

## Analysis

# Can REDD+ still become a market? Ruptured dependencies and market logics for emission reductions in Brazil



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## ABSTRACT

During almost 20 years of political debate on the nature of Payments for Ecosystem Services (PES), these schemes have been characterized mostly as a non-market approach, even though attempts to transform them into market instruments has persistently recurred in these debates. One notable example is the materialization of Reducing Emissions from Deforestation and Forest Degradation (REDD+) in Brazil, where a sustainable development discourse dominates national forest governance at the expense of a carbon commodification discourse. This research paper adopts a Foucauldian approach to plot the epistemological foundations of the market logics that still influence REDD+ institutionalization in Brazil to a large extent and thereby reproduce what we define as a ruptured dependence on nature. More specifically, we recognize ruptured dependence in the three building blocks of market instruments, namely singularization, monetary valuation and appropriation. Our analysis shows that REDD+ institutions have retained the singularization and monetary valuation of emission reductions, even though the appropriation processes have rejected the possibility of exchange and instead emphasized the national ownership of emission reductions. However, appropriation remains a highly politicized process that is sensitive to criticism and open to calls for alternative approaches that are closer to ruptured dependence.

## 1. Introduction

After almost 20 years of debating the concept of Payments for Ecosystem Services (PES), scholars have increasingly reached agreement about the non-market nature of existing PES schemes. Empirical observations demonstrated that most PES schemes do not constitute an environmental market at all (Fletcher and Büscher, 2017; Muradian et al., 2013; Pirard and Lapeyre, 2014). Consequently, PES definitions have been modified from an emphasis on the trade between buyers and providers of ecosystem services (Wunder, 2005) to “voluntary transactions between service users and service providers that are conditional on agreed rules of natural resource management for generating offsite services” (Wunder, 2015, p. 241). Similar trends are also reflected in international climate negotiations, such as the shift from an emphasis on Quantified Emission Limitation and Reduction Objectives (QELROs) in the Kyoto Protocol to an emphasis on the voluntary Nationally Determined Contributions (NDCs) in the Paris Agreement (Voigt and Ferreira, 2016).

In the context of forest governance, the conceptual development of “Reducing Emissions from Deforestation and Forest Degradation, and

the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries” (REDD+) has been exemplary for these changes. In their historical account of REDD+ institutionalization, Den Besten et al. (2014) have described conceptual transformations that excluded a market-based approach due to critical concerns about the overemphasis on carbon, potential avoidance of emission reductions from buyers and the dependence on technological solutions. Some national governments were explicitly unfavourable to carbon offsetting, arguing that “the market risks being flooded with cheap carbon credits” and that “reductions might take place in developing countries but allow emissions to occur in developed countries” (Moutinho et al., 2011, p. 41). The Brazilian resistance to carbon offsetting is particularly noteworthy (Carvalho, 2012) and underpins the materialization of a dominant sustainable development discourse, embodied by the Amazon Fund, in national REDD+ governance (Van der Hoff et al., 2015). More broadly, some scholars have characterized international REDD+ finance as ‘results-based aid’ (Angelsen, 2017). Although financial transactions still take place with respect to both PES and REDD+, they build on conditions mutually agreed upon by trade parties rather than imply an exchange of

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ecosystem services (Fletcher and Büscher, 2017).

While the materialization of REDD+ strategies eludes a characterization as a market instrument, more recent developments provide some subtle evidence that the use of market instruments is not entirely excluded from negotiations. Some scholars have argued that the Paris Agreement has contributed to a situation where the use of market instruments for REDD+ is “an open issue and remains very contested in the context of the UNFCCC” (Turnhout et al., 2016, p. 8). The Warsaw Framework for REDD+ contributes to this ambiguity by retaining openness about their possibility yet abstaining from any predefined disposition towards their use (Voigt and Ferreira, 2015). Other scholars have suggested that REDD+ schemes obscure market-like relations, as donations are used as ‘political offsets’ in order to “respond to critiques regarding the lack of domestic efforts to reduce emissions” (Angelsen, 2017, p. 22). Finally, the prevalence of offset-based approaches to REDD+ has been observed within some national contexts, even in countries like Brazil. Van der Hoff et al. (2015), for example, have identified the materialization of a distinct carbon commodification discourse in parallel to the sustainable development discourse that has become mainstream in national politics. If the REDD+ concept is decidedly not a market instrument, as mainstream debates emphasize, on what basis are proponents of carbon offsets able to persist in advocating for the use of market instruments for REDD+? Conversely, on what grounds are opponents to carbon offsetting able to resist the use of market instruments despite this political openness?

In order to answer these questions, this research paper extends the analysis of Van der Hoff et al. (2015) on the materialization of national REDD+ governance in Brazil and analyzes how social structures and political processes affect and perpetuate the distorted power relations between the sustainable development discourse and the carbon commodification discourse. As already argued above, national forest governance in Brazil is widely known for its resistance to carbon offsetting and its highly advanced REDD+ implementation processes, which insist univocally on a sustainable development discourse and results-based payments. Our analysis plots the epistemological foundations of environmental market instruments on national REDD+ governance institutions in Brazil in an effort to understand the resistance of the sustainable development discourse as well as the persistence of the carbon commodification discourse. In the next section, we discuss the epistemological building blocks of environmental market instruments and that we define as ‘ruptured dependence’. After explaining our research approach in Section 3, we describe in detail the formal procedures and political debates related to Brazilian REDD+ institutions and their relation to ‘ruptured dependence’ (Section 4). Section 5 returns our argument to the use of market instruments for REDD+ schemes, explaining why this issue still prevails in political debates and how power relations are perpetuated. We conclude with some considerations for future REDD+ politics.

