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ARTICLE

Implementation of a Climate Policy Monitoring System in Brazil: Political Challenges for Coordination on Multilevel Governance Arrangements*

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After the failure of the Kyoto Protocol, a new architecture of international climate governance gradually emerged in the Paris Agreement establishing a division of roles for climate governance: states, which are formal members of the United Nations Framework Convention on Climate Change (UNFCCC), set goals and incentives, while non-party actors' action conditioned implementation. As the UNFCCC framework remained state-based, less attention has been given to how non-party actors interact with national governments to enable multilevel governance arrangements for implementing climate policies. This work contributes to filling this gap by investigating the unsuccessful Brazilian initiative to implement a monitoring, reporting, and verification (MRV) system, part of the UNFCCC framework, led by the Federal Climate Articulation Group (NAFC, in Portuguese). The NAFC was a venue for subnational participation within the governance structures of federal climate policy, whereas non-state actors provided technical knowledge. We consider the MRV system to be a public policy instrument and non-party actors to be border agents supporting capacity building through the translation of technical issues into policy options. Based on qualitative analysis of documents and interviews, we found that such influence did not enable capacity building due to the limited decision-making power of federal agents, which led to the non-implementation of an MRV system.
Keywords: National climate change policy; monitoring, reporting, and verification (MRV); implementation; non-State actors; public policy.

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Climate change due to anthropogenic greenhouse gas (GHG) emissions is a complex global problem, and the adoption of political solutions involves challenges of scale and coordination (OSTROM, 2010). In the run-up to the Paris Agreement, the United Nations Framework Convention on Climate Change (hereby the Convention or UNFCCC) regime made reporting climate policy efforts and outcomes a key coordination mechanism to achieve the goal of limiting GHGs in the atmosphere. Starting from Nationally Appropriate Mitigation Actions (NAMA) in the Bali Action Plan (Decision 01/COP13, 2007), and later with Nationally Determined Contributions (NDCs) under the Paris Agreement (Decision 01/COP21, 2016), parties were summoned to submit GHG emissions reduction pledges compatible with their capacities and development priorities.

To ensure the existence of information to assess parties' policy performance, the UNFCCC adopted the concepts of Monitoring, Reporting, and Verification (MRV) as a transparency framework (Bali Action Plan) guiding parties on the implementation of reliable information systems to present GHG inventories and evaluate the results of mitigation policies (SINGH et al., 2016, p. 101).

Assessment of countries' pledges is essential to the establishment of incentives for reaching climate goals, as it enables rewards to ambitious and effective actors while imposing reputational costs to laggards. Adopted in the aftermath of the failure of the Kyoto Protocol, this so-called 'pledge-and-review' approach was conceived as a bottom-up strategy to tackle the challenges of uncertainty of policy outcomes, diverging interests, and lack of a central authority in climate governance (KEOHANE and VICTOR, 2015). By voluntarily proposing commitments instead of observing top-down emission reduction mandates, parties can take into account their specific contexts and interests when tackling climate change.

Literature shows the existence of tensions between international pledges and national policies (HOCHSTETLER, 2021). In this context, the concept of governance has re-conceptualized political processes within states as complex, heterogeneous, and marked by strong divergences within political structures (BICHIR, 2018; LASCOUMES and LE GALÈS, 2012; PIERRE and PETERS, 2020). In practice, the implementation of a national policy represents the result of complex relationships with civil society, private

actors, and subnational actors – all understood, in the context of the UNFCCC, as non-party actors involved in multiple processes – operating on many levels.

The adoption of MRV processes and policies is, thus, a key aspect in the global climate architecture and a feature of the policies adopted by countries as part of their UNFCCC commitments. Parties' design and implementation pledges are subject to the challenges of uncertainty and fragmentation in climate governance. In the absence of implementation structures defined under the UNFCCC and in the context of capacity constraints in many countries, implementation often involves a range of actors working on multiple scales to create concrete policies aligned with the general language of the Convention (ABBOTT, 2012; MUCCI, 2012).

Therefore, this bottom-up approach to climate governance revealed the importance of non-state actors[1] in policy implementation, and their roles became the object of increased attention in the literature in terms of legitimacy and effectiveness (BÄCKSTRAND et al., 2017; NASIRITOUSI et al., 2016).

Assessing the potential of the global climate change regime to reach commonly adopted goals, hence, requires an analysis of the actors' dynamics in implementation processes on the ground. Consequently, agreement between different actors is a precondition to overcome the technical, social, political, and financial constraints to the establishment of an MRV system. As an example, investigating the case of Indonesia, Chandran et al. (2018) identify the role of international cooperation actors as border agents, translating UNFCCC frameworks and technical knowledge into concrete policy options that consider different interests, as essential to enabling multilevel coordination, especially among subnational actors.

[1]We employ the term 'non-state actors' here in a broad perspective which may involve several actors who might influence international politics although without the legal or institutionalized recognition in the international field, such as: non-governmental organizations, activist groups, networks, coalitions, corporations, private sector representatives, scientists, research institutions, the broader public; noteworthy individual leaders, and also subnational states. Literature also defines non-state actors as "private actors, civil society, transnational networks and substate actors" (BÄCKSTRAND *et al.*, 2017). When we dive into the case assessed here, the groups of actors we are most interested in are specified. One additional issue is that, among the actors involved in the case we are investigating, we analyzed that there are the World Bank, which is an intergovernmental organization, and also GIZ, which is a German agency. We understand we cannot properly call those two actors non-state actors, and therefore we adopted, in those cases, the term 'non-party' actors, in accordance with UNFCCC terminology which considers GIZ as non-party and non-governmental, as described at: Available at <https://unfccc.int/process-and-meetings/parties-non-party-stakeholders/non-party-stakeholders/submissions/nps-submissions-before-2017/submissions-from-non-party-stakeholders-to-the-sbi>.

Considering that, this paper contributes to the comprehension of the functioning of global climate governance by analyzing the interactions between different actors in a multilevel policy, using the case of negotiations for the implementation of an MRV system in Brazil. From 2009 to 2010, Brazil assumed a leading role in international climate governance. Its success in emission reduction, because of reductions in deforestation rates in the Amazon, and the early submission of Nationally Appropriate Mitigation Actions (NAMA) put Brazil at the forefront of the global climate stage (HOCHSTETLER, 2021; VIOLA and FRANCHINI, 2013). Later reversal of those achievements, however, would demonstrate the limitations in the country's climate policy. Research on the topic shows that barriers related to problems of political economy, scale, and cross-sectoral coordination hampered success in this policy (CARDIAl, 2020; HOCHSTETLER, 2021; SPERANZA et al., 2017; UNTERSTELL, 2017; VIOLA and FRANCHINI, 2013).

This work contributes to the literature by presenting a case of policy failure. The MRV system was discussed within the Federal Climate Articulation Group[2] (NAFC, acronym in Portuguese), a body created under the Executive Group of the Interministerial Committee on Climate Change in 2013 (MCTI, 2013; NAFC, 2013a). Established under the governance structures of the National Climate Change Policy (Política Nacional de Mudança do Clima, or PNMC, BRASIL, 2009), the NAFC involved the participation of ministries, international organizations, research institutions, international cooperation agencies, and subnational authorities. In 2014, the NAFC was decommissioned and the MRV system was never implemented in Brazil.

In terms of methodological procedures, we analyzed guides, reports, regulations, and interviews with key actors involved in the process with detailed information described in Appendix. Our research starts from the assumption that actors could not reach a consensus and aims to explore the reasons for this no agreement. By considering the participation of intermediary actors in global climate governance orchestration, it investigates how these actors were inserted in the

[2]At the time, the NAFC was not the only arena where subnational actors could interact to discuss a climate change policy. This fact raises the possibility that not all subnational efforts were put into reaching the desired outcome within that body. Nevertheless, this does not minimize the fact that the NAFC was a relevant interaction space, which exposed the political contradictions we decided to focus on here.

national context considering that, for formal UNFCCC purposes, they are decisive for policy implementation. We employ the idea of governance (PIERRE and PETERS, 2020) as a theoretical framework and the pentagon model of public policy from the sociology of public action (LASCOUMES and LE GALÈS, 2012) as an analytical framework for the Brazilian case. We analyze this case as a multilevel process, involving the alignment of interests of actors in many levels and centers of authority.

This case presents a privileged opportunity to unveil the complex mosaic of such an implementation process, as it involved federal government officials, subnational authorities, and non-state actors – where the two last groups are considered 'non-party stakeholders' from the point of view of the Convention (KUYPER et al., 2018; NASIRITOUSI et al., 2016). We enlighten the challenges of policy implementation, considering the complex nature of climate change, its multilevel character, and the current transformations of public action.

Our results highlight the importance of bringing state-party bureaucracies and non-state actors to the forefront of the analysis of global climate change governance and its potential to reach agreed-upon goals. Domestic climate policy coordination involving national and subnational levels hinders states' ability to fulfill the pledges submitted to the Convention and its failure may reveal political fragmentation challenges.

Our work is structured as follows. In addition to this introduction, Section 02 provides theoretical reflections on orchestration and governing through the promotion of interaction spaces seeking consensus building. Section 03 deals with the specific object – the Monitoring, Reporting, and Verification (MRV) system – and reveals the importance of non-party actors in policy implementation. Section 04 presents the results of our investigation, identifying the challenges of coordination between the technical and political arenas in the Brazilian implementation of an MRV system on climate policy. The fifth section discusses the results and presents our final remarks.

