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Framing REDD+ in the Brazilian national media: how discourses evolved amid global negotiation uncertainties

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Abstract

Reducing emissions from deforestation and degradation (REDD+) in tropical countries is an important and contested element of the post-Kyoto climate regime. For policy options which generate controversy between diverse actor groups, such as REDD+, mass media plays an important role in defining and supporting policy possibilities. Analysis of the way in which national media frames issues of climate change and deforestation can offer insights into the nature of the contested domains of the REDD+ policy process. Here we examine the Brazilian national media discourses surrounding REDD+ because it contributes to setting the tone of policy debates at the federal level. Specifically we ask: (i) How was REDD+ portrayed in the Brazilian national print media and whose opinions and perceptions were represented?; (ii) How have media frames on REDD+ in the national print media changed over time? Our results contribute with new knowledge for understanding the observed progress of REDD+ in Brazil. We identify two main themes that dominate the focus in the national media coverage of REDD+, specifically, ‘Politics and policymaking’ (representing half the coverage) and ‘Economics and market’ (with over a third). Results show that discussions around carbon markets were among the most contested and that optimism in relation to REDD+ effectiveness declined over time. The analysis suggests that positions adopted on the national REDD+ strategy were shaped by state and federal collision of interests. We demonstrate an evolution of national concerns from an initial focus on efficiency (i.e. finance and carbon markets) to a recentered focus on equity issues (i.e. implementation of safeguards). We conclude with some thoughts on the implications of these features for REDD+ interventions and implementation in Brazil.

Key words: deforestation, Brazil, governance, discourse analysis, Amazon

1. Introduction

Since 2007, reducing emissions from deforestation and forest degradation (REDD+) has emerged as a potential instrument for mitigating climate change by compensating tropical countries for preserving (and augmenting) their standing forests. REDD+ is particularly relevant for the Brazilian Amazon, considered of national and international significance as the world’s largest contiguous remaining tropical forest. Furthermore,

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1 the region is under considerable threat from deforestation pressures, particularly from
2 agribusiness expansion (May et al. 2011; INPE 2016).

3
4 Among experts and specialized NGOs, REDD+ is perceived as an effective way to
5 mitigate climate change (Intergovernmental Panel on Climate Change 2007; Stern
6 2007; Eliasch 2008; Angelsen and McNeil 2012). Yet, public perceptions and debates
7 about REDD+ are informed by a diverse set of actors, including the media, and not
8 limited to expert opinion. For example, the mass media has an increasingly significant
9 role in influencing public perceptions, and is an outlet for the views and positions of a
10 variety of actors in a policy arena. Media can raise awareness about policy issues,
11 propose or counter specific policy solutions, or broadly advocate for a particular policy
12 action (see Kennamer 1992, Paletz 1999, Rogers and Dearing 2007, Crow 2010, for
13 example). Importantly, the way the media frames controversial issues such as climate
14 change and deforestation is of particular interest since it likely affects public
15 preferences for policy options.
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19 In Brazil, the national media contributes to setting the tone of policy debates at the
20 federal level. Although the national media may not adequately reflect local realities, it
21 remains central to understanding the different frames surrounding policy discourses and
22 helps to identify gaps between local concerns and national policy making. This is
23 because of national media wide coverage and high persuasive levels. This study then
24 focuses attention on the role of the national print media in shaping REDD+ policy
25 discourses in Brazil and connects these discourses with the observed progress in global
26 negotiations.
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30 We adopt a temporal approach and examine how the Brazilian national print media
31 represented REDD+ from its first appearance toward the end of 2005, and throughout
32 the subsequent period of formulating the national REDD+ strategy in 2011. Specifically,
33 this analysis seeks to answer the following questions:
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- 36 (i) How was REDD+ portrayed in the Brazilian national print media and whose
37 opinions and perceptions were represented?
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39 (ii) How have media frames on REDD+ in the national print media changed
40 over time?
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44 Answering these questions allows us to identify which discourses dominate over time
45 and to discuss the possible reasons and implications of such shifts for Brazil's REDD+
46 policy design and implementation.
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49 The paper is organised in four parts: we present the conceptual framework that guides
50 our study followed by the methods and analysis employed, this is followed with our
51 results and finally conclusions. Our analysis demonstrates that the way REDD+ is
52 framed in the national print media in Brazil reflects the divergent opinions of particular
53 groups regarding what REDD+ should become. We discuss the implications for
54 REDD+ policy formulation and implementation in Brazil, in terms of its potential
55 effectiveness, efficiency, equity and co-benefits (3Es+). We identify discussions
56 around carbon markets among the most contested and that optimism in relation to
57 REDD+ effectiveness declined over time. We conclude by identifying a temporal shift
58 in the discourse from efficiency/effectiveness concerns to a focus on issues related to
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1 equity. We suggest that the controversial nature of the issues as represented in the media
2 and which accompany the evolution of REDD+, may explain the slow development of
3 concrete policies and institutional structures that are needed to implement REDD+ in
4 Brazil.

