

THE TELEVISED REVOLUTION: JOURNALISTIC COVERAGE OF DEFORESTATION CONTROL IN THE BRAZILIAN AMAZON

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ABSTRACT: This paper analyzes Brazilian media coverage of deforestation in the Amazon between 1997 and 2018. This period was marked by the implementation of public policies and private initiatives that contributed to a significant reduction in forest devastation. Computerized textual analysis techniques were used to analyze a corpus extracted from the Factiva database. We identified publication frequency, most frequently used terms, and performed topic modeling and recognition of named entities. The analysis considered the production of different media outlets and throughout different presidential terms. The results confirm homogenizing and depoliticizing trends in media coverage. They indicate, however, that the dynamics of this production may change within the scope of coverage of conflicts between elites.

KEYWORDS: Amazon. Deforestation. Media. Textual Analysis. Environmental Policies.

Introduction

Throughout the first decades of the 21st century, deforestation in the Brazilian Amazon, triggered from the 1960s onwards by public policies that boosted colonization and agricultural production in the region, seemed to finally be under control.

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Between 2004 and 2012, deforestation fell by approximately 80%, mainly due to the implementation of the Action Plan for the Prevention and Control of Deforestation in the Legal Amazon (*Plano de Ação para a Prevenção e Controle do Desmatamento na Amazônia Legal* – PPCDAm) by the governments of Luiz Inácio Lula da Silva and Dilma Rousseff (Candido et al., 2023; West; Fearnside, 2021; Mello; Artaxo, 2017). The establishment of private agreements to reduce deforestation involving large companies in the soy and beef supply chains, environmental organizations, and public authorities also contributed significantly to this achievement (Candido, 2023; Nepstad, 2015; Gibbs et al., 2016).

Controlling deforestation involved fierce political disputes involving agents from the field of power (Bourdieu, 1998; Candido et al, 2023; Candido, 2023). The journalistic field played a key role in these dynamics. By selecting, framing, and narrating events, granting or denying access to social agents and their perspectives, the media was decisive in constructing social representations of this processes of change.

Our work analyzes Brazilian press coverage of Amazon deforestation between 1997 and 2018. We seek to understand journalistic representations of the disputes involved in reducing deforestation, considering, in particular, how these representations have changed in the face of the dynamics of social stability and change. We used computerized text analysis techniques to analyze a *corpus* extracted from the Factiva database. We identified patterns of publication frequency, most frequently used terms, and performed topic modeling and named entity recognition. The analysis considered the dynamics of production by different media outlets and across different presidential terms.

Unlike what is predicted by Gil Scott-Heron's famous poem and song, to which we refer in the article's title, our analysis demonstrates that important social changes can have repercussions on media production. In line with the proposals of authors in the sociology of scandals (De Blic ; Lemieux, 2005; Grün, 2018) and the theory of social movements (Gamson; Wolfsfeld, 1993; McAdam ; McCarthy ; Zald, 1996), we found that the journalistic field captured the dynamics of social change by reporting on decisive disputes that tested the implicit support for the expansion of agricultural production into the forest, enhancing the capacity of the "left hand" of the State to limit it through the implementation of environmental legislation.

Our analysis contributes to the literature on journalistic coverage of socio-environmental issues in the Amazon. These studies have addressed how the media portrays the process of destruction of the planet's largest tropical forest. Palmer (1996), for example, showed how the international media was key in shaping the representation of Amazon deforestation as a global environmental problem. Costa (2016) and Mangas and Costa (2022) show that journalistic coverage of the topic is marked by alarmism, addressing the causes and consequences of deforestation super-

ficially, without effectively contributing to public awareness and the development of effective policies. Ladle et al. (2010), Braga and Marinho (2023), and Andrus and Waters (forthcoming) compare the coverage of Brazilian and foreign media, identifying both important similarities in coverage and the occurrence of changes in the framings that reflect different levels of embedding and the involvement of the media field with the reported dynamics.

Although these studies make important contributions, they disregard how coverage relates to concrete political and historical contexts associated with the dynamics of the field of power. An exception is the interesting study by Santiago (2024), which investigates how news reports published during election years use numerical data associated with the deforestation rate. The author shows how the journalistic agenda on the Amazon is influenced by the dynamics of the political field. Engaging with previous research on the political relations involved in controlling deforestation (Candido et al., 2023; Candido, 2023; Candido, 2025), the article considers the relationship of the journalistic arena with other fields in a period marked by the implementation of public policies and initiatives of social movements that contributed to a significant reduction in forest devastation.

The article is structured in four parts in addition to this introduction. In the following section, we briefly review the sociological literature dealing with the dynamics of media production during times of social stability and change, particularly addressing how conflict between elites can alter journalistic conventions. Next, we describe the method adopted in our empirical research, which was based on computerized text analysis techniques. In the following sections, our main findings are presented and discussed.

Media coverage during times of stability and change

Journalistic coverage can take on distinct forms in times of stability and change in the social arenas being reported. In times of stability, coverage tends to reflect and reproduce existing power structures and social norms (Tuchman, 1978). The agenda is generally set by dominant institutional sources, such as government agencies, established civil society organizations, and recognized experts (Gans, 1979). The framing of news tends to be more consensual and less conflictual, focusing on technical, informative, or general public interest aspects, within the limits of the *status quo*.

This stability does not imply the absence of a certain dynamism, which stems from the fact that coverage takes place within the journalistic field, defined by Bourdieu (1997) as a space of struggles structured by power relations and competition among journalists, editors, presenters, media owners, and other agents. These

agents, however, tend to reproduce orthodoxy, taking premises linked to established power hierarchies as given. For authors such as Champagne (1995), the dependence of media companies on advertising to generate revenue makes them dependent on large economic and political groups, which are critical factors in homogenizing and depoliticizing journalistic content. Expanding the audience is key to maintaining and increasing these revenues, which leads media outlets to appeal to common sense, favoring content that is more easily assimilated and more engaging for the public (Champagne, 1995; Bourdieu, 1997; Schudson, 2000; Benson, 2000; Pedrosa Neto, 2015).

