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From the Citizen's Constitution to REDD+: Domestic and International Policy Instruments Intersecting Climate Change and Forestry in Brazil From 1988 to 2018

Da Constituição Cidadã ao REDD+: Instrumentos de política doméstica e internacional que cruzam a mudança climática e a silvicultura no Brasil de 1988 a 2018

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Abstract: This article identifies forest and climate change public policy instruments in Brazil. The country created a complex network of forest protection, deforestation control policies and Measurement, Reporting and Verification (MRV) instruments, culminating with institutional arrangements for Reducing Emissions from Deforestation and Forest Degradation (REDD+). Brazil's positions at the United Nations Framework Convention on Climate Change (UNFCCC) negotiations relied on a diverse pattern of leadership, blockage, and flexibility. Under the Warsaw REDD+ Framework, Brazil reduced 8,2 billion tons of CO2 equivalent (tCO2e) and received almost 1,4 billion American dollars as results-based payments, by the end of 2018.

Keywords: Brazil. Forest. Climate Change. Public Policies. REDD+.

Resumo: Este artigo identifica instrumentos de política pública para florestas e mudança do clima no Brasil. O país criou uma rede complexa de proteção florestal, políticas de controle de desmatamento e instrumentos de Mensuração, Relato e Verificação (MRV), culminando em arranjos institucionais de Redução de Emissões por Desmatamento e Degradação Florestal (REDD+). Nas negociações da Convenção-Quadro das Nações Unidas sobre Mudança do Clima (UNFCCC), as posições brasileiras variaram entre liderança, bloqueio e flexibilidade. Sob o Marco de Varsóvia para REDD+, o Brasil reduziu 8,2 bilhões de toneladas de gás carbônico equivalente (tCO2e) e recebeu cerca de 1,4 bilhão de dólares americanos como pagamento por resultados, até o fim de 2018.

Palavras-chave: Brasil. Florestas. Mudança do Clima. Políticas Públicas. REDD+.

1. Introdução

Human and natural systems have already experienced widespread impacts due to recent climate changes (IPCC 2014). The increase of concentration of greenhouse gases (GHG) emissions caused by anthropogenic activities has resulted in a warmer atmosphere and ocean, reducing the amounts of snow and ice, and enhancing sea level (IPCC 2014). In 2015, the international community agreed to reduce the rise of the global surface temperature well below two degrees Celsius compared to pre-industrial levels (1850) through the adoption of the Paris Agreement which entered into force in November 2016. The Intergovernmental Panel on Climate Change (IPCC) compiled peer-reviewed scientific data in 2018 indicating that the global temperature is already one degree Celsius above pre-industrial levels, and current anthropogenic global warming is rising at 0.2°C per decade due to past and ongoing emissions (IPCC, 2018, p. 4).

Arguably one of the most important and far-reaching problem facing the world today, climate change impacts comparative advantages of countries in the world economy and knowledge systems that maintain basic infrastructure, adversely affecting domestic and international relations in short, medium and long terms (IPCC, 2007; IPCC, 2014; IPCC, 2018). While international cooperation has been considered a critical enabler for developing countries and vulnerable regions (IPCC, 2018, p. 23), the scale of potential impacts will also depend on the capabilities of each member of the international system to deal with asymmetries of power, development/technological disparities, and conflicting political orientation towards the treatment of the climate change problem.

This article focuses on Brazil, the country hosting the largest tropical forest of the world and a key player in the international negotiations intersecting climate change and forestry. Building on the identification of Brazil's complex network of domestic and international policy instruments related to climate change and forestry, it sheds light on Brazil's diverse positions in international negotiations. The following research questions are addressed: 1) Which policy instruments can be characterized at the intersection of climate change and forestry in Brazil, since the adoption of the Citizen's Constitution?; 2) How can policy instruments be classified according to their normative hierarchy, taking in consideration their domestic and international dimensions?; and 3) How did Brazil's positions on forest and climate change vary during the period of analysis within the international negotiations?

To answer these questions, the article first takes stock of Brazil's varied institutional framework from the Citizen's Constitution in 1988 to the enactment of results-based payments (RBP) for Reducing Emissions from Deforestation and Forest Degradation (REDD+) under the United Nations Framework Convention on Climate Change (UNFCCC)[1]. This includes article 5.2 of the Paris Agreement which encourages Parties to take action to implement and support the existing REDD+ framework, including through RBP.

The article is organized as it follows. Section two discusses the conceptual framework, which is based on two pillars: a) relative versus absolute gains as guiding concepts to assess Brazil's engagement at the intersection of climate change and forestry; and b) normative hierarchy of policy instruments at the domestic level. Section three addresses Brazil's domestic policy instruments at the intersection of climate change and forestry from 1988 to 2018. Section four discusses the normative hierarchy of policy instruments, including the internationalization of international agreements at the domestic level. Section five presents the classification of Brazil's positions within the international climate change and forestry negotiations, according to the positions of leadership, blockage, and flexibility. To illustrate Brazil's experience with pioneering environmental governance mechanisms, two REDD+ related policy instruments (Amazon Fund and Green Climate Fund – GCF REDD+ Window) are briefly outlined, with attention to the amount of Carbon Dioxide (CO2) verified reductions achieved by Brazil, and the sum of results-based payments received up to 2018. In the conclusion, key elements of our analysis are highlighted, including research questions to support the understanding of the post-2018 context.

2. Analyzing international cooperation: relative versus absolute gains

This article's theoretical framework draws on the literature of international regimes supported by other political and social sciences concepts and methodological approaches – including public policy instrument and normative hierarchy – to understand how international and national dimensions of climate change and forestry intersect. The study of international

[1] The Warsaw REDD+ Framework is treated here as a financial/results-based payments arrangement under the UNFCCC. The concept refers to reducing emissions from deforestation and forest degradation in developing countries, and the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks in developing countries. Once results are achieved and verified, potential fundraising limits are internationally recognized as a reward to developing countries' efforts.

regimes attracted attention from International Relations scholars since the 1970s (Hasenclever, Mayer, & Rittberger, 2000) with questions including: i) what explains cooperation in the international system; ii) how do international institutions influence the behavior of State and non-State actors; and iii) which elements shape the success and stability of international regimes (Hasenclever et al., 2000, p. 1). Increasingly, the literature on international regimes has underlined initiatives involving a range of actors at different levels of governance (Biermann, Pattberg, van Asselt, & Zelli, 2009; Keohane & Nye, 1977; Keohane & Oppenheimer, 2016; Putnam, 1988). Studies have also examined international regimes through the lenses of nested regimes or regime complexes conceptualized as loosely linked set of specific regimes rather than an integrated regime governing all the efforts to constrain the effects of climate change (Keohane & Victor, 2011; Rodríguez Fernández-Blanco, Burns, & Giessen, 2019; Young, 1996).

