

Disinformation as a form of enchantment: Instrumentalization of narratives and the production of institutional fake news about the Amazon (2019–2022)

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Abstract

This article discusses the impact of *fake news* on scientific approaches related to agricultural development and the environment in the Amazon region. The objective is to present the scientific perspective, composed of an interdisciplinary team of researchers linked to universities, and researchers institutionalized by the State. This research adopts a qualitative and exploratory methodology, based on the discourse analysis of contrasting textual materials that contest the narrative about agricultural development and environmental conservation in the Amazon. The study focuses on the period from 2019 to 2022, corresponding to the government of Jair Bolsonaro, a period marked by intense narrative conflicts on environmental issues. The corpus of analysis consists of two central materials, both published in 2020: 1) The scientific article entitled “The rotten apples of Brazil's agribusiness” (published in the journal *Science*), which addresses illegal deforestation in Brazil; and 2) The book “Agriculture, Facts and Myths – Foundations for a Regional Debate on Brazilian Agriculture” (Baraúna Publisher), which represents an institutional perspective linked to the State. Added to this is the analysis of fragments of speeches by political and institutional agents that were reproduced or disseminated through the media during the period 2019-2022. The focus is on the instrumentalization of narratives and the production of disinformation (institutionalized *fake news*) as a tactic to evade responsibility and to argue in defense of government policies, exposing the difficulty in discerning the truth in a deliberately nebulous discursive field.

Keywords: Fake News; Narrative Conflict; Agribusiness; Deforestation; Brazilian Amazon.

Disinformation as hechizo: Instrumentalization of narratives and production of institutional false news about the Amazon (2019-2022)

Resumen

Este artículo analiza el impacto de las noticias falsas en los enfoques científicos relacionados con el desarrollo agrícola y el medio ambiente en la región amazónica. El objetivo es presentar la dicotomía entre la corriente científica, compuesta por un equipo interdisciplinario de investigadores vinculados a universidades, y los investigadores institucionalizados por el Estado. Esta investigación adopta una metodología cualitativa y exploratoria, basada en el análisis del discurso de materiales textuales contrastantes que cuestionan la narrativa sobre el desarrollo agrícola y la conservación ambiental en la Amazonía. El estudio se centra en el período de 2019 a 2022, correspondiente a la administración de Jair Bolsonaro, un período marcado por intensos conflictos narrativos en torno a temas ambientales. El corpus de análisis consta de dos materiales centrales, ambos publicados en 2020: 1) El artículo científico titulado “Las manzanas podridas del agronegocio brasileño” (publicado en la revista Science), que aborda la deforestación ilegal en Brasil; y 2) El libro “Agricultura, hechos y mitos: Fundamentos para un debate regional sobre la agricultura brasileña” (Editorial Baraúna), que representa una perspectiva institucional vinculada al Estado. A esto se suma el análisis de fragmentos de discursos de agentes políticos e institucionales que fueron reproducidos o difundidos a través de los medios de comunicación durante el período 2019-2022. El enfoque se centra en la instrumentalización de las narrativas y la producción de desinformación (noticias falsas institucionalizadas) como táctica para evadir la responsabilidad y argumentar en defensa de las políticas gubernamentales, exponiendo la dificultad de discernir la verdad en un campo discursivo deliberadamente nebuloso.

Palabras clave: Noticias falsas; Conflicto narrativo; Agroindustria; Deforestación; Amazonía brasileña.

Disinformation as hechizo: Instrumentalization of narratives and production of institutional false news about the Amazon (2019-2022)

Resumo

Este artigo versa sobre o impacto das fake news, ou notícias falsas, em abordagens científicas relacionadas ao desenvolvimento da agricultura e meio ambiente, na região Amazônica. O objetivo está basicamente em apresentar a dicotomia entre a corrente científica, composta por uma equipe interdisciplinar de pesquisadores ligados às Universidades frente a pesquisadores institucionalizados pelo Estado. A presente pesquisa adota uma metodologia de natureza qualitativa e exploratória, pautada na análise de discurso de materiais textuais contrastantes, os quais disputam a narrativa sobre o desenvolvimento agrícola e a conservação ambiental na Amazônia. O estudo concentra-se no recorte temporal de 2019 a 2022, correspondente à gestão do governo de Jair Bolsonaro, período marcado por intensos conflitos narrativos sobre questões ambientais. O corpus de análise é composto por dois materiais centrais, ambos publicados em 2020: 1) O artigo científico intitulado “The rotten apples of Brazil’s agribusiness” (publicado na revista Science), que aborda o desmatamento ilegal no Brasil; e 2) O livro “Agricultura, Fatos e Mitos – Fundamentos para um Debate Regional sobre o Agro Brasileiro” (Editora Baraúna), que representa uma perspectiva institucional ligada ao Estado. Somam-se ainda a análise de fragmentos de discursos de agentes políticos e institucionais que foram reproduzidos ou veiculados através da midiaticização dentro do período 2019-2022. O foco recai sobre a instrumentalização de

narrativas e a produção de desinformação (fake news institucionalizadas) como tática de desvio da responsabilidade e de argumentação em defesa das políticas governamentais, expondo a dificuldade em discernir a verdade em um campo discursivo deliberadamente nebuloso.

Palavras-chave: Fake News; Conflito Narrativo; Agronegócio; Desmatamento; Amazônia Brasileira.

1. Introduction

Disinformation, in its power to conceal the truth under an attractive veneer, operates like a spell. Drawing an analogy to the classic Brothers Grimm tale, 'Snow White', this article proposes replacing the poisoned apple with soy produced in the Amazon biome – the largest in Brazil and the world. If in the tale the beautiful and deceptive fruit aimed to induce the sleep of death, in the Amazonian scenario, institutionalized disinformation about agricultural development seeks to induce the sleep of reason, concealing socio-environmental impacts under narratives of progress and unquestionable facts. In this context, which covers the period from 2019 to 2022, the objective is to uncover how the narrative conflict between the scientific current and the perspectives institutionalized by the State instrumentalizes falsehood (the poison) in order to contest and shape the truth regarding agriculture and the environment in the region.

The poison of the apple—misinformation and environmental destruction—is not confined to the boundaries of the biome. It strikes at the heart of the global economy: soy from areas of illegal deforestation is paradoxically offered and exported as a conventional and 'clean' commodity, especially to large markets like Europe and China. This trade flow establishes a profound contradiction, since these same destinations frequently promote and finance global actions against deforestation and advocate for sustainable supply chains. The acceptance of this 'enchanted' soy, whose origin is obscured by a lack of traceability or the intentional denial of its impacts, exposes the systemic failure to discern the truth in the field of production. It is in this vacuum that the institutionalized narrative consolidates, shifting attention away from responsibility and reinforcing the spell that makes invisible the destruction underlying agricultural 'progress'.

Soybeans, which we call bewitched by deforestation, are like fake news that 'haunt' Brazilian agribusiness. According to the 2021 World Food and Agriculture Organization of the United Nations (FAO) report, China is the world's largest food producer, with Brazil being the second largest food producer on the planet. Given its prominence, it is expected that Brazil would be a target of *fake news*, as it is a rising global agricultural powerhouse.

The reflection proposed here is intrinsically linked to the turbulent period from 2019 to 2022, a time frame marked by the saturation and dissemination of digital content. In this scenario, information – legitimate or distorted – circulates at high speed through news portals, social networks, and *blogs*, being readily consumed and

¹Deliberately misleading content that mimics the form and style of legitimate journalistic news, but which is, in reality, a symptom of the crisis of confidence in information, being more dangerous because of its ability to appeal to personal beliefs rather than facts (Frias Filho, 2018).

shared. *Fake news* not only accompanies this flow but infiltrates and acts like a virus in public debate, demanding a redoubled effort of attention and critical thinking from citizens. The proliferation and acceptance of these false narratives reach such proportions that the constant verification of practically all consumed information becomes an imperative need for distinguishing between fact and fiction, especially on highly polarized topics such as agricultural development and environmental conservation in the Amazon.