5 6 **2 Conceptual framework and methods**

7 8 **2.1 Definition of media frames**

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10 The media plays a key role in framing policy toward climate change (Anderson 2009)
11 and in contributing to the creation of political identities and public preferences for
12 policy options (Dittmer 2005). Media is influential because it allows for certain
13 representations, and silences, of controversial issues such as climate change and
14 deforestation. Media can affect public opinion on REDD+, on policy actors and, can
15 influence public choices, in terms of politic allegiances and behavioral change.
16 Importantly, the way policy and media players frame an issue can influence its
17 likelihood of reaching the front burner in the public or political agenda.
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21 Mass media can both reflect and reshape social realities and discourses through the
22 process of framing. Goffman was the first to concentrate on framing as a form of
23 communication and defined “framing” as a “schemata of interpretation” that enables
24 individuals to “locate, perceive, identify and label” occurrences or life experiences
25 (Goffman 1974:21). Following Boykoff (2007; 2008) this study explores media frames
26 in order to analyse discourses surrounding REDD+ in the national print media in Brazil.
27 We understand media frames as such schemata for interpretation that result in a
28 particular way of representing REDD+ in media articles.
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32 33 **2.2 Data Collection**

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35 We selected the four principal printed national newspapers in Brazil, that: i) represented
36 a broad spectrum of political orientation and ii) had digital archives. This approach
37 followed the methodology adopted in the Global Comparative Study on REDD+
38 (Brockhaus and Di Gregorio 2012), ensuring both the comparability of data within this
39 broader project, while also restricting policy analysis to the national sphere. The four
40 national printed newspapers selected were: Folha de S. Paulo (a newspaper with
41 balanced views that has the highest circulation among Brazilian newspapers); O Estado
42 de S. Paulo (the fifth largest newspaper in circulation, with a somewhat progressive
43 orientation); O Globo (part of Brazil’s largest media group), and Valor Econômico (a
44 critical business newspaper). Although we recognize that policy is also determined at
45 the state level, this analysis focuses on media representation at the national level, we
46 therefore did not include sub-national newspapers. The national level focus of our
47 analysis allowed us to identify how debates related to REDD+ implementation at the
48 sub-national-level are represented in national level media discourses.
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55 Based on theoretical and methodological justifications we focused on print media and
56 did not analyse content in other web-based media. Specifically print media are
57 ubiquitous, exhibit high usage (including their online versions), draw public attention
and exert political influence. Second, print media has important practical advantages,
with well documented and completeTM archives (while other web-based material is often

ephemeral), large amounts of data can be collected efficiently and systematically, with consistent and comparable meta-data. Finally, print media are particularly valuable to elicit information about dominant discourses (Maunter 2008).

Data were retrieved for the period December 2005 to December 2011. The first period (2005-2009) coincides with the Montreal Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC), when REDD+ was first accepted on the global climate change policy agenda. The second period (2010-2011) covers the beginning of REDD+ "readiness" phase, in which the Brazilian federal government started to develop the strategies and capacity to respond to the challenges of REDD+. The data were collected at two points in time, in 2010 and in 2012.

The following keywords (and their Portuguese equivalents) directed the search: "REDD+", "REDD", "RED"; "Reduction of Emissions from Deforestation and Degradation"; "Reduction of Emissions originating from Deforestation and Degradation". In the first interval (2005-09), we also included "Avoided Deforestation"; "Standing Forest"; "Forest Carbon"; "Forest Emissions" as additional keywords to capture those articles that were concerned with such issues in the press but that had not yet been identified with the abbreviations RED or REDD. In the second interval (2010-11), this recourse was unnecessary, since REDD+ had by this time passed into journalistic parlance. We identified a total of 598 articles over the six-year period.

To validate coding results and complement the media framing data, we conducted semi-structured interviews with four journalists with experience on REDD+ in Brazil - two from O Estado de São Paulo, one from Folha de São Paulo and one from Valor Econômico. We were unable to identify journalists with specialized perspectives on REDD+ at O Globo at the time of our research. These interviews solicited validation of the main issues under debate in the national media regarding REDD+ (i.e. monitoring, finance, benefit-sharing), as well as the journalists' perspectives on the principal actors and their positions in the REDD+ policy arena.