International regimes may be defined as 'sets of implicit or explicit principles, norms, rules, and decision-making procedures around which actors' expectations converge in a given area of international relations' (Krasner, 1982, p. 186). Keohane further defines international regimes as 'institutions with explicit rules, agreed upon by governments, that pertain to particular sets of issues in international relations' (Keohane, 1989, p. 2). The latter definition emphasizes the key role of governments in reaching agreements and the importance of rules within the international regime. Despite their differences in defining how regimes affect international relations, both structural realists and neoliberal institutionalists share similar understanding that regimes survive in an international arena of anarchical nature. The basic causal variables that lead to the creation of regimes are power and interest. The basic actors are states' (Krasner, 1982, p. 205).

To better comprehend the international climate change regime, this article also draws insights from a major theoretical debate of international relations between neoclassical institutionalists and neorealists (Wæver, 1996). Within this neo-neo debate, rational choice is the concept driving the explanation of a unilateral or a cooperative action of a given State. From the perspective of neorealism, a State is better off establishing a cooperation process if it achieves a higher relative gain compared to other States involved. This theoretical perspective adopts power as its main explanatory variable, and the cooperation process may be understood as a circumstantial or ad-hoc situation on which states form an alliance or a coalition (Mendes, 2014). By contrast, from the perspective of neoclassical institutionalism, interests are the key

explanatory variable guiding State's rational decision on cooperation. Hence, the actions of agents in the international community are backed by a calculation of the absolute gains involved.

Based on a neoliberal perspective, a cooperation process is underpinned by the rationale that rules are designed to constrain State actions when tackling a specific problem. From this standpoint, absolute gains to all involved in a cooperation are more important than a change in the balance of relative power. Therefore, if a cooperation process increases absolute gains to all, a neoliberal would disregard the final outcome in terms of relative gains. However, if States end up with higher absolute gains after the cooperative action – and the distribution of these gains alters the balance of power to a point of threatening self-preservation – those States with lower relative gains are less likely to cooperate. If that is the rationale adopted by a given State, it could be classified as a neorealist-oriented decision, and harder it would be for the country to accept multilaterally agreed rules constraining its actions.

Due to the complexity of the international system and to the wicked nature of the climate change problem (Head, 2008), drawing on both theoretical approaches widens the explanatory scope of the international climate change regime. However, it is relevant to further clarify how the climate change international regime is structured before proceeding to the analysis on Brazil's policy instruments and international positions within the regime.

3. Multilayer representation of the climate change international regime

This article adopts a multilayer representation of the climate change regime, considering two dimensions (international and domestic) and their complex network of sectors, activities, negotiation building blocks, and political action perspectives. A simplified climate change framework comprises the four following elements: i) the dimensions of the regime (international and domestic); ii) the perspectives for political action (adaptation; mitigation; or inaction)[2]; iii) negotiation building blocks, with particular attention to transparency and finance (due to this article's scope of analysis), referring to 'transparency' as the domestic and international arrangements related to Measurement, Reporting and Verification (MRV) of the regime; and

[2] Mitigation of climate change refers to 'human intervention to reduce emissions or enhance the sinks of greenhouse gases' (IPCC, 2018, p.18). Adaptation refers to 'the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities' (IPCC, 2012, p. 556). Inaction relates to the delay or the inexistence of political action to tackle climate change, which itself also brings costs of inaction (e.g. climate damages and adaptation costs) (Kemfert & Schumacher, 2005; IPCC, 2007).

finance as the building block dealing with means of implementation to support climate policies and measures; and iv) affected sectors, bearing in mind that under UNFCCC, GHG emissions and removals are combined in five sectors: waste; agriculture; industry; energy; and Land Use, Land Use Change and Forestry (LULUCF).

Finally, the research object here addressed is restricted to the intersection between domestic and international dimensions. Focus is given to the perspective of mitigation within the c.limate change regime of the UNFCCC[3], with particular attention to Brazil's public policy instruments related to LULUCF, MRV and finance (results-based payments). This scope is justified by the importance of these elements within Brazil's domestic and international treatment of climate change and forestry.

4. Brazil's domestic policy instruments at the intersection of climate change and forestry

The concept of public policy instruments is used here in a broad sense to refer to State's policies, laws and regulations, along with government instruments and apparatuses (e.g. regulation, economic means and information) enacted at national and international levels (Bemelmans-Videc, Rist, & Vedung, 1998; Howlett, 2011; Lascoumes & Le Gales, 2007). Policy instruments can be understood as "set of techniques by which governmental authorities wield their power in attempting to ensure support and effect social change" (Bemelmans-Videc et al., 1998, p. 3) and 'concrete and specified operational forms of intervention by public authorities'. On a more functionalist and less sociopolitical perspective, policy instruments can be defined as 'techniques or tools by which states attempt to attain their goals including stakeholder consultations, legislative rules and norms (Hurlbert & Gupta, 2019, p. 221)'. Combining policy instruments analysis with the theory of regimes – the study of international norms and cooperation – provide the lenses to look at land use, land use change and forestry in Brazil, using historical deforestation rates (conversion of forest into non-forest) to reflect the use of the territory and its resources (e.g. forests) within the limits of territorial sovereignty and national interests, in a context of global climate change.

Brazil relies on a complex and heterogeneous normative and operational basis at the domestic level dealing with climate change and forestry. Our analysis specifies 19 policy

[3] It is beyond the scope of this analysis to address other sectors of the climate regime (waste, agriculture, industry, and energy), or the political perspectives of 'adaptation' and 'inaction'.

instruments at the intersection of climate change and forestry (Table 1), indicating their legal basis as well as key sources of finance (means of implementation)[4]. Brazil's domestic policy instruments framework includes the Citizen's Constitution, federal laws, decrees, ordinances, plans, programs and actions, in addition to internalized international agreements (UNFCCC, KP and Paris Agreement). Furthermore, Brazil makes use of several means of implementation and sources of financing to implement actions related to climate change and forestry (e.g. federal budget[5] and Global Environmental Facility – GEF, among others).

