

IN DEFENSE OF THE AMAZON FOREST: THE ROLE OF LAW AND COURTS

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Abstract: *The Amazon Forest is approaching a point of no return from which it will enter an irreversible process of savannization, with the loss of most of the environmental services it provides to the world, and great damage to life quality on the Planet. According to environmentalists and scientists, Brazil is failing to combat deforestation, which has grown at an alarming rate in recent years. This essay demonstrates that ineffective legislative initiatives and a deficient legal framework are in part responsible for allowing this failure. It proposes solutions including: (i) a constitutional amendment to prohibit the regularization of public land invasions that favor land grabbers, (ii) strategies to confront executive inaction through the demarcation of conservation units and indigenous reserves, and (iii) improvement and better enforcement of laws punishing environmental crimes.*

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INTRODUCTION

Any meaningful effort to mitigate climate change has to start with the Amazon Forest. The Amazon makes up 67% of the world's tropical forest.¹ It is the world's largest, most biodiverse reserve, hosting a remarkable concentration of plants, animals, fungus, bacteria, and algae.² Its role in capturing carbon, impact on rainfall patterns, and relevance as a source of fresh water all play a critical role in ensuring climate stability in the region and worldwide.

The Amazon is also the natural habitat to a wide variety of peoples and cultures. It covers 40% of South America³ and comprehends the territory of nine countries,⁴ although 60% of the Forest is in Brazil. Around 27 million Brazilians live in the so-called Legal Amazon ("BLA"),⁵ including dozens of indigenous peoples, some of whom are still uncontacted

1 *A Amazônia em números*, IMAZON – INSTITUTO DO HOMEM E MEIO AMBIENTE DA AMAZÔNIA [AMAZON INSTITUTE OF PEOPLE AND THE ENVIRONMENT] (Aug. 1, 2013), <https://imazon.org.br/imprensa/a-amazonia-em-numeros/>.

2 The region hosts an estimated 60,000 plant species (of which 30,000 are superior plants and 2,500 are tree species), 2.5 million arthropod species (insects, spiders, centipedes, etc.), 2,000 fish and 300 mammal species. Sarita Albagli, *Amazônia: fronteira geopolítica da biodiversidade*, PARCERIAS ESTRATÉGICAS, Sept. 2001, at 5, 10.

3 LUIZ C. BARBOSA, GUARDIANS OF THE BRAZILIAN AMAZON RAINFOREST 1 (2015).

4 Bolivia, Brazil, Colombia, Ecuador, French Guiana, Guyana, Peru, Suriname, and Venezuela.

5 The Brazilian government created the "Legal Amazon" (Amazônia Legal) which covers the Northern states of Brazil (Acre, Amapá, Amazonas, Pará, Rondônia, and Roraima), Mato Grosso and Tocantins (Midwest region), and the eastern part of Maranhão (in the Northeast). See Lei No. 5.173, de 27 de Outubro de 1966, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 31.10.1966 (Braz.); Lei Complementar No. 124, de 3 de Janeiro de 2007, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 4.1.2007 (Braz.). The region called Brazilian Legal Amazon ("BLA") includes not only the tropical rainforest biome, but also the "Pantanal" and savanna areas.

tribes.⁶ These indigenous peoples depend on the Amazon for the preservation of their culture, religion, nutrition, and health.

Deforestation began meaningfully in the 1960s with the onset of governmental initiatives, such as infrastructure construction and agricultural and settlement subsidies.⁷ From then onwards, it increased progressively until it reached its peak in 2004.⁸ After that, government initiatives kept deforestation in check until 2012,⁹ but with the loss of political will to protect the Amazon and Brazil's economic downturn in 2015, deforestation levels started to rise again with each passing year. By 2015, the accumulated deforestation of the last 40 years added up to a total of 20% of the Brazilian Amazon,¹⁰ an area equivalent to the territories of Spain and Italy together. The situation turned dire in 2019 when

6 Out of a total of 170 indigenous peoples in the region, 46 are totally isolated or have limited contact with civilization. See RICARDO ABRAMOVAY, *AMAZÔNIA: POR UMA ECONOMIA DE CONHECIMENTO DA NATUREZA* 55 (2019).