2.3 Data analysis

We identified the different variables and levels of media analysis (Table 1). Media articles usually contain one dominant (or primary) frame, but sometimes may also contain more than one frame. We first looked at the primary frame. Primary frames are found in the prominent elements of the text: headline, subheading and first paragraph. Longer articles may contain a secondary frame that represents a different perspective on REDD+. For each frame we coded two main characteristics: the scale of the frame (international, national, sub-national, local REDD+ issues) and the main theme – or topic – of REDD+ that was discussed (ecology; economics and markets; politics and policy making; civil society; governance context; science; or culture).

Journalists may report a statement and include a counterstatement of different policy actors thus providing a broader, more balanced account of opinions. We coded statements of up to two policy actors in each frame. The first actor mentioned we term 'the advocate of the frame' and the second actor mentioned (described as holding a different opinion) 'the adversary of the frame'. Adversaries are often given less prominence, space, and direct voiceTM than advocates of a frame but their presence is

1 meaningful, illustrative of divergence (Di Gregorio et al. 2012:1). We coded each
2 actor's position as "optimistic" or "pessimistic" regarding the potential that REDD+
3 could fulfil its promise, and whether these perspectives reflected characteristics of the
4 3E+s as evidence of their position.

6 **Table 1: Variables and levels of media analysis**³

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8 Of all articles (n 598) identified over the time period of the research, 244 (41%) were
9 not coded beyond level 1, because they made only passing mention of REDD+. These
10 mostly referred to coverage of international climate negotiations where REDD+ was
11 under discussion, without further elaboration on the matter. Thereafter, 354 articles
12 were coded to level 2 (characteristics of the frame) and 3 (opinions of actors), 70 of
13 which had a secondary frame, totaling 424 media frames analysed altogether.

17 **3. Results**⁴

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19 Our data set showed that the largest number of articles on REDD+ in the Brazilian
20 national printed media appeared in 2009 (Table 2). This coverage was concentrated in
21 the last few months of that year – immediately prior to, during and after the UNFCCC
22 conference of the parties (COP) in Copenhagen (COP15). All newspapers except Folha
23 de S. Paulo published more REDD+-related articles in 2009 than in the preceding 4
24 years combined. In the months immediately following COP15, there was considerable
25 coverage of the aftermath and presumed failure of the negotiations, little content
26 focussed on the advances that were achieved with regard to REDD+ (e.g. Brazil's
27 stalemate-breaking adoption of voluntary targets to reduce deforestation by 80% in the
28 Amazon). The proliferation of coverage in 2009 was not repeated in 2010-11, coverage
29 was less, apparently eclipsed by other concerns in the press. At the same time, the
30 coverage in the second time interval changed focus and gave more attention to sub-
31 national and local considerations related to the climate agreements, particularly those
32 reflecting safeguards and equity, including the role of indigenous groups in benefit-
33 sharing.

39 **Table 2: Number of reviewed REDD+-related articles published in Brazil by 4 key 40 national Newspapers between May 2005- Dec. 2011.**

42 **3.1. Dominant themes and actors in REDD+ national media coverage**

45 **The main themes in the national media frames**

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47 The dominant themes of REDD+ in the national media were related to 'Politics and
48 policymaking' (49%), 'Economics and market' (34%) and 'Ecology' (9%), which
49 combined represent 92% of all media frames. Themes related to 'Politics and
50 policymaking' refer to debates between policy actors and to reporting on policy
51 processes for the design and implementation of REDD+ (such as debates around the
52 development of the national REDD+ strategy). This frame generated the most media
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56 ³ Adapted from Di Gregorio et al. 2012a.

57 ⁴ The results analysed in this article are part of a greater database constructed for the Global
58 Comparative Study. Those interested in delving in more depth into the data are welcome to obtain the
full text online as supplementary material: <http://www.cifor.org/library/3423/redd-politics-in-the-media-a-case-study-from-brazil/>

1 coverage in both the first and second interval analysed (51% and 49% respectively).
2 Frames covering REDD+ economic issues, in particular debates over funding and the
3 carbon markets, represented 28% of the primary frames in the pre-COP 15 period
4 (2005-2009), but had fallen to 12% in the 2010-11 period, while articles in which the
5 primary topic was 'Ecology' or 'Science' had grown to 16% and 6% from a prior 9%
6 and 1%, respectively.
7