[4] While representative, this a non-exhaustive identification of policy instruments identified in the literature review. Although not addressed in this article, subnational policy instruments (e.g. enacted by states and municipalities) have also been important in the context of climate change and forestry in Brazil.

[5] Brazilian public budget is based on a set of planning instruments that are formalized through a national law. The budget has to pass into Congress every year taking into account a Pluriannual Plan (PPA) designed and approved for a four-year period (Garson, Rocha, Mendes, & Muniz, 2013).

Table 1: Key policy instruments in the intersection of climate change and forestry in Brazil, from 1988 to 2018

Policy instruments	Date	Description	Legal basis in Brazil	Means of Implementation
Forestry Code	1965/ 2012	Regulates the use of private land, including areas of permanent protection (APP) and legal reserves (RL)	Issued in 1965 and revised as Federal Law 12.651/2012.	Private/public; Environmental Reserve Quota (CRA)
Federal Constitution (Article 225)	1988	Establishes that the environment is: 1) a right; 2) a common good; and 3) related to present and future generations	Federal Constitution, Chapter VI (Environment)	Private/ public
National Monitoring Systems	1988	Deforestation, degradation and land use change monitoring at regular intervals (Prodes, Deter, Degrad, TerraClass)	Pluriannual Plan (Inter-institutional Project)	Public budget (Annual Budget Law)
UNFCCC/Convention	1994	Signature of Convention in Rio 1992 and ratification in 1994	International Treaty	GEF/ GCF
Conservation Units National System (SNUC)	2000	Policy establishing the criteria and norms for the creation, implementation and management of protected areas	Federal Law 9.985/2000	Private/public; environmental compensation
Clean Development Mechanism (CDM)	1999/ 2002	Project activities that generated certified emission reductions which can be traded under KP	Presidential Decree 8.200/1999	Reforestation and afforestation projects
ARPA	2002	Government program led by the Ministry of the Environment	Presidential Decree 8.505/2015	Several international donors
Kyoto Protocol (KP)	2002	Brazil's ratification in 2002, entering into force in 2004	International Treaty	CDM
PPCDAm	2004	Plan to reduce deforestation and degradation in the Amazon	Instrument of the PNMC	Public Budget
GHG National Inventory	2005	Inventory to report GHG emissions and removals by sinks	Obligation/UNFCCC	GEF ("agreed full costs")
PPCerrado	2008	Plan to reduce deforestation and degradation in the Cerrado	Instrument of the PNMC	Public Budget
National Climate Change Plan	2008	Plan launched in 2008 with no further update. Goal to eliminate the net loss of forest coverage by 2015	Presidential Decree 6.263/2007	Private/ public
Amazon Fund	2008	Results-based payments Fund that supports projects to prevent, monitor and combat deforestation	Presidential decree 6.527/2008	Payments from Norway, Germany and Petrobrás
National Climate Change Policy (PNMC)	2009	Policy establishing voluntary reduction of 36.1% to 38.9% below projected emissions in 2020 (business as usual)	Federal Law 12.187/2009 regulated by Decree 9.578/2018	Public Budget
Fundo Clima	2009	Financial mechanism for climate-related projects (instrument of the PNMC)	Federal Law 12.114/2009 regulated by Decree 7.343/2010	Public Budget
NAMAs	2010	Voluntary commitments to reduce deforestation by 2020	Embassy Letter to UNFCCC	Public Budget
REDD+	2013	International framework with MRV and RBP rules; National institutional arrangement (CONAREDD)	COP Decisions; Presidential Decree 8.576/2015	Amazon Fund and GCF (results-based REDD+)
iNDC	2015	Intended national target to reduce emissions by 36% below 2005 levels in 2025, and 43% in 2030	Brazil's Communication to UNFCCC Secretariat	Public/private, results-based REDD+
Paris Agreement	2016	Brazil's ratification in 2016, entering into force in 2016	International Treaty	Public/private, results-based REDD+

Brazil's policy instruments at the domestic level include the Forestry Code, which regulates land use and management on private properties[6].

In the 1980s and 1990s, the structuring of national forest monitoring systems reduced domestic and international uncertainties related to data on gross deforestation and informed public policy design and implementation (Rajão & Georgiadou, 2014). The ratification of the UNFCCC in 1994 and the establishment of the Brazilian national system of conservation units in 2000 were other landmarks, followed by the creation of the Amazon Region Protected Areas Program (ARPA). Furthermore, Brazil enacted important policy instruments during the mid-2000s, including Plans to Prevent and Control Deforestation in the Amazon (PPCDAm) and in the Cerrado biome (PPCerrado). The National Policy on Climate Change (PNMC) is another cornerstone of Brazil's expanding institutional framework by 2009, when the country also committed to Nationally Appropriate Mitigation Actions (NAMAs) under the Copenhagen Accord/Cancun Agreements with a view to achieving emissions reductions of 668 million tCO2e in 2020[7]. Moreover, Brazil structured domestic financing mechanisms such as Fundo Clima and the Amazon Fund, the latter established by a Presidential Decree and complemented by an Ordinance regulating the Technical Committee of the Amazon Fund (CTFA). Brazil established REDD+ governance structures such as the National Council on REDD+ (CONAREDD).

5. Norm hierarchy: intersection of international and domestic dimensions

This article adopts the notion of norm hierarchy along with what the Constitutional Law doctrine refers to as 'Hans Kelsen's Pyramid' as a heuristic for thinking about the intersection of climate change and forestry policy instruments in Brazil (Figure 1). Despite the diversified mix of policy instruments established during the last three decades, it is important to further clarify how the two dimensions of the international regime (domestic and international) are interconnected by these policy instruments. Kelsen's pyramid is useful in this sense as it brings together domestic and international law under a pyramidal structure, understanding the legal system as an interconnected system of norms with a hierarchical relationship (Kelsen, 2005). It

[6] Roughly 53% of Brazil's native vegetation occurs on private properties (Soares-Filho et al., 2014, p. 363). The Forestry Code establishes that landowners shall set aside a minimum amount of land called 'Legal Reserve' and includes a market instrument called Environmental Reserve Quotas (Cotas de Reserva Ambiental-CRA). Regulated by Decree 9.640/2018, CRAs allow the surplus of Legal Reserve to be used to compensate for another property's deficit (May et al. 2015).