7 Danielle Celentano et al., *Welfare Outcomes and the Advance of the Deforestation Frontier in the Brazilian Amazon*, 40 *WORLD DEVELOPMENT* 850, 850 (2012).

8 *PRODES – Monitoramento do Desmatamento da Floresta Amazônica Brasileira por Satélite*, INPE – INSTITUTO NACIONAL DE PESQUISAS ESPACIAIS [NATIONAL INSTITUTE OF SPACE RESEARCH] (Nov. 11, 2020), <http://www.obt.inpe.br/OBT/assuntos/programas/amazonia/prodes>.

9 A process of substantial reduction in resources to fight deforestation started in 2011. At the same time, developmental arguments have gained force. Projects with considerable environmental impacts have been approved, while sustainable initiatives that could serve local communities have been neglected. See Thiago Bandeira Castelo et al., *Governos e mudanças nas políticas de combate ao desmatamento na Amazônia*, 28 *REDIBEC*. 125, 138 (2018).

10 Beto Veríssimo, *Let's Cut Amazon Deforestation to Zero. Here's How*, *AMERICAS QUARTERLY* (Nov. 9, 2015), <https://www.americasquarterly.org/fulltextarticle/lets-cut-amazon-deforestation-to-zero-heres-how/>.

deforestation¹¹ increased by 34.4%,¹² and indigenous lands and conservation units were affected to an unprecedented extent.¹³ Forest burning increased by 67.9% in 2019 compared to 2018.¹⁴ These numbers continued to grow in 2020, when deforestation increased by 9.5% and fires by 6.7% compared to 2019.

Deforestation can have unpredictable systemic consequences on the environment.¹⁵ Scientists estimate that if 40% of the forest territory is destroyed, we will arrive at an irreversible tipping point, with a significant portion of the region beginning to develop into a savanna-like area.¹⁶ The

11 Deforestation implies the suppression of land cover by means of cutting vegetation, while forest burning is carried out by means of fire. There are three main types of fire in the Amazon: (i) fires to clear primary forest in order to prepare the area for agriculture and pasture; (ii) fires to rid pastures of weeds in areas that have been previously cleared as well as fires used in farm-fallow systems; and (iii) fires that invade standing forests, as a consequence of the loss of control over the other two types of fire. Jos Barlow et al., *Clarifying Amazonia's Burning Crisis*, 26 GLOBAL CHANGE BIOLOGY 319, 319 (2019).

12 *But see Desmatamento na Amazônia cresce 85% em 2019*, DW (Jan. 14, 2020), <https://www.dw.com/pt-br/desmatamento-na-amazônia-cresce-85-em-2019/a-52006186> (indicating a significantly higher volume).

13 *Destruição de áreas protegidas na Amazônia explode com Bolsonaro*, ISA – INSTITUTO SOCIOAMBIENTAL [SOCIAL-ENVIRONMENTAL INSTITUTE] (Dec. 22, 2020), <https://www.socioambiental.org/pt-br/noticias-socioambientais/destruicao-de-areas-protegidas-na-amazonia-explode-com-bolsonaro>.

14 The percentage of forest burning is calculated based on squared kilometers of burnt areas officially reported by the Brazilian government. *See Programa Queimadas*, INPE - INSTITUTO NACIONAL DE PESQUISAS ESPACIAIS [NATIONAL INSTITUTE OF SPACE RESEARCH], <http://queimadas.dgi.inpe.br/queimadas/aq1km/> (last visited Jan. 11, 2021).

15 *See Dalila Ventura, O grupo de cientistas que descobriu as regras que orientam a vida no planeta e mudou nossa visão do mundo*, BBC NEWS MUNDO (Jan. 20, 2020), <https://www.bbc.com/portuguese/geral-51092849>.

