Environmental Conservation



cambridge.org/enc

Comment

Cite this article: Dutra da Silva M and Fearnside PM (2022) Brazil: environment under attack. *Environmental Conservation* **49**: 203–205. doi: 10.1017/S0376892922000364

Received: 30 April 2022
Revised: 19 August 2022
Accepted: 20 August 2022
First published online: 29 September 2022

Author for correspondence:
Professor Dr Marcelo Dutra da Silva,
Email: dutradasilva@terra.com.br

© The Author(s), 2022. Published by Cambridge University Press on behalf of Foundation for Environmental Conservation.



Brazil: environment under attack

Marcelo Dutra da Silva[1] and Philip Martin Fearnside[2]

[1]Universidade Federal do Rio Grande, Instituto de Oceanografia, Rio Grande, RS, Brazil and [2]Instituto Nacional de Pesquisas da Amazonia, Ecology, Manaus, AM, Brazil

The escalation of environmental threats in Brazil is unprecedented in history. With science under attack and public institutions and policies being dismantled, destruction of the environment under the Jair Bolsonaro presidential administration is advancing at a rapid pace. Environmental degradation did not emerge under Bolsonaro: it dates from the first arrival of Europeans in Brazil and has continued over the centuries, with successive deforestation peaks. When President Jair Bolsonaro took office on 1 January 2019, his administration quickly became a threat to Brazilian forest ecosystems, native forest peoples and agricultural sustainability (Ferrante & Fearnside 2019, 2021a, Athayde et al. 2022, Vale et al. 2021). Brazil could lose more than US$1 billion a year in agricultural production if deforestation in the Amazon is not contained (Leite-Filho et al. 2021).

The installation of the Bolsonaro administration was the culmination of a process of easing of the laws for deforestation and mining, which restarted in the 2000s. This process was consolidated in the Dilma Rousseff administration (2011–2016) and gained strength in the Michel Temer administration (2016–2018), despite the significant drop in deforestation achieved in the Luiz Inácio Lula da Silva government (2003–2011). Our objective is to report the sequence of events and federal government decisions that led to the worsening of the environmental situation in Brazil.

This process started immediately after President Bolsonaro took office, with various responsibilities of the Ministry of the Environment being transferred to other parts of the federal government, staff being dismissed, agreements with non-governmental organizations being suspended and environmental councils and committees being weakened or abolished (Brazil 2019b). There were even unsuccessful attempts to pervert the use of funds from international donations that had been received for projects intended to combat deforestation (Netto 2019). The situation worsened, especially for the original peoples, when the National Indian Foundation (FUNAI) was transferred to the Ministry of Agriculture with the aim of preventing new demarcations of Indigenous lands and validating invasions of existing Indigenous lands. FUNAI was returned to the Ministry of Justice in May 2019 by the National Congress, but President Bolsonaro's appointment of a military police officer to head the agency and military officers to key positions within it ensured that his promise not to demarcate 'a single centimetre of Indigenous land' has been kept. These were setbacks and illegalities that have guided the Brazilian government's anti-Indigenous policy (INESC 2022).

The federal government has systematically advanced the agenda of the 'ruralists' (large landholders and their representatives), both in legislative actions and in appointing ruralists to key positions throughout the government. The long list of setbacks includes constant interference in the inspection and control efforts of environmental agencies, the approval of 1682 new pesticides for use in Brazil from the beginning of the administration until June 2022 (many of them banned in Europe and North America; ROBOTOX 2022), cutting of government funds for environmental protection (Brazil 2019a, 2019d, 2020, 2021), weakening of the system for monitoring and combating environmental crimes (Bragança 2021), greatly reducing the application of fines (Brazil 2019c), criticism of forest research and monitoring agencies (Fearnside 2019) and issuing decrees, ordinances and 'provisional measures' (executive orders valid for 120 days) that inhibit efforts to inspect for environmental violations and combat deforestation, burning, land invasion and illegal mining (ASCEMA 2020).