8 Frames related to 'Politics and policy-making' discussed REDD+ political decisions at
9 both federal and state levels. The frames made visible how states struggled to try to
10 influence REDD+ policy decisions, acting strategically in order to improve their
11 prestige and socio-political leverage. These frames also showed that a conflict of
12 perceptions over the roles of state and federal governments dominated the REDD+
13 political discourse in Brazil in the pre-COP 15 period. This conflict arose from states
14 wishing to act independently from the federal government, adopting contrasting
15 positions in relation to funding, supporting carbon markets and seeking independent
16 access to voluntary sources of financing, all of which contrasted with the position
17 adopted by the federal government.
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21 In the later period, however, the media reflect a decline in attempts to jockey for
22 position by state governors. Instead, national media coverage in this period focused on
23 the policy discussions surrounding REDD+ safeguards and equity in the REDD+
24 national strategy. This reflects the perception that despite the general failure of
25 achieving consensus at COP15 on the construction of a new overall climate agreement,
26 the essential role of REDD+ in climate mitigation was confirmed there. The media
27 coverage also indicated how the debate had stalled over construction of the national
28 REDD+ strategy, and how states filled this vacuum, gaining the necessary autonomy to
29 develop their own REDD+ related policies and measures (see GCF 2014).
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33 The analysis of the frames focusing on the theme of economics and markets, showed
34 that discussions around carbon markets were among the most contested. They revealed
35 high levels of contention amongst Brazilian policy actors regarding the desirability of
36 permitting access to carbon markets to finance REDD+, versus the creation of a fund
37 based mechanism (e.g. Amazon Fund). The latter would be unrelated to obligations for
38 compliance imposed by developed countries. The analysis suggests that actors' at the
39 federal level perceived these options as mutually exclusive, despite being seen at other
40 levels of governance as mutually compatible. This contrast coloured the positions
41 adopted on the national REDD+ strategy, in which state and federal interests collide.
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45 These findings were corroborated in our interviews with leading journalists, who agreed
46 that the most important matters for newspapers, when discussing REDD+, were related
47 to policy making and economics. "Implementation and funding are the issues of most
48 interest" (interview with journalist from Valor Econômico, 2010).
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52 **The dominant actors debating REDD+ in the national media over time**

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54 Our analysis found that only a small number of key actors were cited frequently in
55 national media in Brazil (Table 3). These actors were engaged in the debate since the
56 topic first appeared on the international agenda and involved directly in developing
57 national proposals to the UNFCCC and in implementing state and local pilot projects.
These are the 'go-to people' for journalists and their views have significant influence

1 in the REDD+ arena both in the Brazilian national media and in broader policy
2 networks (see Gebara et al. 2014).

3
4 **Table 3: Most frequently cited actors and organizations by number of mentions**
5 **between 2005-11**

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8 The comparison between the two time periods reveals a shift in influence from the state
9 to the federal level, with assumption by the Ministry of the Environment of its
10 responsibility for consultation on and development of the national REDD+ strategy.
11 There was a reduction in the (initially important) role of state government actors in
12 Amazonas, the pioneer state to implement REDD+ in Brazil. This may reflect ex-
13 governor Braga's failure at re-election and the consequent discontinuation of REDD+
14 actions by the state government. Although Viana – also in the state of Amazonas - leads
15 pilot REDD+ initiatives through the Bolsa Floresta Program implemented by the NGO
16 Sustainable Amazonas Foundation, he has reduced public policy influence. The same
17 occurred in Mato Grosso, with Maggi moving to the federal Senate, and his successor
18 having little role in REDD+ debates. Continued REDD+ efforts in Mato Grosso were
19 linked to state-NGO partnerships. These changes were reflected in the data regarding
20 an apparent shift in individual and organizations roles in REDD+ policy arena.
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25 Just over one third of the policy actors (35%) identified in the media frames between
26 2005 and 2009 were sub-national level (state) actors. This dropped to 29% in the second
27 period (2010-2011). Federal government or bureaucratic actors included foremost
28 representatives of the Ministry of Environment (under Carlos Minc to 2010 and Izabella
29 Teixeira thereafter), the Brazilian Forest Service (forestry agency operating under the
30 auspices of the Ministry of Environment) and also negotiators for Brazil at the COP.
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33 National and international research centres mentions in relation to REDD+ increased
34 from 13% to 23% over the two periods. The most often cited research centre was the
35 National Institute for Spatial Research (INPE), mainly with content of its ongoing
36 programmes for monitoring deforestation in the Amazon by satellite. Reflecting their
37 emerging role in state and federal policy, ENGOs were also prominently represented in
38 REDD+ media debates. In the first period domestic ENGOs represented 18% of the
39 policy actors mentioned in the media frames, though this dropped to 12% in the second
40 time frame. A similar proportion of international ENGOs were mentioned, with 12%
41 in the first phase and 14% in the second. It is noteworthy that the percentage of indigenous
42 actor groups discussing REDD+ in the national media grew, rising from 2% to 9%.
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47 **3.2 Dominant REDD+ perceptions in the national media over time**