The role of States in climate governance between orchestration and steering

While there is a variety of different definitions of governance in the literature (CASULA, 2017), different strands converge towards the idea of a reconfiguration of state institutions (PIERRE and PETERS, 2020). Lascoumes and Le Galès (2012)

characterize governance as an institutional polycentrism determined by complexity, which involves multiple centers of power, more fluid boundaries between public and private realms, a focus on the procedural dimension of public action, and more horizontal, cooperative, and subtle command and authority relations, through more varied and less limiting instruments.

When it comes to climate governance, state structures in this new configuration are responsible for steering different actors (including state and non-state actors) towards public goals through different forms of engagement (BÄCKSTRAND et al., 2017; PIERRE and PETERS, 2020). This process involves a wide range of demands and resources states do not possess, such as specialized knowledge to deal with complex technical issues related to climate change (ABBOTT, 2012).

The idea of voluntary national pledges developed under the international climate regime exposed several coordination problems both internationally and domestically. Due to consensus obstacles in climate policy, for example, the UNFCCC text is vague (MUCCI, 2012). Pledges are also general commitments, often lacking specific means of implementation (PAUW et al., 2018). Therefore, such arrangements and instruments require shared values and worldviews to be effective in mediating interests and orchestrating relationships among intergovernmental organizations, states, and non-party actors who play the role of intermediaries (ABBOTT, 2012; ABBOTT et al., 2021).

Here, orchestration is understood "a strategy whereby states or international organizations bring new capacities and resources to the provision of global public goods by strengthening or catalyzing transnational governance schemes" (HALE and ROGER, 2014, p. 63). In short, orchestration is the use of intermediaries to address target actors in the pursuit of governance goals, made possible through the provision of material and ideational support to those actors (ABBOTT, 2012). Considering that intermediaries provide resources to the implementation of UNFCCC goals, the effectiveness of the global climate regime depends on the success of orchestration.

However, the reality of climate policy implementation is more complex, as the array of non-party actors involved in pledge implementation actively shapes those policies. Non-party actors are more than intermediaries: some of them (such as subnational entities) hold decision-making power that is essential to climate policy

implementation (ABBOTT, 2012; KUYPER et al., 2018; NASIRITOUSI et al., 2016). Others hold ideational and technical resources that shape policy when translating the more general UNFCCC frameworks into concrete means of implementation (VAN ASSELT, 2016).

Scientific literature recognizes the active role that non-party actors play in climate governance and argues that schemes to coordinate their action under the pledge-and-review system are necessary (BÄCKSTRAND et al., 2017; KUYPER et al., 2018). In short, they play a role in climate policy, not necessarily on the international level, but in shaping implementation domestically. This context, in turn, is marked by the existence of multiple centers of authority, interlinked with international governance (LEVIN et al., 2012; OSTROM, 2010; STEFFEN et al., 2011).

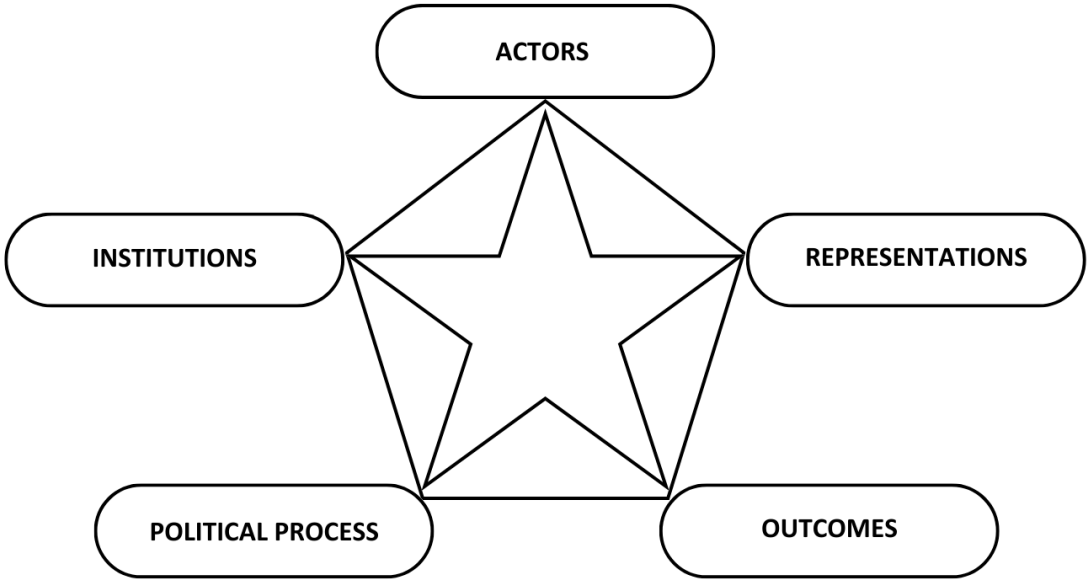
The need to steer actors toward a common policy vision and to incorporate technical instruments is a key feature of the governance and implementation of the Monitoring, Reporting, and Verification (MRV) system. However sparse, research on the political aspects of MRV shows that the establishment of an MRV system involves political challenges such as 01. the development capacities to implement an MRV information system, 02. the need to develop adequate tools to address economic actors' demands, 03. criteria on monitoring cost sharing, and 04. expected benefits from participation, especially when it comes to providing public information on private economic activity (CHANDRAN et al., 2018; PEROSA et al., 2023).

Considering the MRV as a public policy, we can analyze it from the perspective of Lascoumes and Le Galès (2012), who emphasize the importance of specific configurations of actors to the creation of public policy. Working within the idea of governance, the authors interpret public policy not as a process marked by successive phases, but as the result of social interactions reaching socio-technical consensus. This configuration reveals the need for coordination among different actors about their values, goals, and technical-administrative means of achievement.

The elements that constitute these interactions, according to the authors, represent a pentagon with five vertices, depicted in Figure 01: 01. actors; 02. representations; 03. institutions; 04. processes; 05. outcomes. In this perspective, one of the major roles of the state in public policy is to shape the interactions between the actors involved, defining each one’s access to resources and opportunities.

Actors are individuals or collectives who have resources and are driven by material or symbolic interests, adopt strategies to pursue these interests, and make decisions accordingly. Representations are cognitive and normative frames that give meaning to actions taken by actors. Institutions are the rules, routines, and procedures that constrain the interaction between actors. The combination of these elements shapes the processes, which are the dynamics of actors' mobilization and interaction. Finally, interaction generates results, including both outputs, understood as the effects produced in organizations and behaviors, and consequences, or impacts on the problem to be addressed.

Figure 01. Public policy pentagon



Source: Lascoumes and Le Galès (2012).

The pentagon of public policy is a useful approach for analyzing the complex governance arrangements and coordination efforts involved in the implementation of climate change policies domestically. It represents multiple actors with their representations and interests interacting, seeking consensus and coordination, and within different centers of authority. Non-state actors play a central role in this specific policy domain as intermediaries supporting capacity-building through the translation of technical issues into policy options, which gives them considerable leverage over

state decisions. The commitment and coordination of national and subnational state agencies throughout the policy process is also a condition for the success or failure of the policy implementation in national contexts and requires shared understandings among actors. In the next sections, we apply these categories to better understand the context of the Brazilian climate policy, as well as the NAFC process itself.

The monitoring, reporting and verification system (MRV) and the role of non-party actors in climate change governance

More than just accounting for carbon emissions, the MRV framework aims to provide reliable information about climate policy and its results (WARTMANN et al., 2018). In the international arena, this information is a key climate governance mechanism. For governments enacting climate policy, an MRV system is a crucial information system. As such, it needs to be integrated into commitments under the UNFCCC and the governance structures that shape climate action in the national context.

Given the difference in different parties' priorities and the general aspect of UNFCCC provisions, the MRV framework allows for discretion in its adoption. While the UNFCCC strives to enable comparability between parties' efforts in emissions reduction and carbon sinks, this goal is often in tension with the flexibility required to address parties' priorities (BELLASSEN et al., 2015).

Measuring or monitoring refers to gathering and processing data about relevant policy aspects; reporting is related to the organization and compilation of field data; and verification is related to control processes that ensure the reliability of the data. Whether via verifying the reliability of the data gathering process or through triangulation to verify aspects of the data (MONZONI, 2013; PEROSA et al., 2023). Consequently, there is a variety of possibilities for constructing an MRV system. This diversity reflects the set of options within climate policies: an MRV system might focus on understanding key sources of emissions and carbon sinks, enabling policy-making through analysis of data on more specific levels, or promoting the use of specific policy instruments – carbon markets, projects, and others (DAMASSA et al., 2015; SINGH et al., 2016).

Bottom-up MRV allows for finer-grained data that is necessary for the deployment of some policy instruments, such as carbon markets. The elaboration of

MRV systems leads to two essential trade-offs: one between cost and uncertainty, and one between relevance and comparability. The more reliable the information, the higher the cost. Considering that different cases (different sectors of the economy) may have different information needs, the more relevant the information, the less comparable it is (BELLASSEN et al., 2015).

Due to such trade-offs, all political decisions in the implementation of an MRV system have technical aspects to them. Technical choices, in turn, have political stakes. In the measuring/monitoring phase, issues such as choice of sectors, scopes (understood as the level of economic activity to be considered), methodologies, and calculation baselines are technical issues, as they deal with technical constraints in information systems. The choices made within these technical constraints, however, have political aspects to them. They affect issues such as monitoring costs, expectations of benefits from the system, and aspects related to the disclosure of information on private economic activity (PEROSA et al., 2023). Therefore, they are related to actors' interests and representations.