16 Carlos Nobre et al., *Land-use and Climate Risks in the Amazon and the Need of a Novel Sustainable Development Paradigm*, 113 PNAS 10759, 10763 (2016). In

consequences of a world without the Amazon are catastrophic not only for Brazil, but for the planet we inhabit. Besides loss of animal and plant species, there would be a drastic reduction in rainfall levels, which are essential for Brazilian agribusiness and electric power generation.¹⁷ The water shortage would also impact industry, the supply of basic needs, and urban life.

According to a growing number of critics, the increase in deforestation is a byproduct of the Brazilian government's lack of interest towards environmental protection¹⁸ and apparently debilitating public policies,¹⁹ which have been read

fact, there are two tipping points: the destruction of 40% of forest cover or a temperature increase around 4° C. However, new studies suggest that the Amazon tipping point could be reached earlier at 20-25% of deforestation. Thomas E. Lovejoy & Carlos Nobre, Editorial, *Amazon Tipping Point*, SCIENCE ADVANCES, Feb. 2018, at 1.

¹⁷ João Moreira Salles & Bernardo Esteves, *O mundo sem a Amazônia*, PIAUÍ MAGAZINE (Oct. 17, 2019), <https://piaui.folha.uol.com.br/o-mundo-sem-amazonia/>.

¹⁸ See Megan Darby, *Brazil: Bolsonaro Threatens to Quit Paris Climate Deal*, CLIMATE HOME NEWS (Aug. 14, 2018, 6:09 PM), <https://www.climatechangenews.com/2018/08/14/brazils-bolsonaro-threatens-quit-paris-climate-deal/> (reporting on public statements by the Brazilian president about abandoning the Paris Agreement); Ana Laura Stachewski, *Bolsonaro mantém Ministério do Meio Ambiente, mas esvazia pasta*, ÉPOCA NEGÓCIOS (Jan. 22, 2019), <https://epocanegocios.globo.com/Brasil/noticia/2019/01/bolsonaro-mantem-ministerio-do-meio-ambiente-mas-esvazia-pasta.html> (on the *de facto* dismantlement of the Ministry of the Environment); Pedro Rafael Vilela, *Bolsonaro defendeu não realizar COP-25 no Brasil*, AGÊNCIA BRASIL (Nov. 28, 2018), <https://agenciabrasil.ebc.com.br/politica/noticia/2018-11/bolsonaro-defendeu-nao-realizar-cop-25-no-brasil> (on the country's refusal to host the UN Conference on Climate Change (COP-25) in 2019). See also ABRAMOVAY, *supra* note 6, at 13 (stating that since January 2019, the federal government has been sending signals that are locally interpreted as a green light for the grabbing of public lands and as halts to governmental initiatives to combat those criminal practices).

¹⁹ See Human Rights Watch, *Máfias do Ipê* (Sep. 17, 2019) at 10, https://www.hrw.org/sites/default/files/report_pdf/brazil0919pt_web.pdf (noting actions by the Bolsonaro Administration to limit enforcement of Brazil's environmental laws). See

as a green light for even more daring unlawful conduct.²⁰ The oldest causes of deforestation, aggravated in recent years, point to the reduction of command-and-control actions,²¹ the expansion of livestock and agricultural activities, illegal logging and mining, the lack of economic alternatives for the poor, the unsatisfactory functioning of some relevant Brazilian institutions, corruption, and, finally, deficiencies in the legal framework.