[7] The efforts committed by Brazil's Forestry NAMAs corresponded to more than the United Kingdom's total GHG emissions in 2010. Based on data from UNFCCC database, accessed May 23, 2019, http://di.unfccc.int/detailed_data_by_party

is based on the idea that lower legal norms (founded norms) derive their foundation from the validity of higher legal norms (founding norms). Under this approach, attention is given to the type of norm – whether constitutional or infra-constitutional – and the legal authority of the body that adopted the norm (e.g. executive and/or legislative).

Article 225 of the Federal Constitution is on the top of the normative hierarchy as it clearly consolidates the environment in the Citizen's Constitution and provides the overall normative basis for other policy instruments at the intersection of climate change and forestry. On the next level, we have several federal laws and three international treaties ratified by the executive and legislative (UNFCCC, KP and Paris Agreement). Despite the lack of international enforcement mechanisms, these agreements have the force of law at the domestic level and are thus subject to the potential scrutiny of control bodies[8]. REDD+ is also at this level due to the adoption of Article 5 of the Paris Agreement. Other key normative elements are those established by federal laws, including the Forestry Code, PNMC, SNUC and Fundo Clima.

The policy instruments at the third lowest level of the pyramid of norms are established by decrees (i.e. Amazon Fund and ARPA) and include climate governance structures, also established by decrees. This is the case of CONAREDD, responsible for REDD+; CIMGC[9], responsible for CDM; and CIM[10], responsible for the National CC Plan. Finally, at the bottom of the pyramid, we find inter-ministerial action plans (i.e. PPCDAm, PPCerrado, and the National Climate Change Plan), along with Brazil's National GHG Inventory, NAMAs and iNDC.

It is important to highlight that the internalization of Brazil's iNDC within the domestic legal framework has been limited. The iNDC was firstly communicated by the government of Brazil in 2015. As per paragraph 21 of Decision 1CP/21 'if a Party has communicated an intended nationally determined contribution prior to joining the Agreement, that Party shall be considered to have satisfied this provision unless that Party decides otherwise'. Brazil's ratification was communicated in 2016 hence iNDC was formally transformed into NDC. However, Brazil's

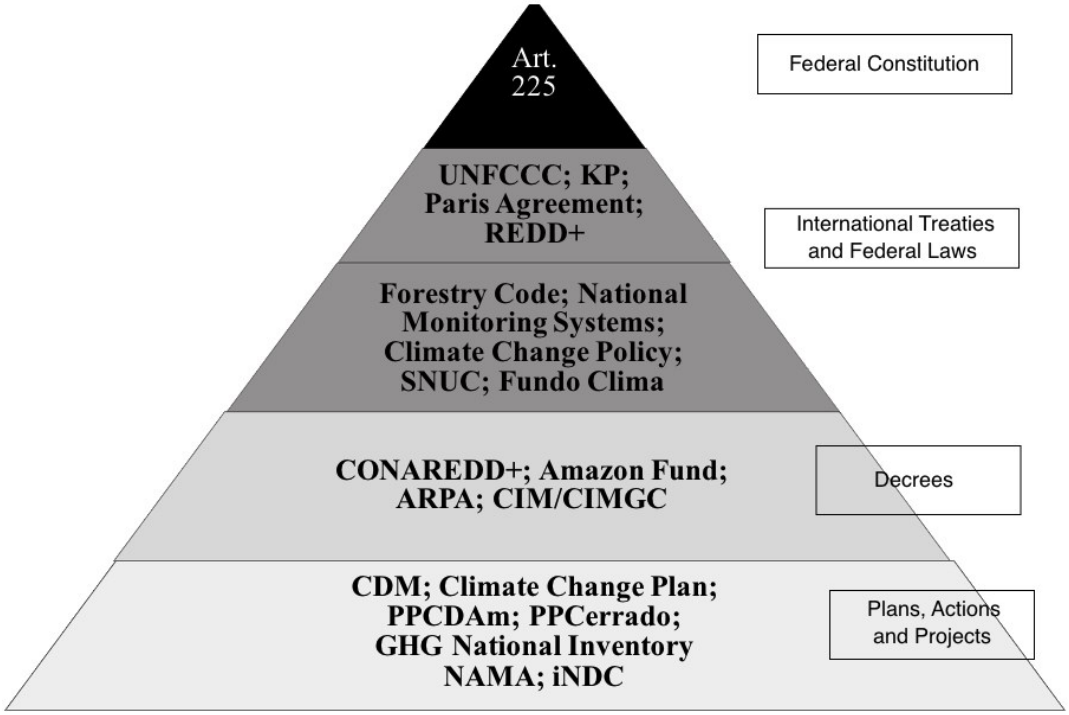
[8] Our argument here is that domestic control bodies may ultimately verify and oversee the implementation of international treaties at the domestic level (e.g. Tribunal de Contas da União; Controladoria-Geral da União; Ministério Público da União).

[9] Comissão Interministerial de Mudança Global do Clima – CIMGC. Accessed 24 March 2019, http://www.mctic.gov.br/mctic/opencms/ciencia/SEPED/clima/cimgc/Comissao_Interministerial_de_Mudanca_Global_do_Clima__CIMGC.html

[10] Comitê Interministerial sobre Mudança do Clima – CIM. Accessed 26 March 2019, http://www.mma.gov.br/clima/grupo-executivo-sobre-mudanca-do-clima/comitê-interministerial-sobre-mudanças-climáticas.html

NDC was not ultimately submitted to the National Congress for approval, despite initial discussions through a bill aiming to internalize it into the National Climate Change Policy Law[11]

Figure 1: Hierarchy of norms in the intersection of climate change and forestry in Brazil.



6. Brazil's positions on the treatment of forestry within the climate change negotiations

Brazil's importance at the intersection climate change and forestry international regime in unambiguous. On one hand, the average annual CO2 emissions from gross deforestation of the Brazilian Amazon biome from 1996 to 2010 equaled 907,959,466 tCO2e (Brazil, 2014, p. 25). This would be ranked the fifth major annual CO2 emission[12] during the 1996-2010 period if counted as an Annex I country to the UNFCCC[13]. On the other hand, annual rates from deforestation in the Brazilian Amazon decreased by 73% from to 2004 to 2018[14], with evidence

[11] Projeto de Lei do Senado 750/2015' was introduced in the Senate with the aim to incorporate the NDC under the domestic legal system. While referred to the Committee of the Environment, it was not put to a vote and expired by the end of the legislative period in 2018. Federal Senate database, accessed 12 August 2019, http://www25.senado.leg.br/web/atividade/materias/-/materia/124173

[12] This data disregards CO2 uptake derived from managed lands (IPCC, 2003).

