agenda. These included: Agenda 21, the Convention on Biological Diversity, the Statement of Forest Principles, and the Rio Declaration, which established new foundations for cooperation among states (Buckler & Creech, 2014).

One of the agreements resulting from the Conference was the United Nations Framework Convention on Climate Change (promulgated in Brazil by Decree No. 2,652/1998), created with the objective of addressing global warming and expanding actions aimed at decarbonizing the economy. Since then, the Conference of the Parties (COP) has been convened to bring together signatory countries and advance multilateral commitments related to the issue, such as those established under the 1997 Kyoto Protocol and the Paris Agreement (signed in 2015 and promulgated in Brazil by Decree No. 9,073/2017).

Brazil is a signatory to all these commitments and, since that period, has sought strategies to internalize their objectives and targets. The primary instrument adopted was the National Policy on Climate Change (Law No. 12,187/2009), which sets forth guidelines for reducing greenhouse gas emissions, adapting to climate change, and promoting sustainable development. The National Climate Change Plan defines the goals and strategies Brazil must adopt domestically to meet its internationally agreed commitments, including its Nationally Determined Contribution (NDC), through which the country pledged to reduce greenhouse gas emissions by 37% by 2025 and 43% by 2030. In addition, other plans exist, such as the National Adaptation Plan and the Action Plan for the Prevention and Control of Deforestation in the Legal Amazon (Amazon Fund, 2024).

In 2023, President Lula reconstituted, through Decree No. 11,550/2023 (updated by Decree No. 12,040/2024), the Interministerial Committee on Climate Change (CIM), whose purpose is to "monitor and promote the implementation of actions and public policies within the federal Executive Branch related to the National Policy on Climate Change" (Decree No. 12,040/2024). Additionally, the CIM seeks to establish multi-actor and multilevel governance, integrating 22 ministries and 3 chambers, including the Chamber of Social Participation, the Scientific Advisory Chamber, and the Inter-Federative Coordination Chamber (Decree No. 12,040/2024). These three chambers, however, serve only a consultative role; in other words, they do not have decision-making authority, which limits their ability to influence macro-level aspects of the national climate agenda.

In this context, it is important to highlight that, in response to Brazil's international commitments on the climate agenda, several subnational governments have developed their own policies and implementation plans, establishing local targets and performance indicators. Regarding financing projects aimed at promoting initiatives in this area, one of the main criticisms voiced by states and municipalities concerns the lack of budgetary decentralization for the implementation of public policies on the topic.

Currently, the execution of projects and actions is made possible through the National Climate Fund (Law No. 12,114/2009), the resources of which are managed by the Ministry of the Environment and Climate Change, without effective participation of states and municipalities in the governance structure. Regions4, a global alliance of subnational governments promoting sustainable development, raised these concerns with the G20 Brazil engagement group, the T20. Among the organization's main demands are the need to simplify processes for accessing climate and sustainable development

financing and to strengthen local capacities for project design, with the aim of increasing equity and effectiveness in the allocation of resources by multilateral development banks and climate funds.

In this context, the absence of budgetary decentralization is one of the primary concerns of local authorities (Interviewees 15, 27, and 30), given that the lack of financial resources limits the capacity of local governments to develop and implement projects aligned with sustainable development targets. Nevertheless, this article shows that local actors have demonstrated resilience and innovation by utilizing their IPAs to attract funding and financially enable the necessary projects (Interviewees 8, 11, 13, and 28).

4.2 Brazilian IPAs in the Implementation of Sustainability Projects

The actions of subnational IPAs have been fundamental for the implementation of sustainability projects in Brazil, reflecting the alignment of local policies with the country's international climate change commitments. In this context, the agencies Invest SP, Invest Rio, Invest Minas, Invest Paraná, and Invest Piauí stand out for executing innovative and diverse initiatives that contribute to the transition toward a low-carbon economy and sustainable development.

The state of São Paulo, seeking to domestically internalize the commitments undertaken by Brazil under the United Nations Framework Convention on Climate Change, established the State Policy on Climate Change (Law No. 13,798/2009), the São Paulo State Energy Plan, and the State Climate Action Plan. These instruments set ambitious targets for reducing greenhouse gas emissions and promoting renewable energy (São Paulo State Investment and Competitiveness Promotion Agency, 2022, 2024).