The latter is precisely the object of this essay. It will demonstrate that ineffective legislative initiatives and obsolete legislation encourage illicit behaviors. It will also propose changes to the regulatory framework to address these problems. The essay attempts to fill an important gap in the literature. It seeks to make a comprehensive diagnosis of the different legal problems that interfere with the fight against deforestation and offers an original proposal (constitutional amendment), in addition to other relevant measures already explored by the literature,²² to discourage land grabbing in the

also *Ministério do Meio Ambiente reduz verba de combate à mudança climática*, EXAME (May 7, 2019), <https://exame.com/brasil/ministerio-do-meio-ambiente-reduz-verba-de-combate-a-mudanca-climatica/> (on the statements of Carlos Nobre, an internationally known environmentalist, regarding the government's lack of interest on the environment); André Borges, *Ministério do Meio Ambiente quase zera verba de combate à mudança climática*, ESTADÃO (May 2, 2019), <https://sustentabilidade.estadao.com.br/noticias/geral,ministerio-do-meio-ambiente-quase-zera-verba-de-combate-a-mudanca-climatica,70002818539/>.

20 ABRAMOVAY, *supra* note 6, at 13.

21 Command-and-control actions relate to operations to prevent and combat deforestation and other criminal activities in the Amazon, involving the use of intelligence, several state bodies, and usually the Armed Forces.

22 For examples of such literature see Brenda Brito et al., *Stimulus for Land Grabbing and Deforestation in the Brazilian Amazon*, ENVIRONMENTAL RESEARCH LETTERS, June 2019, at 1, 7 (concerning the problems related to land grabbing

Amazon.

I. EXISTING LEGAL FRAMEWORK

Like many countries in Latin America, Brazil was under an authoritarian government between 1964 and 1985. In the process of re-democratization, the current Constitution of 1988 was promulgated. This Constitution restored the rule of law, the balance between powers, contemplated a wide range of rights—including the right to a healthy environment—and conferred broad powers to the judiciary to make it effective. It was responsible for a deep change in the way law is practiced in Brazil.²³ Almost any question of relevance to the country can give rise to a constitutional debate and the environmental crisis follows this rule.

regularization and the importance of allocating more areas for conservation); HELEN DING ET AL., CLIMATE BENEFITS, TENURE COSTS: THE ECONOMIC CASE FOR SECURING INDIGENOUS LAND RIGHTS IN THE AMAZON 4-5 (2016), https://files.wri.org/s3fs-public/Climate_Benefits_Tenure_Costs.pdf (regarding secure tenure of indigenous lands, achieved through demarcation, as a strategy to reduce deforestation); PAULO BARRETO & MARÍLIA MESQUITA, IMAZON, COMO PREVENIR E PUNIR INFRAÇÕES AMBIENTAIS EM ÁREAS PROTEGIDAS NA AMAZÔNIA? 39-40 (2009) (concerning the necessity of command-and-control operations and measures to make criminal prosecution more effective, among others); Carlos Nobre et al., *Land-use and Climate Risks in the Amazon and the Need of a Novel Sustainable Development Paradigm*, 113 PNAS 10759, 10764-10766 (2016) (proposing a new development model for the Amazon).

²³ LUÍS ROBERTO BARROSO, CURSO DE DIREITO CONSTITUCIONAL CONTEMPORÂNEO 383-84, 403-07 (2020); Patrícia Perrone Campos Mello, *El Papel del Juez Transformador en Brasil: Ius Constitutionale Commune, Avance y Resiliencia* (Max Planck Institute for Comparative Public Law and International Law, Research Paper No. 2020-05, 2020) (demonstrating how the new Constitution and a strong judiciary had a transformative role in Brazil), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3672658.

A. Public Land in Brazil

In order to understand the deforestation problem in Brazil, it is crucial to access the public land categories in the Amazon, principally conservation units, indigenous lands, and non-allocated lands. These classifications have different impacts on the greater protection or vulnerability of the forest, due to their different legal regime and to the infrastructure settled to protect them.