Some studies, however, indicate that these trends can be disrupted during times of social conflict, especially when those dominant in the journalistic field are not directly involved. Coverage of these situations is driven by the conflict's ability to attract public interest, expanding the audience, but it can be distorted by sensationalist tendencies and spectacularization processes, driven by the influence of market logic (Bourdieu, 1997).

Zelizer (2015) points out that the dynamics of journalistic coverage can be altered during times of significant social change or conflict, exposing latent tensions and opening space for new voices and perspectives. Challenging dominant sources of information can be crucial in these changes (Bennett; Lawrence; Livingston, 2012). The symbolic disputes inherent in journalism tend to become more exposed, with different agents seeking to impose their framing and define the interpretation of events (Entman, 1993). The intensity of the conflict and social mobilization can lead specific themes to rapidly rise to the media agenda, becoming the subject of public debate (Mccombs; Shaw, 1972).

The sociology of scandals literature indicates how conflicts between agents in positions of power can be mediated, especially when they involve urgent representations associated with the dominant moralities in a society (De Blic; Lemieux, 2005; Grün, 2018). Scandal here is seen as a moment that puts established social orders to the test, revealing tensions and limits of shared norms, which creates instability and favors change. In some cases, agents may strategically exploit relationships with the media to promote their social conceptions (Adut, 2004; Jamieson; Cappella, 2008).

Social agents underrepresented in journalism can also gain visibility by disseminating their narratives and challenging official or dominant versions. The literature on social movements demonstrates that media coverage can be key to the success of challenging agents seeking to alter the *status quo*. One of the primary aspects in these cases lies in the ability to amplify the message and reach a wider audience (Gamson; Wolfsfeld, 1993). Evidently, the media can shape the interpretation of events through its framing, influencing how the public perceives the movements (Entman, 1993). Therefore, the most successful movements develop communication strategies to influence the coverage of their actions and messages

(Benford; Snow, 2000). Positive or neutral coverage can help legitimize a cause and garner support, while negative coverage or media marginalization can hinder change processes (McCadam; McCarthy; Zald, 1996).

Computerized analysis of news about deforestation in the Amazon

The research was based on a *corpus* extracted from the Factiva database. This database gathers structured data from news reports from the world's leading media outlets (Dow Jones, 2020). The search was restricted to news reports in Portuguese and to the most impactful news outlets. Regional outlets and other documents included in the database, such as official documents and data from other sources, were disregarded. The news collected covered the period from 1997 to 2018, which was critical for the structuring of policies to combat deforestation in Brazil (Candido et al., 2023). The search terms included “deforestation” (*desmatamento*) and “Amazon” (*amazonia*).

Before starting the text processing, it was necessary to tabulate the news articles, supplementing them with metadata. To do this, we used *web scraping*, which allowed us to access the news database and add information. This was done using a Python library called *BeautifulSoup*. We thus obtained a spreadsheet containing all the news information: title, media outlet, publication date, and body of the text. Next, a manual cleanup of the tabulated data was performed to remove duplicate news items and empty rows.

The clean corpus consisted of a total of 6230 news reports published in 29 media outlets. Table 1 shows the distribution of news across these outlets. Publications are concentrated in three outlets: *O Estado de São Paulo*, *O Globo*, and *Folha de S.Paulo*. To simplify the analysis and focus on the main sources of information, the 25 outlets with the fewest news reports were grouped as “Others” in our analysis.

Table 1: Frequency of publications by media outlet

Media	Amount	% Total	Cumulative%
O Estado de São Paulo	2027	33%	33%
O Globo	1633	26%	59%
Folha de São Paulo	1616	26%	85%
Jornal do Comércio do Rio de Janeiro	466	7%	92%
Agencia EFE	115	2%	94%
Exame	96	2%	96%

Media	Amount	% Total	Cumulative%
CE NoticiasFinanceiras	38	1%	96%
Correio Braziliense	36	1%	97%
Correio do Brasil	30	0%	97%
Estado de Minas	25	0%	98%
Agência Brasil	20	0%	98%
Político News	20	0%	98%
El País Online	13	0%	98%
Diário da Amazônia	11	0%	99%
DCI – Daily Commerce Indústria & Serviços	10	0%	99%
Infomoney Daily News	10	0%	99%
Jornal Grande Bahia	10	0%	99%
Hoje em Dia	9	0%	99%
Brasil Econômico	8	0%	99%
Gazeta Online	7	0%	100%
Jornal de Brasília	6	0%	100%
Veja Online	6	0%	100%
Valor News	5	0%	100%
A Tarde	4	0%	100%
Opinião e Notícia	4	0%	100%
Diário do Nordeste	2	0%	100%
DJ	1	0%	100%
Reporter Brazil	1	0%	100%
iBahia	1	0%	100%
Total	6230	100%	-

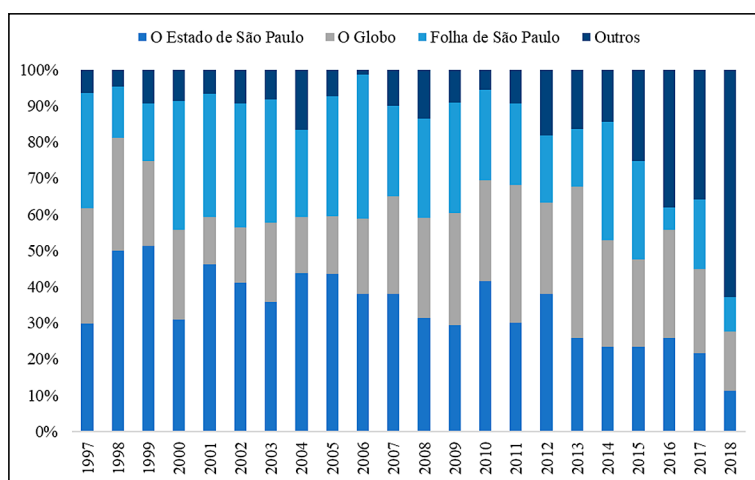
Source: Own elaboration.