## 2. Environmental markets: building blocks and their critiques

Market instruments for environmental governance embody an approach to addressing environmental issues that aims to reduce destructive consequences of economic activity by building on the same logic that engendered them. Since the emergence of environmental awareness, particularly on climate change, many scholars have advocated a respect for the human dependence on nature and the limits or planetary boundaries imposed by this dependence (Meadows et al., 2004; Rockström et al., 2009). According to Gómez-Baggethun and Naredo (2015), however, calls for respecting planetary boundaries through more stringent public regulation and political intervention were mostly rejected in favor of an emphasis on economic growth, market instruments and technological solutions. In the same line, economists advocate the decoupling of economic growth from its negative environmental consequences (Meadows et al., 2004; Pearce et al., 1989) and frame market instruments as most efficient approach

to addressing environmental problems (e.g. Eliasch, 2008). Market instruments thereby embody the conviction that environmental problems exist because “environmental goods and services, and the general functions which environments serve (e.g. as a waste sink), are not invariably bought and sold in the marketplace” (Pearce et al., 1989, p. 51). Economists argue that such market instruments advance the internalization of externalities by incorporating environmental consequences into decision-making processes (Tietenberg and Lewis, 2012), thereby acknowledging the human dependence on nature. These economic conceptualizations have indeed become a mainstream approach to addressing environmental problems (Gómez-Baggethun and Naredo, 2015). At the same time, however, market instruments perpetuate a world view in which “the rational egoist of orthodox, neo-classical economics is [...] independent from social, biological and ecological needs and relationships” (Barry, 2007, p. 212). This sets up a paradox: the use of market instruments reflects an attempt to incorporate human dependence on nature into economic systems without altering its foundations that assert the opposite.

The critical literature on market instruments for environmental governance sheds some light on this paradox by demonstrating that the incorporation of human dependence on nature is far from comprehensive. Some scholars have argued that environmental market instruments build on fragmentary representations of reality by isolating only one element of an essentially highly complex system (Arsel and Büscher, 2012; Farnsworth et al., 2015; Turnhout et al., 2016). More broadly, these representations often obscure the ecological, economic and political dimensions of the reality of environmental issues, which scholars refer to as a ‘commodity fetish’ (Kosoy and Corbera, 2010; Norgaard, 2010; Peterson et al., 2009). In this respect, the construction of environmental markets oversimplifies these issues in order to render markets viable (Moreno et al., 2015; Stephan, 2012). Other scholars have extended this critique of reductionism to the attribution of monetary values to nature, arguing that “possibly some of it, probably not most of it, and definitely not all of it” is adequate for monetary valuation (Farnsworth et al., 2015; Hajkowicz, 2007, p. 25; Spangenberg and Settele, 2016). Monetary values not only reflect one of many approaches to making value judgements, but even ‘crowd out’ “a complex amalgam of intuitions [...], beliefs, norms, principles, dispositions, attitudes, emotions, passions and sentiments” that motivate nature protection (Graeber, 2001; Hill, 2006; Lo, 2014; Neuteleers & Engelen, 2015, p. 256). Rather than incorporating the human dependence on nature comprehensively, this critical literature implies that market instruments reproduce what we call a ‘ruptured dependence’. This epistemological foundation could be more clearly conceptualized through a closer scrutiny of the building blocks of market instruments, namely singularization, monetary valuation and appropriation.

Environmental market instruments build, first and foremost, on a clear understanding of the object of trade that arguably contributes to nature conservation. More specifically, they require the characterization of a singular object (‘qualification’), the expression of these characteristics into common metrics (‘commensuration’) and the decontextualization of the tradable object (‘disentanglement’), a process also described as ‘singularization’ (Callon and Muniesa, 2005; Lovell and Liverman, 2010; Stephan, 2012). Many environmental market instruments define their trade objects in terms of restrictions to use rights of natural resources (e.g. Lam and Pitcher, 2012; Soares-Filho et al., 2016). Since the late 1990s, environmental market instruments also increasingly build on a conceptualization of natural properties in terms of ‘ecosystem services’, which denote the “supply of valuable products and materials, support and regulation of environmental conditions and provision of cultural and aesthetic benefits” and include services like climate regulation, biodiversity, protection against flooding, and even psychological and spiritual wellness (Armsworth et al., 2007; Fearnside, 1997; Foley et al., 2007, p. 25). In this respect, reducing emissions from deforestation contributes to the preservation of such ecosystem services (Boyd et al., 2011; World Bank, 2016).

The construction of singular and tangible trade objects builds on scientific knowledge that represents the mechanics (i.e. ‘the gears and bolts’) of natural systems that starkly contrasts with alternative (i.e. emotional or spiritual) knowledges (Barry, 2007; Worster, 1994). Consequently, understanding nature means “reducing plants and animals to insensate matter, mere conglomerates of atomic particles devoid of internal purpose or intelligence”, and as such becomes controllable and manageable in a way that removes “the remaining barriers to unrestrained economic growth” (Worster, 1994, p. 40). Environmental market instruments related to emission reductions (i.e. carbon offsetting) build on a mechanistic understanding of climate change dynamics that problematizes the contribution of carbon emissions from deforestation and forest degradation to global anthropocentric greenhouse gas emissions (Angelsen et al., 2012; World Bank, 2016). Furthermore, such representations involve high-technology methodological approaches such as Forest Reference Emissions Levels (FREL), Measuring, Reporting and Verification (MRV) systems, and forest monitoring systems in order to quantify carbon emissions and carbon stocks (see Voigt and Ferreira, 2015). This mechanistic approach to understanding natural and environmental issues conceptualizes environmental issues in terms of a scarcity problem that is a direct consequence of natural resource depletion and Earth’s diminishing carrying capacity (e.g. Meadows et al., 2004). In this way the mechanistic approach to nature is integral to markets as it enables the subdivision of broad scarcity problems (e.g. overfishing or deforestation) into discrete rights (e.g. quantity of fish or forested hectares per quota) that can be transacted.