In this context, journalism – which is also a science – and its modern forms of disseminating media content, become polluted with news produced with the purpose of negatively affecting the image of institutions or people (usually public figures).

Institutionalized disinformation is largely sustained by the homogenization of the concept of “Agricultural sector” promoted by the media. By treating the agricultural sector as a monolithic bloc and as synonymous with economic success – the so-called *commodity agribusiness* – the state discourse camouflages the fundamental dichotomy with family farming, responsible for the majority of food production consumed in the country. This generalization allows the state's political agenda (frequently aligned with the interests of export-oriented large landholdings, monoculture, and deforestation) to be defended under the pretext of supporting the entire national “Agribusiness”, diverting attention from the environmental and social costs inherent in the *commodity model* and discrediting scientific criticism as a generic attack on the countryside.

The spread of *fake news* within the agribusiness sector is serious, but it's not new. There's a general stigma surrounding the potential for help and development that the sector brings to the population. Daily, information lacking technical grounding is disseminated, further exacerbating the difficulties to its development. This “*fake news*” attacks key production chains by exploiting sensitive issues such as food safety, the environment, and public health.

From this perspective, this analytical essay aims to problematize how narratives about agricultural development and deforestation have been produced and contested in the Brazilian sociopolitical landscape, focusing on the period from 2019 to 2022, as well as to revisit what Brazilian development theorists have already highlighted for decades: the Brazilian primary-export model is responsible for Brazilian underdevelopment. For Foucault (2014), discourse is a set of statements and relations that establish the rules of what can be said and thought at a given historical moment. Analyzing discourse, in this sense, means accounting for historical practices and concrete power relations that are “alive” in the statements.

The article is structured as follows: The first chapter proposes a reflection on the powerful form of fake news and how it can be instrumentalized. The second chapter presents the discourses circulated through mediatization. Following this, the third chapter discusses the dichotomy within the scientific field: on the one hand, scientific production resulting from research with an interdisciplinary team of researchers, and on the other hand, the support of a science constructed from the State. In the fourth chapter, we propose that the environment is embedded in this phenomenon of *fake news*, and the possibilities for responses are explored. Some signs of crisis, through non-verbal communication, are presented throughout the

fourth chapter. Finally, the concluding remarks summarize the main points of this work.

2. Fake news: misinformation to advance.

The dissemination of false news is a phenomenon known internationally as *fake news* and can be conceptualized as the spread, through any means of communication, of knowingly false news with the intention of attracting attention to misinform or obtain political or economic advantage. This phenomenon, frequently called *fake news*, falls within the broader category of disinformation, which is academically defined as information that is “false and deliberately created to cause harm” (Wardle; Derakhshan, 2017). It is a consolidated phenomenon that occurs throughout the world. From this context of the electoral influence of disinformation, a central question arises, as pointed out by Braga (2018, pp. 204-205): “how have fake news managed to occupy such a relevant space in the contemporary political landscape?”

To find an answer to this question, a thorough reflection on the transformation of mass communication in digital society becomes imperative. The disruptive power of the internet and social networks has fundamentally altered the information ecosystem, allowing fake news not only to circulate but to achieve the *status* of a crucial vector in public opinion (Braga, 2018; Frias Filho, 2018). This analysis requires understanding how the speed of dissemination, confirmation bias, and the algorithmic dynamics of digital platforms themselves facilitate the viral spread of misleading content, giving it unprecedented prominence in the current political debate.

According to Wardle and Derakhshan (2017), the phenomenon should be understood as a broad Information Disorder, whose most dangerous manifestation is disinformation: deliberately false information created and disseminated to cause harm.

It is in this context of informational disorder that the role of mass communication and the rapid dissemination of *fake news* takes on a specific dimension when we analyze the 2018 elections in Brazil, which culminated in the victory of Jair Bolsonaro. Bolsonaro's campaign was marked by a strong presence on digital media, especially WhatsApp, configuring a strategy of intense digital “narrative warfare” (EL PAÍS, 2018). The central common point was the use, often illegal and financed by businessmen, of mass messaging via WhatsApp (VEJA, 2018; EL PAÍS, 2019). This practice allowed the creation of a veritable ecosystem of disinformation, distributing false content, *memes*, and conspiracy theories directly to millions of voters, circumventing the monitoring of the Electoral Court.

Starting from the global dimension of the problem and the need for reflection on mass communication, the disinformation crisis found fertile ground in Brazil, especially during the 2018 election, which culminated in the victory of Jair Bolsonaro. The Brazilian case was characterized by the mass dissemination of messages via WhatsApp, configuring what Ribeiro and Ortellado (2018) call “combat information”. This tactical model, although reminiscent of the digital warfare observed abroad, such as in the USA, uses a closed and encrypted communication ecosystem that

hinders monitoring and verification, enhancing the penetration of false and polarizing narratives.

Despite the specificities of the distribution channel, such as *WhatsApp*, the effectiveness of disinformation, whether in the US in 2016 or in Brazil in 2018, lies in its ability to mask itself. As Tandoc Jr., Zielonka, and Ainsworth (2018) point out in their content analysis, the most impactful fake news is often that which mimics the form and style of authentic journalistic reporting. The success of this orchestrated disinformation (Wardle & Derakhshan, 2017) is a symptom of the weakening of traditional journalism as a *gatekeeper* of truth, as Frias Filho (2018) is concerned about.

It is worth noting, according to Frias Filho (2018, p. 41), that the term “*fake news*” is recent, although it was previously known as “*rumors*”. The author highlights that when the Americans put men on the moon in 1969, a famous and persistent wave of rumors arose claiming that those images had been forged in some secret studio and that the entire expedition was nothing more than a hoax (Frias Filho, 2018, p. 41). Frias Filho cites another episode: Domestically, when septicemia resulting from probable medical malpractice killed President-elect Tancredo Neves in April 1985, it was reported that he had actually been the victim of an attack in which a well-known television reporter was injured, all duly concealed by the authorities to make the population believe in the mystification of the alleged illness (Frias Filho, 2018, p. 41). The author presents these two events to demonstrate that the study of these fantastical versions likely deceived the credulity of many people for a long time; he reveals their triggering factors and their mechanisms of propagation.

According to Frias Filho (2018, p. 41), what they seem to have in common is the property of spreading mainly orally among less educated and informed segments of the population, in addition to generally following conspiratorial and delusional scripts. For the author, most people in all eras have lived in the obscurity of a precarious, incipient knowledge, shackled by all kinds of prejudices, beliefs, and superstitions.

The author argues that since the Enlightenment, a growing layer – an educated middle class – has been formed under the influence of the scientific method and modern rationalism, which, according to Frias Filho (2018, p. 42), results in a more discerning attitude towards available information. However, he emphasizes that this layer is far from becoming the majority.

It can be argued, and rightly so, according to Frias Filho (2018, p. 42), that the novelty lies not in *fake news* itself, but in the appearance of an instrument capable of reproducing and disseminating it with unprecedented reach and speed.

In writing about the bustling planetary environment of 18th-century print publications, historian Robert Darnton showed how it was infested with falsehoods, plagiarism, impostures, and slander – *fake news*, in short – whose authors were protected by anonymity or pseudonyms. Similar to what happens today, it was common for those responsible for such abuses to escape any punishment because they were outside the borders where their writings had been incriminated (Frias Filho, 2018, p. 42).

In this more permissive sense, *fake news* becomes anything that displeases me, not only facts that are viewed differently from how they are presented, but also

interpretations with which I vehemently disagree and opinions that seem abominable to me. What is *fake news* for a fanatic is crystal clear truth for the fanatic of the opposing sect (Frias Filho, 2018, p. 42). In this context, in an environment of political polarization, instead of admitting the presence of distinct or conflicting opinions and treating their plurality as positive, the individual seeks elements that reaffirm and prove their conceptions, generally incriminating or blaming the group on the opposite side of the spectrum for all existing ills (Braga, 2018, p. 210).

The term *fake news*, according to Frias Filho (2018, p. 43), should be understood as any information that, being demonstrably false, is capable of harming third parties and has been forged and/or put into circulation through negligence or bad faith, in this case, with a view to easy profit or political manipulation.

