OPINION PIECE

Wildfires and Brazilian irrationality on social networks

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ABSTRACT: Recent forest fires in Brazil and Australia have been the subject of irrational discussions on social networks without any legitimate scientific basis. These discussions often overlook or ignore fundamental questions about how limited government reactions, especially from the Brazilian government, to climate change affect these disasters. This article seeks to foster a discussion supported by data about climate change, the consequences of increased frequency of catastrophic weather events, and ways in which aggressiveness and ignorance via the internet and social networks do nothing to address the underlying issues.

KEY WORDS: Ecology · Climate change · Social media

1. INTRODUCTION

Many Brazilians have been engaging in senseless debates on social networks regarding environmental issues, such as fires in the Brazilian Amazon and Australia. It is critical to go back in time to 'attempt' to comprehend the incomprehensible. The reaction on the part of the Brazilian government to accusations of increased deforestation in the Amazon has been erratic (Andrade 2019) and included the resignation of a prominent scientist who sounded the alarm (Tollefson 2019). After issuing largely meaningless statements and false claims (e.g. non-governmental organizations or NGOs are setting fire to the forest), the government deployed the military to contain wildfires (Escobar 2019a). In addition, the Brazilian government created a task force, led by the vice president, which was supposed to change the direction of Brazilian environmental policy. The overall goal was to bring the Amazon issue to the center of national government, but no concrete results have been achieved thus far.

Rather than honestly addressing environmental problems, President Bolsonaro prefers a battle which relies on his hordes of followers on social networks, most notably Twitter. He devotes time and effort on these social networks to blaming international NGOs for the Amazonian evils (deforestation and wildfires). He also vociferously opposes international leaders who criticize his environmental policy, the Europeans in particular (Posta 2020). Despite his invective, the president is attempting to respond to strong criticism of his environmental policy by creating the Amazon National Council, led by his vice president Mourão, an iconoclastic and dubious character. Through the press and social networks, Mourão has ended up being an apologist for the disastrous statements and actions of the president and other government ministers (Rosevics 2019). It is worth noting that he has a poor history of supporting policies aligned with a credible environmental agenda. For example, his advocacy for completion of the BR 319 highway will most certainly have severe and negative impacts on the indigenous peoples of the Amazon (Ferrante et al. 2020).

Surprisingly, even agribusinesses have vehemently criticized the stance of the Bolsonaro administration and his minions, as they rightfully assert that large-scale fires in the Amazon forest, as well as accu-

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sations of the involvement of NGOs, harm this fundamental sector of the Brazilian economy. To illustrate the content of this reaction, the former agriculture minister and one of Brazil's leading cattle ranchers, Blairo Maggi, highlighted the damage these actions could do to Brazil's international image. Germany and the Scandinavian countries, for example, have proposed boycotting Brazilian meat. Further complicating Brazil's international status, Brazilian populism is approaching that of former US President Donald Trump. Like Bolsanaro, President Trump uses social networks to stoke his most radical supporters, implying that domestic interests supersede any global considerations such as the Amazon issue. In this vein, Foreign Minister Ernesto Araújo suggests that climate change is just an international 'Marxist conspiracy' (Casarões & Flemes 2019).

Without adequate confrontation, devastation in the Amazon forest continues, and increases month by month, year by year (Escobar 2019b). Scientific denialism within the Brazilian government (Ricard & Medeiros 2020) is an important element of this degradation, as government ministers deny that the problem exists. The environment minister himself, Ricardo Salles, has a stance against environmental preservation. As documented in a recording of a macabre government ministerial meeting (Analytica 2020), he suggests using his authority to approve an anti-environmental agenda by taking advantage of the press and public being 'distracted' by the COVID-19 pandemic. This is unbelievable not only if we think about the function of his ministry, but also from the point of view of ethics and morals, given the dramatic, intense, and lasting consequences for the preservation of the Brazilian Amazon and implications for Brazil's entire environmental policy (Thomaz et al. 2020). Another example of Salles' chaotic operations was the reduction in funding from the Ministry of the Environment for specific extra-budgetary projects, for example, the Amazon Fund (McConnell & Hart 2019). The minister severely criticized this particular fund and claimed that, after auditing 25% of its contracts, problems existed within all NGO contracts. However, the managers of this fund, Norway and Germany, never reported any irregularities and the minister never presented concrete evidence to corroborate his accusations (Araújo 2020).