The creation of large conservation units²⁴—including national parks, biological reserves, national forests, and environmental protection areas—are an effective way of protecting the biodiversity and habitat of traditional communities. The conservation units can be (i) of *full conservation*, aimed at keeping ecosystems free of any human intervention;²⁵ or (ii) of *sustainable use*, allowing for the exploitation of nature’s goods in a manner that ensures perpetuity of the resources and the environmental processes, in a socially fair and economically viable manner.²⁶ According to the Brazilian Constitution, conservation units can only be suppressed or have their legal regime modified by law.²⁷

²⁴ Conservation units account for 22% of the BLA. See ELIS ARAÚJO ET AL., *IMAZON, UNIDADES DE CONSERVAÇÃO MAIS DESMATADAS DA AMAZÔNIA LEGAL (2012-2015)* 8 (2017), https://imazon.org.br/PDFimazon/Portugues/livros/UCS%20mais%20desmatadas%20Amazonia_2012-2015.pdf.

²⁵ Lei No. 9.985, de 18 de Julho de 2000, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 19.7.2000, arts. 7(I), 8-13 (Braz.) (The full conservation units are composed of ecological stations, biological reserves, national parks, natural monuments, and wildlife refuges, each one of them with specific features).

²⁶ *Id.* arts. 7(II), 14-21 (The conservation units of sustainable use are composed of areas of environmental protection, areas of relevant environmental interest, national forests, extractive reserves, fauna reserves, sustainable development reserves, and natural patrimony reserves).

²⁷ CONSTITUIÇÃO FEDERAL [C.F.] [CONSTITUTION] art. 225(para. 1)(III) (Braz.).

The indigenous lands²⁸ formally belong to the federal government but, according to the Constitution, indigenous communities are entitled to the areas that they have traditionally occupied and have the right to their perpetual use and possession.²⁹ It is the federal government's responsibility to demarcate and protect these areas.³⁰ As of 2019, 424 territories in the Brazilian Amazon were designated as indigenous land. The exploitation of hydraulic resources and hydroelectric potential as well as the search for and exploitation of mineral resources in these lands require (i) previous congressional authorization, (ii) consultation with the interested communities, and (iii) guaranteed sharing of revenues.³¹ The demarcation of these areas limits the uncontrolled advance of economic activities, protecting the life and immemorial rights of communities, and contributing to environmental conservation.

Areas that are not privately owned and that the government has not designated as indigenous reserves or conservation areas are referred to as “non-allocated public areas.” Approximately 45% of the Amazon's territory falls into this category.³²

28 Indigenous lands account for 23% of the BLA. 98.25% of all Brazilian indigenous lands are located in the Amazon. See *Localização e extensão das TIs*, ISA – INSTITUTO SOCIOAMBIENTAL [SOCIAL-ENVIRONMENTAL INSTITUTE] (Jan. 25, 2021), https://pib.socioambiental.org/pt/Localização_e_extensão_das_Tis.

29 CONSTITUIÇÃO FEDERAL [C.F.] [CONSTITUTION] art. 231.

30 *Id.* Indigenous lands are recognized through an administrative demarcation process carried out by the federal government, which ends up with a formal act declaring the status and limits of those lands. See Decreto No. 1.775, de 8 de Janeiro de 1996, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 09.01.1996, art. 5 (Braz.).

31 CONSTITUIÇÃO FEDERAL [C.F.] [CONSTITUTION] art. 231(para. 3).

32 JOSÉ HEDER ET AL., INSTITUTO DE PESQUISA AMBIENTAL DA AMAZÔNIA

Deforestation is significantly lower in conservation units and demarcated indigenous reserves due to their constitutional and legal regimes, which make it impossible for a land grabber³³ to acquire ownership of the land.³⁴ In addition, conservation units³⁵ and indigenous reserves³⁶ are managed by governmental bodies specifically responsible for protecting their integrity. Indigenous lands also count on the presence and surveillance of indigenous peoples and each benefit from the shared monitoring of non-governmental organizations (“NGOs”).³⁷ On the other hand, non-allocated public areas are vast tracts of land, very difficult to monitor, and are not submitted to any special legal regime or surveillance scheme. Worse than that, they are subject to mistaken public policy, as discussed below.

[AMAZON ENVIRONMENTAL RESEARCH INSTITUTE], *A GRILAGEM DE TERRAS PÚBLICAS NA AMAZÔNIA BRASILEIRA* 17 (2006).