Graph 1 shows that *O Estado de São Paulo* was the leading publication in terms of volume, especially from 2004 onwards, surpassing *Folha de S.Paulo* and *O Globo* in most years. Although the latter two presented very similar total publication volumes, their distribution over time showed significant differences. *O Globo* experienced a more pronounced increase in coverage from 2007 onwards, while *Folha* concentrated a greater distribution before that period. The other publications gained relevance from 2015 onwards, reflecting a diversification in the sources of coverage on the topic.

The preprocessing of the texts aimed to properly format the data for analysis (Desikan, 2018). Special characters, punctuation, and stop words (terms that do not add information, such as articles and prepositions) were removed. Manual data selection was also necessary to remove news items that lacked thematic and semantic relevance. This step was necessary because the filter applied to the Factiva database selected news items based on word occurrence in the text, but not on their contextual meaning. News items whose main subject in the body of the text was the topic in question were selected. To avoid biasing this process, all columns in the table were hidden except for the title and body of the news item.

After selecting the news items, the *bag-of-words model* was applied, which consists of representing each news item in the *corpus* in a vector whose size is equal to the size of the entire corpus vocabulary. Each position in the vector represents a term. If the news item contains that term, that element receives the value 1; otherwise, 0. In this way, each news item is represented by a unique vector that helps the machine interpret the interrelationship of words in the texts.

Graph 1: Annual frequency of publications by media outlet



Source: Own elaboration.

The initial analyses consisted of examining the most frequent unigrams and bigrams in the media and presidential terms. Following this, the texts were thematically grouped using similarity and clustering analysis, also known as *topic analysis*. The method used was *Latent modeling*. Latent Dirichlet Allocation (LDA), a probabilistic generative model designed to infer latent topics from a textual corpus (Blei, Ng, & Jordan, 2003). The model operates on the premise that documents are generated from a mixture of central themes, with each theme represented by a

probability distribution over a vocabulary. The functioning of LDA can be compared to that of a librarian who, without prior knowledge of the internal content of the books, organizes a vast set of documents into thematic groups. This organization is carried out by analyzing the co-occurrence of words, assuming that documents that share similar vocabulary likely address the same topics. In the end, the model infers: (1) which words characterize each topic and (2) the proportion of each topic in each document. The definition of the number of topics (k) is one of the crucial parameters of the model. The choice of k , in this study equal to 4, was guided by an iterative process, seeking a point of equilibrium where the resulting topics were semantically cohesive and distinct from each other. The performance of the final model was validated by a *Coherence Score* (C_v) of **0.44**, a value that suggests high semantic cohesion between the words of each topic. Additionally, the model achieved a *log-likelihood* per word of approximately **-8.9**, indicating a good probabilistic fit to the data (Blei, Ng, & Jordan, 2003). The final criterion, however, was maximizing the human interpretation of the clusters, ensuring that the themes were relevant and applicable to the research problem.

To identify the main actors mentioned in the news reports, the Named Entity Recognition (NER) technique was employed. The model used was trained to classify proper nouns into two categories: People and Organizations. Given the complexity of the Portuguese language and potential inaccuracies of the model, a manual validation and curation step was performed to correct incorrect classifications, according to best practices in the field (Desikan, 2018). Subsequently, an empirical cutoff criterion was applied, selecting for analysis only the entities mentioned in more than ten news reports, in order to focus on the most relevant actors. Finally, these entities were manually categorized to facilitate the analysis: individuals were classified by their activity (e.g., National Politicians, Environmentalists, Scientists/Researchers) and organizations by their nature (e.g., Governmental Institutions, NGOs, Private Companies).

Individuals, organizations, and topics covered in news reports during this period

Among the organizations mentioned in the reports, 154 stood out, including 62 governmental institutions, 17 international institutions, 17 private companies, 16 non-governmental organizations, 13 research institutions, 13 political parties, 11 armed forces organizations, five other movements and associations, and one religious organization. Table 2 presents the most relevant organizations in the *corpus* according to their category.

Table 2: Organizations most frequently mentioned in the corpus, by category

Category	Organizations
Governmental Institutions	IBAMA, National Institute for Space Research (INPE), Ministry of the Environment, Imazon, Federal Police, INCRA, Federal Public Prosecutor's Office (MPF), Amazon Fund, Ministry of Agriculture, Army, ICMBio, FUNAI, Ministry of Foreign Affairs (Itamaraty), Ministry of Science and Technology, SFB, Ministry of Agrarian Development, Ministry of Labor, Ministry of Justice, Ministry of Finance, ABIN, Ministry of Transport, National System for Estimating Greenhouse Gas Emissions, Ministry of Health, Ministry of Planning, Ministry of Education, Federal Public Prosecutor's Office of Pará, Ministry of Institutional Relations, Ministry of Development, Ministry of Defense, Ministry of Science, Ministry of Mines, Unified Health System (SUS), Secretariat of the Environment, Secretariat of Strategic Affairs, Federal Court of Accounts, Ministry of National Integration, OECD, Ministry of Science, Technology and Innovation (MCT), National Treasury, Supreme Federal Court (STF), Federal Government
NGOs	Greenpeace, WWF, ISA Instituto Socioambiental, Instituto de Pesquisas Ambientais da Amazônia Ipam, Friends of the Earth, Climate Observatory, SOS Mata Atlântica Foundation, Instituto Vitae Civilis, Conservation International, Instituto Ethos, FSC, The Nature Conservancy, Woods Hole Research Center, Amazon Working Group (GTA), Brazilian Society for the Advancement of Science (SBPC)
Political Parties	PT, PSDB, PV, PMDB, PSL, PFL, PSB, PDT, PPS, PSOL, PTB, PCdoB, MDB
Armed Forces	Army, Armed Forces, Military Police, FARC, Federal Highway Police, National Force, Navy, Military Police, National Public Security Force, Brazilian Air Force (FAB)
Private Companies	Petrobras, Vale, Google, JBS, Walmart, Minerva Meatpacking Plant, Marfrig, Natura, Bertin Group, Sadia, McDonald's, Odebrecht, Teles Pires, Perdigão, Samarco, Carrefour, Cargill
Universities / Research	University of São Paulo (USP), Federal University of Minas Gerais (UFMG), Federal University of Rio de Janeiro (UFRJ), University of Brasília (UnB), State University of Campinas (Unicamp), University of California, Federal University of Pará, Federal University of Rio Grande do Sul, Federal University of Amazonas, University of Maryland, Federal University of Goiás (UFG), Stanford University
International Institutions	UN, FAO, The New York Times, World Trade Organization WTO, NASA, Mercosur, WHO, UNESCO, International Union for Conservation of Nature (IUCN), International Labour Organization (ILO), Financial Times, The Guardian, Reuters, IMF, KfW German Banking Group
Religious Institutions	Catholic Church
Movements and Associations	Landless Rural Workers Movement, Abiove, Fiesp, Environmental Parliamentary Front, Abiec, Brazilian Association of Meat Exporting Industries