A second important building block for environmental markets concerns the conversion of knowledge about the aforementioned scarcity problems into a monetary value. According to Pearce et al. (1989, p. 5), the scarcity of natural resources or ecosystem services only becomes meaningfully problematic when “something is provided at a zero price, [because] more of it will be demanded than if there was a positive price”. By placing this scarcity problem “directly or indirectly in relation with the measuring rod of money” (Pigou, 1920, p. 11), it becomes “reduced to a problem of scarcity of capital [and] considered as an abstract category that could be expressed in homogeneous monetary units” (Naredo, 2003, p. 250). Building on this economic rationale, many scholars began advocating the attribution of monetary values to nature since at least the 1950s (Baveye et al., 2013; Chichilnisky and Heal, 1998; Costanza et al., 1997; Pearce et al., 1989; Wunder, 2007). Estimations of the value of environmental benefits (i.e. willingness-to-pay) and environmental costs (i.e. willingness-to-accept) are among the most widely used methodologies, which estimates a perceived value of nature in the context of competing private interests (Chee, 2004; Soares-Filho et al., 2016; Zhang and Li, 2005). Alternative approaches include calculations of the opportunity costs, or forgone economic benefits, of reducing negative environmental impacts (Angelsen et al., 2012; Pagiola and Bosquet, 2009).

The monetary values described above refer to ‘exchange values’, or the “[purchasing power] that possession of an object can convey”, rather than ‘use values’, or “the utility of some particular object” (Gómez-Baggethun et al., 2010; Zhang & Li, 2005, p. 180). Basically, this attribution of a monetary value to nature functions as a common denominator for understanding environmental problems in the context of other priorities (Costanza and Daly, 1992; Pearce et al., 1989). This conceptualization of monetary values as ‘purchasing power’ implies that the tradable objects of environmental markets become intelligible in comparison with alternative objects that are similarly attributed with an exchange value and may even allow a certain degree of substitutability. As a consequence, decision-making in environmental markets often involve a trade-off between two or more alternative approaches to environmental issues (Chee, 2004; Pearce, 1998; Pearce et al., 1989; Tietenberg and Lewis, 2012). For instance, in compensating deficits of legal requirements determining the forested area on private lands, rural producers may choose between reforestation on their property,

purchasing other (forested) properties, or purchasing environmental reserve quota (not to mention accept penalties) in order to effectuate legal compliance (Soares-Filho et al., 2016). This juxtaposition facilitates our understanding of the negative environmental consequences of economic activity by internalizing their monetary values into decision-making processes and could potentially redirect investments to minimize environmental harm (Solow, 1973).

The third and final building block of environmental markets concerns the appropriation of the tradable objects described above, where it is assumed that the establishment of individual property rights is both an institutional requirement for the functioning of markets and also an implicit end goal of market interventions. As nature valuation translates natural resource scarcity into capital resource scarcity (see Naredo, 2003), efficient allocation of capital resources becomes an important consideration in addressing environmental issues, a characteristic that is often attributed to markets instead of command-and-control approaches (Eliasch, 2008; Lane, 2012; Newell et al., 2014). Many contemporary proposals to establish environmental markets often emphasize efficiency gains as most important component, as has been argued with respect to, for example, payments for ecosystem services (e.g. Wunder, 2007) and environmental reserve quota in Brazil (Soares-Filho et al., 2016). While economic scholars acknowledge that command-and-control policies may actually achieve efficiency gains in specific situations (see Cole and Grossman, 1999; Wittneben, 2009), their primary function is mostly limited to correcting for market inefficiencies or establishing a strong institutional framework within which markets are to operate (Tietenberg and Lewis, 2012). Weaknesses in the latter function have indeed been identified as underlying factor for many contemporary environmental issues like tropical deforestation (Araujo et al., 2009; Puppim de Oliveira, 2008).

Returning the argument to these operational processes, we argue that the processes of singularization, monetary valuation and appropriation reproduce an epistemological foundation of ruptured dependence on nature. Singularization renders a clearly defined tradable object that reflects that part of nature upon which humans depend. Monetary valuation further decontextualizes nature and renders it commensurable with other trade objects within a particular modality of value judgements. Appropriation, finally, excludes consumption of nature by others and enables the possibility of exchange, which is legitimized on the basis of efficiency. Some scholars may argue that these characteristics denote a neoliberal approach to nature conservation (e.g. Arsel and Büscher, 2012). At the same time, classifying ruptured dependence as a form of neoliberalism would direct attention to highly ambiguous debates about the philosophical underpinnings of the concept. Fletcher and Büscher (2017), for example, discussed these widespread interpretations ranging from Marxist to Foucauldian approaches as well as classifications of neoliberalism as a worldview, political programme or set of policies, among others. Other scholars may argue that ruptured dependence could encompass a wide array of different practices. Following the classification of market-based instruments used by Pirard and Lapeyre (2014), for example, ruptured dependence in the context of REDD+ may reflect an exchange of permits, rights or titles as implied in permit trading schemes and Coasean-type agreements, whereas it differs from other categories like regulatory or voluntary price signals that do not emphasize exchange. Our analysis intends to use this more operational understanding of ruptured dependence as an analytical lens through which we analyze REDD+ materialization in Brazil.

### 3. Theoretical and methodological considerations

The central theme of this research paper is to understand how the epistemological building blocks of market instruments relate to political processes of implementing a national REDD+ structure in Brazil. As argued in the introduction, these processes are generally geared towards a sustainable development discourse. Such an analysis could start

with a search for similarities and differences between the originally offset-based environmental market and the currently performance-based funding mechanism. This objective corresponds strongly with a Foucauldian analysis of the epistemological structure, or *episteme*, that governs the regularity of statements and practices in the politics of discourse. This regularity concerns a set of rules that govern the relations between individual statements and practices, such that some become more possible or valid than others (Foucault, 1970, 1972). Mannheim (1954) also recognizes a regularity in the use of the concept of ‘collective-unconscious’, which is continuously being shaped and reshaped by historical-social or situational motivations. More specifically, he describes thought structures that transcend reality in order to either maintain the status quo for largely political reasons (i.e. ‘ideologies’) or to destroy the existing order in favor of a desirable new order (i.e. ‘utopias’). Mannheim’s approach emphasizes the role of agency in shaping and reshaping the ‘collective-unconscious’, whereas Foucault’s approach focuses on how the existing order of things governs practices and statements. Moreover, the latter perspective also acknowledges that this order of things is only manifested through practices and statements by agents, which implies that these agents can influence to some degree the nature of the order of things. Both Mannheim and Foucault argue that the regularity of practices and statements affect power relations between different stakeholders, who in turn try to influence this reality. Our analysis follows this Foucauldian conceptualization of regularity that governs the politics of discourse with respect to REDD+ implementation in Brazil and structures power relations between the discourses identified by Van der Hoff et al. (2015).