33 Land grabbers are offenders who seek to appropriate lands by means of invasion and falsification of documents.

34 DING ET AL., *supra* note 22, at 4. *See also* ABRAMOVAY, *supra* note 6, at 55-56; Claudia Azevedo-Ramos et al., *Lawless Land in no Man’s Land: the Undesignated Public Forests in the Brazilian Amazon*, 99 *LAND USE POLICY* 1, 1-3 (2020); Oswaldo Braga, *Invasores promovem maior desmatamento em Terras Indígenas em 11 anos*, ISA – INSTITUTO SOCIOAMBIENTAL [SOCIAL-ENVIRONMENTAL INSTITUTE] (Nov. 18, 2019), <https://www.socioambiental.org/pt-br/noticias-socioambientais/invasores-prod-uzem-maior-desmatamento-em-terras-indigenas-em-11-anos> (stating that only 1.3% of deforestation of the Brazilian Amazon takes place in indigenous lands, after examining 207 out of 424 of the mentioned lands).

35 Lei No. 9.985, de 18 de Julho de 2000, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 19.7.2000, art. 6(III) (Braz.).

36 Lei No. 5.371, de 5 de Dezembro de 1967, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 6.12.1967, art. 1(I), (II), (VII) (Braz.).

37 Sue Branford, *Brazil’s Bolsonaro Presses Anti-indigenous Agenda; Resistance Surges*, MONGABAY (Jun. 27, 2019), <https://news.mongabay.com/2019/06/brazils-bolsonaro-presses-anti-indigenous-agenda-resistance-surges/>.

B. Crimes in the Amazon

1. Illegal Land Appropriation

The Brazilian Constitution provides that the ownership of public lands may not be transferred to private individuals based solely on claims that they have been using the land uninterruptedly and with no opposition, even if for a long period of time.³⁸ Rather, the alienation of public lands typically depends on public bidding.³⁹ Moreover, the invasion and/or exploitation of public lands is a crime.⁴⁰

Public land grabbing in the Amazon follows a pattern. First, invaders⁴¹ take over the land and convert it into pastures and plantations by extracting selective trees and burning and/or cutting the remaining plant cover. Next, they attempt to legalize land ownership. They do so by soliciting fake ownership deeds, in collusion with registry offices and public officers.⁴² Finally, they sell the land in allotments for agricultural use or cattle-raising. In short, the illegal appropriation of public lands typically initiates a vicious cycle that leads to deforestation and other crimes, such as illegal

³⁸ CONSTITUIÇÃO FEDERAL [C.F.] [CONSTITUTION] art. 191 (stating that real public property may not be acquired by usucapio).

³⁹ Lei No. 8.666, de 21 de Junho de 1993, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 22.6.1993, art. 17(I) (Braz.).

⁴⁰ Lei No. 4.947, de 6 de Abril de 1966, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 11.04.1966, art. 20 (Braz.) (concerning public lands); Decreto-Lei No. 2.848, de 7 de Dezembro de 1940, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 31.12.1940, art. 161(para. 1)(II) (Braz.) (concerning lands in general).

⁴¹ Invaders are those who appropriate lands for their own use or for speculation and selling to third parties.

⁴² HEDER ET AL., *supra* note 32, at 17-19.

logging, burning, and forgery of public documents.⁴³

2. *Environmental Crimes*

Environmental crimes are currently listed among the most lucrative forms of transnational criminal activities, not least because of their low risk of punishment.⁴⁴ When practiced on a large scale, they rely on well-structured criminal organizations and networks that include not only producers, but also intermediaries and buyers of gold, logging, cattle, meat, and agricultural products. They are often connected to other illegal activities, such as money laundering, corruption of government officials, smuggling, and slavery. The most important environmental crimes in the Amazon region and their criminal framework are presented below.

a. *Deforestation*

Deforestation without the permission of a public authority is a crime, leading to prison sentences of up to four years in regular public lands, and up to five years in the case of conservation units, plus fines.⁴⁵ The main cause of

⁴³ The involvement of political and economic power makes it difficult to fight against such a system. Illegal activities generate jobs and help in the election of representatives, who ensure their permanence in power. See discussion *infra* section III(C). In addition, these activities involve strong networks of organized crime. See Human Rights Watch, *Rainforest Mafias* (Sep. 2019) at 30-39, https://www.hrw.org/sites/default/files/report_pdf/brazil0919_web.pdf.