Additionally, supporters of the Bolsanaro administration claim that the devastating fires in the Amazon have received a disproportionate amount of international attention and reprimand relative to fires in Australia. These supporters, lacking a deeper analysis of the ethical implications for Brazilian society, attack

those who disagree with them, which accelerates cycles of hatred and scientific denialism, particularly on social networks (Bradshaw & Howard 2018). This misinformation is actively encouraged by the Brazilian president himself. His nationalist rhetoric is that the Amazon belongs to Brazilians (Phillips 2019), and he asserts that other countries (especially developed ones) have already destroyed their forests. Thus, their repudiations would be hypocritical, by suggesting limitations on development and harvesting of resources, especially minerals, in the Amazon region, because the developed countries would have done the same with their forests.

So, the impact of the 'fake news' phenomenon on Brazil's environmental problems must be considered because of the notorious and deleterious influence of social networks on politics, economics, and culture. The courageous actions of well-informed and professional scientists, politicians, and jurists will be necessary to face these issues and their consequences (Ottonicar 2020).

Responses to the Australian and Brazilian wildfires have 2 things in common. First, even though both accelerate anthropogenic climate change, both are denied by internet-based groups that treat climate change as a conspiracy theory (Uscinski et al. 2017). Second, both have been poorly addressed by incompetent national leaders who deny or diminish the effects of climate change (Barlow et al. 2020, Lindenmayer & Taylor 2020). The origins of these circumstances, however, have some differences.

The most effective way to counter misinformation through social networks and the internet is through the dissemination of scientific knowledge. It is fundamental to understanding this misinformation phenomenon, which may appear random and chaotic, but often has well-defined economic and political interests aiming to manipulate information and distort reality to benefit specific and organized groups (Marwick & Lewis 2017). In Australia, there are examples of the misuse of social networks through fake news, including recently by political parties, indicating that it is not as diffuse and random a phenomenon as perceived by many, therefore deserving a more accurate and cautious look because the risks to society are tangible and their ethical implications must be considered (Warren 2020).

2. AUSTRALIAN FIRES

Australian wildfires are seasonal due in large part to periodic droughts and highly flammable eucalyp-

tus forests. These factors, coupled with constant changes in temperature and rates of evaporation, as well as uncertain rainfall, make Australia the most flammable of all continents (Bradstock 2010). This problem may increase in the coming years, especially in the face of a globally inept response to climate change. This risk of fires will be dramatically increased by 2100 if carbon dioxide emissions remain high in Australia, despite increased investment in fire management. These investments will inevitably increase even more given the urgency and gradual worsening of the problem (Pitman et al. 2007). The fires in the years 2019 and 2020 have been particularly tragic with respect to the loss of human lives, the devastation of biological communities, and the loss of habitat for endangered species. Far from irrational debates via the obscure face of the internet, the questions that remain for science are how to mitigate the impacts that are repeated by the devastation of fires and how to preserve endangered species in the face of increasing risk (Wintle et al. 2020).

3. BRAZILIAN FIRE

The fires in Brazil are completely different. They occur in a humid tropical forest, and it requires intentional action to ignite and spread the fires. The Amazon rainforest is not dry like the Australian forest. To set fires, it is necessary to use an accelerant or to deforest areas so the wood can be dried and burned. Causal links between deforestation and wildfires were established in 2019 (Escobar 2019a). Fire in the Brazilian Amazon is a historical process for the management of land for agriculture and raising cattle. In another important biome in Brazil, the savannah, fires have similarly increased in frequency and intensity.