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49 In the first period, more than half of the actors discussing REDD+ were optimistic
50 (57%), while 16% were not. Optimism declined as the REDD+ debate continued and
51 in the second period 48% were optimistic and 22% pessimistic. However, in general,
52 actors continued to perceive REDD+ as a positive measure for reducing emissions in
53 Brazil, but it had become clear that REDD+ policies would not be implemented rapidly
54 – reflected in media content. At the same time, deforestation control policies at the
55 federal level had proven successful in achieving a significant reduction in deforestation
56 from 2005-2009, so that more complex institutional arrangements were not always
57

1 Among the 3Es+, the major concerns of the actors discussing REDD+ in the national
2 media, in order of importance were: the effectiveness of REDD+ in reducing emissions
3 (33%); concerns of policy actors with REDD+ efficiency and cost–benefit
4 considerations relating to 30% of actor’s opinion statements. Actors therefore discussed
5 whether REDD+ might result in standing forest receiving higher economic returns than
6 conversion and deforestation related to different land uses. For example, one statement
7 of one key actor read: “Deforestation does not happen because people are irrational, but
8 because it generates a lot of money. If we want to stop the destruction, the forest must
9 be worth more standing than cut.”⁵
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13 During the first period, equity considerations for local communities and co-benefits
14 such as biodiversity, were discussed less frequently than effectiveness and efficiency
15 (in 18% and 9% of actors’ statement respectively). However, equity was consistently
16 the main concern of the representatives of indigenous people. As indicated by
17 indigenous leader Chico Apurinã in one of the articles analysed for this research:
18 “Indigenous peoples are suffering the effects of global warming without cutting down
19 the forest. Our understanding is to discuss REDD+ in order to achieve people
20 recognition for the work we do.”⁶
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24 The priorities of the actors are distributed more equally over the years 2010-11, than in
25 the previous period, suggesting that controversy decreased over time. Greater attention
26 was paid to the generation of co-benefits (26%). This can be related to international
27 decisions, such as the Cancun Agreements, which determined that countries should
28 establish REDD+ safeguards (UNFCCC 2010). Many actors demonstrated this concern
29 in articles that discussed the conflict between economic development and conservation,
30 such as the advance of the agricultural frontier into the Amazon. Consequently, issues
31 of fairness and equity also gained somewhat more attention (23%) than in the previous
32 period. The increase in indigenous actors in REDD+ media coverage may be related to
33 a slight increase in the roles of equity advocates as demonstrated in press coverage.
34 Most actors concerned with equity discussed issues involving proposals for REDD+
35 initiatives in indigenous lands.
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40 The majority of opinion statements of policy actors discussed REDD+ issues related to
41 ‘Politics and policymaking’ (63 advocates and 19 adversaries), mirroring the most
42 common themes. Most advocates (79%) (i.e. those in favour of the frame) were positive
43 about REDD+ and international negotiations. However, Brazil’s negotiators at the COP
44 were among the adversaries (i.e. those counter the main frame) in articles from 2007,
45 especially when the primary frame was the carbon market. Some policy actors
46 expressed concerns that REDD+ may not be effective in reducing overall global
47 greenhouse gas emissions (GHG) if offsetting by developed countries was allowed. In
48 the words of Tasso Azevedo, former director of the Brazilian Forest Service, cited in
49 an article in O Estado de São Paulo: “Brazil’s official position is that REDD+ is valid
50 only if rich countries do not have permission to use the mechanism to avoid reducing
51 their own emissions.”⁷
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⁵ Projeto incentiva desenvolvimento sustentável na Amazônia, O Estado de S. Paulo, 11 December 2009.
Terras indígenas e reservas possuem 30% do carbono estocado na Amazônia, Valor Econômico, 5
September 2009. TM