Literature on MRV schemes mentions the need for governance bodies to steer activities towards established policy goals and assign roles, resources, and responsibilities to agents within an adequate normative framework (BASAK, 2016; ELSAYED, 2013; MONZONI, 2013). This is usually the case for higher political structures, which are required to steer the system towards policy goals, administrative structures to ensure its functioning, and executive structures to perform the necessary information collection and management tasks.

Guides and reports formulated by non-state actors often compile, analyze, and systematize experiences from developed countries. As those documents constitute action-guiding instruments, we analyzed them to shed light on the influence of non-state actors in Brazilian political processes[3]. They present the necessary conditions for MRV implementation that, to some extent, represent consensus at the national and subnational levels, and recommend implementation strategies (CHANDRAN et al., 2018). Examples of recommended strategies to facilitate adoption by promoting learning and stimulating political support are: 01. using pre-existing administrative

[3]Detailed information from documentary, regulatory sources and interviews are available in Appendix (Methodological transparency issues, procedures, and primary research sources).

structures to take advantage of their technical capacities and seeking minimum consensus; 02. providing basic capacities and 03. starting implementation with 'low-hanging fruit' (BASAK, 2016; ELSAYED, 2013; SINGH et al., 2016; SINGH and BACHER, 2015). In the next section, we analyze how those strategies were perceived by interviewees who participated in the process of attempting to implement an MRV system in Brazil in 2013.

The challenges of implementing an MRV system in Brazil: from technical-bureaucratic to political-relational coordination

The climate policy landscape surrounding the NAFC is marked by low levels of institutional coordination. Since 1992, the year of the Earth Summit, the Brazilian climate policy was limited to preparations organized by the Ministry of Foreign Affairs (MRE, in Portuguese) and the Ministry of Science and Technology (MCTI, acronym in Portuguese) for participation in international climate forums (CARDIAL, 2020; FRANCHINI, 2016). There was an understanding that it was a technical and scientific issue. A significant expansion in terms of the creation of bureaucratic structures, legal instruments, and involvement of different policy sectors in the following years (CARDIAL, 2020; FRANCHINI, 2016; MORAES, 2020; UNTERSTELL, 2017) did not translate into effective coordination mechanisms (CARDIAL, 2020; SPERANZA et al., 2017; INSTITUTO TALANOA, 2020).

Regarding the transparency obligations within the UNFCCC, the MCTI managed to develop a national inventory of GHG emissions, with the support of international cooperation via the United Nations Development Programme (UNDP) (ELSAYED, 2012). This inventory, however, constitutes a top-down[4] type of MRV system and, therefore, it is inadequate for some types of policy goals, especially regarding the creation of carbon markets (MONZONI, 2013; NAFC, 2013a).

Reasons for trying to establish a broader policy include: financial incentives for climate action in the form of the Clean Development Mechanism (SPERANZA et al., 2017; UNTERSTELL, 2017); the representation of climate policy as an intersectoral effort by Environment Minister Marina Silva and her policy entrepreneurship

[4]A broader distinction can be made between top-down and bottom-up MRV (MONZONI, 2013). The former is based on statistical calculations of an economic activity according to emissions factors. The latter involves measuring on a scale closer to an economic activity – the unit of production, such as a factory.

(CARDIAL, 2020), and President Luiz Inácio Lula da Silva's political interest in establishing Brazil as a climate leader (CARDIAL, 2020). Since then, several institutional arrangements have been gradually built.

In 1999, an Interministerial Committee on Global Climate Change (CGIM) with participation from the MCTI and the Ministry of the Environment (MMA, in Portuguese) was created for intersectoral coordination of climate policy (BRASIL, 1999). Later, a Brazilian Forum on Climate Change (FBMC, in Portuguese), linked to the Office of the President of Brazil and headed by a Secretary, was created to accommodate the participation of other entities of the federation and civil society (BRASIL, 2007). In 2007, under Marina Silva's term in the Ministry of Environment (MMA), the Secretariat for Climate Change and Environmental Quality (SMCQ, in Portuguese) was created (BRASIL, 2007), as well as an Interministerial Committee on Climate Change (CIM) aiming to coordinate climate policy implementation. The Office of the President's Chief of Staff and the CIM Executive Group (GEX, in Portuguese) prepared a National Climate Plan and proposed voluntary emission targets to be presented at COP15 (CARDIAL, 2020). At this point, climate policy had support from actors close to the President's Office. Finally, a law (BRASIL, 2009) establishing a National Policy on Climate Change (PNMC, in Portuguese) was approved, adding to the institutional framework of climate policy.

Therefore, we observe that the PNMC was built over preexisting institutional arrangements. The existing Interministerial Committee on Global Climate Change (CIMGC), and the Brazilian Forum on Climate Change (FBMC) remained as governance bodies of the PNMC, while the CIM remained as an executive body (BRASIL, 2010). In this design, the representation of federated entities was not included: while the law determined that subnational states would participate through the FBMC, their effective participation in this Forum did not materialize (SPERANZA et al., 2017; INTERVIEWEE #02, 2021; INTERVIEWEE #03, 2021). When it comes to sectoral work, Working Groups (WGs) were established under the CIM's Executive Group (GEX) to work on specific aspects of climate policy – one of them was the NAFC. The NAFC itself was also composed of three working groups, but our analysis focused on the Emissions Registry Working Group, which is central to the setting up of an MRV system.

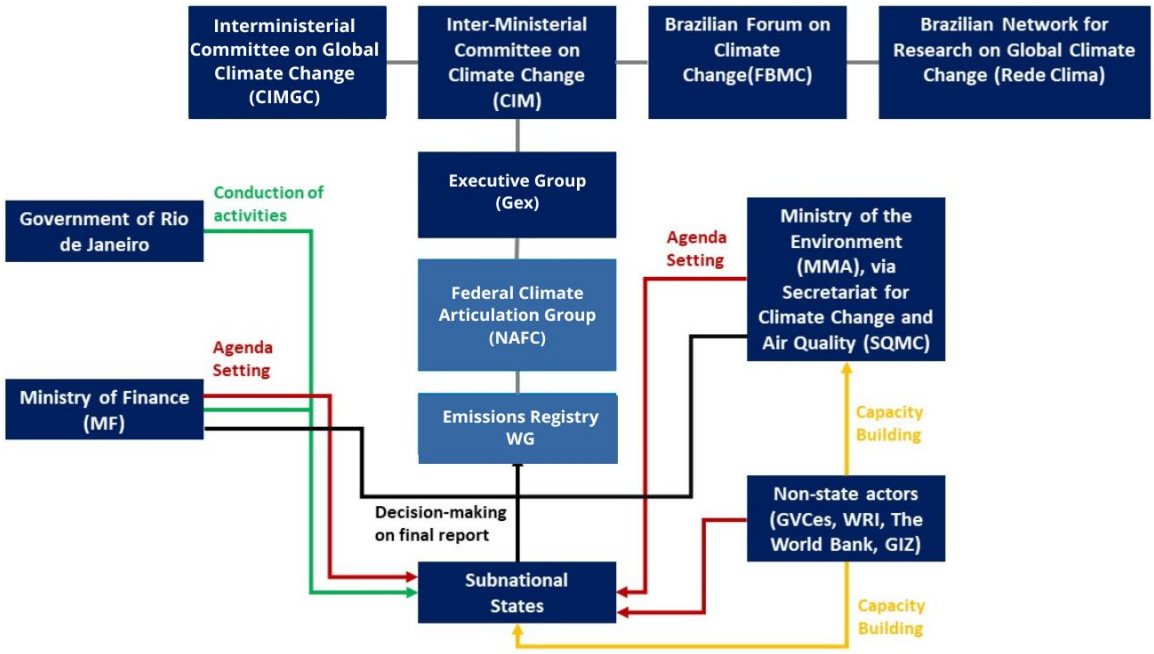
The NAFC was created when climate was on the agenda of high-level actors. Its setup, nevertheless, was marked by low levels of institutionalization. Differently from other WGs under the CIM, its creation was not backed by a normative act (UNTERSTELL, 2017). All decisions in the WG were taken by consensus, a rule that would impact its outcomes, as shown below. The group was created through the initiative of two public servants from the Ministry of Finance, involved with the implementation of the World Bank's 'Partnership for Market Readiness', an institutional program aiming at supporting the implementation of carbon markets (Partnership for Market Readiness). Those actors convey a representation of the MRV as a step for the implementation of carbon markets as climate policy instruments. They were regarded as authorities among NAFC participants, as demonstrated in how Interviewees #02 and #03 (2021) praised their technical competence. However, neither they nor the NAFC institutional setup secured the possibility of enforcing the WG's decisions.

Other actors participating in the process were representatives of Brazilian states, public employees from IBAMA (the National Environment Institute) working for the SMCQ, and non-party members participating in international climate governance. The work plan was devised by consensus among the participants. The NAFC objectives included the training of subnational entities in MRV; the formulation of technical recommendations for the implementation of a national registry of GHG emissions and removals through sinkholes, and the review of the Brazilian Inventory (NAFC, 2013b).

The Economic Policy Secretariat of the Ministry of Finance (MF) and the government of the state of Rio de Janeiro, one of the three Brazilian states with an existing emissions registry policy, led the activities of the WG together. MF servants set the agenda, but they met with the Ministry of the Environment (MMA) representatives, aided by consulting agents, to define the scope of the discussions (INTERVIEWEE #03, 2021). The group worked for one year and carried out the activities provided for in the work plan such as technical training, meetings, and activities (INTERVIEWEES #02 and #03, 2021). However, the final report was not published (INTERVIEWEE #04, 2021). We were able to access it for research purposes thanks to one of the interviewees who participated in the process and obtained the document through a request based on the Law on Access to Information (INTERVIEWEE #02, 2021).