Bills currently advancing in the National Congress, demanded by the Bolsonaro administration, with strong support from members of congress aligned with ruralists and miners, would open up Indigenous lands for mining, dams and agribusiness (Villén-Pérez et al. 2022). These and other anti-environmental legislative initiatives have accelerated since the political turn of 1 February 2021, when, under the influence of the Planalto Palace (the official workplace of the president of Brazil), control over both houses of the National Congress passed to the 'Centrão' coalition of political parties, which support the ruralist agenda (Ferrante & Fearnside 2021b).

At the 22 April 2021 climate meeting convened by US President Joe Biden, President Bolsonaro made promises such as ending illegal deforestation by 2030, but soon afterwards he took measures that favoured the legalization of deforestation and land claims (Fearnside 2021b). The day after promising in his speech to double resources for the environment, President Bolsonaro published vetoes withdrawing R$240 million (US$46.7 million) from the Ministry of the Environment's budget (Carneiro 2021). Funds for the prevention of forest



Fig. 1. Progress in the deforestation and destruction of undesignated public forests.

fires fell from R$49 million (US$9.4 million) in 2019 to R$37 million (US$7.1 million) in 2021. And in 2022 the President's vetoes diverted R$8.6 million (US$1.8 million) from the Environment Ministry's budget for promoting conservation and preventing fires (Menegassi 2022). A bill (PL3729/2004), already approved in the Chamber of Deputies, will, when approved by the Senate, allow the self-licensing of infrastructure projects without analysis or judgement by the technical team of the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA), the licensing body (Ruaro et al. 2021). In October 2021, the Bolsonaro government approved cutting the federal budget for Brazilian science by more than 90%, further reducing the country's ability to study and control deforestation (Kowaltowski 2021).

Bolsonaro declined to attend the 26th Conference of the Parties to the Climate Convention (COP26) held in Glasgow (UK) in November 2021. Brazil's representative at the conference changed the pledged date for ending illegal deforestation from 2030 to 2028, signed the declarations on forests and methane and stated that Brazil would achieve net zero emissions by 2050. However, there is no known plan to achieve these goals.

Part of the Amazon is already emitting more CO_2 than it absorbs (Gatti et al. 2021). Brazil is the world's seventh largest carbon emitter. Reduced emissions from the sharp economic slowdown in Brazil resulting from COVID-19 were more than compensated by increased greenhouse gas emissions from deforestation in 2020. It is estimated that emissions grew by 10–20% in 2020 (SEEG 2020) because deforestation had not stopped, with strong government stimulus for the production and export of commodities.

Deforestation in Brazil increased by 22% from August 2020 to July 2021 compared to the previous year. These deforestation data were available on 27 October 2021, but, by order of the President, these data were only officially released on 18 November 2021 so as not to contradict the administration's speech at COP26 (Álvares 2021). This even-greater jump in deforestation reflects the effect of the government's anti-environmental discourse, which sends a message that environmental crimes will always be forgiven. It also reflects the effect of the dismantling of environmental agencies, the budget cuts for these bodies and the many administrative measures that discourage or prevent the application of fines. Finally, it reflects squatters' confidence in impunity if they invade and clear 'undesignated public forests' (government land that is not specified for use as a protected area or settlement project) since the 'land-grabber's law' (PL2633/2020) was approved by the Chamber of Deputies in August 2021, while other bills are being processed in Congress that will further facilitate the legalization of illegally occupied areas (Ferrante et al. 2021). Encroachment on undesignated public forests (Fig. 1) emitted 1.87 billion tonnes of carbon between 2003 and 2019 (Kruid et al. 2021).