3. Mediatization and the discourses put into circulation.

The concept of mediatization has become a cornerstone of communication studies, offering a lens through which to understand the growing and intricate web of influence that the media weaves over society and culture. Its academic relevance, observed by Verón (1997, p. 1) among researchers dedicated to communication technologies, attests to the recognition of this phenomenon in both Europe and Latin America. But how do we define this force that surrounds us? We turn to crucial perspectives, such as those proposed by Stig Hjarvard and José Luiz Braga, which offer complementary angles on the subject.

According to Hjarvard (2012, p. 55), mediatization is the key concept for deciphering the influence of media on culture and the social fabric. He describes it as a two-way process (p. 53): the media asserts itself as a semi-autonomous entity in society, and, in response, all other spheres – from religion to politics – are compelled to bend and adapt to its internal logic.

Although the term “mediatization” historically emerged to theorize the profound impact of media on politics, its scope quickly exploded to encompass a large-scale sociocultural transformation. This is where the power of media logic resides: the set of rules (formats, aesthetics, temporal and spatial expectations) inherent in the media not only guides and shapes, but also integrates into the forms of interaction of all other social institutions. This diffusion signals that the media transcends the role of a mere “channel”. It has become an active agent of change, requiring other institutions to incorporate its operational and narrative codes to ensure visibility and relevance on the contemporary social stage.

In practical terms, this relevance manifests itself in the way messages circulate. Consider, for example, the news, information, or narratives disseminated by institutional sources. For an organization's discourse to penetrate and engage the public, it needs to be shaped by media logic, which values synthesis, emotion, and circulation in often decontextualized environments. News, in its various platforms and formats (textual, visual, and audio), is therefore one of the most powerful vehicles for consolidating this process.

In contrast to the view that focuses primarily on the media institution, the Brazilian researcher José Luiz Braga proposes an analysis anchored in social interaction. For him, the study of mediatization turns to the meticulous investigation of “those social experiences of producing circuits and interactional devices” (Braga,

2012, pp. 49-50). The objective is to identify their “risks, challenges, potentialities, and preferred directions,” even attempting to intervene praxeologically in these communicative mediations.

Braga (2012, p. 35) is categorical in drawing a fundamental distinction: mediatization should not be confined to the culture industry nor understood merely as the result of technological innovations. He states that it does not correspond to a mere expansion or dominance of the culture industry over society. Overcoming this conceptual restriction leads us to focus on the reception, behavior, and understanding of the socio-historical-cultural mediators that allow the establishment of mediatization.

In this light, mediatization ceases to be a mere effect of the media and becomes a process that constitutes the very social structure. As Braga (2006, p. 14) states, it is “largely responsible for the constitution of the social fabric.” Society is not limited to producing its reality through basic interactions; it begins to produce the very interactional processes it uses to elaborate this reality. This is a progressive movement, “based on expectations generated by previous social constructions and subsequent autopoietic processes” (Braga, 2006, p. 5).

We can therefore conclude that we inhabit a society immersed in mediatization, a living and active communicational process that permeates all social layers and practices. Mediatization, in its action, goes beyond the strict limits of media studies. Metaphorically, it resembles the liquid state of matter: it penetrates the deepest social fabrics, lodging itself as a complex and nourishing element of social practices.

This profound social and communicational transformation is marked by the transition from the “society of means” to the “society in mediatization,” as detailed by Gomes (2014). The author (2014, p. 5) describes the society in mediatization as a fundamentally new environment, broader and more basic than the previous conception, which viewed the media only as technical devices of communication.

Gomes (2014, p. 5) observes that, in this new stage, “it is not only communication that is enhanced”; the direct result of this process is an increase in social complexity. For this reason, mediatization has established itself as the dominant mode, “in accelerated motion to become the reference interactional process” (Braga, 2006, p. 14), which justifies the use of terms such as “media society” or “mediated society” to describe the current panorama.

Antônio Fausto Neto (2008, p. 93) articulates the definitive contrast between the two stages: if in the “society of means” the media enjoyed relative autonomy (“they would have relative autonomy, in the face of the existence of other fields”), in the society of mediatization, “media culture becomes the reference upon which the socio-technical-discursive structure is established”.

This conversion is not a passive movement. It produces zones of impact on multiple levels, affecting the dynamics of organizations. The effectiveness of an institutional message, such as a video, is no longer defined solely by the intrinsic relevance of its content. Crucially, it is determined by its ability to successfully insert itself and circulate within the media logic. This requires the adoption of specific visual, narrative, and interactional codes so that the discourse is recognized and, ultimately, gains effectiveness in the complex mediatized society. It is precisely at this point of convergence between media logic and discursive effectiveness that the State's

action takes on the contours of power, instrumentalizing this visibility to “guide the conduct” of individuals.

This idea of “imposing a regime” is crucial for analyzing state discourse on the Amazon. Foucault (2014) suggests that the production of discourse is controlled, selected, organized, and redistributed throughout society through specific procedures. According to the author, these procedures aim to “conjure away the powers and dangers inherent in discourse, to dominate its random occurrence, and to evade its heavy and fearsome materiality” (p. 8). In this context of discursive organization and control, the modes of subjectivation employed to guide the conduct of subjects become identifiable, notably in relation to the acceptance of agricultural development policies in the Amazon and the disqualification of scientific criticism of deforestation.

It is crucial to consider that the materials defending agribusiness and the statements contesting climate science were disseminated by agents and institutional structures linked to the State, which, by its very nature, holds the prerogative to validate the official discourse. Thus, these productions present narratives that disseminate “truths” associated with development policy in the Amazon. In this context, those in authority hold the privilege and the right to assert the “truth” about deforestation, often dispensing with the need for factual verification, or even because the central objective is not proof, but the legitimization of a regime. This scenario explores the nature of discourse, which plays its role in society, exploiting power, truth, and authority, establishing, through discourse, a tool for social control (Foucault, 2014).

From this process of institutionalized, mediated information, a media contract is established, bringing subjects closer together through a process of recognition in this space of debate, thus establishing a relational network. Verón's (2004, p. 218) perspective on these instances' points to the subject's participation as an active operator in the discourse process, because without a subject there is no discourse, and without discourse, there is no meaning.

Analyzing the narratives defending agribusiness and attacking science in the period 2019-2022, we observe the creation of a scenario that seeks to establish such representations as unquestionable truth. This strategy was amplified by the figure of the elected President, whose informal speeches and the use of intentionally false information (deliberate disinformation) were launched and perpetuated to discredit official deforestation data and reinforce the discourse in favor of unregulated agricultural expansion. Such speeches, cloaked in the highest authority of the State, are powerful tools of social representation.

According to Hall (2016, p. 31), “representation is an essential part of the process by which meanings are produced and shared among members of a culture.” According to cultural studies, representing involves the use of “language, signs, and images that signify or represent objects.” He argues that “representation through language is therefore essential to the processes by which meanings are produced” (Hall, 2016, p. 18).

Thus, the analysis of the procedures for controlling and organizing discourse, as proposed by Foucault, proves essential for understanding how these systems of representation – including presidential pronouncements uncommitted to factuality – shape environmental reality and the conduct of subjects in specific contexts. Foucault

argues that discourse “constructs the subject matter.” It defines and produces the objects of our knowledge, governs the way in which the subject matter can be meaningfully spoken and debated, and also influences how ideas are put into practice and used to regulate the conduct of others” (Hall, 2016, p. 80).

4 Science for science's sake and science for the state's sake: two perspectives on deforestation for soy production.

Brazil deindustrialized rapidly starting in the 1980s, while the export-oriented agribusiness sector reached record production and export levels in 2020, jeopardizing the supply of the domestic market and increasing the prices of basic goods such as rice ². Government policies played a fundamental role, especially exchange rate policies, acting as a driving force in increasing Brazilian exports, as well as expanding the country's agricultural frontiers. It is reasonable to relate events with a major environmental impact on national natural resources to the expansion of agricultural and extractive activities, more clearly perceived from 2020 onwards, with the “pass the cattle, pass the herd” (let it go through) policy of ³the Ministry of the Environment and the subsequent devastation in the Amazon, Cerrado, and Pantanal ⁴.