⁷ REDD+ divide Estados e União, O Estado de S. Paulo, 17 August 2009

1 The main argument of the advocates was that it is possible to sign an agreement under
2 the UNFCCC that will contribute to conserving tropical forests. In contrast, the
3 adversaries feared that rich countries could use REDD+ as a way to avoid reducing
4 their own emissions. In 2006 and 2007, we found scepticism towards REDD+ on the
5 part of federal actors. However, a shift occurred between 2007 and 2008, with
6 advocates beginning to agree with and accept diverse forms of REDD+ funding,
7 perhaps related to the potential of securing voluntary finance (e.g. through the Amazon
8 Fund).
9

10 There were 46 policy actors cited discussing REDD+ issues related to ‘Economics and
11 market’, the majority being national-level government actors (43%). Within frames
12 related to economic and market topics, we found a high proportion of optimistic
13 advocates (80%). Here, the advocates’ main concern was efficiency (59%), followed
14 by effectiveness (15%) and equity (11%). Co-benefits were of concern to only 6% of
15 advocates with a voice in articles about the economy. The advocates of the economics
16 and market frames highlighted the necessity to economically value the standing forests.
17 Their main question was: “how much will it cost for Brazil to keep the forest standing?”
18 – in other words: what are the opportunity costs? They also focussed on the need for
19 financing of REDD+ initiatives, either through the carbon market or a combined
20 strategy. Adversaries identified in media frames, generally expressed doubt as to where
21 the resources for REDD+ would come from and who would benefit.
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26 There were a total of 20 policy actors discussing ecological issues related to REDD+
27 (13 advocates and 7 as adversaries). Although most indicated REDD+ as the best
28 available proposal for conserving forests and reducing GHG emissions, a minority
29 expressed concerns related to leakage (i.e. deforestation being simply displaced from
30 one area to another), the possible risks posed by REDD+ to biodiversity conservation
31 (i.e. the highest carbon savings are not necessarily located in places with the highest
32 levels of species diversity), to the prospect that indigenous rights over carbon stocks be
33 recognized and possible consequences of poor implementation of policies and measures.
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39 **4. Discussion**

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41 In Brazil, national media coverage of REDD+ shows that discourses have been
42 dominated by controversy generated by actors with divergent interests. Our data
43 suggests that these controversies may be delaying concrete decisions on REDD+
44 implementation at the national level. REDD+ implementation appears not to rely on
45 discursive convergence, but rather is characterized by the parallel development of
46 distinct REDD+ discourses that are at the same time competing, coexisting and
47 collaborating on different levels (see van der Hoff et al. 2015).
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51 With specific regard to the prominent controversies over modalities of REDD+ finance,
52 as shown by Pham et al. (2013) approaches adopted by countries to receive and share
53 REDD+ financial resources have been largely based on hybrid options, since such
54 approaches can create more possibilities for funding. The issue of REDD+ funding and
55 benefit-sharing is still to be regulated in most countries (Luttrell et al. 2013).
56 Fundamental questions have yet to be resolved and most REDD+ initiatives are
57 operating in a vacuum of uncertainty. Evidence from implementation of REDD+
initiatives on the ground shows that the main challenges in designing interventions that

1 are both effective and equitable are related to the heterogeneity of land uses and
2 livelihood portfolios (de Sassi et al. 2014). Determining who should gain from REDD+
3 benefits is, therefore, likely to involve trade-offs between the 3Es+.