[13] This comparison resulted from the assessment carried out based on the most updated information available at UNFCCC database, accessed May 23, 2019, http://unfccc.int.

[14] Based on PRODES/INPE data, accessed July 14, 2019, http://terrabrasilis.dpi.inpe.br.

of the role played by protected areas, land-use monitoring systems, targeted law enforcement in critical municipalities, and beef and soy supply chain interventions in curbing deforestation (Arima, Barreto, Araújo, & Soares-Filho, 2014; Assunção, Gandour, & Rocha, 2015; Börner, Wunder, Wertz-Kanounnikoff, Hyman, & Nascimento, 2014; Herrera, Pfaff, & Robalino, 2019). In addition to reducing emissions from deforestation, Brazil overall expanded the legal protection over 'carbon sinks' through the establishment of Conservation Units (UCs) and Indigenous lands (TIs), which currently account for 216 million hectares or 43% of the Legal Amazon (Soares-Filho, 2016, p. 3). These distinguishing features add up to Brazil's profile at the international level when it comes to issues related to land use, land use change and forests.

To offer insights into Brazil's international role at the intersection of climate change and forestry, this article draws on the definitions of three typical negotiation positions – blocking, leading, and flexible – and highlights general conditions that may contribute to their adoption along the course of negotiations. Brazil's distinctive thematic national positions within the UNFCCC are then pointed out, showing the assorted roles adopted by the country throughout the process. This categorization derives from literature review and direct participation in multilateral and bilateral negotiations on climate change and forestry from 2006 to 2019, during the authors' international professional experience[15].

> **i) Blocking position:** It occurs when the implementation of a given proposal spawns a context which the membership of a concerned Party is put at risk. The underlying assumption is that the adoption of a given proposal would cross the acceptable individual limits (red line) of a Party to join the system of rules under negotiation. By crossing the red line, a Party would be facing two irreconcilable options: it either opts out (not ratifying the results of the negotiation, or withdrawing from it); or it seeks a common understanding that the best output is to avoid reaching a substantive decision ('agreeing to disagree').
> **ii) Flexible position:** It arises when a given proposal does not engender relevant immediate gains for a non-proponent Party but accommodates interests of other Parties as a compromise to reach an agreement. The underlying assumption is substantiated in the following pillars: 1) relative gains are not substantial; 2) the calculation of absolute gains is not restricted to a specific position as it considers the broader context of negotiations; and 3) it does not cross any red line.

[15] Participation as members of Brazil's official delegation, from 2006 to 2019, in the following meetings: UNFCCC (COP 12 to COP 24). Conference of the Parties Meeting as the Conference of the Parties to the Kyoto Protocol (CMP): CMP 2 to CMP 14. Subsidiary Bodies (SBI and SBSTA): SB27 to SB50. Participation in bilateral environmental negotiations with Germany and Norway for the establishment and implementation of the Amazon Fund, and other international cooperation agreements.

> **iii)Leading position:** It arises when the implementation of a given proposal generates the perception to non-proponent Parties that relevant individual positive gains can be reached for a substantial amount or even to all Parties involved in negotiations. The leading position tends to create 'negotiation space' for alliances among those countries adhering to the proposal. While assessing absolute versus relative gains, adherent Parties envisage that expected outcomes of negotiation justify cooperation.

Using this characterization as a background, it is possible to identify that Brazil adopted blocking positions in several moments of the multilateral negotiations. Concerns related to territorial sovereignty initially drove the national position away from quantified commitments to reduce deforestation (Carvalho, 2012; Fearnside, 2009). Historically, the country opposed the inclusion of offsets as the main treatment of forestry in developing countries within the UNFCCC and KP. This position is based on the perception that forest carbon offsets prevent those developed countries historically most responsible for climate change from carrying out far-reaching domestic climate action in several sectors of the regime (van der Hoff, Rajão, Leroy, & Boezeman, 2015). Brazil also opposed to the accounting of unlimited amounts of LULUCF units towards the compliance of KP targets. As the outcome of this view, the Marrakech Accords – which provided the rule book for the KP implementation – restricted the use of Removal Units (RMU) under the first and second commitment periods[16]. Furthermore, Brazil regarded as a red line the possibility of generating carbon credits for avoided deforestation under the KP's Clean Development Mechanism.

Another blocking position adopted by Brazil relates to the non-acceptance of conditionalities for developing nations to give up CO2 reductions rights associated with their REDD+ activities. This conditionality was adopted by the Forest Carbon Partnership Facility (FCPF), generating upfront offset rights to donors. The issue of offset rights was one of the reasons why Brazil decided not to participate nor to submit any funding proposals to this global platform supporting REDD+ in Asia, Africa and Latin America[17].

The current study also identified Brazil's leadership during several moments of the international negotiations. Brazil played a role of leader in the following conditions: a) when it

[16] Decision 16, 17 and 18 of CMP. Accessed 14 July 2019, http://www.ipcc-nggip.iges.or.jp/public

[17] FCPF comprises 17 donors that made contributions and commitments of 1.3 billion dollars. Data collected from FCPF's website. Accessed 12 July 2019, http://www.forestcarbonpartnership.org/