However, this is not to indiscriminately attribute the idea that all activity linked to agribusiness is invariably devastating to natural resources, and that its nature cannot be a factor in the country's economic development. Nevertheless, it is a fact that misguided public policies fail to mobilize the country's resources for higher value-added activities in international trade, and that institutional weaknesses do not prevent abuses by interest groups in the sector from causing enormous environmental damage, in addition to the risks and distortions caused in the domestic market regarding food security for the majority of the population.

The role of the agricultural enterprise – which originated in the colonial period – would profoundly mark Brazilian economic history, establishing, from the beginning of the occupation, the concentration of political power in the owners of large tracts of land. These lands would be destined for men who had the resources to develop economic activity, control the land, and later, rely on enslaved labor (Furtado, 2013).

(...) the expansion of the agricultural frontier for export due to increased international demand, primary production expanded in such a way that it occupied areas previously destined for food production, decreasing the surface area for food production and increasing its cost in the region. (...)

²Brazil opened 100 new markets and broke export records in agriculture.
<https://summitagro.estadao.com.br/comercio-exterior/brasil-abriu-100-novos-mercados-e-bateu-recorde-de-exportacao-na-agropecuaria/>. November 18, 2020. Accessed November 18, 2025.

³The destruction of the environment is part of the Bolsonaro government's plan.
<<http://www.bancáriosguarulhos.com.br/passa-boi-passa-boiada-a-destruição-do-meio-ambiente-e-plano-do-governo-bolsonaro/>>. July 5, 2020. Accessed November 18, 2025.

⁴Under Bolsonaro, deforestation doubles. (Climate Observatory) <<https://www.oc.eco.br/sob-bolsonaro-desmatamento-dobra-de-patamar/>>. October 9, 2020. Accessed November 17, 2025.

even so, the semi-feudal character of the sugar economy persisted, since production depended on external demand which periodically became unstable and caused a decline in employment levels, leading to a return to a subsistence economy (...) thus, Furtado understood that within the underdeveloped economy there was a sector that constituted the basis of this inequality, the large properties destined for export that determined semi-feudal relations (Furtado, 2013 apud Mendonça, 2016, p.182-184).

The quote from Mendonça (2016), which synthesizes Celso Furtado's theoretical framework on Brazilian underdevelopment, establishes a powerful and persistent line of continuity with the ethnophenomenological observation expressed by a family farmer from the Amazon/Cerrado agricultural frontier: "Soybeans are very thirsty, aren't they? They drink more water than we do."⁵

The Furtado framework describes a historical system that, although initially focused on the sugar regime, applies *mutatis mutandis* to the expansion of the soybean agricultural frontier. This system is characterized by External Priority and Internal Contraction: the expansion of primary production is driven primarily by international demand, resulting in the occupation of areas previously destined for subsistence food production. This dynamic reduces the surface area for food production and increases its costs internally, exacerbating inequality. In essence, the system maintains a Semi-feudal Character and Dependency, where large export-oriented properties—modern agribusiness—constitute the basis of this structural inequality.

The farmer's observation updates this matrix of inequality to the environmental sphere, establishing a hydrological Connection in Current Inequality. The "thirst" of soy, referring to the high consumptive use of water by *Glycine max*⁶, is the contemporary manifestation of that sector of the underdeveloped economy that Furtado identified as the core of inequity. Agribusiness, as a large property destined for export, disproportionately consumes the vital water resource, exceeding not only local food production but also violating the basic human right to access to water.

The depletion of water resources caused by export-oriented monoculture emerges as the new mechanism of regression. If in the past regression was imposed by the instability of external demand, today it is driven by the depletion of aquifers and the consequent environmental exhaustion. The final result, however, is identical: vulnerability and the potential forced return to a subsistence economy (or the negation of this, due to resource scarcity), as predicted by Furtado.

The discourse of family farmers is not limited to environmental criticism; it functions as a practical diagnosis demonstrating the persistence of the structure of underdevelopment and inequality. Anchored in large, export-oriented landholdings, this structure replaces the primary exploitation of the land with the predatory exploitation of water, but maintains and intensifies the pressure on local populations and their livelihoods.

⁵This is a quote from a family farmer in the Matopiba region, as found in the interview available at: <<https://outraspalavras.net/outrasmidias/no-cerrado-deserto-de-soja-puxa-o-subdesenvolvimento/>>. December 15, 2020. Accessed November 17, 2025.

⁶Scientific name for Soybean.

The intense degradation of the main national biomes, specifically observed in the four-year period from 2019 to 2022, is a direct result of the accelerated expansion of primary activities on large landholdings (*latifundia*), driven by the encroachment of these frontiers into protected areas. These areas, in theory, should be under constant monitoring and surveillance by the Brazilian State, with effective oversight carried out by the institutional apparatus responsible for this purpose, under the Federal Executive Branch. This situation is corroborated by widespread public knowledge—evidenced by the vast volume of information disseminated in the main media outlets—that the Federal Executive Branch, during the four-year period from 2019 to 2022, failed to satisfactorily fulfill its environmental monitoring and oversight obligations. Whether driven by ideological bias or by serving the interests of privileged groups represented in the spheres of institutional power, they demonstrate an aggressive stance towards opening new areas for cultivation, livestock farming, or plant extraction, putting at risk the lives and future survival of traditional and/or indigenous populations that inhabit these areas.

According to data released by Canal Agro, Brazilian agribusiness expanded to over 100 new ⁷foreign markets in the last period and broke export records in 2020. The trade in produced grains reached 286 million tons destined for export, with soybean exports growing by 420% compared to 2019. ⁸In the case of the Amazon, Torres (2019) highlights that deforestation in the Amazon is historically linked to criminal practices of land exploitation and the expansion of agricultural frontiers, obtained at the cost of rampant deforestation. However, it is from 2019 onwards that the federal government has adopted a confrontational stance with agencies such as INPE, disagreeing with data collected by INPE, as well as confronting other entities linked to environmental preservation.

According to INPE (National Institute for Space Research), between July and August, deforestation alerts increased by 40%. The institute also found that between January and August 2019, there was an 83% increase in wildfires compared to the same period in 2018. This is the largest increase ever recorded within 7 years, totaling an alarming 73,000 mapped fire outbreaks. According to INPE, more than 20,000 hectares of forest were destroyed in the Amazon, even reaching forest regions in neighboring countries such as Paraguay and Bolivia (Torres, 2019).

According to IBGE (2020), the growth of soybean production hubs in the region, the expansion of the agricultural frontier, as well as the hotspots, reflect the growth of activities linked to this process, such as logging, pasture opening, and grain cultivation, which has radically altered the traditional occupation of the Brazilian Amazon. Associated with the process of expanding the agricultural frontier, the spatial distribution of deforested areas, as well as hotspots, directly reflects the

⁷Countries that make up the new markets: Saudi Arabia, China, Kazakhstan, South Korea, United Arab Emirates, India, Japan, Malaysia, Indonesia, Taiwan, Iran, Thailand, Myanmar, Singapore and Qatar, Argentina, Colombia, Peru, United States, Mexico, Canada, Guyana, Ecuador, Venezuela, Guatemala and Bolivia, Egypt, Morocco and Zambia and Australia.

⁸NEW Markets and Record Exports. Available at: <<https://summitagro.estadao.com.br/comercio-exterior/brasil-abriu-100-novos-mercados-e-bateu-recorde-de-exportacao-na-agropecuaria/>>. Published on: November 18, 2020. Accessed on: November 18, 2025.

growth of activities intrinsically linked to this process, such as logging and pasture opening, which, together with the expansion of grain cultivation, make up a mosaic of differentiated uses of the Amazonian space that has radically altered the traditional dynamics of occupation of the Brazilian Amazon. Furthermore, the introduction of field methods and new technologies associated with agricultural activities has effects on the natural environment, through erosion and water pollution, and affects income generation, employment, and the living conditions of local populations (IBGE, 2020).