4
5 While attempts to evaluate the opportunity costs of REDD+ in Brazil exist (e.g. Nepstad
6 et al. 2007; Börner and Wunder 2008), these may be inadequate if they do not capture
7 the non-market values ascribed to indigenous land use, subsistence and cultural values
8 (Plumb et al. 2012). The original idea of REDD+ was to make forest conservation more
9 profitable than forest clearing (Angelsen and McNeil 2012). However, the cost of
10 keeping the forests standing has been found to differ substantially across
11 implementation approaches. As argued by Gregersen et al. (2010:14), “it would appear
12 that opportunity costs are just the tip of the iceberg when it comes to estimating the real
13 compensation that will have to flow into tropical developing countries to implement
14 effective, efficient and fair REDD+ initiatives. The institutional investment costs
15 involved in governance reforms can be significant and such reforms cannot be done
16 overnight. Yet in many countries they are essential before REDD+ can be a success.”
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21 Federal actors - largely from the Ministry of Environment and the Brazilian Forest
22 Service -, Amazon state governments, as well as a certain domestic ENGOs and
23 research centres are the main actors whose positions are cited in discussing REDD+ in
24 the Brazilian national media. This shows that Brazil has strong ownership over REDD+
25 policy processes, as most relevant actors are domestic rather than international,
26 contrasting with other country contexts (see Dkamela et al. 2014). This is a positive
27 sign for REDD+ progress, since national ownership is necessary for success (Davis
28 2010; Di Gregorio et al. 2012b; Korhonen-Kurki et al. 2014; Brockhaus et al. 2016).
29 Despite national ownership, it is evident that the media coverage of this debate is
30 strongly keyed to the international policy process at the COPs as in other REDD+
31 countries (Cronin et al. 2016; Khatri et al. 2016; Vijge et al. 2016). Media coverage
32 was mainly driven by international negotiations and debates, peaking before and after
33 global meetings held by the UNFCCC.
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38 Most actors believe REDD+ could be a positive instrument for reducing deforestation.
39 This optimistic view however refers to broader international REDD+ issues, with most
40 frames discussing broader and internationally relevant policymaking concerns, such as
41 REDD+ finance. National and sub-national issues related to implementation and
42 institutional dimensions of REDD+ on the ground (such as REDD+ processes, land
43 tenure, benefit-sharing and carbon rights), were not as prominent in national media
44 content. Examining local and sub-national level media content would be a useful
45 research contribution to understand if these issues are covered at those scales. While
46 most actors expressed optimism of the potential for REDD+ to contribute to climate
47 change mitigation in the first period of our analysis, this optimism declined in the
48 second period, as it became clear that implementation would be neither simple or cheap.
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53 There appears to be a gap in the national media addressing concerns associated with the
54 possible negative impacts of specific institutional REDD+ issues in Brazil, such as land
55 conflicts and unfair benefit-sharing. The minimal coverage of these issues could reflect
56 a representation particular to the national media and may be more prevalent at other
57 scales (e.g. sub-national and local) or in other forms (e.g. grey literature, NGO
communications) of coverage. Implementation discourses in Brazil during the period
analysed are deeply embedded in concerns related to the tangible risks and problems of

1 implementing REDD+ (i.e. tenure clarification; benefit-sharing). These concerns are
2 reflected in the parallel materialization of REDD+, as argued by van der Hoff et al.
3 (2015), both in sustainable development discourses (centralized in the federal
4 government) and in those expressing opposition to commodification of nature as
5 embodied in the carbon market.
6

7 The increase in the percentage of actors concerned with equity and co-benefits of
8 REDD+ over time is taken here to reflect specific developments in this area after the
9 Cancun COP in 2010. The Brazilian government and civil society actors began to focus
10 greater attention on the development of a safeguards system that includes measures
11 responding to the distribution of co-benefits among states, social and economic actors
12 (MMA 2012). Concerns about REDD+ in indigenous lands were more prominent in the
13 second than in the first period analysed, likely reflecting the shift that occurred towards
14 increased participation of indigenous actors. The consideration of equity issues in this
15 context is salient as indigenous peoples, who have historically and continue to act as
16 forest stewards, occupy around 22% of the Brazilian Amazon biome. The indigenous
17 peoples' discourse framed in the national media corresponds to what Luttrell et al.
18 (2013) called the "stewardship" rationale for REDD+ benefit-sharing, which suggests
19 that benefits should go to low-emitting forest stewards.
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24 The conflictual debates framed by both 'Economics and markets' issues (i.e.
25 discussions around carbon markets) and 'Politics and policymaking' ones (i.e. state-
26 federal parallel discourses) have been dominated by divergent interests. This is likely
27 to reflect uncertainties that may have translated into reduced private and public
28 investments in REDD+. As already acknowledged by several authors integrating
29 different organizations and sectors, including better coordination between ministries
30 and different levels of government, as well as between climate policies and major
31 development policies is essential to achieve effectiveness on REDD+ (Milikan 2009;
32 May et al. 2011; Gebara and Thuault 2013; Fatorelli et al. 2014). Sectors that compete
33 with forest conservation such as livestock production and infrastructure development
34 put great pressure on forests and continue to receive the lion's share of public
35 investment. The levels of REDD+ finance stand in stark contrast to domestic subsidies
36 (Assunção et al. 2012), with average annual domestic agricultural subsidies in Brazil
37 exceeding REDD+ finance by a factor of 70 (ODI 2015).
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42 Finally, the political agendas of the different ministries and factions within the Brazilian
43 National Congress have not always been aligned, whether in relation to climate change
44 or with regard to anti-deforestation policies (Carvalho 2013, Anderson 2014). In
45 general, since 2011 the trend in climate change policy and political commitment in
46 Brazil has been to slow the rate of progress (Hochstetler and Viola 2012, 2015).
47 Whether Brazil will meet the targets proposed in its Intended Nationally Determined
48 Contribution as defined in COP21 in Paris, will depend to a considerable degree on the
49 allocation of financial resources for REDD+ related activities, since deforestation and
50 agriculture remain the two principal sources of carbon dioxide emissions in Brazil.
51 Indeed, since 2012 deforestation in the Amazon has risen by almost 36% (INPE 2016).
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5. Conclusions