This paper adopts an interpretive approach to the analysis of Brazilian REDD+ policies in order to describe the regularities and epistemologies behind market and non-market instruments in forest governance. According to Yanow (1999), interpretive policy analysis emphasizes the construction of specific interpretations of reality as reflected in the combination of various ‘artifacts’ (i.e. language, objects and acts). Extending this view, Foucault understand these artifacts as discourses that not only produce and reproduce specific practices and statements within a specific interpretation, but also convey the epistemic structures that govern how some are more possible than others. Since Brazilian REDD+ policy has only started to take shape after international REDD+ debates consolidated in 2013 (see below), we assume that much meaning still comes from language (e.g. debates, legislation, documents, plans, etc.) rather than objects (e.g. credits, diplomas, etc.) or acts (e.g. financial transactions). One notable exception is the Brazilian Amazon Fund, which is already operative since 2008 (Van der Hoff et al., 2018; Correa, et al, 2019) and complements our analysis with useful insights into these objects and acts.

The primary data for our research paper, therefore, builds on document analysis. The most informative documents involved the minutes of 5 plenary meetings of National Commission for REDD+ (CONAREDD+), 13 meetings of its Thematic Consulting Chambers (CCTs) and 7 meetings of Technical Working Group on REDD+ (GTT REDD+), all held between 2014 and 2017. In addition, we assessed the legislative foundation for these groups (e.g. decree 8.576 and Portarias 41, 91, 117, 143, 242, 209 and 461 of MMA) as well as the outcomes of these meetings in 15 resolutions. We also benefitted from other formal documents such as national REDD+ strategies, information of safeguards and other submissions to UNFCCC. The assessment of these documents mainly used the building blocks of environmental market instruments, developed in the previous section, as central categories for our analysis of the national REDD+ structure in Brazil. More specifically, our analysis has paid particular attention to the building blocks of environmental markets, which were operationalized into three focus categories, namely (1) the indicators that measure results or performance (i.e. singularization), (2) the calculation basis for financial transactions (i.e. monetary valuation) and (3) the formal obligations involved in these transactions (i.e. appropriation).

This data has been complemented with participant observations

during two series of workshops. The first series of workshops were organized by the Secretariat for International Affairs (SAIN) of the Ministry of Finance (MF) between September and December 2017 on the development of strategy for receiving results-based finance, where the first author participated in two workshops. The second series of workshops was organized by MMA between February and October 2018 on the development of a Safeguards Information System for REDD+ (SISREDD+), where the first author participated in one workshop. Budgetary constraints explain the limited participation in these workshops and justifies our emphasis on document analysis. This research has also benefited from insights from a longitudinal study by the first author on the role of financial instruments for REDD+ governance since 2012, which has yielded 22 semi-structured in-depth interviews with key stakeholders in developing REDD+ in Brazil, as well as a longitudinal study by the second author on the formation of Brazilian forest policies since 2006, which has yielded over one hundred interviews. These interviews include representatives of the Ministry of Environment (MMA), Ministry of Finance (MF), Ministry of Foreign Affairs (MRE), the Brazilian Development Bank (BNDES), non-governmental organizations (NGOs) and representatives from state and municipal governments.

#### 4. Building towards results-based payments for REDD+ in Brazil

In November 2013, participants in the UNFCCC debates during COP13 in Warsaw agreed upon a series of decisions that established the Warsaw Framework for REDD+ (WFR), which became a milestone in international REDD+ development since its inception in 2003 (Moutinho et al., 2011; Voigt and Ferreira, 2015). Part of its importance stems from institutionalization of REDD+ that impedes or at least complicates carbon offsetting, which has been one of the main critiques in preceding debates (Den Besten et al., 2014). On the one hand, the WFR affirms that “results-based finance [...] may come from variety of sources, public and private, bilateral and multilateral, including alternative sources” (see decision 09/CP.19), which effectively allows for the use of market instruments. On the other hand, the possibility of carbon offsetting has been complicated by the agreement that “results-based actions that may be eligible to appropriate market-based approaches [...] may be subject to any further specific modalities for verification” (decision 14/CP.19, paragraph 15). Moreover, the WFR recognizes “the key role that the Green Climate Fund will play in channelling financial resources to developing countries and catalysing climate finance”. These provisions denote the institutionalization of a REDD+ concept that abstains from carbon offsetting, but scholars still anticipated that this issue remains highly contested in political debates (Turnhout et al., 2016; Voigt and Ferreira, 2015).

For now, however, international REDD+ finance channels through the Green Climate Fund. The WFR has operationalized this by deciding that the obtainment of results-based finance by developing countries is conditional upon the provision of four elements established in 2010 during COP16 in Cancún (i.e. decision 01/CP.16, paragraph 71). These elements include, firstly, a national strategy or action plan in which the developing country describes how REDD+ is embedded within the national context and how it plans to develop the remaining three elements in a coherent REDD+ structure. The second and third elements concern national (or interim subnational) Forest Reference Emissions Level (FREL) or Forest Reference Level (FRL) as well as a robust and transparent forest monitoring system, which together enable the developing country to determine its results in terms of emission reductions. Finally, developing countries are required to establish a system for providing information on addressing safeguards. These safeguards involve (a) consistency with national forest programmes, (b) transparency and effectiveness of national governance structures, (c) respect for knowledge and rights of indigenous peoples and local communities, (d) full and effective participation of relevant stakeholders, including indigenous peoples and local communities, (e) consistency with



conservation of natural forests and biological diversity, (f) addressing the risk of reversals (i.e. impermanence), and (g) reducing displacement of emissions (i.e. leakage). This documentation currently mobilizes developing countries to make efforts for receiving results-based finance from the Green Climate Fund.