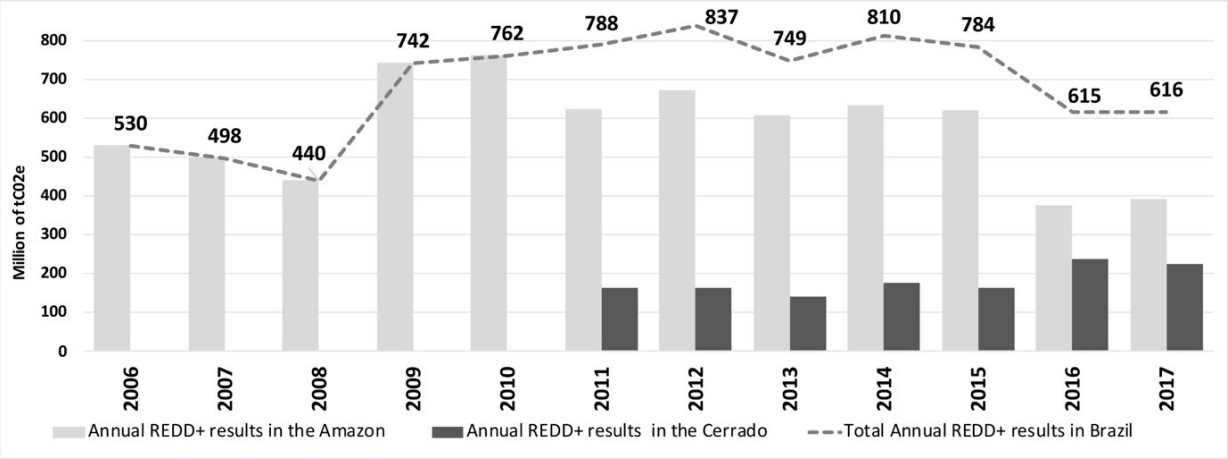
proposes the concept of Reduction of Emissions from Deforestation (RED); b) when it establishes the Amazon Fund as a policy instrument to implement the concept of results-based payments; c) when it proposes the creation of a REDD+ window within the GCF; d) when it supports the creation of Article 5 within the Paris Agreement, a key bargaining element to developing countries to operationalize the REDD+ Warsaw Framework.

However, the consolidation of such institutional arrangements under the Convention[18] would not be possible without flexible positions supporting REDD+ as an international response to climate change. Brazil was a constructive player when it considered the inclusion of additional activities beyond the original RED concept, complementing the proposal with degradation and enhancement of carbon stocks. By acting as an adaptable player in the regime, Brazil contributed to the institutional transition from RED to REDD and, finally, to REDD+. Moreover, Brazil accepted the discussion of its REDD+ safeguards rules and procedures under the Warsaw Framework, and agreed under UNFCCC with different MRV arrangements from those underpinning the Amazon Fund. Another flexible position was the acceptance of different methods to receive payments and implement investments through the Amazon Fund and GCF REDD+ Programme[19]. Despite the differences in these mechanisms, the payment value per ton of CO2 equivalent remained the same (US$ 5 dollars/ton).

[18] While REDD+ was included in 2007 in the negotiations for a climate agreement by the UNFCCC, the Warsaw REDD+ Framework was only adopted in 2013. It consists of seven decisions (Decisions 9, 10, 11, 12, 13, 14 and 15/CP.19) that institutionalizes the international architecture associated with financial incentives for developing countries to implement REDD+ related policies and actions under the UNFCCC. Accessed 12 April, 2019, http://unfccc.int/topics/land-use

[19] According to the terms of reference for the REDD+ pilot program, GCF funding should be consistent with the Warsaw Framework for REDD+. Accessed 08 May 2019, https://www.greenclimate.fund/

Figure 2: REDD+ results achieved in Brazil, from 2006 to 2017 (millions of tCO2e/year)



Source: Own elaboration based on data from the 'Lima REDD+ Info Hub' and Brazil's Biannual Update Reports (BUR). Accessed 23 July 2019. http://redd.unfccc.int/info-hub.html

Brazil has overall defended that forest emissions should be treated differently from emissions from fossil sources because they are different in nature: while a forest is also a carbon sink, a thermoelectric power plant – for example – is not. Thus, Brazil has expressed reservations related to fungibility, or the property of REDD+ credits being interchangeable with carbon credits stemming from other sources. Furthermore, Brazil has argued that constant forest monitoring and control is required to permanently reduce emissions from deforestation, being markedly different from reducing emissions from other sectors, for example, because once technological and production process changes are implemented, they would hardly be reversed. Thirdly, Brazil has overall defended that standing forests should not be included in carbon markets, fearing that forest credits would lead to an oversupply of carbon credits thus considerably lowering prices and allowing States to effortlessly meet their climate mitigation targets.

By using the 'follow the money approach', this analysis turns now to two key variables to present Brazil's REDD+ achievements: 1) verified reduction of emissions from deforestation based on the international REDD+ framework with MRV and results-based payments rules; and 2) results-based payments received through the Amazon Fund and the Green Climate Fund. Our focus is restricted to the potential financial gains that Brazil may attain according to the 'rules of the game'. Whether REDD+ has been able to deliver on its promises and engendered expectations is beyond the scope of analysis. It should be noted, however, REDD+ limitations and

shortcomings related, for example, to implementation problems and clashing interpretations of RBP between donor and recipient organizations (van der Hoff, Rajão, & Leroy, 2018).

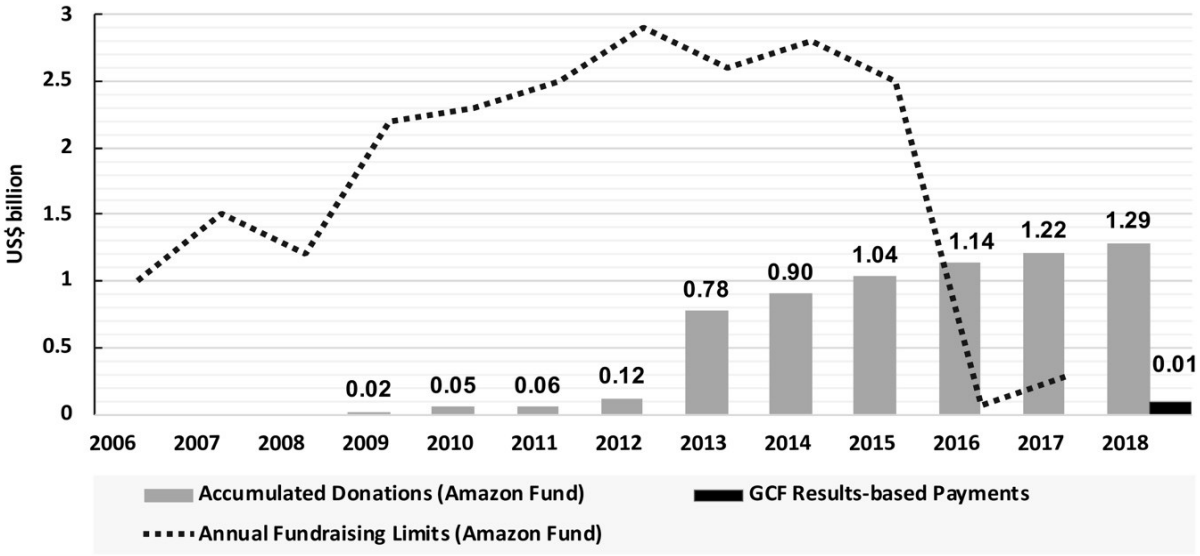
Under the REDD+ Warsaw Framework, Brazil managed to reach substantial verified REDD+ results from 2006 to 2017 in the Amazon and Cerrado biomes (Figure 2). During that period, Brazil achieved reductions of approximately 8,2 billion tCO2e. This accounts for the entire amount of CO2 emissions from the 28 Member States of the European Union plus Switzerland, for the years 2016 and 2017[20]. Moreover, Brazil's average annual REDD+ results in the period correspond to 780 MtCO2e, larger than the combined annual emissions in 2017 from France, Spain and Norway[21].