Source: Author's own elaboration.

112 individuals were identified as being mentioned in more than 10 news reports (Table 3). Fifty-two are national politicians, 41 are environmentalists and scientists, eight are international politicians, and 11 are from other categories. Few individuals from companies and other public and private bureaucratic organizations tend to be mentioned in the reports.

Table 3: Individuals most frequently mentioned in the corpus, by category.

Group	People
National Politicians	Lula, Marina Silva, Dilma Rousseff, FHC, Izabella Teixeira, Reinhold Stephanes, Michel Temer, José Serra, Jair Messias Bolsonaro, Kátia Abreu, Moacir Michelleto, Sérgio Cabral, Marcelo Leite, Tarso Genro, Guilherme Cassel, José Dirceu, Aécio Neves, Geraldo Alckmin, Fernando Gabeira, Fernando Haddad, Roberto Rodrigues, José Antonio Marengo, Ivo Cassol, Gilberto Kassab, Marcelo Furtado, José Sarney, Flexa Ribeiro, Xico Graziano, Jorge Viana, Virgílio Viana, Márcio Santilli, Gisele Bündchen, Adriana Ramos, Guido Mantega, Luciano Evaristo, Gustavo Krause, Marta Suplicy, Luciano Coutinho, Mauro Pires, Raul Jungmann, Moacir Pires, Gilney Viana, Henrique Meirelles, Rubens Ricupero, Itamar Franco, Raul Jungmann, Moacir Pires, Gilney Viana, Rubens Ricupero, José Maria Cardoso da Silva, Fidel Castro, José Paulo Capobianco, Gilmar Mendes, Fernando Collor, Valdir Colatto, Mercadante, Luiz Alberto Figueiredo Machado, José Alencar, Gilberto Carvalho, Tereza Cristina Demms, Renan Calheiros, Paulo Bernardo, Jader Barbalho, Fernando Coelho Filho, Rubens Barbosa, Raul Jungmann
Environmentalists	João Paulo Capobianco, Paulo Adário, Adalberto Veríssimo, Roberto Smeraldi, Tasso Azevedo, Paulo Moutinho, Flávio Montiel, Hugo Chávez, Afra Balazina, Thelma Krug, Sergio Leitão, Marcelo Furtado, Marcio Astrini, Thomas Lovejoy, Sergio Rezende, Mauro Armelin, José Paulo Capobianco, Herton Escobar, Mary Allegratti, Achim Steiner, Marilene Ramos, Raoni Rajão
Scientists/ Researchers	Roberto Mangabeira Unger, Gilberto Câmara, Washington Novaes, José Goldemberg, Paulo Barreto, Luiz Pinguelli Rosa, Sérgio Cabral, Marcelo Leite, Roberto Schaeffer, Paulo Artaxo, Roberto Schaeffer, Thomas Lovejoy, Fernanda Krakovics, José Maria Cardoso Da Silva, Philip Fearnside, Alberto Setzer, Suzana Kahn Ribeiro, William Laurance
International Politicians	George W. Bush, Hugo Chávez, Nicholas Sarkozy, Kofi Annan, Fidel Castro, Evo Morales, Tony Blair, Nicholas Stern
Others	Luciano Coutinho, Rolf Hackbart, Sérgio Serra, Marcelo Marquesini, Mauro Pires, Marcus Barros, Sergio Rezende, Sérgio Serra, Gilberto Carvalho, Luiz Aragão, Raoni Rajão, Luciano Evaristo, Mauro Pires, Raoni Rajão, Gilberto Carvalho, Rui Prado

Source: Author's own elaboration.

Topic modeling made it possible to identify four main themes in the news reports. The first addresses the relationship between agricultural production, deforestation, and land exploitation in Brazil, with emphasis on soybean cultivation and cattle ranching. It explores how the expansion of *commodity production*, driven by global demand, has caused deforestation. This topic raises questions about Brazil's role as a global leader in food production and environmental conservation, and how a balance between these two agendas can be achieved.

The second topic addresses global political and economic dynamics, focusing on Brazil and its interaction with other nations, especially the United States. It portrays international relations involving the Brazilian Amazon. The approach includes issues concerning natural resources, Brazil's role in the global market, and the environmental policies adopted.

The third topic explores the actions of the Brazilian government regarding environmental preservation, with an emphasis on policies to combat deforestation in the Amazon. It addresses environmental policies led by ministers and presidents, and rules related to forest protection enacted by Congress. The topic also highlights the role of state authorities in implementing laws and operations to control deforestation.

Finally, the fourth topic addresses carbon emissions and the environmental impact of wildfires and deforestation. It explores data and figures provided by institutions such as INPE, which monitor deforestation and deforested areas over different periods and their relationship to climate change.

The terms most closely associated with these four identified topics are presented in Table 4.

Table 4: Terms associated with the four identified topics.