Several actors influenced the policy process by providing ideational resources and steering them toward their interests. Three subnational state members who already had set up an emissions registry policy (Rio de Janeiro, São Paulo, and Minas Gerais) presented their programs (NAFC, 2013c, 2013d, 2013e). Non-party members of the UNFCCC, such as the World Resources Institute (WRI) and the GVCes/FGV, an academic research group of the Getúlio Vargas Foundation – FGV, contributed with support plans, meeting reports, technical, normative, managerial and institutional advice, and the preparation of the final report (MONZONI, 2013). Interviewee #03 (2021) also reported that the World Bank Partnership for Market Readiness (PMR) offered opportunities for training, participation in international forums, and other exchange experiences with foreign countries. The GVCes provided critical support by preparing policy documents and guides and responding to requests for research and information. Figure 02 depicts the actors and institutions involved in the process.

Figure 02. Actors and their roles in the Brazilian MRV system implementation process



Source: Elaborated by the authors based on Speranza et al. (2017) and collected data.

The final report, which would be the main output to guide the creation of the MRV system, was approved by consensus within the NAFC, but it was never published. Interviewees #02 and #03 (2021) stated that while all participants agreed upon the report's content, this concurrence was merely a formality. Disagreements involved conflicting political economic interests and different representations among institutions and federal bureaucracy sectors. The NAFC's institutional context and setup did not provide rules to overcome such disagreements, did any of the actors had sufficient resources to single-handedly steer the policy.

The report proposed the use of IBAMA's Annual Report on Potentially Polluting Activities and Users of Environmental Resources (RAPP[5]), which monitors polluting activities and records firm-level GHG emissions. The use of this system would require a specific legal basis for the reporting program and technical details, requiring the signing of a Technical Cooperation Agreement between IBAMA and the MCTI, and between IBAMA and subnational states who have the constitutional competence to monitor polluting activities (NAFC, 2013a). Technical and operational issues regarding monitoring guidelines and calculation methodologies were not defined, as they required further discussion. Finally, the allocation of competences in the federation regarding climate change would be conducted by a new WG to be created by an appropriate legal instrument, given the perception that the lack of strong institutional mechanisms could hinder the achievement of further results by the NAFC's work (INTERVIEWEE #03, 2021).

These recommendations are aligned with reported experiences and good practices promoted by non-state actors in international climate governance. For example, they suggest seeking minimum consensus in an iterative process for initial implementation and providing basic capacities, taking advantage of preexisting systems and capacities, and conducting the implementation through executive bodies to avoid legislative discussions. The decision to use the RAPP-CTF/Ibama instead of creating new public bodies is an example of the adoption of this strategy.

To date, the main MRV mechanism in Brazil remains the top-down national inventory prepared by the MCTI. In 2021, this ministry released the online platform

[5]The RAPP-CTF/Ibama is a system operated by Brazil's National Environment Institute (IBAMA), which is in charge of implementing environmental laws in partnership with federated states (NAFC, 2013f). The system is used to monitor activities on pollution.

SIRENE (Sistema Nacional de Registro de Emissões, the National Emissions Registry System), aiming to "provide transparency to the National Inventory of GHG emissions" (MCTI, 2017). This initiative has been mentioned at least since 2016, but it remains a top-down MRV scheme. Other recommendations, such as the creation of a new WG to discuss the allocation of competences in the federation, were never implemented.

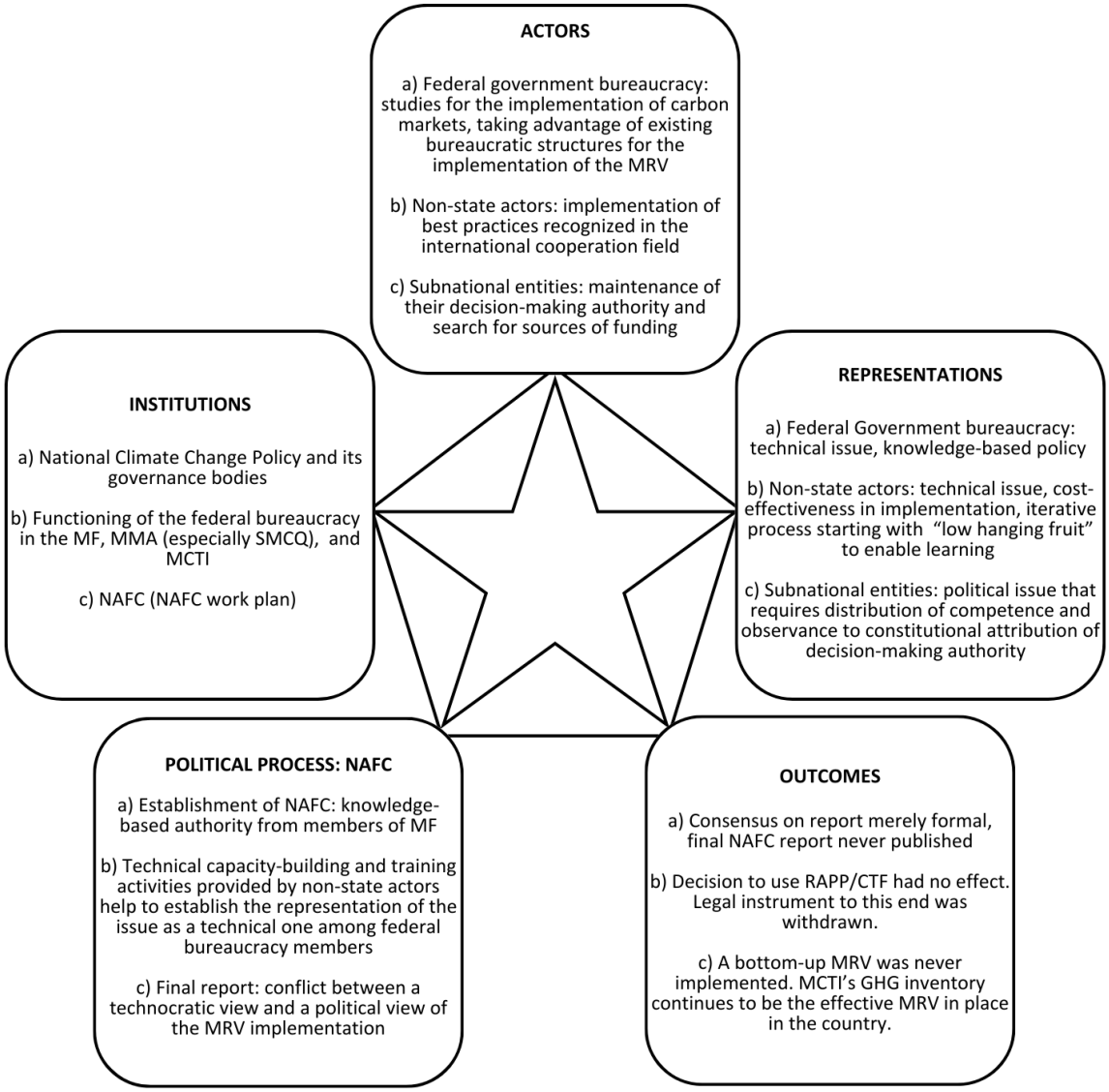
Analyzing this phenomenon by employing the pentagon of public policy by Lascoumes and Le Galès (2012), as shown in Figure 03, reveals that the Brazilian government failed to orchestrate actors and interests bringing about a socio-technical consensus around MRV. Institutional weaknesses in the Brazilian climate policy and in the NAFC process itself, as well as essential divergences among participating actors' interests and representations about the nature of the issues around MRV, resulted in a process marked by ineffective consensus.

In a coordination failure, the process left out an actor with significant knowledge and resources in the sector: the MCTI (INTERVIEWEE #02, 2021). While MF actors were regarded as authorities within the NAFC for their technical knowledge, they did not have the legal authority to enforce or steer decisions by the WG, nor they had political support from higher levels of authority to sustain the results of the process (INTERVIEWEE #03, 2021). Interviewee #04 (2021) also pointed out a representation issue, as conflicts with sectoral policy areas were also determining factors in the failure to adopt the final report, which shows a lack of coordination between the MF and other policy areas. In the context of the divergence of interests and representations, other actors, such as members of sectors of the federal environment bureaucracy led the activities forward. However, this leadership rendered the process ineffective and hampered the creation of a supporting network from within the NAFC.

The different actors involved envisioned distinctive pay-offs from the process and the establishment of the MRV itself. MF authorities, interested in establishing the foundations for the implementation of a carbon market, had a technocratic view of the NAFC process and the nature of MRV provisions. Subnational states, albeit interested in the MRV as a precondition to access financing options, viewed the NAFC as a political entity. They were interested in maintaining what they saw as their constitutional policy-making prerogatives in such a system. Meanwhile,

public employees from the MMA were interested in establishing leadership in climate policy.

Figure 03. The Brazilian MRV system implementation pentagon



Source: Elaborated by the authors based on Lascoumes and Le Galès (2012) and collected data.

Non-state actors were interested in sharing their experiences and best practices, even if it meant challenging the power of the federal government, increasing tensions over disagreements about how to best implement best practices and speeding up implementation. They promoted a framework for understanding the MRV policy process as a technical and administrative proceeding guided by efficiency and cost-effectiveness. Their provision of resources – for example, training on MRV – reinforced MMA actors' representation of the MRV as a technical rather than political

issue. Interviewee #03, who undertook such training activities, described emissions accounting as a purely technical issue, and the use of the RAPP as an efficient solution. This participant described the WG as a great opportunity for capacity-building and believed that federated states' relevant barrier was capacity.