⁴⁴ *Environmental Crimes Are on the Rise, So Are Efforts to Prevent Them*, U.N. ENVIRONMENT PROGRAMME (Sep. 21, 2018), <https://www.unenvironment.org/news-and-stories/story/environmental-crimes-are-rise-so-are-efforts-prevent-them> (stating that environmental crimes rank most likely fourth among criminal activities in the world, behind drugs, counterfeiting and human trafficking, with an estimated annual income between \$91 billion and \$259 billion).

⁴⁵ Lei No. 9.605, de 12 de Fevereiro de 1998, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 13.2.1998, arts. 38, 38-A, 50, 50-A (Braz.).

deforestation in the Amazon Rainforest is cattle-raising.⁴⁶

b. Burnings

Burnings are typically the cause and consequence of deforestation. On the one hand, burnings enable the fast suppression of vegetation, clearing areas for the development of economic activities. On the other, deforestation exposes the soil and the remaining forest to sunrays, drying it up and increasing the risk of fires, deliberate or natural. Under Brazilian law, setting fire to woods and forests without public authorities' permission is a crime that carries a sanction of two to four years in prison and fines.⁴⁷

c. Illegal logging and trade

Illegal logging and trade is also a very common crime in the Amazon region.⁴⁸ It accounts for an estimated 80% of timber production in Brazil.⁴⁹ Illegal loggers typically hide the

⁴⁶ See MINISTÉRIO DO MEIO AMBIENTE [MINISTRY OF THE ENVIRONMENT], PLANO DE AÇÃO PARA A PREVENÇÃO E CONTROLE DO DESMATAMENTO NA AMAZÔNIA LEGAL, PRIMEIRA FASE 10 (2004), http://redd.mma.gov.br/images/publicacoes/PPCDAM_fase1.pdf; MINISTÉRIO DO MEIO AMBIENTE [MINISTRY OF THE ENVIRONMENT], PLANO DE AÇÃO PARA A PREVENÇÃO E CONTROLE DO DESMATAMENTO NA AMAZÔNIA LEGAL, SEGUNDA FASE 34 (2009–2011), http://redd.mma.gov.br/images/publicacoes/PPCDA_M_fase2.pdf.

⁴⁷ Lei No. 9.605, de 12 de Fevereiro de 1998, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 13.2.1998, art. 41 (Braz.) (“To set fire on woods and forests. Sanction – two to four years of imprisonment, and fines”).

⁴⁸ *Id.* arts. 45, 46 and single paragraph. See Human Rights Watch, *supra* note 43 (concerning the crimes of illegal logging and trade).

⁴⁹ See INTERPOL-UNEP, *Strategic Report: Environment, Peace and Security – A Convergence of Threats*, p. 43 (Dec. 2016), <https://www.unep.org/resources/report/strategic-report-environment-peace-and-security-convergence-threats> (download document). See also Elaíze Farias, *Amazônia em chamas: 90% da madeira exportada*

unlawful origin of the timber by paying bribes to obtain fake documents attesting that their timber was extracted from certified areas.⁵⁰ Forest degradation occurs when illegal loggers select the most valuable trees in a given area for extraction. Its effects are very similar to deforestation effects.⁵¹

d. Illegal mining

Illegal mining, especially of gold, occurs in nearly all the States of the BLA. It is a crime,⁵² the third most important cause of deforestation, after cattle-raising and logging, and further harms the environment by causing serious river pollution due to the use of mercury. Between 2005 and 2015, more than 90% of deforestation caused by mining occurred on illegal sites.⁵³ Like illegal logging, illegal mining is also an activity that requires significant scale. There are currently 450 illegal mining areas in the BLA region.⁵⁴

é ilegal, diz Polícia Federal, BRASIL DE FATO (Sep. 16, 2019), <https://www.brasildefato.com.br/2019/09/16/amazonia-em-chamas-90-da-madeira-exportada-sao-ilegais-diz-policia-federal/> (reporting higher estimates).