#	Topic 1	Topic 2	Topic 3	Topic 4
1	area (<i>area</i>)	brazil (<i>brasil</i>)	government (<i>governo</i>)	deforestation (<i>desmatamento</i>)
2	amazon (<i>amazonia</i>)	countries (<i>países</i>)	ibama	amazon (<i>amazonia</i>)
3	forest (<i>floresta</i>)	world (<i>mundo</i>)	environment (<i>meio ambiente</i>)	emissions (<i>emissões</i>)
4	region (<i>região</i>)	development (<i>desenvolvimento</i>)	president (<i>presidente</i>)	area (<i>area</i>)
5	deforestation (<i>desmatamento</i>)	brazilian (<i>brasileira</i>)	minister (<i>ministro</i>)	data (<i>dados</i>)
6	hectare (<i>hectare</i>)	policy (<i>política</i>)	amazon (<i>amazonia</i>)	government (<i>governo</i>)
7	wood (<i>madeira</i>)	question (<i>questão</i>)	deforestation (<i>desmatamento</i>)	forest (<i>floresta</i>)
8	environmental (<i>ambiental</i>)	all (<i>todos</i>)	environmental (<i>ambiental</i>)	wildfires (<i>queimadas</i>)

#	Topic 1	Topic 2	Topic 3	Topic 4
9	bigger (<i>maior</i>)	president (<i>presidente</i>)	project (<i>projeto</i>)	km
10	project (<i>projeto</i>)	brazilian (<i>brasileiro</i>)	ministry (<i>ministerio</i>)	reduction (<i>redução</i>)
11	forests (<i>florestas</i>)	resources (<i>recursos</i>)	he/she stated (<i>afirmou</i>)	institute (<i>instituto</i>)
12	earth (<i>terra</i>)	international (<i>internacional</i>)	law (<i>lei</i>)	increase (<i>aumento</i>)
13	enterprise (<i>empresa</i>)	to make (<i>fazer</i>)	state (<i>estado</i>)	may (<i>maio</i>)
14	state (<i>estado</i>)	united states (<i>estados unidos</i>)	federal	carbon (<i>carbono</i>)
15	production (<i>producao</i>)	energy (<i>energia</i>)	yesterday (<i>ontem</i>)	inpe
16	soy (<i>soja</i>)	economy (<i>economia</i>)	congress (<i>congresso</i>)	period (<i>periodo</i>)
17	protection (<i>proteção</i>)	others (<i>outros</i>)	national (<i>nacional</i>)	environment (<i>meio ambiente</i>)
18	“amazonic” (<i>amazonica</i>)	government (<i>governo</i>)	against (<i>contra</i>)	square kilometers (<i>quilômetros quadrados</i>)
19	fence (<i>cerca</i>)	world (<i>mundial</i>)	<i>sarnei filho</i>	system (<i>sistema</i>)
20	part (<i>parte</i>)	usa (<i>eua</i>)	<i>temer</i>	fire (<i>fogo</i>)
21	national (<i>nacional</i>)	time (<i>tempo</i>)	river (<i>rio</i>)	<i>nacionalpesquisas</i>
22	others (<i>outras</i>)	big (<i>grande</i>)	<i>lula</i>	monitoring (<i>monitoramento</i>)
23	biodiversity (<i>biodiversidade</i>)	market (<i>mercado</i>)	day (<i>dia</i>)	agreement (<i>acordo</i>)
24	lands (<i>terras</i>)	planet (<i>planeta</i>)	two (<i>dois</i>)	numbers (<i>numeros</i>)
25	forest-related (<i>florestal</i>)	good (<i>bem</i>)	decree (<i>decreto</i>)	rate (<i>taxa</i>)
26	big (<i>grande</i>)	example (<i>exemplo</i>)	policy (<i>politica</i>)	climate (<i>clima</i>)
27	exploration (<i>exploração</i>)	environmental (<i>ambiental</i>)	deputy (<i>deputado</i>)	brazil (<i>brasil</i>)
28	conservation (<i>conservação</i>)	policies (<i>politicas</i>)	brasilia	past (<i>passado</i>)
29	usage (<i>uso</i>)	problem (<i>problema</i>)	proposal (<i>proposta</i>)	last (<i>ultimos</i>)
30	he/she states (<i>afirma</i>)	society (<i>sociedade</i>)	operation (<i>operação</i>)	forests (<i>florestas</i>)

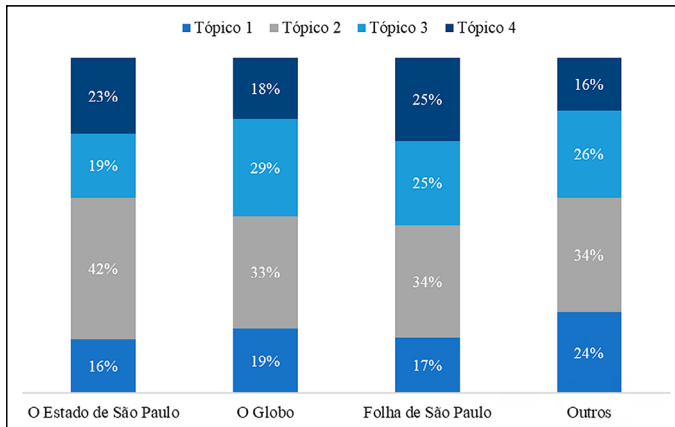
Source: Own elaboration.

Topic 2 was the most frequently covered, accounting for 36% of the coverage, indicating that global political and economic issues are highly relevant to coverage of deforestation in the Amazon. Topic 3, focused on government actions against deforestation, followed with 24%. Topic 4, which deals with deforestation monitoring, was the subject of 21% of the news reports. Topic 1, which addresses

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the relationship between agricultural production and deforestation, received the least coverage, being the focus of 18% of the reports.

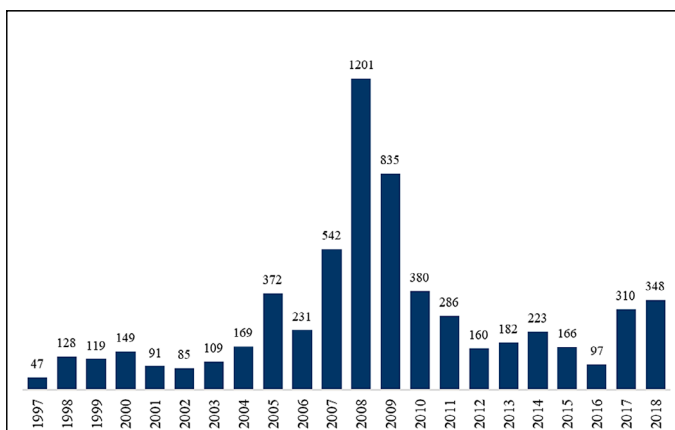
Graph 2: Frequency of topics by media outlet.