Meanwhile, Interviewee #02 (2021), an experienced bureaucrat from one of the states that has an emissions registry program, claimed that the initiative had a political nature and that an MRV system needed a solid political arrangement respecting federated states' constitutional attributions. According to this participant, building technical capacities was not a relevant activity in the WG – all subnational states already have capacities, albeit at different levels[6]. According to this interviewee's account, there was no consensus in the WG and the subnational states preferred the creation of a new body instead of using the RAPP/CTF database. Having been active in climate policy on many levels, this participant made a counterpoint to the SMCQ's IBAMA working group in the negotiations that conceived this as a technical issue, believing that this conception lacked the dimension of relations between different federated states.

It is relevant to point out here that the use of the RAPP would assign federated states the role of inspecting equipment for measuring emissions. Interviewee #03 described this role as cost-efficient for subnational state bureaucracy. It also corresponds to 'good practices' described by non-party actors who work on UNFCCC implementation: using existing bureaucratic structures is the strategic option to tackle low-hanging fruit and experiments before organizing broader systems and emphasizing knowledge gathering (ELSAYED, 2012; MONZONI, 2013; SINGH and BACHER, 2015). It would, nevertheless, constrain the scope of subnational states' activities within an MRV system.

All interviewees – #01, #02, #03, and #04 (2021) (a public employee of the federal government who later worked on the analysis of the PNMC) – mentioned the possibility of obtaining funding for projects from international funding sources. As was the case with the Clean Development Mechanism (CDM), as motivation for

[6]In this discussion regarding the relevance of training, Interviewee #01 (2021), a member of an NGO that worked on capacity-building for MRV years after the NAFC, supported the perspective presented by Interviewee #03 (2021) and declared that subnational states were indeed interested in building technical capacity.

subnational states to adopt or support MRV policies and seek capacity-building in the matter. Interviewee #02 (2021) also described states' experiences with the CDM as positive. Limiting subnational states' prerogatives in climate policy with a RAPP-based MRV system would be, in this context, a limitation of their authority to adopt climate policies that affect their ability to access funding opportunities.

Considering these divergences and institutional constraints, the WG process favored aspects that correspond to a few points of convergence between the representations and interests of the involved actors: training and capacity-building activities. Those provided the federal government with the opportunity to further their technocratic view of the policy, subnational states with a chance for capacity-building, and non-state actors with the possibility of achieving their organizational goals of fostering the adoption of the policy. The authority of MF actors seems to have worked to mediate consensus-building around a work plan for the WG. Nevertheless, in the face of challenging divergences and a lack of institutional mechanisms to address those differences, the weak institutionalization of the process made it an empty vessel: actors accepted a consensus informed by a technical representation of the process, but only because the WG had no power to impose it. While Interviewee #02 (2021) described the existence of a forum involving subnational entities as an innovative and laudable initiative at the time, the WG did not result in advances in the implementation of the MRV system or in lasting vertical and horizontal coordination mechanisms for the national climate policy.

Discussion and conclusion

Transparency regarding GHG emissions and climate policy implementation is essential to reach the UNFCCC goals, pointing to the need to foster a Monitoring, Reporting and Verification system in the national field. In this context, in order to make MRV system implementation feasible, it would be necessary to obtain a socio-technical consensus around governance structures and technical parameters. In addition, it requires defining the main objective of the Brazilian MRV system to establish a legal architecture and administrative structures (ensuring the existence of technical, human, and financial resources) and defining system coverage (monitored gasses, participating sectors, methodologies of accounting, etc).

In this arrangement, non-party actors participate in global climate governance as agents involved in the implementation of the UNFCCC playing a prominent role, as they have the necessary capacities to implement highly technically complex policies, such as a MRV scheme. These actors, as well as UNFCCC member states, are part of a multilevel climate governance regime of processes of coordination of different interests, at different levels. By working in the Emissions Registry WG of the Federal Climate Articulation Group (NAFC), non-party actors used their resources to contribute to consensus building among subnational actors, even though they failed in their ultimate objective: implementing the MRV system.

The idea of governance implies a contextual analysis of the provision of public policies, with the identification of the set of actors that participate in a given area of public action. We analyzed the institutional framework in which these different actors interacted and how this interaction was constitutive of the public policy provision structure. On the one hand, the analysis of how non-party actors, as holders of expertise, operated to obtain consensus and helped in the efforts to institutionalize the Brazilian MRV system is useful to deepen the understanding of multilevel governance in climate policy. On the other hand, observing the demands of subnational states reinforces their active role in public policy-making, even though they lack technical capacities and depend on the federal government to obtain different kinds of resources, including for capacity-building.

The NAFC was a 'sui generis' initiative for subnational states to participate in the governance of the PNMC, exposing the importance of non-state actors in the mediation process between international commitments, national structures, and regional or local actors. In the case of a policy with highly technical components, this mediation would provide the necessary knowledge to translate the technical aspects of carbon accounting into concrete policy options.

Thus, these actors may contribute to socio-technical consensus building on which the existence of policy instruments depends. And, as these instruments structure multilevel relationships, they constitute institutional arrangements. The MRV case provides an interesting opportunity to reflect on multilevel interactions in public policy, from the perspective of the five elements of public action, which were employed here as a tool to understand how the instruments are constituted.

While only one ministry was heading the implementation (in this case, the MMA, a participant in the NAFC and leader of the GEX), the unsuccessful orchestration indicates the need to better understand how to build interest about an environmental policy, beyond the cleavage of interests between the MMA and the MCTI. Furthermore, it points to the need to bring the state and its bureaucracies back in studies about climate policy implementation.

In this context, our research corroborates some of the previous findings from the literature regarding the PNMC, namely: the orientation towards international policy (CARDIAL, 2020; MORAES, 2020), the lack of priority that translates into low coordination capacity (SANTOS, 2021) and, therefore, low transversality (CARDIAL, 2020). As a contribution, our research adds that the problems of coordination are not only horizontal (that is, related to economic sectors and their ministries), but also vertical (concerning federated entities). Furthermore, coordination in those two directions amounts to related barriers to policy consensus.

The PNMC instrumentation gap is a factor that adds complexity in this regard. Subnational states are entities with contexts, capacities, and interests of their own, distinct from interests at the federal government level, as Interviewee #01 (2021) argued. Successfully integrating them into the PNMC and implementing a national policy requires integrating those aspects into functioning coordination mechanisms. In the absence of other governance spaces, the NAFC's weak institutional standing could not overcome coordination challenges.

Deviations from the consensus indicate the relevance of the role of non-party actors as border agents, despite the boundaries and constraints they face regarding their influence. A report, which should be a key outcome of this process, adopted the strategies considered as good practices by international directives. However, the existence of consensus around such strategies was not taken for granted, as illustrated by the divergence of representations between Interviewees #02 and #03 (2021). These strategies are, therefore, political, even though Interviewee #03 (2021) saw them as technical aspects of carbon accounting, a perspective consolidated through the training offered by non-party actors. This perspective fostered friction among actors and imposed obstacles to reaching consensus. Although similar frictions could be remedied in functional institutional arrangements, this is not true for the PNMC.

In short, the outcomes of non-party participation in climate policy and their impact on achieving goals can only be properly assessed in the context of institutional factors and bureaucratic representations that mediate actors' conflicting interests and activities on the ground. The legislative process leading to the creation of the PNMC involved the participation of civil society. Gaps in the involvement of subnational actors, however, are apparent in its implementation by the Executive branch. Beyond the engagement of non-party (both non-state and subnational) actors in global forums and pledges by national governments, an effective climate policy requires effective national institutional arrangements to set proper incentives and enable access to resources.

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Appendix

Methodological transparency issues, procedures, and primary research sources

This research aimed to investigate the initiative to establish an MRV (Monitoring, Reporting, and Verification) system for the national climate policies in Brazil, and the reasons for its lack of success. The case of NAFC, a group set up between representatives of the federal government and subnational states, with the support of external actors (third sector actors, foreign cooperation agencies, research institutions, etc), was chosen due to its potential to enable an investigation of current dynamics in international climate policy. These dynamics refer to the challenges of achieving internationally agreed climate policy (especially GHG emissions reductions) in the absence of centralized enforcement mechanisms, through the 'bottom-up' logic established in the Paris Agreement. The high complexity of climate policy means that this logic involves 'steering' a variety of actors on different levels towards climate goals. The prominence of the so-called 'non-state actors', defined for this research as all actors that are not member states of the United Nations Framework Convention on Climate Change rose both in practice and in academic research. Nevertheless, UNFCCC remains an agreement between states, which bear responsibility for implementation. NAFC provided, thus, an opportunity to examine how member-states and the emerging 'non-state actors' interact, and how features of different levels of policymaking interact to produce public policies.

This research is both explanatory and descriptive. The fundamental research question requires an explanatory answer, i.e. an answer that articulates the relationships between different factors or aspects of an issue (KUMAR, 2011, pp. 31-32) and how these factors and relationships contribute to the occurrence of a phenomenon (GIL, 2008, p. 28). In this case, the aim is to understand how institutional arrangements and the capacities they mobilize influenced the steps taken to implement an MRV in Brazil. To do this, it is necessary to systematically describe them (GIL, 2008, p. 28; KUMAR, 2011, pp. 31-32).