The Amazon Fund adopts the notion of annual fundraising limits to match Brazil's REDD+ performance with the potential to receive RBP. The calculation of annual fundraising limits takes into account the reference level based on the annual average of deforestation for a period of ten years. This moving baseline changes every five years, thus requiring recipient countries to maintain a historical pattern of reductions to potentially receive new payments. Figure 3 compares key features of Brazil's REDD+ results from 2006 to 2018, taking into account annual fundraising limits and accumulated payments received (in the context of the Amazon Fund) and GCF results-based payments. Despite the creation of the Amazon Fund in 2008, Brazil only received major payments between 2012 and 2013. Nevertheless, there is a relatively steady increase of accumulated donations to the Amazon Fund in the following years, from 2013 to 2018. However, annual fundraising limits drop sharply from 2015 to 2016 due to the update of the historical deforestation rates baseline.

[20] Based on the most updated information available at UNFCCC database, considering total emissions, including LULUCF. In 2016 and 2017, Switzerland emitted 91 MtCO2e, and the European Union (Convention) emitted 8.082 MtCO2e, totaling around 8,17 billion tCO2e. Accessed May 27, 2019, http://di.unfccc.int/detailed_data_by_party

[21] Based on the most updated information available at UNFCCC database, considering total emissions, including LULUCF. In 2017, France emitted 439 MtCo2e; Spain emitted 302 MtCo2e; and Norway emitted 27 MtC02e. Accessed May 27, 2019, http://di.unfccc.int/detailed_data_by_party

Figure 3: Annual Fundraising Limits (Amazon Fund), Accumulated Donations (Amazon Fund) and GCF Results-based Payments (US$ Billion), from 2006 to 2018



Source: Own elaboration based on Technical Notes from MMA, validated by the Technical Committee of the Amazon Fund; and GCF/UNFCCC records

Brazil mobilized a substantial amount of REDD+ finance from 2007 to 2018, leading up to approximately US$ 1.4 Billion, or nearly R$ 5.6 Billion by the end of that year[22].

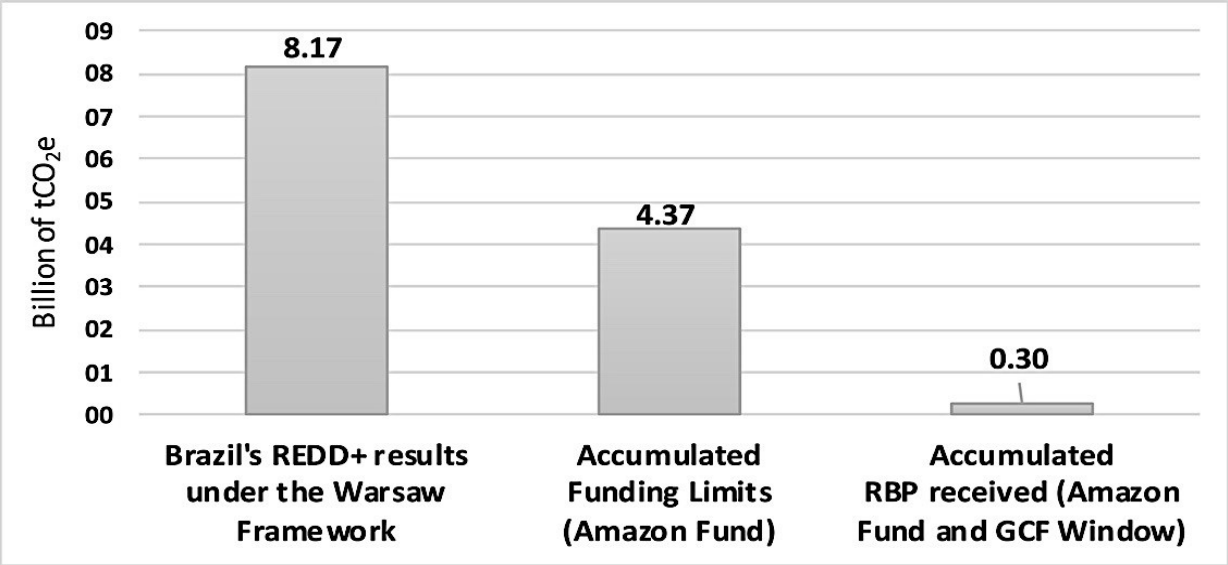
Yet the country received only 3% of its total potential REDD+ results through the Amazon Fund and GCF REDD+ Programme, considering five dollars per ton of CO2 reduction. Theoretically, Brazil can potentially obtain almost US$ 39.5 billion dollars as results-based payments, considering REDD+ results in the Amazon and Cerrado biomes under the Warsaw REDD+ Framework, from 2006 to 2017, for RED activities[23]. The Amazon Fund stood out as Brazil's main REDD+ financing mechanism considering all the RBP by the end of 2018 (approximately US$ 1.4 billion). Payments to the Fund accounted for 93% of the total received by the country (US$ 1.29 billion). The GCF REDD+ Window in 2018 accounted for the

[22] Currency exchange rate of approximately USD 1 = R$ 4. Central Bank of Brazil. Accessed 15 August 2019, https://www.bcb.gov.br

[23] Current references levels adopted by Brazil and its respective results are restricted to reductions of emissions from deforestation (RED). However, the REDD+ framework allows countries to include potential results from reducing forest degradation, as well as potential CO2 removals from activities of forest reforestation and enhancement of carbon stocks – such as revegetation. Therefore, Brazil's potential amount could be even larger if those activities were considered. Whether international funding would be eventually available to completely fulfill these funding limits is a subject for further debate.

remaining 7% (US$ 96 million). These results corroborate that the Amazon Fund – made operational by Brazil through bilateral agreements – reached a larger scale of implementation than the other REDD+ multilateral initiative, the GCF REDD+.