National Brazilian media gave greatest attention to international policymaking concerns and economic issues involving finance and carbon markets and less to institutional issues concerning REDD+ implementation on the ground (such as REDD+ processes and impacts), particularly in the early stages of REDD+. As argued here, much of the controversy that surrounds policy decisions is born in the different perceptions of an issue held by the competing actors and organizations involved in the policy process. We show that policy actors framed REDD+ issues in Brazilian national media by giving greater attention to financing aspects of REDD+ than rights related debates on REDD+. The principal divergence identified among actors' positions in Brazil was between state and federal levels regarding the most effective means to finance REDD+, whether through access to global compliance markets for emissions reduction trading (state governments) or through voluntary donations based on assumption of historical responsibility for global climate change (federal). We argue that this contention, evident in our analysis, contributed to a slowdown in the process of developing a unified national REDD+ strategy. One important area for further research in this regard, is to investigate more in depth the challenges of coordinating national and sub-national REDD+ efforts.

We identify a temporal shift in the discourse from efficiency/effectiveness concerns to a focus on issues related to equity. These epitomize the long-standing struggle for balance between conservation and development in the forest domain. Although the equity debate has gained more attention also as a consequence of the international debate, it indicates that national media and policy players may be reshaping discourses to reflect sub-national concerns related to REDD+ implementation on the ground. Whether this will facilitate or delay REDD+ institutional progress at the national level remains unclear. We suggest this as a fertile ground for additional research on media framing not just at the national level, but inclusive of the sub-national and local media.

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Tables: Gebara et al.**Table 1: Variables and levels of media analysis**

Level	Variables
Level 1: refers to descriptive elements of the whole article.	Date and day; author; length; article section, indication of whether REDD+ is only mentioned in passing.
Level 2: refers to characteristics of the primary and secondary frame of the articles	Level of focus of the frame (international, national, sub-national). Main topic of the frame (ecology; economics and markets; politics and policy making; civil society; governance context; science; or culture)
Level 3: refers to the opinion statements on REDD+ of policy actors within the frames (only coded when the policy actors were identified by name or affiliation)	Opinion statements were either a quote or a paraphrase of an opinion on REDD+ linked to a named policy actor (positions per advocate and adversary in each frame) and were coded in relation to: i) outlook of the actors on REDD+ (optimistic, pessimistic, neutral); ii) main 3Es+ focus (i.e. equity, efficiency, effectiveness)

Table 2: Number of reviewed REDD+-related articles published in Brazil by 4 key national Newspapers between May 2005- Dec. 2011.

Newspaper	2005 - 2009				2010-2011	
	2005 - 2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
Folha de S. Paulo	11 (92)	27 (48)	27 (28)	51 (21)	38 (30)	7 (11)
Valor Econômico	1 (8)	8 (14)	20 (21)	46 (19)	23 (18)	5 (8)
O Globo	0 (0)	3 (6)	15 (15)	73 (30)	20 (16)	22 (35)
O Estado de S. Paulo	0 (0)	18 (32)	35 (36)	74 (30)	45 (36)	29 (46)
Sub-Total	12	56	97	244	126	63
Total for period	409				189	

Most cited actors			No. of mention	
Individuals	Affiliation	Type of organization	2005-2009	2010-2011
Paulo Moutinho	Amazon Institute for Environmental Research	National Research Centre	20	3
Virgílio Viana	Sustainable Amazonas Foundation	National NGO	21	2
Carlos Minc	Ministry of Environment	National Level State Actors	15	2
Eduardo Braga	Governor of Amazonas state	Subnational Level State Actors	15	1
Blairo Maggi	Governor of Mato Grosso state	Subnational Level State Actors	12	0
Total			83	8
Most cited organizations				
	Organization	Type of organization (all National Level)	2005-2009	2010-2011
	Ministry of Environment	State Actors	28	11
	Ministry of Foreign Affairs	State Actors	22	1
	Sustainable Amazonas Foundation	NGO	26	1
	National Institute for Space Research	Research Centre	22	4
	Amazon Institute for Environmental Research	Research Centre	21	3
Total			119	21

Table 3: Most frequently cited actors and organizations by number of mentions between 2005-11

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