At the height of foreign investors' demands on Brazil regarding the increased devastation of the Amazon, two publications address this debate. One deals with the results of a research study, in the form of a scientific article published in the *Journal Science*, which estimates the weight of deforestation's contribution on private properties whose production is exported to the European Union. On the other hand, a book published by Editora Baraúna aims to demystify some facts and myths about Brazilian agriculture, but it produces arguments that contradict the actions of the Bolsonaro government (2019 to 2022) and reinforce the tension between agribusiness and environmental policies, in a scenario of growing international pressure for sustainability and climate responsibility.

The article "*The rotten apples of Brazil's agribusiness*", published in the *Journal Science* in July 2020, authored by researchers from four different countries, presented an interdisciplinary study that... This reveals Brazil's inability to confront illegal deforestation, thus jeopardizing the future of agribusiness. In contrast, in the same year as the publication of the aforementioned research, the book **Agriculture, Facts and Myths: Foundations for a Rational Debate on Brazilian Agriculture** was published, presenting in ten chapters facts and myths about Brazilian agriculture, one chapter dedicated to the historical development of deforestation and another to the Forest Code, in addition to topics such as the use of pesticides in Brazil, low-carbon agriculture, and water resources, among others. One produces science for the sake of science. The other, science by the State, or at the service of the State. In this chapter, we will present the two studies, the article and the book mentioned above, and through evidence, we will highlight the arguments and data, comparing them in order to identify science for the sake of science and science produced to justify State actions.

The book, titled **Agriculture, Facts and Myths: Foundations for a Debate on Brazilian Agriculture**, takes an argumentative ideological approach, grounding its thesis in a detailed preface that addresses: the virtue of progress, the neutrality of knowledge, scientific controversies, marketing and ideology, digital activism, the lens of the past, new obscurantism, facts versus myths, and the pedagogy of knowledge. In order to value the scientific method, the preface presents an argumentative circuit aimed at legitimizing governmental decision-making, producing theorized information through detours that fail to consider sustainability and environmental preservation. The book argues for exploration to develop, however, regarding the theme of sustainability and the importance of the environment, it does not present well-founded arguments guided by an ecological perspective and criticizes works that place this issue as a premise for environmental debate.

The work, while having a pedagogical slant for lay readers, is excessively biased. It argues against *fake news* and the production of rumors, but it produces

arguments that support the actions of the federal government (2019 to 2022), which ends up legitimizing and justifying the actions of the State. It does not discuss the much-talked-about “green agriculture,” for example, which is focused on environmental issues, preservation, sustainability, and the management of resources, which are not infinite, and it says little about the impacts behind capitalization. It argues the idea that bucolic environmentalism depreciates the technological modernity of agribusiness, configuring a counterculture that rejects the reality of agrarian capitalism and belittles its importance in contemporary, urbanized, and globalized society (Graziano; Gazzoni; Pedroso, 2020, p. 11).

In contrast, the scientific article: “*The rotten apples of Brazil's agribusiness*” (2020) – translated into Portuguese as: *Maçãs podres do agronegócio brasileiro*, originating from research on illegal deforestation in Brazil (work developed by a group of researchers linked to the Federal University of Minas Gerais - UFMG)⁹– produced, with partner institutions in Brazil and abroad, a study that identified the properties that illegally deforested between 2008 and 2018 in order to expand their plantations and pastures. The scientists (2020) demonstrate that at least about 20% of the country's exports are potentially linked to illegal deforestation.

According to Graziano, Gazzoni, and Pedroso (2020, p. 33), the suppression of original forests allowed for the advancement of the Brazilian economy and society. By situating agricultural development in the USA, they emphasize that even the atrocities committed against indigenous peoples do not diminish the pride that Americans display in the formation of their nationhood.

US farmers, both then and now, are considered “pioneers” of the territory, called “fatherland pioneers.” Never, ever, have American rural producers been considered “environmental criminals.” On the contrary, they have been portrayed as heroes who confronted Native Americans to produce food in hundreds of films (Graziano; Gazzoni; Pedroso, 2020, p. 31).

But the US is the model we “follow,” that is, if they are considered “trailblazers,” “pioneers of the nation,” as the book mentions, the idea conveyed is that we should copy them, tearing down and deforesting in order to grow, imposed by a development model (Graziano; Gazzoni; Pedroso, 2020, p. 36).

The book defends a vision of “development” that considers a single premise: deforestation to advance. It does not frame this situation as a problem, but instead distorts the issue and highlights the critique made by so-called “environmentalists,” as categorized in Graziano et al. (2020), of historical deforestation, which is presented as the actual problem to be unraveled.

The book also references the Greeks and the Roman Empire regarding the evolution of civilizations, in order to substantiate its argument, stating that “The

⁹The University group is formed, in addition to Raoni Rajão and Britaldo Soares-Filho, by researchers Felipe Nunes, Danilo Figueira, Lilian Machado, Débora Assis, and Amanda Oliveira, the latter three being doctoral students in Geography at the IGC. UFMG partnered with the University of Bonn (Germany), the Higher School of Environmental Conservation and Sustainability (Escas/Ipê), the Stockholm Environmental Institute (Sweden), and the University of Wisconsin (USA). The study received support from CNPq, Fapemig, the Climate and Land Use Alliance (Clua), the Gordon and Betty Moore Foundation, the Alexander von Humboldt Foundation, and the German Federal Ministry of Education and Research.

civilizing process can only unfold, anywhere in the world, through the suppression of original vegetation. From the Fertile Crescent, through Greek civilization and the Roman Empire, trees gave way to men” (Graziano, Gazzoni, Pedroso, 2020, p. 25).

The article under investigation presents a counterpoint, highlighting the concern about deforestation for development, revealing that exported products such as soy and cattle, commodities, originated from deforested areas. The study evidenced that farmers were circumventing international requirements and agreements, since importers do not tolerate the purchase of products that come from deforested areas.

In an article published in *Science* (2020), researchers suggest that the European Union could help Brazil combat the destruction of the Amazon and Cerrado biomes. In this study, conducted by a group of researchers from Brazil, the United States, and Germany, Rajão *et al.* (2020) estimate that although only 2% of properties located in the Amazon and Cerrado biomes are responsible for 62% of illegal deforestation in the region, a portion of this devastation is linked to agricultural commodities for export. According to Rajão *et al.* (2020), this information was only possible by cross-referencing satellite data on forest loss with registration information from the Rural Environmental Registry (CAR).

Furthermore, according to this study, one-fifth of the 53,000 properties that produce soy in the Amazon and Cerrado biomes cultivated on land deforested after 2008, disregarding regulations, that is, illegally (previous actions were pardoned), and it is estimated that half of this soy was produced on recently deforested land in an irregular manner. In the view of Graziano, Gazzoni, and Pedroso (2020, p. 25), the civilizing process can only unfold – anywhere in the world – through the suppression of original vegetation. The authors state that trees have gradually given way to the expansion of human presence, a movement observed since the first civilizations in the Fertile Crescent and continuing to be a trend in the times of Greece and the Roman Empire.

Researchers (2020) concluded, in the *Science* article, that approximately 2 million tons of contaminated soybeans may have been destined for European Union markets during the period covered by the study. According to Rajão *et al.* (2020), the bloc buys 41% (13.6 million tons) of all the soybeans it imports from Brazil, and almost 70% of that volume comes from the Amazon and Cerrado regions.

According to Rajão *et al.* (2020), the European Union imports almost 190,000 tons of beef from Brazil annually. Researchers from UFMG and partners found that at least one in eight of the 4.1 million head of cattle traded in slaughterhouses each year originate directly from properties that may have illegally deforested. This represents 2% of the beef produced in the Amazon and 13% of the production in the Cerrado. They warn, however, that it is also necessary to monitor indirect cattle suppliers, and this is not done by large slaughterhouses or by the government (federal or state). The calculations made for the study, which cover the various stages of the process, generated the estimate that around 60% of the slaughtered cattle are potentially contaminated by deforestation at some point in the production chain (Rajão *et al.*, 2020).