Figure 4: Brazil's results under the REDD+ Warsaw Framework; accumulated funding limits (Amazon Fund); and accumulated results-based payments received (Amazon Fund and GCF Window) (in billions of tCO_2e)



Source: Own elaboration based on Technical Notes (MMA) validated by the Technical Committee of the Amazon Fund; GCF/UNFCCC records; Lima REDD+ Info Hub; and Brazil's Biannual Update Reports (BUR)

While Brazil's REDD+ results under the Warsaw Framework are noteworthy in terms of CO2 emissions reduced from 2006 to 2017, its effective financial reward is lagging behind. Figure 4 illustrates the distance between REDD+ finance in 'theory' and 'practice' by contrasting three indicators: 1) Brazil's REDD+ results under the Warsaw Framework (accounting for 8,17 billion tCO2e); 2) Amazon's Fund accumulated funding limits, understood as the maximum amount that could be fundraised through the mechanism (corresponding to 4,37 billion tCO2e or 54% of Brazil's total reductions); and 3) accumulated RBP effectively received by Brazil through the Amazon Fund and GCF, by the end of 2018 (equivalent to approximately 300 MtCO2e). These results indicate that approximately 46% of the total share of Brazil's REDD+ verified reductions are not potentially covered by the Amazon Fund (3.8 billion tCO2e). Moreover, it reveals that less than 5% of Brazil's verified reductions from 2006 to 2017 were ultimately rewarded with payments, either through the Amazon Fund or the GCF Window.

7. Conclusion

This article shows that Brazil's institutional arrangements at the intersection of forest conservation, deforestation control and climate change mitigation comprised a multifaceted framework of policy and MRV instruments by the end of 2018. A mix of policy instruments coexists and connects the domestic and international political dimensions of the climate change and forestry regime. The Citizen's Constitution is at the top of the 'pyramid of norms' and the Action Plans are at the bottom, with several laws, decrees and international treaties in between. Ratified international treaties have the force of law at the domestic level, so they are relatively well placed within the hierarchy of norms related to climate change and forestry. This is important because REDD+ is an international framework internalized under Brazil's legal system due to the approval of its decisions under the REDD+ Warsaw Framework (COP 19 in 2013). Moreover, REDD+ is inscribed within the legal instrument of the UNFCCC, ratified by the Brazilian Congress. Importantly, with the ratification of the Paris Agreement by the National Congress, these decisions reached the status of law, as they were integrated within Article 5 of the international treaty.

Assuming that the stronger the normative act behind a policy instrument, the more complex it could be to reform or extinguish it, elements at the bottom of the normative hierarchy (decrees, ordinances and action plans, for example) are potentially more exposed to reforms or even discontinuation. The current study found that the majority of policy instruments is situated in the two lowest tiers of the pyramid, thus with a limited normative support, including Brazil's NDC. This finding will be of interest to the analysis of the political context in the post-2018 period, with shifts related to power and interests affecting existing arrangements at domestic and international levels.

Rather than a linear pattern, Brazil has shown a nuanced repertoire of positions during the international negotiations intersecting climate change and forestry. National positions have been shaped by concerns of different nature – technical, economic and political – related, for example, to the issues of fungibility and permanence. Notably, Brazil played a leadership role during the adoption of the RBP concept at international and domestic levels. This finding is consistent with previous literature on Brazil's ability to use forests as a soft power resource in the context of the climate change regime negotiations. Furthermore, Brazil blocked proposals perceived as in conflict with its national interests and territorial sovereignty. In parallel, the

country has also been a flexible and constructive player, adjusting its positions on various occasions as a compromise to reach multilateral agreements.

In terms of relative and absolute gains, engagement with REDD+ brought forth important outcomes for Brazil. Firstly, when it comes to relative gains, the way the 'results-based payments' approach is inscribed under Article 5 of the Paris Agreement reduces the prospects of carbon offsetting in the framework, a position historically defended by Brazil. From a power-centered perspective, the potential loss of national sovereignty over projects in the Brazilian Amazon (or any additional biome that could be included in the system) is reduced because REDD+ payments are strictly associated with emission reductions (not with land tenure rights, for example). In addition, participation in the RBP scheme is voluntary and the decision to use national or international data for reporting on REDD+ results is taken within the autonomy of the national authority.

Moreover, all countries interested in joining the REDD+ Framework are required to reach a certain level of national expertise and institutional capacity to gain access to RBP. Those features set an entrance barrier to other tropical developing nations and strengthens Brazil's position as a leader in the field, considering the country has reached a high level of domestic expertise – in terms of forest monitoring systems, for example – and has accumulated experiences with strategic law enforcement tackling illegal deforestation (Tacconi, Rodrigues, & Maryudi, 2019).

Secondly, in terms of absolute gains, payments received by Brazil under existing national arrangements (Amazon Fund and GCF) are by no means negligible. As a matter of comparison, the total budget of the FCPF to support 47 developing countries in REDD+ reached a similar amount to Brazil's. In a more general perspective, REDD+ also presents potential absolute gains to other Parties in the system. On the one hand, developing countries gained potential access to sources of funding for forestry and mitigation of CO2 emissions. On the other hand, developed nations can make use of the RBP approach to make sure the application of resources will only happen after results are internationally verified.

In terms of power and interests, two critical results emerge from this analysis. Firstly, REDD+ relies on an increasing legal basis due to the structuring of norms and rules at international and domestic levels. However, in the case of Brazil, results-based payments corresponded to less than 5% of the total REDD+ verified GHG reductions achieved by the

country. Further research is required to establish why this gap exists and possible ways to reduce it.

In the long run, Brazil's REDD+ success may depend on continuous efforts to reduce deforestation rates in the Amazon, and on the capacity of the country to expand the system to other biomes (e.g. Cerrado). Brazil's REDD+ future may also be shaped by its capability to influence the rules of the regime (e.g. inclusion of additional activities beyond deforestation, such as carbon removal activities). At the domestic level, Brazil's efforts to reduce deforestation will also hinge on the political willingness of governments to effectively implement planned policy objectives. Against this background, REDD+ in Brazil may also be affected by reforms of existing policy instruments and mechanisms directly or indirectly related to forest conservation, and deforestation control and prevention in public and private lands. For example, an eventual withdrawal from the Paris Agreement, the weakening of the Forestry Code or the discontinuation of the Amazon Fund could have important implications at the intersection of climate change and forestry.

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