It is necessary to think about techniques other than controlled burning for land preservation and management. In addition to the total exclusion of burning in certain areas, these alternatives include small-scale agricultural projects, maintenance of more sensitive areas with rich biodiversity, and the incorporation of forest-use techniques based on ancient indigenous knowledge (Pivello 2011). The agricultural sector is experiencing a dilemma in relation to the destruction of the Amazonian forest. In the last decade, there has been an intense growth of the agricultural frontier with a proportional impact on the Brazilian economy (Simon & Garagorry 2005). However, as a major agricultural power integrated into international markets, Brazil will have to change the way domestic agriculture is carried out to avoid possible international re-

taliation (Stabile et al. 2020). In addition to using fire for agriculture and ranching, logging activity contributes to the degradation of the Amazon. This activity of extracting trees of great commercial value creates large amounts of debris and reduces tree crown cover, which increases the likelihood of future fires and more intense degradation. Each of these factors creates intermediate patterns of forest destruction, between intact and completely deforested, which have different effects, necessitating varied forms of recovery. Therefore, it is necessary to discern these forms of destruction of the Amazon forest in order to allow for low-impact or non-impact forms of exploitation techniques while concurrently implementing viable measures of fire prevention (Gerwing 2002).

4. THE IMPACT OF CLIMATE CHANGE AND ITS CONSEQUENCES

Those who trivialize the fires in the Brazilian forest do not know, or do not want to know, that it is this forest that balances the climate, providing rain to the most populous and most economically developed regions of the country. The transpiration of the trees in the Amazon increases the rainfall in neighboring and even distant regions in a cascading effect, providing a stable amount of rainfall in much of Brazil. Therefore, deforestation combined with global warming can have unpredictable effects on the Brazilian climate and the key area of its economy, agriculture (Staal et al. 2018). This is the most robust component of the Brazilian economic sector, and has remained relatively unscathed, even during the COVID-19 pandemic. Another aspect that should be considered is the damage caused by decreased biodiversity. Economists and ecologists agree that the costs of species extinction are almost incalculable because no one can imagine, for example, how many medicines can be produced from undiscovered plants and animals and how many of our most widespread foods have originated from wild Amazonian species (Ehrlich & Ehrlich 1997). Therefore, in addition to the obvious ethical issue of the elimination of another living species by human negligence, these losses have the potential for economic devastation and even self-extermination.

Nevertheless, scientific knowledge that would mitigate the aforementioned environmental and economic concerns appears to be repellent in certain internet and political circles worldwide. Meanwhile, climate change continues, and its consequences will only worsen in the coming years. There is strong criticism from the academic community of the anti-envi-

ronmental rhetoric promoted by the Bolsonaro government, with the decisive participation of its environment minister as well as other members of various ministries. They consistently attack NGOs and any others that are in favor of environmental preservation. They criticize those who oppose deforestation with arguments lacking in both consistency and logic. However, the 'hater' supporters of the Brazilian government need only to look at satellite images and listen to scientific specialists for a demonstration of the correlation between increased forest devastation and policy initiatives of the current national administration (Escobar 2019b).

5. RECOMMENDATIONS

Therefore, instead of dismissing the science to justify the unjustifiable, I suggest the following:

1. Groups sowing misinformation on the internet should consider the causes of other prominent fires. In California, for example, periodic fires play a role in maintaining the integrity of the ecosystem, but human activity has led to a cascade of deleterious ecological effects. More fires have been occurring in densely populated regions, which requires more aggressive preventative action based on scientific knowledge (Syphard et al. 2007).

2. I recommend that these groups consider and understand the circumstances in Portugal, which has the highest rate of fires in all of Europe. The fires in this country have other causes, such as the prevalence of highly inflammable vegetation which is vulnerable to climate change. Scientific knowledge of the region and proper vegetation management can increase fire resistance and change human behavior in relation to the problem. Shifting resources from fire suppression to fire prevention would be one positive policy decision (Mateus & Fernandes 2014).