According to Rajão *et al.* (2020), previous studies had already warned that the situation in the meat supply chain is more complicated because there are many stages. Generally, the calf is born in one place, fattened in another, and transported

from one property to another until it reaches the final destination, which sells it to the slaughterhouse. Companies generally monitor compliance with the law by this direct supplier, but not by indirect suppliers, so deforestation ends up occurring in the chain. In their analysis, the researchers (2020) calculated that among the 4.1 million head of cattle traded in slaughterhouses, at least 500,000 head come directly from properties that may have illegally deforested.

In this study, Rajão *et al.* (2020) describe the development of high-performance software capable of analyzing more than 815,000 rural properties individually. The authors emphasize that the goal of deforestation-free Brazilian agricultural production is perfectly achievable by political leaders and agribusiness. They highlight that, with this technology, it becomes possible to monitor the entire supply chain, differentiating legal from illegal deforestation. This feasibility is crucial, especially because the European Union and Mercosur are negotiating a trade agreement, and the European bloc adopts policies that block the import of commodities from illegally deforested areas (Rajão *et al.*, 2020).

The study cross-referenced land use and land cover data obtained from different sources, such as the Rural Environmental Registry (CAR) – which includes six million individual properties –, the National Institute for Space Research (INPE), and the MapBiomass project. The satellite images were subjected to spatially explicit modeling, developed by Professor Britaldo Soares-Filho, which integrates information related to the properties and performs calculations based on parameters defined by land use regulations, determining whether production is contaminated or not. The properties are then linked to production chains, and it is also possible to measure production capacity, in the case of soybeans. When it comes to livestock, the process is more complex and requires network analysis, according to the study (Rajão *et al.*, 2020).

The authors (2020) report that the study traced the international sales trajectory of commodities, which was done through the *Trase platform*, developed by the *Stockholm Environmental Institute* in Sweden. According to Rajão *et al.* (2020), the work would not have been possible without the quality of the data available in Brazil. They also emphasize that the European Union occupies a leading global position in efforts to ensure imports of products that do not benefit from deforestation, an agent of destruction of tropical forests. Initiatives with this purpose are part of the European Green Deal, alongside, among others, a food policy aimed at reducing distances for the transport of animals and agricultural products.

This investigation has had a significant impact on the structures of Brazilian agribusiness, with repercussions both nationally and internationally. The study revealed that soybeans and consequently cattle are exported from deforested areas. According to Girardi (2020), Vice President Hamilton Mourão, who coordinates the Amazon Council, admits that the data harms the country's image and exports. He counters the research by saying: “*But the Ministry of Agriculture is evaluating it and as soon as it has the correct numbers it will respond and clarify*”¹⁰.

¹⁰GIRARDI, Giovana. 20% of soy and meat exported to the EU would be “illegal”. Estadão (republished in UOL Economia). São Paulo. July 18, 2020. Economy. Available at: <<https://economia.uol.com.br/noticias/estadao-conteudo/2020/07/18/20-de-soja-e-carne-exportadas-para-a-ue-seriam-ilegais.htm>>. Accessed on: December 23, 2020.

According to Girardi (2020), the Ministry of Agriculture, through a statement, did not question the data, but asked that *agriculture not be “vilified.”* As the article's title suggests and the data demonstrate, more than 90% of rural producers were not involved in any type of illegal deforestation, based on the study's data sample. According to Girardi (2020), Abiove, an entity that brings together soybean exporting traders, *stated that the work presents a “distorted view”*.¹¹

Science article, the group classifies these properties as “rotten apples of Brazilian agribusiness,” but suggests that with the tools already available, the government can act precisely to contain the problem. Based on these two publications, it becomes difficult to know who is telling the truth; information derived from science, produced by science, is contested by the State. The claim that the State acts simultaneously in the production and refutation of scientific data, and in the dissemination of misinformation, is supported by the strategy of delegitimizing bodies of technical expertise. The most emblematic case lies in the government's reaction to deforestation data in the Amazon, monitored by the National Institute for Space Research (INPE). In 2019, after the release of alerts of increased deforestation (DETER/PRODES data), the then President of the Republic publicly questioned the validity of the numbers, resulting in the dismissal of the INPE director, Ricardo Galvão. Such action is interpreted as an attempt to refute scientific data that contradicts the political agenda, undermining the credibility of an internationally recognized institution. Concomitantly, the production of disinformation manifested itself in distorted official narratives, such as the insinuation, made by members of the high command, that non-governmental organizations (NGOs) were behind the fires in the Amazon in 2019, without presenting any evidence, constituting an example of misinformation with the strategic objective of diverting responsibility and focus from oversight, refuting scientific studies with fake news.

Graziano et al. (2020, p. 9) highlight that the political game of society usually affects and modifies the understanding of facts, almost always causing a loss of objectivity. Worse, it causes distortions in the absorption of knowledge. They further conclude that, in this way, “opinions” arise and myths are constructed, which inadvertently permeate people's common sense. Finally, the authors (2020, p. 9) emphasize that in the digital age, the objectivity of knowledge has become a tremendous challenge. They even use journalistic objectivity techniques, defending information that is closer to the truth. However, the book produces institutionalized *fake news* and at the same time argues against *fake news*: “*citizens have come to believe more in fake news that circulates on their WhatsApp than in science.*” And they pass it on to friends, generating an endless process of misinformation (Graziano et al., 2020, p. 10).

The quote from Graziano et al. (2020) exposes a paradoxical crisis of trust: the public's preference for misinformation disseminated on platforms like *WhatsApp*, to the detriment of scientific knowledge. This dynamic creates a vicious cycle where the book's own “institutionalized *fake news*”, even if unintentional, contributes to undermining the credibility of traditional sources, mirroring the problem it purports to combat. The proliferation of this disbelief and the acceptance of distorted narratives establish fertile ground for warning signs to be ignored, regardless of

¹¹Same as the previous item.

where they manifest—whether in discredited science or in natural systems themselves.

5. The environment also speaks: signs of crisis and non-verbal communication.

The ecological crisis manifests itself through intense and unequivocal nonverbal communication, where landscape destruction and biodiversity loss act as alarm signals emitted by ecosystems. Accurate measurement and systematic monitoring of these changes are crucial to decoding this crisis message, providing the necessary empirical basis for political and conservation interventions. In this context, the WWF-Brazil report, based on data from the First Annual Deforestation Report of MapBiomas (MapBiomas, 2020; WWF-Brazil, 2020), revealed a devastating panorama for 2019 with alarming figures: the total loss of native forest cover in Brazil reached 1,218,708 hectares. This extent is comparable to the combined area of eight cities the size of São Paulo or the total area of the capital city of Manaus. A critical finding was the extreme prevalence of illegality, as more than 99% of deforestation alerts showed irregularities, classifying the vast majority of deforestation as an illegal act (WWF-Brazil, 2020).

Given this overall magnitude of devastation, the analysis of the spatial distribution of loss reveals a specific geographic focus and a dynamic of destruction that demands differentiated attention. The suppression was concentrated mainly in the Amazon and Cerrado biomes, which together accounted for 96.7% of all deforested areas nationwide (WWF-Brazil, 2020).

Although the Amazon recorded the largest absolute volume of deforestation, totaling 770,148 hectares (63.2% of the total) – representing a destruction rate of approximately 2,100 hectares per day – the Cerrado stood out for its higher average rate of deforestation, reaching an index of 0.99, followed by the Pantanal, with 0.87 (WWF-Brazil, 2020). This concentration of losses in the most vulnerable biomes reflects intense anthropogenic pressure, the consequences of which manifest themselves unevenly in different regions.