Source: Own elaboration.

The coverage in *O Estado de São Paulo* shows a predilection for international topics, *O Globo* places slightly more emphasis on actions against deforestation, and *Folha de S. Paulo* has the highest proportion of reports on deforestation monitoring. The coverage of Topic 1, the most negative and contrary to the interests of powerful economic sectors, is similar across these three publications, ranging from 16% (*O Estado de São Paulo*) to 19% (*O Globo*) of the reports.

Graph 3: Annual frequency of news reports.

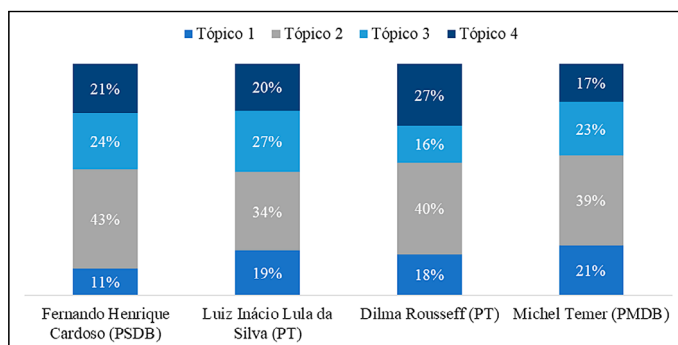


Source: Own elaboration.

Graph 3 shows the annual frequency of publications. There is a significant variation in the frequency of publications over time and a peak in 2008. The Lula government had the highest average number of reports (479.9 per year), followed by the Temer (302.7), Dilma (188.0) and FHC (123.8) governments.

Graph 4 shows the occurrence of topics during the governments involved in the analysis. During the FHC government, coverage is marked by a slow growth in the number of publications. Topic 2 stood out with 43% of the coverage, reflecting an emphasis on themes related to global political and economic dynamics. Topic 3, with 24%, also received significant attention, indicating a relevant interest in environmental or institutional issues. Topics 1 (11%) and 4 (21%) had less representation, suggesting that issues related to deforestation or wildfires, predominant in Topic 4, received little attention during this period.

Graph 4: Distribution of topics by presidential term.



Source: Own elaboration.

Two figures stand out: José Sarney Filho and Congressman Moacir Micheletto. The former was Minister of the Environment under Fernando Henrique Cardoso (FHC) from 1999 to 2002. His tenure was marked by the approval of the Environmental Crimes Law and the creation of the National Policy on Conservation Units. Micheletto was a federal congressman for the PMDB-PR party and led attempts to change the forestry code, in reaction from agribusiness parliamentarians to the increased restrictions on deforestation of rural properties in the Amazon, which had been approved by Provisional Measure by the FHC government in previous years.

In addition to them, other agents from the political field gain prominence. Agents linked to the executive branch, such as Gustavo Krause, who headed the government's environment ministry in previous years, Raul Jungmann, Minister of Agrarian Development, Ronaldo Sardenberg, Minister of Science and Technology, José Serra, senator and Minister of Planning and Budget, and FHC himself are

frequently mentioned. In the legislative branch, Gilney Viana, federal deputy from Mato Grosso and member of the Commission for National Integration, Regional Development and the Amazon, also stands out.

A few environmentalists and journalists also gained prominence during this period. Marina Silva (then a Senator), João Paulo Capobianco, Paulo Adário (Greenpeace), and Roberto Smeraldi (Friends of the Earth) stand out among the environmentalists. Batmanian, William Laurance, and José Goldemberg are among the scientists. Marcelo Leite and Washington Novaes stand out among the journalists.

During FHC's (Fernando Henrique Cardoso's) term, corporate presence in the news was limited. Emphasis was given to the energy and mining sectors, with companies like Vale and Petrobras mentioned due to their exploitation of natural resources and their impacts. The food sector was also present with Sadia, reflecting initial discussions about the relationship between food production and deforestation. Teles Pires emerged representing the infrastructure sector, linked to the expansion of hydroelectric projects.

Coverage intensified throughout Lula's administrations, reaching its peak in 2008 with 1200 publications, an increase of over 120% compared to the previous year. During this period, other terms gained prominence. The emergence of terms such as "bill," "emissions reduction targets," and "climate change" demonstrates the intensification of discussions on public policies and the global implications of deforestation. Topic 2, although still predominant with 34% of the coverage, saw its representation reduced compared to the previous administration. Topic 3, with 27%, showed an increase, suggesting a greater emphasis on environmental debates and institutional issues during this period. Topic 1 (19%) showed an 8% increase, indicating greater attention to deforestation and agricultural production. Finally, topic 4 (20%) remained very close to the previous administration.

Figures who were already prominent during the FHC administration continued to be relevant. João Paulo Capobianco, Paulo Adário, Roberto Smeraldi, José Goldemberg, and Washington Novaes maintained their significant contributions to environmental protection. Marina Silva and João Paulo Capobianco gained even more prominence when they were appointed Minister of the Environment and Secretary of Biodiversity and Forests, respectively.

Ministers from the governments gained prominence during this period. Carlos Minc, Marina's replacement after 2008, emerged as a relevant name. Dilma Rousseff emerged as Minister of Mines and Energy, playing a strategic role in energy issues. Reinhold Stephanes, Federal Deputy for Paraná, who was Minister of Agriculture, Livestock and Supply, Tarso Genro, who held several ministerial portfolios, and Roberto Mangabeira Unger, who assumed the Ministry of Strategic Affairs and the coordination of the Sustainable Amazon Plan at the same time that Marina Silva left the Ministry of the Environment, also stand out.