This deforestation means that species are being lost, many of them before they have been described. The stock of global biodiversity is being significantly reduced and is heading towards mass extinction. Disrupting the integrity of ecosystems also

https://doi.org/10.1017/S0376892922000364 Published online by Cambridge University Press

affects human survival, as it reduces food production capacity (Flach et al. 2021). Global warming may reduce water vapour in the air over Amazonia, leading to a reduction of 12% in the annual volume of rainfall, an effect that could reduce the availability of water for agriculture and livestock in the country (Sampaio et al. 2021). These changes risk pushing the climate beyond its various tipping points (Walker 2021). The destruction of forests in the Amazon, combined with climate change, could raise average maximum in-shade temperatures in the hottest month of the year in the region by up to 11.5°C, putting at risk nature, the economy and the lives of Amazonia's residents (Oliveira et al. 2021).

The continuous litany of environmental setbacks in Brazil has enormous consequences for present and future generations, both in Brazil and in the world. This means that countries and international organizations around the world cannot simply watch this tragedy as mere spectators. One-fifth of the European Union's soybean imports, produced in the Amazon and the Brazilian Cerrado, are linked to illegal deforestation (Rajão et al. 2020). There are a variety of conditions that can be imposed on Brazilian international trade to induce change (Ferrante & Fearnside 2021a), but the most likely to be effective would be restrictions imposed by importing countries (especially China) on Brazilian soy and beef produced in illegally deforested areas.

Acknowledgements. Our deep gratitude to the resistance of the native peoples, who fight in defense of the forest, at the cost of their lives.

Financial support. None.

Competing interests. The authors declare none.

Ethical standards. None.

References

Álvares D (2021) Sources: Brazil withheld deforestation data 'til COP26's end. *Associated Press*, 20 November 2021 [www document]. URL https://bit.ly/3HoNx1V

ASCEMA (2020) Cronologia de um desastre anunciado. Brasília, Brazil: Associação Nacional dos Servidores de Meio Ambiente [www document]. URL https://bit.ly/3uutpa2

Athayde S, Fonseca A, Araújo SMVG, Gallardo ALCF, Moretto EM, Sánches LE (2022) The far-reaching dangers of rolling back environmental licensing and impact assessment legislation in Brazil. *Environmental Impact Assessment Review* 94: 106742.

Bragança D (2021) Câmara aprova projeto que flexibiliza o licenciamento ambiental, ainda falta votar emendas. O ECO, 13 May 2021 [www document]. URL https://www.oeco.org.br/noticias/camara-aprova-projeto-que-flexibiliza-o-licenciamento-ambiental-materia-vai-ao-senado/

Brazil (2019a) Presidência da República. Decreto n° 9.741.

Brazil (2019b) Presidência da República. Decreto n° 9.759.

Brazil (2019c) Presidência da República. Decreto n° 9.760.

Brazil (2019d) Presidência da República. Lei Orçamentária 2019 n° 13.808.

Brazil (2020) Presidência da República. Lei Orçamentária 2020 n° 13.978.

Brazil (2021) Presidência da República. Lei Orçamentária 2021 nº 14.144.

Carneiro M (2021) Bolsonaro corta verba para o Meio Ambiente no dia seguinte à promessa de dobrar orçamento. *O Globo*, 23 April 2021 [www document]. URL http://glo.bo/3qxXoN4

Fearnside PM (2019) As Amazon deforestation in Brazil rises, Bolsonaro administration attacks the messenger. *Mongabay*, 3 August 2019 [www document]. URL https://bit.ly/356ur3f

Fearnside PM (2021a) China's carbon emissions in Brazil. *Science* 373: 1209–1210.

Fearnside PM (2021b) 'Zero illegal deforestation' – One more Bolsonaro distortion. *Mongabay*, 3 May 2021 [www document]. URL https://bityl.co/6gez

Ferrante L, Andrade MBT, Fearnside PM (2021) Land grabbing on Brazil's Highway BR-319 as a spearhead for Amazonian deforestation. *Land Use Policy* 108: 105559.

Ferrante L, Fearnside PM (2019) Brazil's new president and 'ruralists' threaten Amazonia's environment, traditional peoples and the global climate. *Environmental Conservation* 46: 261–263.