The research is qualitative. Although there is an effort to explain a phenomenon based on the causes that contribute to its occurrence, this analysis corresponds to the aspects of qualitative research described by Flick (2004): as it is not

possible to isolate factors to establish universal cause and consequence relationships, the phenomena that are the subject of this work will be analyzed as issues situated in a complex context, formed by the totality and diversity of the daily practices of the actors involved. The theoretical orientation of the work is constructivism, insofar as there is a focus on the interaction between individuals and how the structure shapes these interactions and at the same time is shaped by them (FLICK, 2004, p. 71; GIL, 2008, p. 24).

The theoretical framework chosen for the investigation was the one set by Lascoumes and Le Galés (2012) in their sociology of public action. These authors reviewed transformations in theoretical frameworks for understanding public policy and provided a framework to understand public policies as the result of the mobilization and interaction of different players. This framework conceives the policy space as a locus for dispute between a variety of actors and conceptions of public policy and the formation of consensuses as a requisite for their production. It is, therefore, adequate for the investigation of the case of the NAFC and its (non-) production of consensus for the implementation of an MRV.

The framework is based on the categories in the pentagon of public policy (actors, representations, institutions, processes, and outcomes). Those categories come from different branches of political science and political sociology. Lascoumes and Le Galès (2012) bring them together and schematize them as elements in the processes of dispute and consensus formation in policymaking. This schematization enables the localization of the NAFC process in its specific context and the development of a constructivist analysis, by specifying the 'building blocks' of the social structures that shaped the actors' participation, and how they mobilized the elements of such structures. While each of the elements of the pentagon allows for individual, in-depth studies, a strategic choice for the use of all was set for this research. This choice is justified by the need to map a playing field that has been insufficiently explored and therefore does not yet allow for in-depth studies. Besides that, literature on the topic is also emerging and emphasizes the need to understand how the elements in the production of public policies interact to produce specific policy pathways and resulting policies. Given the absence of specific studies about the MRV case in Brazil, a broader analysis contributes to the creation of a cross-sectional look at

the process. This supports further research both on this specific case and in comparative analysis of similar cases.

The choices related to data collection were based on the need to identify each of the elements in the Pentagon in the case at hand. It was thus necessary to collect material that allowed: 01. the identification of participating actors; 02. the analysis of actors' representations; 03. the institutional context of interaction; and 04. how processes concretely took shape. The research relied on documents and interviews.

Documents used for this research included government documents (legal texts, administrative decisions, reports, etc), knowledge products produced by non-state actors, and textual documents (news, press releases, etc) from different sources containing information about NAFC activities and MRV policies in Brazil (all documents are listed below).

Analysis of legislation also provided information on the institutional context, the position, and the roles of the involved actors. Legal documents showed under which administrative structures NAFC functioned and the policy context, that is, the goals and bodies of the Brazilian Climate Policy. Other legal documents relate to the roles and prerogatives of the different federative bodies in Brazilian public administration.

Official documents about NAFC specifically (statutes, activity plans, PowerPoint presentations, and others) from the federal government were essential to identify the participating actors - institutions and their specific representatives. Those documents did not comprise the entirety of NAFC's activities, but they also contained relevant information about the institutional context (the government bodies involved and their roles), the processes (through the description of activities, rules, etc), and the outcomes (which are documented in the final report). They also helped to identify and give context to representations: a few PowerPoint presentations from NAFC activities describing policies from subnational states and explanations on MRV by non-state actors helped to construct their representation of the policy. Representations of the policy from the side of non-state actors were found in their published knowledge products.

Minutes from meetings and activities of NAFC were not made public. For this reason, and because documents do not capture all representations and interactions,

interviews with participants and other actors in institutions related to the process and the topic of the MRV were conducted. Due to challenges in obtaining documentation of activities and information about the participants, only two people who participated directly in the process could be contacted. The other two persons interviewed worked in institutions that participated in the process and knew the context well.

The subsequent analysis of documents and interviews sought to identify the pentagon elements, as they appeared in the NAFC process. The actors were identified through the names of the individuals and their institutional affiliations in lists of participants.

The identification of the representations of the policy by actors was operationalized through the search for definitions and descriptions of an MRV, and the normative perspectives that underlie or are attached to them. Some documents presented explicit definitions of the MRV, but mentions of purposes or goals to be achieved by the system were also considered. Descriptions were understood as an enumeration of the characteristics of an MRV. Examples of descriptions included in this category and found in the documents were lists of elements, resources, relevant actors, their roles, and structures necessary for an MRV. Normative perspectives are related to the ideas and criteria that should orient the definition and description of the MRV. In the research, the conflict between two normative frameworks was identified: a 'cost-benefit' perspective of how to implement the system, versus the MRV as a political arrangement that should respect Brazil's federative organization emerged as an opposing view to the economic one. Those normative views could be identified in the documents in the form of 'best practices' and 'recommendations' that are common in policy recommendations by knowledge actors in the development policy field. The normative perspectives from actors in the federal government and subnational actors were obtained via interviews. During the interviews, questions addressed these normative aspects specifically, and the participants commented on other perspectives in the process directly and specifically.

The institutional context of interaction was drawn thanks to both documents (especially legal texts and specific documents from NAFC) and interviews. Legal texts and documents offered information on the position of NAFC within the structures of the Brazilian Climate policy and the rules under which these structures operate. The

specific context of NAFC, with the distribution of roles amongst actors and rules for behavior, could be found in specific documents. Since informal structures also shape actors' activities, the interviews offered insight into other rules informing the activities of NAFC. The elements constituting this institutional context are described in Figure 02 of the paper.

The documents from NAFC also described processes, in the form of a description of plans of activities, and reports of the activities. This description was supplemented by accounts given by interview participants. Processes concern actors' mobilization of resources and the conflicts, concessions, and production of agreements between them. The evidence from documents and interviews pointed to contentious issues. In interviews, specifically, actors recounted interactions and factors that influenced them. Finally, while this research departed from the examination of the absence of NAFC's 'intended outcome', interviews and documentary evidence also presented results that came out of the process, in the shape of the final report and administrative decisions from IBAMA, even if they were not finally implemented. As a whole, the study of each of the elements of the Pentagon clarified how those outcomes came to be produced but remained without effects in Brazilian Climate Policy.

Data sources

Our data were collected from regulations, official documents from intergovernmental, governmental, and non-governmental bodies (especially government partners), and semi-structured interviews.

Documental sources: legislation and reports

The data from the official documents were employed to describe the official procedures, and institutional arrangements, identify relevant actors, activities, and processes, observing how these interactions contributed to consensus building. The documents used were chosen according to availability and relevance criteria.

Table 01 presents the agreements and reports of the Framework Convention on Climate Change.

Table 01. Agreements and reports from UNFCCC

Id	Reference	Available at	Access
01	UNFCCC. Kyoto Protocol, 1998.	https://unfccc.int/resource/docs/convkp/kpeng.pdf	Dec. 06, 2021
02	UNFCCC. Paris Agreement, 2015	https://unfccc.int/sites/default/files/english_paris_agreement.pdf	Dec. 06, 2021
03	UNFCCC. Decision 01/COP15, December 19, 2009	https://unfccc.int/sites/default/files/resource/docs/2009/cop15/eng/11a01.pdf?download	Dec. 06, 2021
04	UNFCCC. Decision 01/COP16, November 29, 2010	https://unfccc.int/sites/default/files/resource/docs/2009/cop15/eng/11a01.pdf?download	Dec. 06, 2021
05	UNFCCC. Decision 01/CP.21. FCCC/CP/2015/10/Add.1. January,29, 2016	https://unfccc.int/sites/default/files/resource/docs/2015/cop21/eng/10a01.pdf	Dec. 06, 2021
06	UNFCCC. Decision 02/COP17. December 11, 2011	https://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf.	Dec. 06, 2021
07	UNFCCC. Decision 17/CP8. March 28, 2003	http://unfccc.int/resource/docs/2007/cop13/eng/06a01.pdf#page=3	Dec. 06, 2021
08	UNFCCC. Decision 18/CMA1. December 15, 2018	https://unfccc.int/sites/default/files/resource/cma2018_3_add2_new_advance.pdf	Dec. 06, 2021

Source: Elaborated by the authors.

Table 02 presents Brazilian reports on UNFCCC. Tables 03 and 04 list the Brazilian legislation related to the climate and to participation, respectively.

Table 02. Brazilian National Communications before UNFCCC

Id	Reference	Available at	Access
01	BRAZIL. Biennial update report (BUR). BUR 01. | UNFCCC. Biennial update report (BUR), Nº 01. Brasília, DF: 2014	https://unfccc.int/documents/180611	Nov 05, 2021
02	BRAZIL. Biennial update report (BUR). BUR 02. | UNFCCC. Biennial update report (BUR), Nº 02. Brasília, DF: 2017	https://unfccc.int/documents/180612	Nov 05, 2021

Id	Reference	Available at	Access
03	BRAZIL. Biennial update report (BUR). BUR 03. | UNFCCC. Biennial update report (BUR), Nº 03. Brasília, DF: 2019	https://unfccc.int/documents/193513	Nov 05, 2021
04	BRAZIL. Biennial update report (BUR). BUR 04. | UNFCCC. Biennial update report (BUR), Nº 04. Brasilia, DF: 2020a	https://unfccc.int/documents/267661	Nov 05, 2021
05	BRAZIL. National Communication (NC). NC 01. | UNFCCC. National Communication (NC), Nº 01. Brasilia, DF: 2004	https://unfccc.int/documents/66128	Nov 05, 2021
06	BRAZIL. National Communication (NC). NC 02. | UNFCCC. National Communication (NC), Nº 02. Brasilia, DF: 2010	https://unfccc.int/documents/69067	Nov 05, 2021
07	BRAZIL. National Communication (NC). NC 03. | UNFCCC. National Communication (NC), Nº 03. 2016	https://unfccc.int/documents/66129	Nov 05, 2021
08	BRAZIL. National communication (NC). NC 04. | UNFCCC. National communication (NC), Nº 04. Brasilia, DF: 2020b.	https://unfccc.int/documents/267657	Nov 05, 2021

Source: Elaborated by the authors.