In the opposition, the most prominent names were José Serra, Lula's opponent in the 2002 elections; Kátia Abreu, a cattle rancher and federal deputy for Tocantins; and Blairo Maggi, governor of Mato Grosso from 2003 to 2010, known as the "Soy King." Internationally, George W. Bush, then president of the United States, had interactions with the Lula government that were reflected in nationally published news. The rise in the number of news stories between 2007 and 2009 is highly associated with the opposition of these two rural leaders to the tightening of deforestation control policies implemented under the leadership of Environment Ministers Marina Silva and Carlos Minc. Marina's downfall, in fact, is strongly linked to these disputes.

A number of agents from the scientific and environmental fields have proven key in this government. Two of them are associated with organizations involved in producing deforestation indices. Adalberto Veríssimo, researcher and co-founder of the Institute of Man and Environment of the Amazon, was involved in producing figures and research on deforestation that significantly influenced public debate. Gilberto Câmara was the director of the National Institute for Space Research, responsible for producing the official deforestation index. In addition to these, Luiz Pinguelli Rosa, executive secretary of the Brazilian Forum on Climate Change and Director of the Brazilian Panel on Climate Change, and Paulo Moutinho, PhD in ecology and co-founder of the Amazon Environmental Research Institute, who contributed research on the causes and consequences of deforestation in the Amazon, also stand out during this period.

There has been an explosion in the presence of companies in the news, especially those linked to the agribusiness and food sectors, such as Grupo Bertin, Perdigão, McDonald's, and Walmart. These mentions are strongly associated with disputes involving Greenpeace, an environmental organization that developed two major campaigns during this period, and the Federal Public Prosecutor's Office, which resulted in the establishment of the Soy Moratorium, the Public Commitment of Livestock Farming, and the Conduct Adjustment Agreement of the Meat Supply Chain. Companies in the energy and mining sectors also gained prominence. Companies associated with controversial hydroelectric projects, such as the Madeira River and Belo Monte dams, emerged as relevant entities. Finally, Google began to appear in discussions, mainly due to its digital tools for environmental monitoring.

The number of news stories began to decrease throughout Dilma's government. Terms such as "emissions reduction," "greenhouse gases," "deforestation reduction," and "combating deforestation" continued to be prominent. Topic 2, associated with global issues, reached its peak, accounting for 40% of coverage. Topic 4, with 27%, also increased. These increases are associated with the intensification of international climate negotiations that culminated in the Paris Agreement in 2015. Topic 3, with 16%, registered a significant drop, suggesting less emphasis

on institutional aspects and government actions. Topic 1, with 18%, remained very close to the previous term. An important theme related to it is the reform of the Forest Code approved in 2012, considered a huge setback by environmentalists.

Several figures who had already distinguished themselves in the governments of FHC and Lula continued to play relevant roles. Dilma, FHC, Lula, Adalberto Veríssimo, Kátia Abreu, Gilberto Câmara, and Paulo Adário remained at the center of debates and actions related to the environment, agriculture, and national politics. Marina Silva maintained her prominence, now as a presidential candidate in 2010 and 2014. Izabella Teixeira, Minister of the Environment throughout Dilma's term, rose as an important figure. Other political figures who gained prominence were Gilberto Carvalho, Chief Minister of the General Secretariat of the Presidency, Mauro Pires, of ICMBio, and Luciano Evaristo, head of environmental enforcement at Ibama.

In the scientific and environmental field, Paulo Barreto and José Antonio Marengo remain prominent. Tasso Azevedo, who participated in Marina Silva's team at the Ministry of the Environment and conceived the Amazon Fund, is becoming a central figure in debates about climate change, even though he is no longer in government. Marcio Astrini, coordinator of strategic areas at Greenpeace, is also emerging as an important figure. Finally, journalist Giovana Girardi, specializing in science and the environment, is gaining prominence.

No mandato de Dilma observa-se nova diminuição na presença de empresas no *corpus* e uma diversificação nos setores econômicos ligados ao desmatamento.

In Rousseff's mandate another reduction in the mentions of firms is observed in the corpus, along with a diversification in the economic sectors linked to deforestation. Meatpacking companies JBS, Marfrig, and Minerva gain greater prominence due to their connection with the expansion of cattle ranching. In the energy and mining sectors, companies like Samarco gained prominence due to the Mariana environmental disaster. Google and Natura also appear associated with innovation and sustainable initiatives.

During the years of the Temer government, there was a slight increase in the number of publications. The main themes addressed relate to events considered setbacks by environmentalists. Notable among these are the 2017 decree that resulted in the declassification of the National Copper and Associated Minerals Reserve, an area of over 46,000 square kilometers located between the states of Amapá and Pará, and the debates surrounding the declassification of the Jamanxim National Park by Provisional Measure. Debates on the implementation of the Paris Agreement also gained relevance, especially due to international pressure on the new government to fulfill its commitments. More generally, Topic 1 reached its highest value, with 21%, indicating that political and governmental issues gained more space in the coverage. Topic 2, with 39%, remained in the lead, following the

level of the previous government. Topic 3 grew again, reaching 23%, suggesting an increase in institutional or environmental discussions during the period. Topic 4, with 17%, registered the lowest percentage, indicating that issues such as greenhouse gas emissions and climate change have lost prominence.

Members of the government gained prominence in issues related to deforestation in the Amazon. Fernando Coelho Filho, who held the position of Minister of Mines and Energy, José Serra, who was Minister of Foreign Affairs, and Henrique Meirelles, the Minister of Finance, gained more exposure. Zequinha Sarney, who assumed the Ministry of the Environment, remained a prominent figure. Other politicians outside the government gained or maintained prominence. Tereza Cristina, a federal deputy for Mato Grosso do Sul, rose to prominence during this period, later becoming Minister of Agriculture. Geraldo Alckmin also gained prominence as governor of São Paulo and a presidential candidate. Dilma Rousseff, Lula, and Izabella Teixeira remained important media figures. Marina Silva also maintained her leading role. Internationally, Vidar Helgesen, Norway's Minister of Climate and Environment, played a significant role in discussions on climate change and global environmental cooperation.