#### 4.1. The Brazilian REDD+ structure in a post-Warsaw world

Prior to the first signs of an emerging REDD+ structure, the Brazilian government has been expressly resistant in international forest governance debates to the idea of using emission reductions in tropical forests to offset carbon emissions in developed countries, which has been the premise of the Clean Development Mechanism and was also proposed for REDD+ in the early 2000s (Carvalho, 2012). Instead, the Brazilian government sought opportunities for receiving financial compensation for the attainment of quickly dropping deforestation rates since 2004, which appeared in the context of Norwegian politics interested in providing development aid for emission reductions in tropical forests (Hermansen, 2015). The Brazilian and Norwegian governments reached an agreement in 2008, after which a Brazilian REDD+ structure started materializing with the establishment of the Amazon Fund (decree 6.527). Under the administrative management of the Brazilian Development Bank (BNDES), the Amazon Fund would receive financial donations for the attainment of emission reductions from forest-related activities, as verified by its Technical Committee (CTFA), and reinvest in project activities that seek to contribute to attaining REDD+ objectives, as governed by its Steering Committee (COFA) (BNDES, 2017). At least until the adoption of WFR in 2013, the Amazon Fund has been the most important REDD+ institution in Brazil, and continues to channel the majority of financial resources for REDD+ implementation in following years (Van der Hoff et al., 2015).

Immediately after the adoption of WFR, the Brazilian REDD+ structure started expanding with the adoption of new institutions and the redefinition of existing institutions, the outcome of which is reflected in Fig. 1. In 2014, MMA established the Technical Working Group on REDD+ (GTT REDD+) with the purpose of “elaborating and revising input for Brazilian submissions on climate change and forests” (see Portaria 41). During the first three meetings in the same year, GTT REDD+ almost exclusively discussed the FREL methodology, the first version of which was submitted to UNFCCC in June 2014. In November 2015, four days before the decisive UNFCCC meeting in Paris, the Brazilian government established the National Commission of REDD+ (CONAREDD+). CONAREDD+ is responsible for the implementation of the National REDD+ Strategy (ENREDD+) and the compliance with requirements for access to results-based payments (decree 8.576). During its initial years, CONAREDD+ consisted of three Thematic Consulting Chambers (CCTs) that provided a forum for discussing in more detail issues related to safeguards (CCT-Salv), coherence of multi-sector and multi-level governance (CCT-Pact) and fundraising and resource allocation (CCT-CDRNR). Together with GTT REDD+, these CCTs support CONAREDD+ in implementing REDD+ in Brazil and attaining access to financial resources from the Green Climate Fund. The latter objective has also become a responsibility, at least since March 2017, of SAIN in its role as Nationally Designated Authority (NDA). Part of the SAIN's responsibility is to assign accreditation to eligible organizations. BNDES has received automatic eligibility with the establishment of CONAREDD+ (see art. 5 of decree 8.576) and is awaiting accreditation, while other candidates are Caixa Econômica Federal (CEF) and the Brazilian Biodiversity Fund (FUNBIO).

#### 4.2. Definition of results

The methodology for defining REDD+ results already materialized in 2008 with the establishment of the Amazon Fund. This methodology defines that results-based payments to the Amazon Fund occur on the basis of demonstrated achievements in terms of emission reductions

and serves as the basis for calculating its fundraising limit or maximum amount of donations Brazil may receive (Van der Hoff et al., 2018). The methodology for determining these results starts with the obtaining of data from the Amazon Deforestation Calculation Programme (PRODES), a spatial monitoring instrument based on satellite images developed by the Brazilian Institute for Spatial Research (INPE). Since PRODES generates annual deforestation rates in hectares, CTFA applies an emission factor (i.e. 132.3 tC/ha since 2011) and a conversion factor (i.e. 3.66 tC-tCO<sub>2</sub>) in order to transform this data into tCO<sub>2</sub> (BNDES, 2017). The resultant annual emission rates form the basis for calculating the reference levels that alter every five years. More specifically, these reference levels constitute average emissions levels for the periods 1996–2005 (i.e. 719 million tCO<sub>2</sub>), 2001–2010 (i.e. 605 million tCO<sub>2</sub>) and 2006–2015 (i.e. 298 million tCO<sub>2</sub>), which were compared with actual emission levels for each year in order to obtain the results in terms of emission reductions. Based on these calculations, Brazil has achieved a cumulative emission reduction of 3638.4 million tCO<sub>2</sub> for the period 2006–2015.

In 2014, Brazil began preparations for the submission of FREL and was extensively discussed during three GTT REDD+ meetings. By 2018, GTT REDD+ had elaborated and submitted two FRELs for the Amazon biome (2014 and 2018) and one FREL for the Cerrado biome (2017), while a FREL for the remaining biomes still requires further elaboration. The methodology for the FRELs is more elaborate than the methodology for calculating the Amazon Fund reference level, but the basic mathematical approach to the singularization of REDD+ results is quite similar. The first step is to calculate the annual CO<sub>2</sub> emissions since the first year of the reference period, namely 1996 for the Amazon biome and 2000 for the Cerrado biome. The outcome of this calculation depends on a wide variety of factors, most notably the definition and inclusion of activities (e.g. deforestation, forest degradation, etc.), pools (e.g. soil, biomass, etc.), and gases (e.g. CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, etc.), among others. These annual emission rates form the basis for calculating the reference levels that alter every five years. The FREL for the Amazon biome, for example, reflects the average emissions level for the periods 1996–2005 (i.e. FREL-A: 1106 million tCO<sub>2</sub>), 1996–2010 (i.e. FREL-B: 908 million tCO<sub>2</sub>) and 1996–2015 (i.e. FREL-C: 750 million tCO<sub>2</sub>). These average emission levels are compared with the actual emissions levels of each year. Based on this methodology developed by GTT REDD+, Brazil has achieved a total cumulative reduction of over 6125.5 million tCO<sub>2</sub> in the period 2006–2015.<sup>1</sup> The substantial difference between FREL and the Amazon Fund reference level may be attributed to methodological differences, yet was not considered problematic by stakeholders. During the first meeting of GTT REDD+, an MMA representative clarified that “there is no problem in having a different design than the PNMC or the Amazon Fund, as long as it is consistent with the [forest] inventory”.