With a broad and diversified approach, the agency promotes initiatives ranging from financing decarbonization-focused startups to strategic partnerships to produce electric vehicles (Interviewee 1). Among the flagship programs are *Pró Veículo Verde* and the *Portfólio Verde*, which attract substantial investments and strengthen infrastructure and the green economy market in São Paulo (Government of the State of São Paulo, 2022).

Invest SP has also established relevant financial partnerships, such as the agreement with the Brazilian Development Bank (BNDES), amounting to R$ 1.5 billion for long-term financing of renewable energy projects (BNDES News Agency, 2024). Additionally, the Inter-American Development Bank (IDB) allocated US$ 200 million for technical and financial support for sustainability strategies (IDB, 2023). Initiatives such as the *Município Verde Azul* program, which promotes sustainable practices in municipalities across the state, and the ethanol-to-green-hydrogen conversion project position São Paulo as an innovative actor in the energy transition, with investments exceeding R$ 10 billion (Interviewee 8).

The state of Rio de Janeiro has also incorporated the commitments of the Climate Change Convention through Law No. 5,590/2010, which instituted the State Policy on Global Climate Change and Sustainable Development, followed by the capital city, which implemented its own policy under Law No. 5,248/2011. The municipality also developed the Sustainable Development and Climate Action Plan (PDS), establishing carbon-neutrality targets and measures for climate change adaptation (Rio de Janeiro City Government, 2024).

As a municipal investment promotion agency, Invest Rio adopts a multifaceted approach to promoting sustainability in the city (Brazil, 2023; Brazilian Council for Sustainable Construction, 2024). One example is the Center for Energy and Finance of Tomorrow, an emblematic project

supported by the Securities and Exchange Commission of Brazil (CVM) and the Massachusetts Institute of Technology (MIT) (Mendonça, 2023). In addition, the agency entered into a financing agreement with the World Bank, valued at US$ 500 million, aimed at renewable energy and sustainable infrastructure projects (World Bank, 2023; Lewis & Whyte, 2022).

Another highlight is the Technical Cooperation Agreement for Energy Transition with neighboring municipalities, which aims to promote free-market energy purchasing, climate education, and the creation of a transparency portal. Initiatives such as *Solário Carioca* and *Circo Solar* (Revolu Solar, 2024), which aim to achieve energy self-sufficiency through renewable technologies, illustrate the agency's commitment to sustainability (Interviewee 22).

Minas Gerais, in turn, has internalized the international climate commitments assumed by Brazil through Decree No. 45,229/2009 and the Minas Gerais Energy and Climate Change Plan, which sets guidelines for mitigating greenhouse gas emissions and promoting renewable energy (Agência Minas, 2024a, 2024b). Invest Minas, focused on the decarbonization pathway and the attraction of climate-oriented investments, stands out for the "Sol de Minas" project (Interviewee 13). This initiative aims at the production of photovoltaic energy, positioning Minas Gerais as the state with the highest installed solar energy capacity in the country, exceeding 7 GW.

The state public policy that exempts from the Tax on the Circulation of Goods and Services (ICMS) energy generated by distributed systems of up to 5 MW has been essential in creating an environment conducive to sustainable investments (Associação Brasileira de Energia Solar Fotovoltaica, 2023). Furthermore, the "Minas Hydrogen Program" explores the potential of green hydrogen from renewable sources, contributing to the decarbonization of the economy and reinforcing the state's commitment to responsible environmental practices (Interviewee 13). Financing of R$ 2 billion (Banco de Desenvolvimento de Minas Gerais, 2024) and partnerships with European renewable energy companies, such as Enel Green Power, which invested R$ 1.8 billion, have been crucial to these advances (Enel Brasil, 2023).

In Paraná, in 2012, the State Climate Change Policy (Law No. 17,133/2013) and the State Plan for Climate Resilience and Sustainable Development were established, guiding mitigation and adaptation policies (Governo do Estado do Paraná, 2024a). In this context, Invest Paraná has stood out with the Paraná Sustainable Energy Program, or RenovaPR, launched in 2021. Managed by the State Secretariat for Sustainable Development and Tourism (Sedest), it offers credit for the implementation of renewable energy systems in agricultural cooperatives and agribusinesses, promoting biogas, biomethane, solar, micro-hydro, and small-scale wind power (Interviewee 9).