3. Such comparisons are essential for understanding catastrophes that tend to get worse, such as in the Australian case, and for distinguishing between these and other circumstances such as the Amazon fires. It would be beneficial for social network groups to use their energy and time to learn and to understand these fires, and perhaps collaborate, using their ability to communicate, so that these dramatic events are mitigated and maybe avoided.

4. In order to balance the need for agriculture with forest preservation, which is vital to the entire world, it is expected that specific actions will be carried out by the Brazilian government. First, we need to put an end to land grabbing (illegal land invasion for later sale), especially public land, and land speculation in the Amazon. Thus, we need to promote land ownership and minimize the land available for uncontrolled opening of new agricultural and livestock frontiers. Second, we must seek to reduce deforestation on private lands based on the advanced Brazilian Forestry Code, which promotes environmental services and supports proposals for the acquisition of sustainable agricultural products. And third, we can boost productivity on large and medium-sized lands using modern technologies so that Brazil can increase its production in response to the growing international need for food without increasing the agricultural area.

5. Social, economic, and environmental improvements should be presented alongside technical assistance to small landowners. In the case of the Amazon, these farmers occupy large areas with limited access to technical assistance, modern forms of production, and buyers (Stabile et al. 2020). Such improvements will make it possible to attenuate the rabid denialist discourse of the internet and social networks in favour of a movement that can have beneficial and permanent results.

6. CONCLUSIONS

We need less hatred and ignorance on the internet, more science, and actions to combat these tragedies, whether they be Australian, Brazilian, or of any other place on the planet. The scientific community must not leave unanswered false news reports and conspiracy theories because their silence opens space for organized groups, or even supporters of populist governments, to make their agenda in vogue, with harmful and lasting effects on environmental issues. Remaining silent can also negatively impact worldwide scientific credibility (van der Linden 2019), reverberating in areas such as public health, e.g. with the denial of the efficacy of vaccines, which can have tragic consequences (Poland & Jacobson 2001).

LITERATURE CITED

Andrade R de O (2019) Alarming surge in Amazon fires prompts global outcry. Nature News, 23 August 2019, doi:10.1038/d41586-019-02537-0

Araújo SMVG (2020) Environmental policy in the Bolsonaro government: the response of environmentalists in the

legislative arena. Braz Polit Sci Rev 14:e0005

Barlow J, Berenguer E, Carmenta R, França F (2020) Clarifying Amazonia's burning crisis. Glob Change Biol 26:319–321

Bradshaw S, Howard PN (2018) Challenging truth and trust: a global inventory of organized social media manipulation. Computational Propaganda Research Project. Oxford Internet Institute, University of Oxford, Oxford

Bradstock RA (2010) A biogeographic model of fire regimes in Australia: current and future implications. Glob Ecol Biogeogr 19:145–158

Casarões G, Flemes D (2019) Brazil first, climate last: Bolsonaro's foreign policy. GIGA Focus Lateinamerika 5

Ehrlich P, Ehrlich A (1997) The value of biodiversity. In: Dasgupta P, Mäler KG, Vercelli A (eds) The economics of transnational commons. Clarendon Press, Oxford, p 97–117

Escobar H (2019a) Amazon fires clearly linked to deforestation, scientists say. Science 365:853

Escobar H (2019b) Brazil's deforestation is exploding—and 2020 will be worse. Science, 22 November 2019, doi: 10.1126/science.aba3238

Ferrante L, Gomes M, Fearnside PM (2020) Amazonian indigenous peoples are threatened by Brazil's Highway BR-319. Land Use Policy 94:104548

Gerwing JJ (2002) Degradation of forests through logging and fire in the eastern Brazilian Amazon. Forest Ecol Manage 157:131–141