The analysis of geographic focus complements the overall picture, showing that the destruction is not random, but rather concentrated in a few key areas. Almost 78.8% of all alerts were recorded in just five states: Pará, Acre, Amazonas, Rondônia, and Mato Grosso (WWF-Brazil, 2020). The state of Pará stood out as the epicenter of the devastation, accounting for approximately 32.6% of the total deforestation. At the municipal level, ten of the municipalities with the greatest losses are located in the Legal Amazon, with Altamira (PA), São Félix do Xingu (PA), Porto Velho (RO), Lábrea (AM), and Apuí (AM) being the most prominent (WWF-Brazil, 2020). Finally, the report indicated that legally protected areas were also impacted: 16% of Conservation Units (226 CUs ¹²) registered deforestation, notably the ¹³Triunfo do Xingu Environmental Protection Area (PA), which lost 30,360

¹²Territorial spaces protected by law (SNUC - Law No. 9.985/2000), intended for the conservation of biodiversity and natural resources, divided into categories of Full Protection (indirect use) or Sustainable Use (regulated direct use).

¹³An Environmental Protection Area is one of the types of Sustainable Use Conservation Units in Brazil, as defined by the National System of Conservation Units (SNUC) Law – Law No. 9,985/2000; therefore,

hectares. Indigenous Territories (ITs), although representing only 3.6% of the national total, were also not immune to devastation, reinforcing the fragility of legal protection in the face of deforestation pressures (WWF-Brazil, 2020). This escalation in environmental degradation reached its peak at critical moments, highlighting the failure to contain destruction in legally protected areas and in the biome in general.

In August 2020, the situation reached alarming levels: the increase in alerts and occurrences of deforestation and wildfires, repeatedly recorded by satellite systems and replicated by global media outlets, posed a significant challenge to Brazilian environmental management. The international media coverage of forest devastation rendered the federal government's attempt to discredit or conceal scientific data – a strategy observed, for example, in the clash with INPE – ineffective and unsustainable. The high visibility of negative environmental indicators in the international public sphere exposed gaps in the policy for monitoring and combating deforestation, hindering official defense and compromising the country's image with trading partners and foreign investment funds. INPE recorded, up to November 2020, more than 40,000 km² of devastation, meaning that 30% of the biome was devastated by fire in that year. And so, Brazil ended the year 2020 with the sad record of the highest number of fire outbreaks in a decade, according to data from the National Institute for Space Research (Deutsche Welle Brasil, 2020).

Deforestation represents one of the biggest global issues regarding land use. According to Politize (2019), forest cover currently covers 31% of the planet's land surface. It is through forests that vital processes such as air and water purification occur. In addition to being the cradle of much of the planet's biological diversity, it is estimated that about 80% of terrestrial species live in forests. It is also known that two main causes of deforestation are agriculture and illegal logging. According to the organization *Forest Trends*, cited by Politize (2019), commercial agriculture is estimated to be responsible for 70% of forest destruction in tropical and subtropical countries.

In early 2019, monitoring data on environmental developments in Brazil released by INPE caused political tension within the government of then-President Jair Bolsonaro. In a press conference, Ricardo Salles, then Minister of the Environment, claimed that the data published by INPE was sensationalist and did not reflect reality. According to President Bolsonaro, “the Institute was irresponsible in releasing the data and even damaged the country's image.” As a result, the president of INPE was dismissed. And in response to the Bolsonaro government's stance on the environment – according to Politize (2019) – Germany and Norway suspended their contributions to the Amazon Fund, even though together these countries contributed more than 90% of the fund's total reserves. It became evident that the Federal Executive Branch, during the four-year period from 2019 to 2022, not only demonstrated inertia or apathy regarding the control and combating of illegal deforestation, but also caused a significant negative impact in the international diplomatic and economic sphere, culminating in discomfort or tensions with the country's own export-oriented agribusiness sectors.

it seeks to reconcile environmental conservation with socioeconomic activities and human occupation, which distinguishes it from Integral Protection Units (such as National Parks), where the focus is strictly on preservation.

The president at the time argued that “deforestation in the Amazon is a cultural issue”¹⁴ and that “Brazil is the country that most preserves the environment,”¹⁵ and in refuting the data provided by INPE – regarding deforestation rates in the Amazon – he stated that: “If all this devastation that you accuse us of doing and having done in the past were true, the Amazon would already be extinct, it would be a great desert”¹⁶. [...] “I even sent someone to find out who is the guy in charge of INPE so he can come here to Brasília and explain this data that was published in the press.”¹⁷ Responding to the international conflict, he declared: “The Amazon is ours and we are going to develop it, after all, there are more than 20 million Brazilians there who cannot be left helpless.” [...] “Amazon increasingly Brazilian” (Ferrari / CNN Brasil, 2020), in a clear attempt to instrumentalize narratives to shift the focus away from his responsibility.

According to data released in August – the most recent available – the Legal Amazon region experienced the highest rate of deforestation recorded from January to July since 2015: 4,731 km². This was recorded on the Real-Time Deforestation Detection platform (Deter) of the National Institute for Space Research (Inpe). [...] During the same period, 26,868 fire hotspots were also recorded in the Legal Amazon by Inpe satellites, more than the 25,209 recorded in the same period of 2019. [...] Another region that suffered from wildfires is the Pantanal, which faced its worst wave of fires in August 2020 in 15 years, threatening the region's biodiversity, which includes tapirs, jaguars, capybaras, and the highest density of jaguars in the world (Ferrari, 2020/ CNN Brasil).

The Bolsonaro government (2019-2022) systematically disregarded environmental issues. One example was the decision to withdraw from the Paris Agreement¹⁸. In addition to other measures adopted by the Brazilian government, this undoubtedly created international political unease. Emmanuel Macron, the

¹⁴Bolsonaro says deforestation in the Amazon is a “cultural” issue. Deutsche Welle Brasil. 20 Nov 2019. Available at: <<https://www.dw.com/pt-br/bolsonaro-diz-que-desmatamento-na-amaz%C3%B4nia-%C3%A9-quest%C3%A3o-cultural/a-51334649>>. Accessed on 23 Jan 2021.

¹⁵FERRARI, Murilo. 'Brazil is the country that best preserves its environment,' says Bolsonaro. CNN Brasil. São Paulo. September 5, 2020. Politics. Available at: <<https://www.cnnbrasil.com.br/politica/2020/09/05/brazil-eo-pais-que-mais-preserva-seu-meio-ambiente-diz-bolsonaro>>. Accessed January 23, 2021.

¹⁶In contesting deforestation data, Bolsonaro took a pusillanimous and cowardly stance, says INPE director. Época Negócios. Available at: <<https://epocanegocios.globo.com/Brasil/noticia/2019/07/ao-contestar-dados-de-desmatamento-bolsonaro-tomou-atitude-pusilanime-e-covarde-diz-diretor-do-inpe.html>>. July 20, 2019. Brazil. Accessed January 23, 2021.

¹⁷Same as the previous item.

¹⁸It is an international treaty, adopted in 2015 by almost all UN signatory countries, that establishes the main global framework for combating climate change, with the central objective of keeping the increase in the average global temperature well below 2°C – and ideally at 1.5°C – compared to pre-industrial levels. Its operation is based on Nationally Determined Contributions (NDCs), which are greenhouse gas reduction targets defined and voluntarily reviewed by each country every five years, and also includes financial and technological support from developed nations to assist in adaptation and mitigation in developing countries.

president of France, harshly criticized the Brazilian government, condemning Brazil's withdrawal from the Paris Agreement and emphasizing:

"He promised me, with his hand on his chest (at the G20 summit in July in Japan), that he would respect his environmental commitments. Days later, he fired scientists from his government," the Frenchman said on Monday, referring to the dismissal of the president of the National Institute for Space Research (Inpe), Ricardo Galvão, after the release of deforestation statistics that displeased the government (Costa; Lorenzo, 2021, Estadão Conteúdo).

On Twitter, the French President emphasized the need for collective action against environmental crime as part of broader efforts to curb fires in the Amazon. At the same time, he advocated for a change in trade and consumption patterns. (According to Macron, 2020):

The current model is destructive and contradicts its own principles "The EU did not sign the trade agreement with Mercosur because it threatens to increase deforestation", he said. The French president also attacked agricultural production, claiming that it is "genetically modified soy that fuels deforestation in the Amazon." The French leader also announced a new summit of heads of state in January 2021 to address the environmental crisis. According to him, this will be a "new ambitious global agreement." He also called for the formation of an international coalition to guarantee the protection of 30% of the planet (Portal Jovem Pan, 2020).