While the singularization of emission reductions has been successfully completed in preparation for receiving results-based finance, similar outcomes were not observed with respect to safeguards. More specifically, the establishment of performance indicators for safeguards and co-benefits has proven much more challenging than determining emission reductions. The construction process of a Safeguards Information System for REDD+ (SISREDD+) aims to establish a number of performance indicators in order to evaluate the extent to which these safeguards are being addressed. During the first in a series of participatory workshops organized by CCT-Salv between February 2018 and October 2018, representatives of various organizations and social groups fervently debated an adequate set of indicators that would encompass and reflect all concerns. By the end of this period, the debates rendered 114 indicators for the 7 safeguards mentioned at the start of this chapter.<sup>2</sup> In absence of SISREDD+, however, the

<sup>1</sup> The calculation was based on CO<sub>2</sub> emissions data from FREL-C (p. 26).

<sup>2</sup> [http://redd.mma.gov.br/images/salvaguadas/Oficinas\\_Sisredd/sisredd\\_](http://redd.mma.gov.br/images/salvaguadas/Oficinas_Sisredd/sisredd_)

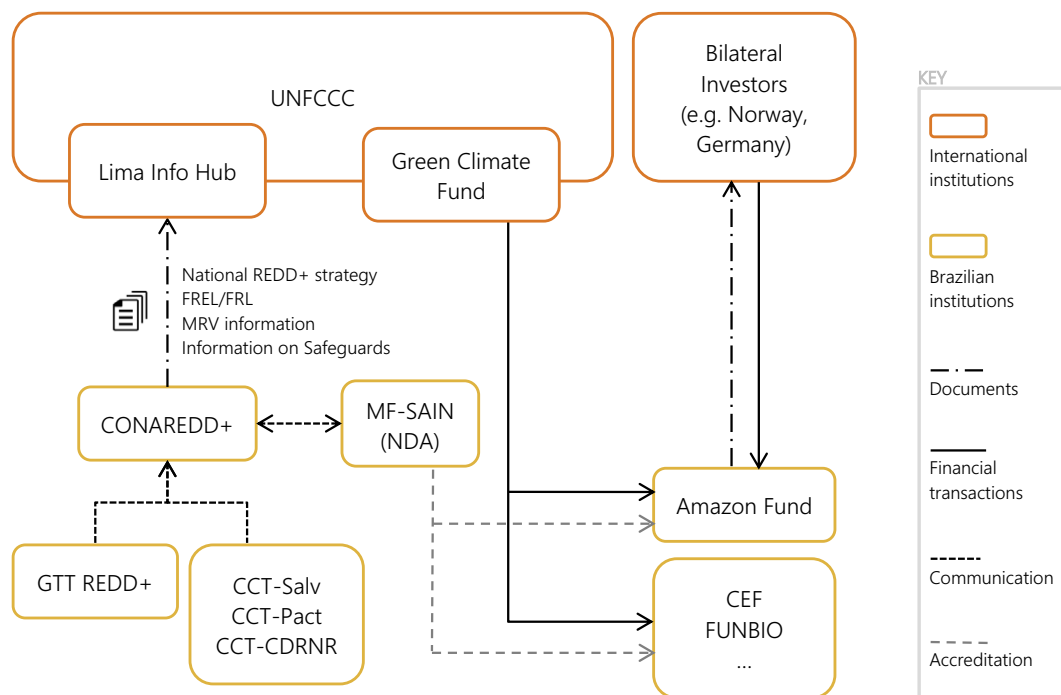


Fig. 1. REDD+ governance structure in Brazil. (Adapted from MMA, 2016, p. 29.)

information on safeguards submitted by Brazil in May 2015 as well as a preliminary updated version of September 2017 involved a largely qualitative discussion on how the Cancún safeguards apply to the Brazilian context of REDD+ implementation. Furthermore, the information on safeguards builds on a vast array of existing environmental policies that themselves could not fully address all safeguards. For instance, ENREDD+ argues that Brazil already has a few information systems related to safeguards, citing “the National Registry of Conservation Units (CNUC), the National System for Forest Information (SNIF), the National System of the Rural Environmental Cadastre (SICAR) and the Biodiversity Portal” (MMA, 2016, p. 24). Moreover, the annex of resolution 15, adopted in September 2018, communicates a governance matrix that lists at least 38 policies, programs, systems, laws and other documents that may inform SISREDD+. The heterogeneous nature of safeguards therefore suggests that its singularization remains a tough challenge for policy-makers.

### 4.3. Valuation of results

As REDD+ implementation in Brazil encompasses a broad array of performance indicators, only results in terms of emission reductions have been subject to monetary valuation. Already since 2008, the Amazon Fund has valued these results at USD 5.00 per tCO<sub>2</sub> (BNDES, 2017). As such, the results obtained in the period 2006–2015 translate into a cumulative fundraising limit of USD 18.2 billion. The Green Climate Fund has adopted a similar approach after adopting decision B.18/07 in November 2017, which allows the allocation of up to USD 500 million for proposals to the “REDD-plus results-based payments pilot programme” on the basis of USD 5.00 per tCO<sub>2</sub>. Extrapolating this logic to the results implied in the FRELS for the Amazon biome, for example, this price would allow Brazil to receive over USD 30.6 billion for cumulative results obtained in the period 2006–2015. In spite of emission reductions being the only results with a monetary value,

(footnote continued)  
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governmental representatives maintain that REDD+ contributes to objectives beyond climate change mitigation. During the first meeting of GTT REDD+ in February 2014, for example, an MRE representative explained that “REDD+ is not just carbon”, but also encompasses safeguards and co-benefits whereby “carbon is just a proxy” for. Still, potential recipient countries of results-based payments must provide information on how non-carbon benefits and safeguards have been obtained. In this respect, these non-carbon results are also represented in the valuation of emission reductions as they pose conditional requirements for receiving results-based payments. Such requirements are not yet demanded in the context of the Amazon Fund, but the integration of the Amazon Fund with broader REDD+ initiatives has been a concern that was raised during the first meeting of CCT-Salv. At the same time, there is no direct value indication attributed to the information on safeguards.