By 2023, RenovaPR had already financed more than 6,000 projects, contributing to the self-generation of clean energy in the state (Governo do Estado do Paraná, 2024b). Innovative strategies to produce green hydrogen from biomass are also among the initiatives that position Paraná as a leader in the energy transition (Interviewee 9). Invest Paraná mobilized more than R$ 3 billion in investments and has partnerships with the Regional Development Bank of the Extreme South (BRDE), which provided R$ 800 million in credit (Todescato, 2023), and the Renault Group, which invested R$ 500 million in research and development of renewable energy (Renault Group, 2023).

In Piauí, the State Climate Change and Poverty Reduction Plan (Law No. 6,140/2011) outlines strategies for a low-carbon economy and the promotion of renewable energy. Investe Piauí has stood out for creating projects aimed at sustainable industrialization and renewable energy, with emphasis on the production of green hydrogen. Through strategic hubs such as the Coast Hub, Teresina Hub, and

São João do Piauí Hub, the agency seeks to position the state as a strategic center for the production and export of this fuel (Interviewee 21).

Projects such as the Solatio Green Hydrogen Project and the Green Energy Park are emblematic, aligning with Piauí's regional capacity for renewable energy production and sustainable agribusiness (Interviewee 21). Participation in international forums and the signing of Memorandums of Understanding (MoUs) with companies and European governments demonstrate Investe Piauí's commitment to attracting investments and establishing strategic partnerships, promoting the region's economic and environmental development (Redação CCom, 2025). Collaborations with the International Fund for Agricultural Development (IFAD) and agreements with technology companies such as Siemens, which invested R$ 1.2 billion, have been crucial to these advances (IFAD, 2023; Redação CCom, 2025). The main projects of the agencies are shown in Table 4.

TABLE 4 MAIN PROJECTS

Invest SP	Green Vehicle Program, Green Portfolio, Green Blue Municipality Program, Ethanol to Green Hydrogen Transformation Project	Reduction of GHG emissions, promotion of renewable energies, innovation in mobility	BNDES (R$ 1.5 billion), IDB (US$ 200 million), Partnership with USP, UNICAMP, and ITA for innovation, Agreements with automotive companies like BYD, Volkswagen, and Mercedes-Benz for electric vehicles
Invest Rio	Center for Energy and Finance of Tomorrow, Technical Cooperation Agreement for Energy Transition, Carioca Solarium, Solar Circus	Promotion of urban sustainability, carbon neutralization, creation of sustainable infrastructure	World Bank (US$ 500 million), Support from CVM, Partnership with MIT, Collaboration with clean energy startups like TeraWatt, Way2, and GreenAnt
Invest Minas	Sol de Minas Project, Minas Hydrogen Program	Increase in installed solar energy capacity, decarbonization of the economy	BDMG (R$ 2 billion), Enel Green Power (R$ 1.8 billion), State tax incentives, Partnerships with European renewable technology companies like Siemens Gamesa, EDP Renováveis, and Vestas
Invest Paraná	Paraná Sustainable Energy Program (RenovaPR), Strategies for Green Hydrogen Production	Own generation of clean energy, promotion of renewable energies in agricultural cooperatives	BRDE (R$ 800 million), Renault Group (R$ 500 million), Partnerships with agricultural cooperatives like C.Vale, Coamo, Integrada, Agreements with local research institutions like UFPR, UTFPR, and Embrapa
Invest Piuaí	Solatio Green Hydrogen, Green Energy Park, Strategic Hubs	Production and export of green hydrogen, sustainable industrialization, sustainable agribusiness	Siemens (R$ 1.2 billion), FIDA, Partnerships with European governments like Germany and Denmark, Memorandums of Understanding with green technology companies like Total Eren and Neoen

Source: Elaborated by the authors.

5. DISCUSSION

Policies become concrete at the local level, where foreign policy is translated into public policies. However, the implementation of goals and responsibilities requires effective coordination, both vertically and horizontally, involving multiple actors and confronting conflicting interests (Figueira et al., 2024). The initiatives of subnational IPAs exemplify how international commitments to sustainability and decarbonization are internalized and adapted to local needs (Interviewees 8, 21, and 22).