Furthermore, he stated on social media that continued dependence on Brazilian soy indirectly supports deforestation in the Amazon. He also argued that: *"no longer depending on Brazilian soy and starting to produce it on the European continent"* (Macron / @Emmanuel Macron, on Twitter, January 12, 2021).

Guimarães (2020) highlights that, according to Carlos Nobre, a climate scholar and researcher at the National Institute for Space Research (INPE): *"the global business world is increasingly concerned with environmental issues."* He adds that there is growing talk of *deforestation-free supply chains*, which could be broadly translated as concern about the impact of products in the supply chains of large companies on forests. And in this way, The Brazilian government at the time was going against the grain.

FINAL CONSIDERATIONS

Before media convergence, journalists were responsible for, and continue to perform, a thorough verification of information, as news came exclusively from news agencies because the information structure was different. Now, after convergence, where this structure is fragmented and everyone has the opportunity to publish and fuel discussions online, the dissemination of fake news is widespread.

Brazil, since its colonial formation, has been a primary exporting country. This characteristic has made it a world power in agribusiness. The country occupies the position of the 2nd largest food producer on the planet, after the USA, and has the potential to become 1st in this ranking in a short time. In this context, would Brazilian agribusiness also be a potential target of *fake news*? Who would be interested in news

that damages the image of Brazilian agriculture? Or rather, what is the point of producing institutionalized *fake news*? It is clear that the latter is linked to justifying the actions of the government of the time, which had in its philosophy deforestation to develop with the unchecked expansion of agricultural frontiers, severely impacting national biomes.

Amidst this crossfire of information surrounding Brazilian agribusiness, where on one side the government, through its Embrapa researchers, publishes a book with biased arguments, failing to consider the environmental issue at the heart of the debate, where the central idea is deforestation to grow, and on the other side, a team of researchers investigates, analyzes, and disseminates their results. Under these conditions, the population has difficulty understanding and distinguishing what is false from what is true, as the phenomenon of *fake news* obscures what is observable.

The political landscape, notably marked by the pronouncements of the Presidency of the Republic at the time (2019-2022) and the subsequent culture of denialism, exacerbated the debate and diverted attention from the central problem. This dynamic of denial, intrinsically linked to political ideologies and dogmas, constitutes a significant social risk, propelling society towards a state of structural misinformation.

In the context of the Amazon, disinformation takes on particularly serious dimensions when its nature is intentional and malicious. Fake news on topics such as deforestation, indigenous peoples, or resource exploitation are generally not the result of mere verification errors or unintentional mistakes, but rather of deliberate dissemination. This form of harmful information has the clear purpose of manipulating public opinion, hindering enforcement, or legitimizing illegal activities in the region, requiring heightened critical attention in combating it and analyzing its harmful intent.

It is essential for readers to look beyond the headline and opening sentences of a text in order to critically assess its content. Crucial information and verifiable context are often found in subsequent parts of the text, footnotes, or links to primary sources. In-depth reading is essential to identify contradictions, inconsistencies, and any intentional omissions that characterize the dissemination of fake news.

As we reach the end of this analysis on the systemic impact of disinformation – and its most virulent manifestation, *fake news* – it is crucial to emphasize that this dynamic operates, in fact, as an ingenious spell capable of subtly reshaping the perceptual landscape. Faced with such power of illusion, it becomes imperative to reassess the active role and cognitive responsibility of each individual within the informational ecosystem.

The central premise of our study, established in the introduction, warned: “Disinformation, in its power to conceal the truth under an attractive veneer, operates like a spell.” Indeed, in-depth analysis confirmed that *Fake News* represents the most sophisticated and high-impact form of this modern enchantment. Its method is not limited to obscuring factual evidence; it is far more insidious, working to install parallel narratives that are meticulously designed to exploit pre-existing biases, amplifying polarization and irrational responses.

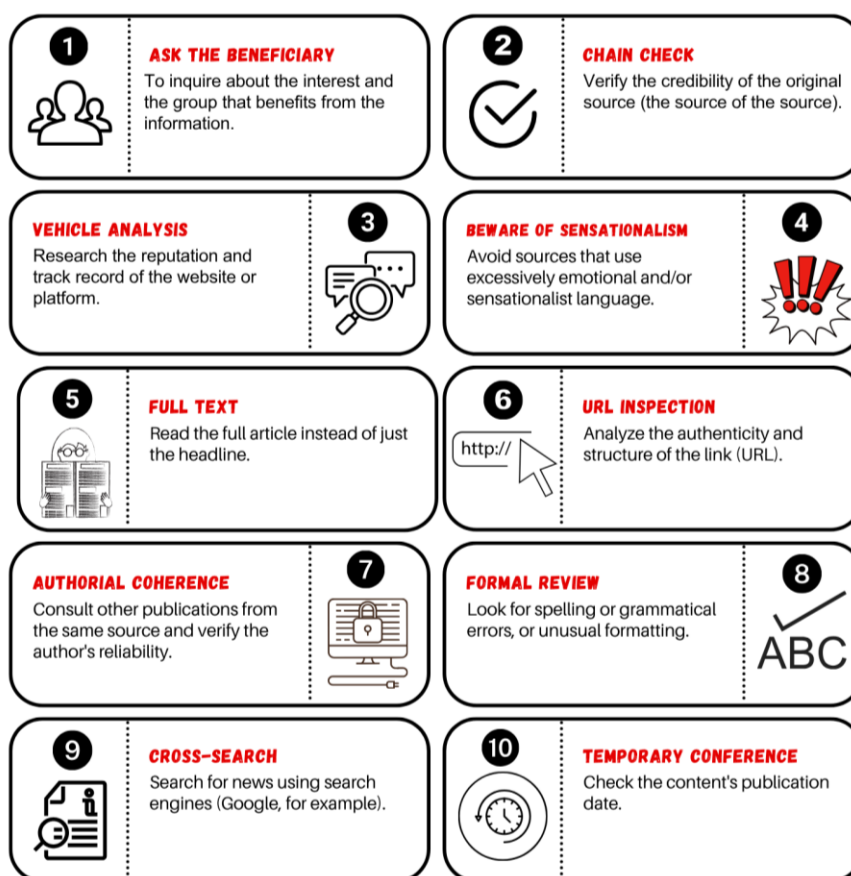
It is crucial to recognize, however, that the effectiveness of this “spell” rests precariously on the cognitive passivity and lack of questioning on the part of the recipient.

The fundamental conclusion of this analytical journey is, therefore, a vehement appeal for active vigilance. The true counterpoint to the persuasive magic of *Fake News* does not lie in external algorithmic solutions, but rather in the relentless discipline of critical thinking. Dispelling this illusion requires that the contemporary citizen adopt the stance of a skeptical investigator: questioning the source of information, subjecting data to rigorous verification, and developing a healthy distrust of any content that promises immediate emotional gratification.

The task of realigning the public sphere with truth and rationality cannot be delegated solely to institutions; it is, in essence, an epistemological and individual responsibility. It is through robust media literacy and the application of methodological skepticism that we build our immunity against the seductive appeal of falsehood, ensuring that democratic debate is guided by evidence and not by convenient mythologies. The unwavering pursuit of truth thus emerges as the ultimate act of counter-magic, dispelling the mirage and allowing the light of reality to manifest.

To transform this intention into resilient practice and systematically dismantle misleading narratives, a ten-point verification guide is proposed below as an essential tool for defending digital citizenship:

Flowchart 1 - Ten Commandments for Verifying Fake News



Source: Authors' own work, 2025.

The systematic adoption of these ten steps allows for the dismantling of a large portion of fake news. Distrust is the starting point: dubious, sensationalist, or emotionally charged information should be investigated. Regarding *fake news* involving agricultural and environmental issues, one final guideline stands out: objective data from physical reality serve as the most effective debunking. A simple analysis of environmental indicators, such as official deforestation rates, directly exposes and refutes the fabrication of false narratives whose objective is to mask what is observable and measurable.

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