### 4.4. Modalities and conditions of payments

Corresponding to the Brazilian position with respect to forest finance in early international forest governance debates, Brazilian REDD+ institutions have formally retained the non-offset nature of results-based payments. The first traces of evidence emerge with the establishment of the Amazon Fund by decree 6.527, which determines that “the diplomas [for results-based payments] are nominal, non-transferable and do not generate rights or credits of any kind” (art. 2, §2). Similarly, the establishment of CONAREDD by decree 8.576 included the determination that “results-based payments and their respective diplomas cannot be used, either directly or indirectly, for the purpose of meeting mitigation commitments of other countries” (art. 6). In December 2016, this statement was reiterated by CONAREDD+ in resolution 5, explaining that “results-based payments do not constitute an international transfer for the purpose of meeting mitigation obligations of other countries” (art. 1, VI). This retention of the non-offset nature of REDD+ finance reinforces that results-based payments are essentially based on achievements realized in the past rather than directly conducive to future achievements.

The attainment of future REDD+ results is pursued by means of

guidelines and criteria for the redistribution of the financial resources obtained from results-based payments. In this respect, the formal agreement between donor countries and BNDES, for example, obligated the latter to report on “the contribution of the [Amazon] Fund in reducing emission from deforestation and forest degradation” (art. VIII-1). Furthermore, the guidelines and criteria for Amazon Fund projects warrants the coherence of project objectives with national policies, including ENREDD+, that seek to reduce emissions from forest-related activities (see also Van der Hoff et al., 2018). Similar provisions have not yet been fully elaborated in the context of CONAREDD+ and are starting to materialize. For example, during the consolidation of the series of workshops on results-based payments from the Green Climate Fund, SAIN presented as one of the outcomes that “REDD+ results-based payments are a modality of country support and not a specific theme for investments”. This suggests that guidelines and criteria for redistributing financial resources is ultimately a concern for accredited entities like the Amazon Fund and are not immediately related to historical emission reductions. At the same time, CONAREDD+ determines in resolution 6 that resource distribution to Amazonian states should occur on the basis of native forest cover and deforestation reduction. In absence of financial transactions from the Green Climate Fund to Brazilian REDD+ institutions at the time of this research, this point still remains unclear.

Although the materialization of the Brazilian REDD+ structure has moved away from offset-based approaches to results-based payments, the possibility of offsetting carbon emissions has not been definitively removed from REDD+ debates. During COP22 in Marrakesh in 2016, for example, a number of Brazilian organizations offered a letter to the Brazilian federal government arguing that the Brazilian position on offsets should be reconsidered. Similar appeals to open up negotiations on carbon offsetting also occurred in CONAREDD+ meetings. During a plenary CONAREDD+ meeting in June 2017, for example, state government representatives demanded the possibility of commercializing REDD+ results on voluntary markets in order to either open up alternative fundraising opportunities or at least opening up debates in CONAREDD+ meetings for discussing offsets. Many participants, most notably federal government representatives, defended that the formal understanding of UNFCCC outcomes refrains from offset-based mechanisms. Instead, they relegated such debates to alternative forums and institutions like the Brazilian Climate Change Forum (FBMC) or the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). CONAREDD+ did not agree on the incorporation of this suggestion from state government representatives, but rather seemed to have soothed their demands by stating in resolution 6 that “those interested in fundraising through voluntary schemes [...] must declare [...] that they are aware that these exclusively represent one financing modality” (art. 5, §2). Concurrently, the same resolution reaffirmed that receipt of results-based payments “do not generate [...] the right to realize international transfers for the purpose of meeting international mitigation commitments” (art. 5, §3).

## 5. Resonating market logics in REDD+ materialization

Although REDD+ developments have generally been characterized the concept as a results-based funding mechanism (Angelsen, 2017), our analysis suggests that national REDD+ institutions in Brazil still reflect two of three building blocks of environmental markets. There is ample evidence that the singularization and monetary valuation of emission reductions are the central objective of national REDD+ governance. The processes related to reference levels and monitoring, for example, emphasize a mechanical role of forests as sources (i.e. deforestation) or sinks (i.e. forest cover) of carbon dioxide. More specifically, it is the curtailment of their role as sinks that is emphasized by these REDD+ elements and centralized in monetary valuation processes. Policy participants are also starting to develop measurable indicators for non-carbon benefits, which signals an attempt to include alternative

value judgements into decision-making processes (Neuteleers and Engelen, 2015). However, it is still unclear under which circumstances either UNFCCC or Brazil have met these conditional requirements for results-based payments. Moreover, we found no indication that these indicators may merit monetary valuation, let alone compensation, in case of positive performance. This suggests that the central tenet of REDD+ remains on emission reductions, whereas non-carbon objectives, most notably safeguards, became auxiliary conditions for results-based payments at best.

Our analysis did not find evidence of an adherence to ruptured dependence with respect to appropriation, the third building block of environmental market instruments. The texts of the national REDD+ institutions are very clear about their abstinence from carbon offsetting, which is consolidated through repetition in formal documents. Correspondingly, attempts to open up negotiations to the consideration of carbon offsetting often have been thwarted by pointing at these consolidations. These lines of argument resonate Brazil's sovereignty concerns that have been very influential in diverting REDD+ debates away from offset-based approaches (Carvalho, 2012; Van der Hoff et al., 2015). One may argue that the resistance to carbon offsetting has been institutionalized in Brazil and have been an important argument used by federal government representatives to ward off political pressure to direct debates towards private appropriation approaches. At the same time, our observations suggest that this institutionalization is not (yet) conclusive and may continue to be an issue in forest politics in the future.