Furthermore, from a comparative perspective, local governments have sought to reshape their regional vocations by incorporating the prerogative of the sustainability agenda into their missions and goals, positioning themselves as competitive hubs for attracting sustainable investments. This is corroborated by Interviewee 8 in the following excerpt: "The state of São Paulo, for example, is discussing how to design a type of financing that uses private resources for environmental policies. [...] The federal government is trailing behind the discussions held by the states."

Actions such as RenovaPR in Paraná and renewable energy hubs in Piauí highlight the importance of effective intergovernmental coordination and the application of specific instruments, such as financial incentives and tax exemptions, to promote sustainability (Interviewees 9 and 21), reinforcing the perspective of multilevel governance and local capabilities (Hill & Hupe, 2003).

The initiatives of Invest Minas, such as green hydrogen projects and the ICMS exemption for distributed energy systems, illustrate how subnational policies may be innovative and aligned with global sustainability goals (Interviewee 13). However, competition for investments, potential tax wars, and the difficulty of aligning local policies with national sustainability guidelines constitute significant challenges for these agencies.

The capacity to generate synergies and avoid redundancies is essential to maximize the positive impacts of public policies and sustainability projects (Pietersen & Bezuidenhout, 2015; Sauvant, 2016). These arguments are corroborated by different interviewees, as shown in the excerpts: "There is a permanent need for coordination among levels of government. At the federal, state, and municipal levels, as well as within government structures. [...] The federal strategy does not always consider the particularities of each subnational entity" (Interviewee 8). "These movements of attraction and promotion [...] are becoming increasingly structured and institutionalized. [...] Perhaps cooperation is still lacking [...] the different levels do not really know what the others are doing" (Interviewee 6). "There is a lack of national coordination. [...] We are a federation, but we have an enormous concentration of resources and policies in the federal government" (Interviewee 1).

Thus, it can be observed that the adoption of governance practices involving the active participation of different levels of government and local actors allows for a more effective adaptation of global goals to regional realities. According to Kettl (2015), the success of these initiatives depends on the capacity for articulation and the creation of mechanisms that ensure interoperability between local policies and national and international guidelines.

Hill and Hupe (2003) reinforce this perspective by highlighting the need for local capacity and multilevel governance for the effective implementation of complex public policies. This approach can be observed in the practices of Invest SP, which maintains strategic partnerships with higher education institutions such as the University of São Paulo (USP), the University of Campinas (Unicamp), and the Aeronautics Institute of Technology (ITA) to develop innovation and sustainability projects. These

collaborations enable the generation of technical-scientific knowledge that supports more effective public policies adapted to local needs (Interviewee 8).

On the other hand, despite the establishment of local governance arrangements, the cases analyzed reveal the absence of intergovernmental integration beyond the normative framework, compromising the effectiveness of multilevel and multi-actor governance. This scenario reflects what is called "compartmentalized federalism," in which actions are fragmented and take place in parallel and without coordination, hindering the execution of diagnoses, integrated actions, and the co-production of public policies (Abrucio, 2010).

In this context, the construction of robust institutional capacities becomes essential for the effective implementation of sustainability policies (Hochstetler, 2021). Investing in training, infrastructure, and administrative tools can significantly improve the ability to execute projects. The promotion of partnerships with universities and research centers, as observed in the collaboration of Invest SP, enhances innovation and the efficiency of the policies implemented.

Pietersen and Bezuidenhout (2015) corroborate this by emphasizing the importance of performance metrics and indicators to assist in the continuous evaluation and adjustment of sustainability initiatives. Along the same lines, Invest Minas, with its green hydrogen projects and ICMS exemption for distributed energy systems, exemplifies how adequate institutional infrastructure can facilitate the attraction of investments and the implementation of innovative projects aligned with global sustainability goals (Interviewee 13).

In this regard, federative coordination must be enhanced to ensure a more uniform and effective implementation of climate policies. The creation of intergovernmental consortia and permanent dialogue forums between municipalities, states, and the federal government can facilitate the harmonization of initiatives. Programs such as RenovaPR demonstrate the need for integration of actions and resources among different levels of government, reinforcing the importance of cooperative strategies for the energy transition in Brazil (Interviewee 9).

Abrucio (2010) highlights that federative coordination is crucial in contexts in which decentralization may result in unequal administrative capacities. Arretche (2004), in turn, complements this view by arguing that decentralization can lead to diverse outcomes depending on the distribution of competencies and the administrative capacity of municipalities, reinforcing the need for political and institutional coordination.