Table 03. Brazilian legislation on climate

Id	Reference	Available at	Access
01	BRAZIL. Participa + Brasil – Public consultation on draft bill for the National Plano on Climate Change - PNMC. Participa + Brasil. Nov 05, 2021	https://www.gov.br/participamaisbrasil/consulta-publica-pnmc	Dec. 06, 2021
02	BRAZIL. Presidency of the Republic. Criates the Interministerial Commission on Global Climate Change. Official Gazette of the Union. July 07, 1999	http://www.planalto.gov.br/ccivil_03/dnn/Anterior%20a%202000/Dnn07-07-99-2.htm.	Nov 05, 2021
03	BRAZIL. Presidency of the Republic. Establishes the Action Plan for the Prevention and Control of Deforestation and Burning in the Cerrado Biome - PPCerrado, amends the Decree of July 03, 2003, wich establishes a Permanent Interministerial Working Group. Official Gazette of the Union. Sep 15, 2010	http://www.planalto.gov.br/ccivil_03/_Ato2007-2010/2010/Dnn/Dnn12867.htm#art3	Nov 05, 2021
04	BRAZIL. Presidency of the Republic. Establishes the Interministerial Committee on Climate Change – CIM, guides the preparation of the National Plano n Climate Changeand provides other measures. Official Gazette of the Union. Nov 21, 2007	http://www.planalto.gov.br/ccivil_03/_Ato2007-2010/2007/Decreto/D6263.htm	Nov 05, 2021

Id	Reference	Available at	Access
05	BRAZIL. Presidency of the Republic. Establishes the National Policy on Climate Change – PNMC and provides others measures. Official Gazette of the Union. Dec 29, 2009	http://www.planalto.gov.br/ccivil_03/_ato2007-2010/2009/lei/l12187.htm.	Nov 05, 2021
06	BRAZIL. Federal Senate. Amends Law Nº 12.187, of December 29, 2009, which establishes the National Policy on Climate Change (PNMC), to update it to the context of the Paris Agreement and the new challenges related to climate change. Official Gazette of the Union. Nov 08, 2019c	https://www.camara.leg.br/proposicoesWeb/fichadetramitacao?idProposicao=2306089	Nov 05, 2021
07	FEDERAL, Senate. Assessment of the National Policy on Climate Change. Environment Committee. Brasília, 2019	http://legis.senado.leg.br/sdleg-getter/documento/download/c002f430-7ece-4ccb-aad3-9247f62713ab	Dec 06, 2021
08	IN-IBAMA. Regulate the Annual Report on Potentially Polluting Activities and Users of Environmental Resources – RAPP, in accordance with this Normative Instruction. Official Gazette of the Union. Feb. 28, 2014		
09	Ministry of Science, Technology and Innovation. Management Plan of the Worging Group on Greenhouse Gas Emissions Inventory of the Federative Articulation Center on Climate. 2013	https://antigo.mma.gov.br/images/arquivo/80077/Plano%20de%20Gerenciamento%20GT-Inventario.pdf.	Nov 05, 2021

Source: Elaborated by the authors.

Table 04. Brazilian legislation on participation

Id	Reference	Available at	Access
01	BRAZIL. Presidency of the Republic. Extingueshes and establish guidelines, rules and limitations for federal public administration bodies. Official Gazette of the Union. April 11, 2019a.	http://www.planalto.gov.br/ccivil_03/_ato2019-2022/2019/decreto/D9759.htm	Nov 05, 2021
02	BRAZIL. Presidency of the Republic. Extingueshes and establish guidelines, rules and limitations for federal public administration bodies. Official Gazette of the Union. November 28, 2019b.	http://www.planalto.gov.br/ccivil_03/_ato2019-2022/2019/decreto/D10145.htm	Nov 05, 2021
03	BRAZIL. Federal Constitution. Ocotober 03, 1988.	https://www.planalto.gov.br/ccivil_03/Constituicao/Constituicao.htm	Sep 20, 2022

Source: Elaborated by the authors.

Table 05 presents instructive reports, MRV drafting guides, and other materials published by international non-state actors active in the implementation of

UNFCCC transparency policies, such as reports, studies, and knowledge products produced by these actors in general.

Table 05. Reports produced by non-state actors active in the implementation of UNFCCC MRV policies

Id	Reference	Available at	Access
01	Institutional Arrangements for MRV	https://transparency-partnership.net/sites/default/files/institutional_arrangements_mrv_final.pdf	Dec 06, 2021
02	Measurement, Reporting and Verification (A note on the concept with an annotated bibliography)	https://www.iisd.org/publications/measurement-reporting-and-verification-note-concept-annotated-bibliography	Nov 04, 2021
03	Supporting Action for Climate Change Mitigation.	https://www.thepmr.org/content/supporting-action-climate-change-mitigation	Dec 06, 2021
04	Guide for developing mandatory greenhouse gas reporting programs	https://www.wribrasil.org.br/sites/default/files/GuiaRelatosGEE.pdf	Nov 01, 2021
05	Understanding Measurement, Reporting, and Verification of Climate Change Mitigation	https://www.wri.org/research/mrv-101-understanding-measurement-reporting-and-verification-climate-change-mitigation	Dec 06, 2021
06	Deciphering MRV, accounting and transparency for the post-Paris era	https://transparency-partnership.net/system/files/document/MRV.pdf	Dec 03, 2021
07	With dialogue, Brazil can have a good program to measure, report and verify emissions	https://wribrasil.org.br/pt/blog/2018/10/com-dialogo-brasil-pode-ter-um-bom-programa-para-mensurar-relatar-e-verificar	Nov 05, 2021
08	Governance challenges in creating a MRV system for the Brazilian MDC	https://wribrasil.org.br/pt/eventos/desafios-governanca-mrv-brasil-ndc	Nov 05, 2021
09	ELSAYED, S. (2012) Initiating a national ghg inventory system and making it sustainable: case study from Brazil. (MAPT National GHG Inventory Case Study Series).	https://docs.google.com/a/academico.ufpb.br/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWFpbnxtYXB0cGFydG5lcnJlc2VhcmNofGd4OjY0MjcwZjg3ZWVjYWYzMmM	Dec 06, 2021

Id	Reference	Available at	Access
10	ELSAYED, S. (2013) Institutional Arrangements for MRV. DOI 10.13140/2.1.3237.3441.	https://transparency-partnership.net/sites/default/files/institutional_arrangements_mrv_final.pdf	Dec 06, 2021
11	MUCCI, M. (2012), Measurement, Reporting and Verification (A note on the concept with an annotated bibliography). International Institute for Sustainable Development.	https://www.iisd.org/publications/measurement-reporting-and-verification-note-concept-annotated-bibliography	Nov 04, 2021
12	Partnership for Market Readiness. Supporting Action for Climate Change Mitigation.	https://www.thepmr.org/content/supporting-action-climate-change-mitigation.	Dec 06, 2021
13	SINGH, N. and BACHER, K. (2015), Guide for developing mandatory greenhouse gas reporting programs. Partnership for Market Readiness – World Bank and World Resources Institute.		
	SINGH, N.; FINNEGAN, J. and LEVIN, K. (2016), MRV 101: Understanding Measurement, Reporting, and Verification of Climate Change Mitigation. 26 ago. 2016.	https://www.wri.org/research/mrv-101-understanding-measurement-reporting-and-verification-climate-change-mitigation.	Dec 06, 2021
	Transparency Partnership. About.	https://transparency-partnership.net/about.	Dec 06, 2021a
	Transparency Partnership. Network.	https://transparency-partnership.net/who-we-are/network.	Nov 07, 2021b
	WARTMANN, S.; SALAS, R.; RICARDO ENERGY & ENVIRONMENT; BLANK, D.; GIZ (2018), Deciphering MRV, accounting and transparency for the post-Paris era. Bonn: GIZ, 2018.	https://transparency-partnership.net/system/files/document/MRV.pdf.	
	World Bank. Readiness to Implementation. 2019.	https://www.thepmr.org/system/files/documents/Update%20on%20Partnership%20for%20Market%20Implementation%20%28PMI%29.pdf.	Feb 07, 2021
	WRI BRAZIL. With dialogue, Brazil can have a good program to measure, report and verify emissions Oct 26, 2018a. WRI Brazil.	https://wribrasil.org.br/pt/blog/2018/10/com-dialogo-brasil-pode-ter-um-bom-programa-para-mensurar-relatar-e-verificar.	Nov 05, 2021
	WRI BRAZIL. Governance challenges in creating a MRV system for the Brazilian MDC. August 14, 2018b. WRI Brazil.	https://wribrasil.org.br/pt/eventos/desafios-governanca-mrv-brasil-ndc.	Nov 05, 2021

Source: Elaborated by the authors.

Another important source for the present research was the working plan, as well as other reports produced under the Federal Articulation Nucleus for the Climate (NAFC, in Portuguese) Registration Working Group.