Other stakeholders have raised concerns about the effectiveness of existing REDD+ institutions. For instance, organizations like Norway's International Forest and Climate Initiative (NICFI) find decreasing methodological foundations for continuing their financial transactions to the Amazon Fund in the context of rising deforestation rates between 2013 and 2018 (Van der Hoff et al., 2018). Rather than engaging in polemic debates about whether market instruments are more efficient than alternative mechanisms (Cole and Grossman, 1999; Mendelsohn, 2006), donor organizations may instead consider alternative financial instruments due to a perceived ineffectiveness of results-based funding mechanisms. The analysis in this paper has not found evidence that this is indeed a concern among advocates of the carbon commodification discourse. Instead, some stakeholders have argued for the diversification of REDD+ finance, which is illustrated by the appeals from state government representatives during CONAREDD+ meetings. These appeals are strengthened by initiatives like the Marrakesh Letter on REDD+ that was signed by various organizations.

Although our discussion underscores that national REDD+ institutions in Brazil adhere only partially to the building blocks of market instruments, we argue that an existing order of ruptured dependence still governs the regularity of actions and statements within these institutions to some extent. The representation of nature in terms of performance indicators and reinforced by monetary values does not encompass all nature, in spite of recent attempts to do so through safeguards (see Hajkowicz, 2007). Moreover, monetary value judgements imply a temporary dependence on nature in addition to a further reduction of nature. The idea of a fundraising limit, for example, implies the view that the dependence on nature will cease to be relevant once the totality of financial resources has been received and the ‘debt’ will be paid for. Such propositions would repudiate the economic argumentation that the effort of ‘internalizing externalities’ (Pearce et al., 1989; Tietenberg and Lewis, 2012) contributes to the integration of human and natural systems. These findings nuance one of the arguments by Van der Hoff et al. (2015, p. 42) that the sustainable development discourse views emission reductions as “a side-effect rather than the central objective” of REDD+. While this may indeed hold true for lower levels of governance, we contend that emission reductions are certainly at the centre of attention at the national level. As a consequence, one may argue that political conflicts between the discourses of sustainable development and carbon commodification will not

concern singularization or monetary valuation processes, because both discourses adhere to a ruptured dependence on nature.

The existing order established by ruptured dependence does not, however, irrevocably justify the prevalence of market instruments over alternative approaches, which denotes that appropriation is subject to the politics of discourse. One may argue that Wunder (2015) acknowledged the political nature of market instruments as he revisited his understanding of PES schemes, since he removed the appropriation of nature from the definition by changing the emphasis from ‘exchange’ to ‘conditionality’ and from ‘service buyers’ to ‘service users’ (Fletcher and Büscher, 2017). At the same time, service users that are interested in obtaining ‘political offsets’ (Angelsen, 2017) may consider alternative channels for climate finance when the conditions, or perceptions thereof, are not met. The first traces of such consequences have already been observed with respect to the Amazon Fund (Van der Hoff et al., 2018). In light of these contestations, one may argue that the power struggles between the sustainable development discourse and the carbon commodification discourse reside within different ideas about appropriating REDD+ results without questioning singularization and monetary valuation processes. Moreover, our analysis suggests that the dominance of the sustainable development discourse is sustained through a repetitive reaffirmation of the resistance to carbon offsetting within formal documents.

## 6. Conclusion

Although we agree with most literature that REDD+ cannot be characterized as a market instrument for carbon offsetting, our analysis suggests that national REDD+ institutions stem from an amalgam of sovereignty concerns and market logics. We have identified that REDD+ institutions in Brazil adhere to at least two building blocks of environmental market instruments, namely singularization and monetary valuation. Furthermore, we have shown that the resistance to market instruments, albeit institutionalized, could still pertain to the politics of discourse. This was observed with respect to two particular argumentations. Firstly, some stakeholders have articulated their interest in a more diversified access to financial resources that, in their view, market instruments could provide. Secondly, and more significantly, other stakeholders have raised concerns about the effectiveness of existing REDD+ activities to which they make financial contributions in the form of donations to the Amazon Fund. While the former argument reflects a political interest in more diverse approaches to the appropriation of nature, the latter may also hint at more structural problems related to singularization and monetary valuation processes (Van der Hoff et al., 2018). These observations indicate that the perseverance of a carbon commodification discourse in REDD+ debates do not build on a predefined determination of superior efficiency, but are instead a reflection of diverging stakeholder interests. Inversely, the prevalence of a sustainable development discourse reflects an active maintenance of distorted power relations between REDD+ discourses in spite of ruptured dependence discourse leaning towards another direction.

It seems useful to further investigate the extent to which ruptured dependence indeed constitutes a governing social structure for a variety of financial and economic instruments as well as environmental policy-making in general. This latter proposition emanates from the observation by some scholars that environmental policy-making has been mostly inspired by economic rationales (Baveye et al., 2013; Gómez-Baggethun and Muradian, 2015; Gómez-Baggethun and Naredo, 2015). If this investigation were to yield positive results, then it will be necessary to further develop the theoretical and philosophical foundations on which the concept of ruptured dependence builds. The close examination of ruptured dependence and related practices could inform environmental and forest governance debates on the underlying foundations for appeals to the use of market instruments. More specifically, such an examination will be useful for identifying whether such appeals reflect structural problems related to the reproduction of ruptured

dependence or whether they reflect stakeholder interests that emerge in the politics of discourse. Understanding these dynamics could help policy-makers to decide whether market instruments are indeed necessary or whether adjustments in alternative financial instruments are preferred. In this way, the analysis of concrete instances of PES in relation to ruptured dependence may also reignite more critical arguments for a more comprehensive relation between humans and nature.

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