In the environmental, scientific, and journalistic fields, figures such as Tasso Azevedo, Paulo Barreto, Márcio Astrini, and Giovana Girardi remained prominent. Raoni Rajão, a Brazilian scientist and professor who would later join Marina Silva's team during Lula's third term, emerged as an important name due to his research related to deforestation.

Regarding organizations, it is observed that the energy and mining sector dominated the debate, with Samarco leading the news due to the ongoing impact of the Mariana disaster. Meatpacking companies JBS, Minerva, and Marfrig remained central. Google and Natura reinforced their presence, with positive contributions to sustainability.

Disputes in the field of power and journalistic dynamics

In line with the perspectives of Bourdieu (1997), Champagne (1995), and Pedroso Neto (2015), our analyses demonstrate a significant homogenization of journalistic coverage. The coverage of the main media outlets is characterized by the recurrence of certain expressions and a focus on four major topics. Throughout the four terms and across all media outlets, Topic 2 gained prominence, indicating a significant media emphasis on Brazil's political and economic relations within the global context. On the other hand, the topic that receives the least attention is precisely the one dealing with the causes of deforestation, associated with the expansion of agriculture. As Champagne (1995) points out, it is plausible to consider that

the media tends to avoid conflicts with powerful sectors of the Brazilian economy, which generates a depoliticization of its coverage.

The homogeneity of the coverage involves a recurrence of certain powerful individuals and organizations in the reports throughout the period, as indicated by Tuchman (1978) and Gans (1979). It is pertinent to consider these agents as members of the power structure involved in the issue of deforestation, and the recognition of named entities has proven to be an effective technique for their identification. The underrepresentation of social movements and representatives of Amazonian rural populations, especially Indigenous, Quilombola, and riverside communities, which tend to be harmed by the dynamics of deforestation, is notable. NGOs and the Catholic Church appear to be important intermediaries between these populations and the media.

The agents involved in the disputes come from five main fields, in addition, of course, to the journalistic field: the Political, the Economic, the Environmental, the Scientific, and the Military. As already indicated, the disputes between these spaces are significantly influenced by international relations, which generally tend to favor and be strategically used precisely by the least powerful space in question, that of environmentalists. Another important alliance for agents in the environmental field is with scientists. Our data indicate that the actions of the political, environmental, and scientific fields tend to be more personalized, with certain individuals gaining media prominence. Coverage of the economic and military fields, however, treats the agents in a more institutionalized way.

One of the most interesting findings of our analysis is the sudden increase in the number of news reports between 2007 and 2009. Previous studies demonstrate that this was a critical period for controlling deforestation (Mello; Artaxo, 2017; West; Fearnside, 2021; Candido et al., 2023; Candido et al., 2025; Nepstad et al., 2014; Gibbs et al., 2016). This stemmed primarily from two factors that generated intense conflicts among elites.

The first was the implementation of the Amazon Deforestation Prevention and Control Plan, the most structured and effective public policy for deforestation control ever implemented in the country (Mello; Artaxo, 2017; West; Fearnside; 2021; Candido et al, 2023). Understanding the State as a set of interconnected fields, Candido et al (2023) show that the expansion of the Brazilian State's capacity to control deforestation was primarily a political construction, in which the Ministry of the Environment, with the support of Lula's Presidency, developed strategies capable of confronting the powerful opposition from the Ministry of Agriculture and Livestock and other groups on the "right wing" of the Brazilian State. The period in which the peak of reporting in our study occurs coincides with the height of the political conflicts involved. Faced with the significant increase in the deforestation rate in 2004, even after significant actions to combat deforestation had been taken,

the MMA team, led by Marina Silva, mobilized in the following years to advance the implementation of strategic measures that confronted the interests of agribusiness (Brazil, 2007). The victory of the government's environmentalists, however, generated strong disputes with agribusiness, leading to Marina Silva's downfall in 2008.

The second factor was the occurrence of conflicts involving Greenpeace, the Federal Public Prosecutor's Office of Pará (MPF-PA), and Brazilian meatpacking companies, notably JBS, Marfrig, and Minerva (Candido et al, 2025; Nepstad et al, 2014; Gibbs et al, 2016). These events were concentrated in 2008, when Greenpeace launched a series of protests around the world targeting meatpacking plants involved in illegal deforestation and their clients in the supermarket, clothing, automotive, and other sectors, and the Federal Public Prosecutor's Office of Pará (MPF-PA) prosecuted companies involved in illegal deforestation in the state of Pará. These actions had significant media repercussions and resulted in the signing of the Public Commitment of Livestock Farming, an agreement in which JBS, Marfrig, and Minerva committed to actions to combat deforestation with Greenpeace, and a Conduct Adjustment Agreement involving meatpacking plants and supermarkets operating in Pará (Candido et al, 2025).

In line with what Zelizer (2015), Entman (1993), and McCombs and Shaw (1972) indicate, the peak of news coverage in our *corpus* is directly related to these two conflicts and the moment of stability experienced in the field of power. At that moment, journalistic coverage also became politicized, not as a consequence of an editorial project of the media outlets, but as a result of the nature of the scandalous events reported (De Blic ; Lemieux, 2005; Grün, 2018) or contentious episodes (McAdam ; McCarthy ; Zald, 1996), in which the dominant social order was put to the test.

Our data indicate two relevant changes in media coverage during the conflict period. First, there is a significant drop in the proportion of news reports associated with international issues. This is consistent with the fundamentally national character of the identified conflicts. Second, there is a significant increase in the exposure of large meatpacking companies, which, according to the findings of authors in the theory of social movements (Gamson; Wolfsfeld, 1993; McAdam ; McCarthy ; Zald, 1996), can be considered key to the relative success of the actions of Greenpeace and the Federal Public Prosecutor's Office of Pará (MPF-PA).

By analyzing media coverage during a period marked by the implementation of public policies and private initiatives that contributed to a significant reduction in deforestation, the study demonstrates how media coverage can transform during disputes between social elites. Despite undeniable reproductive tendencies, this coverage can eventually expose powerful agents and contribute to the strategies of challengers, thus contributing to social transformation.

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