Table 06. Reports produced by NAFC

Id	Reference	Available at	Access
01	NAFC (2013a), 1st Meeting of the GT Record of Emissions and Removals: introduction at work plan. June 06	https://antigo.mma.gov.br/images/arquivo/80076/Plano%20de%20Trabalho%20do%20GT%20Registro%20-%201a.%20Reuniao%20Versao%20Final.pdf	Jan 07, 2021
02	NAFC (2013b), Information collection and MRV of emissions and removals - RAPP/CTF. June 07.	https://antigo.mma.gov.br/images/arquivo/80076/5%20Apresentacao%20RAPP_CTF%207_06_2013.pdf	Dec 10, 2021
03	NAFC (2013c), Information collection and MRV of emissions and removals: 'SÃO PAULO'. June 06.	https://antigo.mma.gov.br/images/arquivo/80076/Coleta%20de%20Informacoes%20e%20MRV%20de%20Emissoes%20e%20Remocoes%20-%20SAO%20PAULO.pdf.	Jan 07, 2021
04	NAFC (2013d), GT Emissions Registry information collection system and MRV of emissions and removals: ERJ initiatives. June 06.	https://antigo.mma.gov.br/images/arquivo/80076/SISEMA%20MINAS%20GERAIS.pdf.	Jan 07, 2021
05	NAFC (2013e), GT final report record of emissions by sources and removals by sink. February.	https://www.researchgate.net/publication/332060874_RELATORIO_FINAL_-_GRUPO_DE_TRABALHO_SOBRE_REGISTRO_DE_EMISSOES_POR_FONTES_E_REMOCOES_POR_SUMIDOUROS_GT_REGISTRO	Nov 24, 2021
06	NAFC (2013f), SISEMA - Minas Gerais. June 06	https://antigo.mma.gov.br/images/arquivo/80076/SISEMA%20MINAS%20GERAIS.pdf.	Jan 07, 2021

Source: Elaborated by the authors.

This document mentions the participation of four non-state entities: WRI, GIZ, GVCes/FGV, and World Bank. These actors are also part of global implementation and knowledge networks in support of MRV implementation, including partnerships directly linked to the UNFCCC (TRANSPARENCY PARTNERSHIP).

The most relevant of these partnerships, the Partnership for NAMAs and MRV, later transformed into the 'Partnership for Transparency' and the Paris Agreement, counts on the participation of the UNFCCC and other entities of the UN system. Other non-state actors include WRI, GIZ, and PMR (PARTNERSHIP FOR MARKET READINESS). In addition, GVCes has collaborated with the WRI in conducting case studies on policy frameworks for the preparation of greenhouse gas inventories in Brazil.

We sought to broaden the range of research through references to other texts found in these works. Often, these references are products of other actors and initiatives linked in some way to the Transparency Partnership, such as the Internationales Klimaschutzinitiative (IKI) of the German government, linked to the NDC Partnership, which in turn is linked to the Transparency Partnership in the first place.

Interviews

The available documents on the NAFC's activities, however, are scarce. In this collection, there is no clarity about the results obtained, just as there is no detailed record of the activities or the exchanges that took place in the activity of the WGs. Consequently, the analysis of institutional structures, technical capacities, and value-political agreements was hampered. Therefore, interviews were conducted with actors involved in the discussions about MRV. From the interviews, it was possible to identify the interests that guided their strategies for implementation and to better understand how the interaction processes took place and better elucidate the results.

It was difficult to identify participants in the Registration WG discussions specifically, as the documents made available on the Ministry of Environment's website did not have lists of participants. Although the contact details of the administrative bodies of the reporting program were available, attempts to contact them through this channel failed. We opened interest statements through the service portals of the state governments, but in some cases (Pernambuco), the citizen service could not inform about the competent bodies, in others (Minas Gerais, Amazonas, Pernambuco again) there was no response.

Only through the personal contacts of two of the participants in the documents was it possible to reach not only interviewees who participated in

the activities, but also a document with a list of participants. Interviewee 03, who was a member of the MMA team that worked in the NAFC, knew that the report had been made and shared the document through non-institutional channels (NAFC, 2013a, d). From this list, we tried to find the contact references of the PMR team from the MF and some states. Some actors left the team and their new contact was not identified. In other cases, contacts found in search engines were used, with no response. Due to these factors, the number of interviewees was restricted.

We interviewed four people. Given the difficulty in obtaining responses from actors, interviewee 01 was an actor participating in the Initiative for Climate Action Transparency (ICAT) project, an international partnership implemented in Brazil with the support of the Brazil Climate Center. The ICAT project currently conducts training in the area of carbon accounting and MRV in some Brazilian states. Although not related to the NAFC - the states' participation in this project gives the interviewee access to the states' representations and interests.

Interviewees 02 and 03 participated in the activities of the Registration WG. Their contacts were obtained through exchanges with the contacts that appear in the documents made available on the Brazilian Environmental Ministry (MMA) website. Interviewee 02 held high-level positions in the government of a Brazilian state that was a pioneer in climate policy and has its own registry program. Although not representative of the universe of states, the testimony of this interviewee helped to illuminate the dynamics of interaction in the WG.

Interviewee 03 is a career employee of IBAMA and, at the time, was assigned to participate in the WG activities through the MMA. This interviewee, who made the GT's final report available through official means (including through a LAI request), demonstrated a great personal investment of resources and dedication to the topic. He did not request anonymity (although, out of caution, we opted to maintain it) and, therefore, his account was in many moments limited by compliance with an official version of events. Still, this interview was revealing of common dynamics at the federal level. Moreover, the interviewee's great professional and personal investment in the topic made him have a great need to share this narrative that was obscured, and his interview gave clues to the understanding of the processes of the WG.

Finally, interviewee 04 is a civil servant at the Ministry of Budget, Planning and Management. Although he did not participate in the discussions of the WG itself, this interviewee was aware of the debates that took place and participated in subsequent discussions on MRV in the context of the implementation of Brazil's Nationally Determined Measure in the Paris agreement-a context in which transparency in climate action became even more important. This actor contributed with an assessment of the role of states in the Brazilian National Policy of Climate Change (PNMC), and in diagnosing the predominant perception of the federal government on the participation of states in this policy.

Table 07. Interviewees

Identification	Reference	Professional acting
Interviewee 01	**Entrevista 01**. Erfurt: [*s. n.*], 24 nov. 2021.	Participant in the Initiative for Climate Action Transparency (ICAT) project, an international partnership implemented in Brazil with support from the Brazil Climate Center
Interviewee 02.	**Entrevista 02**. Erfurt: [*s. n.*], 24 nov. 2021.	Held high-level positions in the government of a pioneering Brazilian state in climate policy that has its own registry program. Participated in the activities of the Registry WG.
Interviewee 03	**Entrevista 03**. Erfurt: [*s. n.*], 26 nov. 2021.	IBAMA career employee and designated for participation in the GT de Registro activities, through the MMA
Interviewee 04	**Entrevista 04**. Erfurt: [*s. n.*], 29 nov. 2021.	Server at the Ministry of Budget, Planning, and Management

We employed semi-structured interviews, allowing participants to elaborate on their perceptions and worldviews within the scope of the topic. An outline of the interview guide is below. The same interview guide was used for all participants. However, since interviewees 01 and 04 did not participate directly in the Registration WG, they skipped several questions. In addition to the questions in the Appendix, I also asked these actors to make a basic diagnosis of the capabilities and interests of states in transparency policy and on the integration of subnational entities in federal policy.

Data collection - Semi-structured interview instrument

01.Could you introduce yourself, talking about your background, job, and relationship to the topic?

02. The NAFC was not created with the other PNMC structures. It is the only instance of the PNMC where there is a centrality of the subnational states. Can you tell us how this nucleus was created? Whose leadership was it? Was there an agenda for its creation? How was this proposal received by other actors?

03. MRV is a subject with very technical aspects. What was the level of knowledge of the participating states on the subject? Given this level of knowledge, what kind of interest did they have in this agenda? Were there fears of the consequences of implementation? If so, what were they?

04. How was the discussion format of the WG's work defined? (Was there participation of non-state actors? Was the consensus format productive? Partnerships?

05. What capacities did the states not have? Do they consider that they have obtained them?

06. As the capacity building and discussions took place, did the position of the participating states change? Did new demands emerge? And did the conduction of the activities (aspects such as the organization of the meetings, texts for discussion, etc) change to meet these demands?

07. Was there difficulty in reaching a consensus on any point (objectives, sectors, scope, reporting platform, institutional arrangements)? If yes, how was it solved?

08. There is a strong emphasis on economic instruments. Was there interest from the states in this direction?

09. Was there a discussion regarding the sectors?

10. The final report emphasized the construction of a reporting program, and, besides determining a series of objectives, it established some technical criteria. Other than the objectives, it was a very technical construction. At the same time, it states that the delimitation of competencies is essential for the proper functioning of the program. Why hasn't this discussion advanced?

11. At the same time that the report mentions the support for climate plans that MRV provides, it mentions that the MRV of emissions reduction was not part of the discussion, and places this discussion as the responsibility of SMMARE. However, at one point, the report also mentions the need for convergence with SMMARE development, as there may be coinciding requirements. Was there interest in the emissions reduction agenda? Why was it not addressed? Do the states think they could play a more active role?

12. Why wasn't the report published?

13. It was suggested the creation of other WGs for the discussion of a bottom-up information system, another to discuss technical cooperation agreements for the construction of the emissions registry subsystem, one to discuss the creation of the national reporting program, another for AIR contracting, and another for the discussion of federative competencies. Were these WGs ever created? If not, why not?

14. In your opinion, were the demands of the states met in any way?

15. Were there any subsequent initiatives to discuss the implementation of MRV? If yes, by which actors? What strategies were pursued?

16. In your opinion, what is the role of non-state actors in this discussion? How do they relate to the subnational states?

17. In your opinion, why does the impasse in this agenda remain?