Ferrante L, Fearnside PM (2021a) Brazilian government violates Indigenous rights: what could induce a change? *Die Erde* 152: 200–211.

Ferrante L, Fearnside PM (2021b) Brazil's political upset threatens Amazonia. *Science* 371: 898–899.

Flach R, Abrahão GA, Bryant B, Scarabello M, Soterroni AC, Ramos FM et al. (2021) Conserving the Cerrado and Amazon biomes of Brazil protects the soy economy from damaging warming. *World Development* 146: 1055822.

Gatti LV, Basso LS, Miller JB, Gloor M, Domingues LG, Cassol HLG et al. (2021) Amazonia as a carbon source linked to deforestation and climate change. *Nature* 595: 388–393.

INESC (2022) *Fundação Anti-Indígena: um retrato da FUNAI sob o governo Bolsonaro*. Brasília, Brazil: Instituto de Estudos Socieconômicos [www document]. URL www.inesc.org.br

Kowaltowski AJ (2021) Brazil's scientists face 90% budget cut. *Nature* 598: 566.

Kruid S, Macedo MN, Gorelik SR, Walker W, Moutinho P, Brando PM et al. (2021) Beyond deforestation: carbon emissions from land grabbing and forest degradation in the Brazilian Amazon. *Frontiers in Forests and Global Change* 4: 645282.

Leite-Filho AT, Soarea-Filho BS, Davis JL, Abrahão GM, Börner J (2021) Deforestation reduces rainfall and agricultural revenues in the Brazilian Amazon. *Nature Communications* 12: 2591.

Menegassi D (2022) Bolsonaro corta 35 milhões do orçamento do Ministério do Meio Ambiente para 2022. *(O)Eco*, 25 January 2022 [www document]. URL https://bit.ly/3QaxQtp

Netto V (2019) Governo estuda usar Fundo Amazônia para indenizar desapropriações de terra. *G1*, 25 May 2019 [www document]. URL http://glo.bo/3QzK9X7

Oliveira BFA, Bottino MJ, Nobre P, Nobre C (2021) Deforestation and climate change are projected to increase heat stress risk in the Brazilian Amazon. *Communications Earth & Environment* 2: 207.

Rajão R, Soares-Filho B, Nunes F, Börner J, Machado L, Assis D et al. (2020) The rotten apples of Brazil's agribusiness. *Science* 369: 246–248.

ROBOTOX (2022) Since the beginning of the term, the Bolsonaro government has published the approval of 1682 new pesticide products [www document]. URL https://twitter.com/orobotax/status/1552429882960818176

Ruaro R, Ferrante L, Fearnside PM (2021) Brazil's doomed environmental licensing. *Science* 372: 1049–1050.

Sampaio G, Shimizu MH, Guimarães-Júnior CA, Alexandre F, Guatura M, Cardoso M et al. (2021) CO_2 physiological effect can cause rainfall decrease as strong as large-scale deforestation in the Amazon. *Biogeosciences* 18: 2511–2525.

SEEG (2020) Impacto da pandemia de Covid-19 nas emissões de gases de efeito estufa no Brasil [www document]. URL https://bit.ly/37PvB41

Vale MM, Berenguer E, de Menezes MA, Viveiros de Castro EB, de Siqueira LP, Portela RdCQ (2021) The COVID-19 pandemic as an opportunity to weaken environmental protection in Brazil. *Biological Conservation* 255: 108994.

Villén-Pérez S, Anaya-Valenzuela L, da Cruz DC, Fearnside PM (2022) Mining threatens isolated Indigenous peoples in the Brazilian Amazon. *Global Environmental Change* 72: 102398.

Walker RT (2021) Collision course: development pushes Amazonia toward its tipping point. *Environment: Science and Policy for Sustainable Development* 63: 15–25.

https://doi.org/10.1017/S0376892922000364 Published online by Cambridge University Press