IPAs have faced challenges in consolidating themselves as support structures for local governments in attracting international investments aimed at local development (Coelho, 2022). In this scenario, the state of São Paulo stands out for having the oldest subnational IPA, with a mature and complex structure among the cases analyzed, which has facilitated the mobilization of significant resources and supported the implementation of energy transition policies. In the case of Rio de Janeiro, the lack of a similar state-level structure means that the municipal agency assumes the role of promoting this agenda and enabling it through investment attraction (Interviewees 22 and 23).

Finally, private sector participation becomes crucial for the economic viability of these policies. Public-Private Partnerships (PPPs) and the creation of favorable regulatory environments may attract more investments for clean energy and green technologies. Examples such as the partnerships of Invest Minas with European renewable technology companies and those of Invest Rio with clean-energy startups (Interviewee 13) illustrate how the private sector may contribute to innovation and the financing of sustainable initiatives (Heilbron & Kronfol, 2020).

These arguments are corroborated by the perspective of some interviewees, as follows: "Today, our project is highly focused on startups [...] helping the government present the state's corporate agenda [...] economic diversification" (Interviewee 22). "We only accept any investment protocol [...] that meets the four major pillars [...] the last is that the company must present a project with sustainability (use of 100% clean energy, water reuse, etc.)" (Interviewee 9).

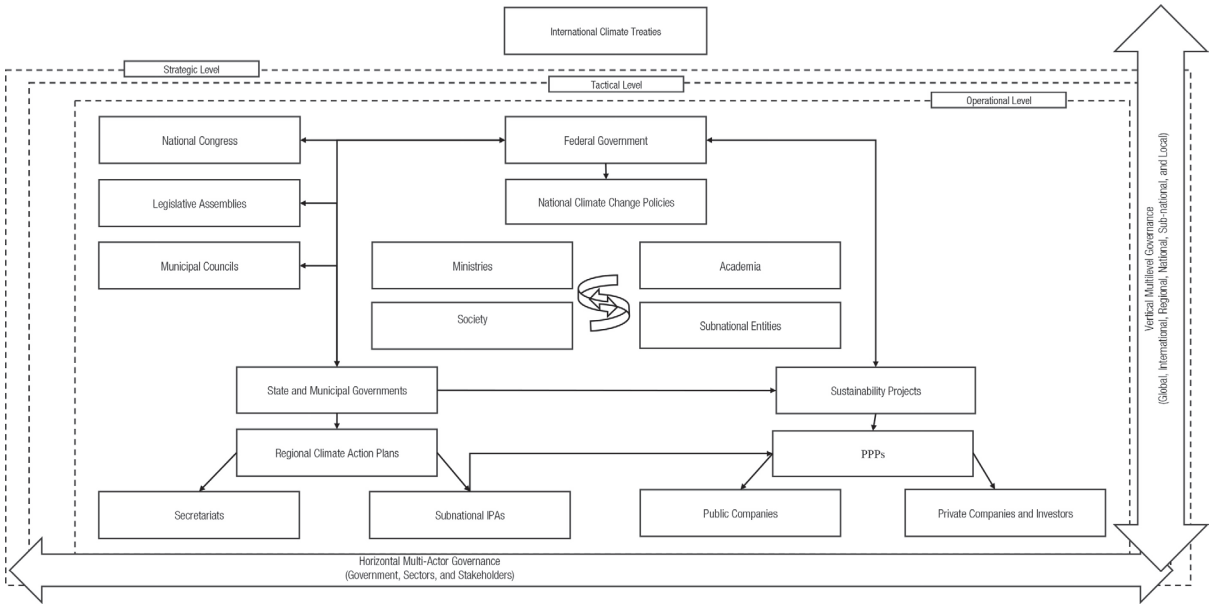
In this context, fostering a stable and attractive business environment becomes essential for consolidating a low-carbon economy (Sauvant, 2016). The experiences of Invest SP and Invest Rio demonstrate that, by promoting favorable conditions for green businesses, it is possible not only to attract investment, but also to stimulate competitiveness and sustainable innovation, generating a virtuous cycle of economic and environmental development. Moreover, these public–private partnerships, together with local government efforts to attract sustainable investments and implement projects, offer relevant alternatives. They help mitigate the macro-level challenges posed by limited budgetary decentralization and the restricted influence of states and municipalities over climate-related resource allocation.