Lindenmayer DB, Taylor C (2020) New spatial analyses of Australian wildfires highlight the need for new fire, resource, and conservation policies. Proc Natl Acad Sci USA 117:12481–12485

Marwick A, Lewis R (2017) Media manipulation and disinformation online. Data and Society Research Institute, New York, NY

Mateus P, Fernandes PM (2014) Forest fires in Portugal: dynamics, causes and policies. In: Reboredo F (ed) Forest context and policies in Portugal. World forests, Vol 19. Springer, Cham, p 97–115

McConnell A, Hart P (2019) Inaction and public policy: understanding why policymakers 'do nothing'. Policy Sci 52:645–661

Ottonicar SLC (2020) Brazilian policy and actions to fight against fake news: a discussion focused on critical literacy. In: Dalkir K, Katz R (eds) Navigating fake news, alternative facts, and misinformation in a post-truth world. IGI Global, p 204–221

Oxford Analytica (2020) Court probe and COVID-19 crisis will damage Bolsonaro. Expert Briefings. https://doi.org/10.1108/OXAN-ES252816

Phillips D (2019) Bolsonaro declares 'the Amazon is ours' and calls deforestation data 'lies'. The Guardian, 19 July 2019. https://www.theguardian.com/world/2019/jul/19/jair-bolsonaro-brazil-amazon-rainforest-deforestation

Pitman AJ, Narisma GT, McAneney J (2007) The impact of climate change on the risk of forest and grassland fires in Australia. Clim Change 84:383–401

Pivello VR (2011) The use of fire in the Cerrado and Amazonian rainforests of Brazil: past and present. Fire Ecol 7:24–39

Poland GA, Jacobson RM (2001) Understanding those who do not understand: a brief review of the anti-vaccine movement. Vaccine 19:2440–2445

Posta J (2020) The securitisation of Brazil's environment under the bolsonaro administration. MSc Thesis, Aalborg Universitet

Ricard J, Medeiros J (2020) Using misinformation as a political weapon: COVID-19 and Bolsonaro in Brazil. The Harvard Kennedy School (HKS) Misinformation Review, Vol 1, Issue 2

Rosevics L (2019) General Mourão e sua Diplomacia vice-presidencial. Diálogos Int 6 March 2019. http://www.dialogosinternacionais.com.br/search?q=General+Mour%C3%A3o

Simon MF, Garagorry FL (2005) The expansion of agriculture in the Brazilian Amazon. Environ Conserv 32:203–212

Staal A, Tuinenburg OA, Bosmans JHC, Holmgren M and others (2018) Forest-rainfall cascades buffer against drought across the Amazon. Nat Clim Chang 8:539

Stabile MCC, Guimarães AL, Silva DS, Ribeiro V and others (2020) Solving Brazil's land use puzzle: Increasing production and slowing Amazon deforestation. Land Use Policy 91:104362

Syphard AD, Radeloff VC, Keeley JE, Hawbaker TJ, Clayton MK, Stewart SI, Hammer RB (2007) Human influence on California fire regimes. Ecol Appl 17:1388–1402

Thomaz SM, Gomes Barbosa L, de Souza Duarte MC, Panosso R (2020) Opinion: The future of nature conservation in Brazil. Inland Waters 10:295–303

Tollefson J (2019) 'Tropical Trump' sparks crisis for Brazilian science. Nature 572:161–162

Uscinski JE, Douglas K, Lewandowsky S (2017) Climate change conspiracy theories. In: Oxford research encyclopedia of climate science. Oxford University Press, Oxford, p 1–43. https://doi.org/10.1093/acrefore/9780190228620.013.328

van der Linden S (2019) Countering science denial. Nat Hum Behav 3:889–890

Warren M (2020) Fake news case study during the Australian 2019 general election. Australas J Inf Syst 24

Wintle BA, Legge S, Woinarski JCZ (2020) After the megafires: what next for Australian wildlife? Trends Ecol Evol 35:753–757