Thus, Figure 1, titled *Framework for the Implementation of International Climate Agreements*, illustrates the complex governance structure required to translate global commitments into local actions. At the macro level, international climate treaties and national climate policies are coordinated by the federal government and its ministries. In this domain, academia and civil society play key roles in producing, disseminating, and monitoring knowledge.

At the meso level, subnational authorities – state and municipal governments – develop regional climate action plans through sectoral secretariats and Investment Promotion Agencies (IPAs). At the micro level, policy implementation occurs through sustainability projects, public-private partnerships, and the engagement of public and private companies as well as investors.

This framework highlights the importance of horizontal, multi-actor governance mechanisms involving cooperation among government, economic sectors, and stakeholders, while also underscoring the need for vertical, multilevel governance to ensure articulation and coherence across different spheres of decision-making – global, international-regional, national, state, and municipal (Tribunal de Contas da União, 2021).

FIGURE 1 ***FRAMEWORK*** **FOR THE IMPLEMENTATION OF INTERNATIONAL AGREEMENTS ON CLIMATE CHANGE**



Source: Elaborated by the authors.

6. FINAL CONSIDERATIONS

This study aimed to investigate the implementation, in Brazil, of diplomatic agreements signed in climate change, with an emphasis on the role of subnational actors, especially subnational investment promotion agencies. The research results indicate that the internalization of international commitments requires a combination of local and national strategies. The convergence between foreign policy and public policy, multilevel governance, and the capacity to create complex institutional arrangements are concepts that apply directly to the efforts of these agencies. This reinforces the importance of subnational IPAs as facilitators of sustainable development and integrators of global commitments into local actions.

Additionally, the study highlighted the need for effective federative coordination to overcome challenges associated with budgetary decentralization and access to thematic funds. Collaboration among different levels of government, as well as between the public and private sectors, is essential for implementing policies aimed at the transition to a low-carbon economy. The experiences of Invest SP, Invest Rio, Invest Minas, Invest Paraná, and Invest Piauí demonstrate that, despite the difficulties, there is significant potential to attract foreign investments aligned with the UN's 2030 Agenda, particularly when local governments provide various instruments – such as tax incentives, technical support, and financing, to foster the green economy through subnational IPAs.

However, the study also identified the need for advances in promoting greater integration among IPAs, as well as in strengthening their institutional capacities through the sharing of best practices

in partnership with international organizations. In this regard, it becomes essential to establish a dynamic multilevel governance model adaptable to the complex demands of sustainable development, enabling the implementation of accountability mechanisms (Bovens, 2007) and the rigorous analysis of the efficacy and effectiveness of the results of these initiatives.

Following COP30, it became even more evident that the implementation of climate commitments depends on multi-scalar governance arrangements capable of articulating different levels of government and public and private actors. In this scenario, federative cooperation emerges as an essential condition for transforming international commitments into effective territorial policies. Therefore, this study contributes to literature by deepening the analysis of the intersections between foreign policy and public policy, especially in the context of multilevel governance.

The results expand the theoretical understanding of the role of subnational IPAs in the implementation process of policies aimed at a transition to a low-carbon economy, with an emphasis on the financial feasibility of projects. For professionals working in investment promotion organizations, this study highlights the importance of developing robust institutional capacities and establishing strategic partnerships with international organizations. Coordination and articulation among different levels of government also prove to be fundamental for the implementation of these policies.

Finally, the limitations of this study indicate the need for future research to examine in greater detail the coordination mechanisms between subnational IPAs and other governmental bodies. Furthermore, it is relevant to explore how different public policy models may influence the effectiveness of the implementation of international commitments in different regional contexts. Additionally, it is crucial that future studies investigate accountability mechanisms, as well as the analysis of the efficacy and effectiveness of the policies implemented, to ensure that the established objectives are achieved in a transparent and efficient manner. The choice of qualitative methods enabled analytical depth but limited the generalization of the results to other contexts.

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DATA AVAILABILITY

All datasets supporting the findings of this study are available upon request from the corresponding authors. The datasets are not publicly available due to privacy concerns involving research participants.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

ARTIFICIAL INTELLIGENCE USAGE

The ChatGPT artificial intelligence tool was used to assist in the technical-grammatical review of the text and the standardization of references.

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