⁵⁰ See Human Rights Watch, *supra* note 43, at 35-36.

⁵¹ Clara Roman, Na Amazônia, a destruição é muito maior do que conseguimos ver, ISA – INSTITUTO SOCIOAMBIENTAL [SOCIAL-ENVIRONMENTAL INSTITUTE] (Nov. 22, 2019), <https://www.socioambiental.org/pt-br/noticias-socioambientais/na-amazonia-a-destruicao-e-muito-maior-do-que-conseguimos-ver>; Scott Wallace, *Inside the Faltering Fight against Illegal Amazon Logging*, NATIONAL GEOGRAPHIC (Aug. 28, 2019), <https://www.nationalgeographic.com/environment/2019/08/brazil-logging/>.

⁵² Lei No. 9.605, de 12 de Fevereiro de 1998, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 13.2.1998, art. 44 (Braz.).

⁵³ Ana Ionova, *Illegal Gold Rush Causing “Irreversible Damage” to Rivers in the Brazilian Amazon*, MONGABAY (Dec. 20, 2019), <https://news.mongabay.com/2019/12/illegal-gold-rush-causing-irreversible-damage-to-rivers-in-the-brazilian-amazon/>.

⁵⁴ See *id.*

II. PROBLEMS WITH THE EXISTING FRAMEWORK

Problems of a different nature contribute to the persistence of deforestation in the Amazon, and may be grouped into: poor initiatives concerning rules applicable to public lands, deficiencies of the rules applicable to environmental crimes, and political, cultural, and contextual issues which interfere with the proper functioning and improvement of the legal framework. These are the main subjects addressed below.

A. Rules Concerning Public Lands

One of the primary incentives for deforestation and illegal appropriation of public lands in the Amazon comes from the government itself.⁵⁵ Under pressure from land grabbers who are politically well-connected, the federal government from time to time pardons the criminal acts of invaders and allows for the regularization of public land appropriation with the transfer of their ownership. Examples of this practice include Laws n. 11.952/2009, during the presidency of Luiz Inácio Lula da Silva, and n. 13,465/2017, during the presidency of Michel Temer, and also Provisional Measure n. 910, issued on December 11, 2019, by current President Jair Bolsonaro.⁵⁶

⁵⁵ Brenda Brito, *Governo não deve premiar os ladrões de terra na Amazônia*, EL PAÍS BRASIL (Sep. 9, 2019), https://brasil.elpais.com/brasil/2019/09/09/opinion/1568042120_747554.html (reporting that regularization laws of invaded lands, upon payment of insignificant amounts, were passed by State legislative bodies of the States of Pará, Mato Grosso and Amazonas).

⁵⁶ Provisional measures are issued by the President, have the status of law, but have to be confirmed by Congress. If they are not confirmed within 60 days (extendable for another 60 days) they expire. See CONSTITUIÇÃO FEDERAL [C.F.] [CONSTITUTION] art. 62(para. 3). Provisional Measure n. 910/2019 expired on May 19, 2020. As a result, the 2014 occupation deadline was not met. It is important, however,

These rules progressively extended the size limits of regularizable areas and the deadlines for lands occupied up until 2004 (Law n. 11.952/2009), 2008 (Law n. 13.465/2017) and, most recently, 2014 (2019 Provisional Measure).⁵⁷ The Provisional Measure also removed the limits on the number of regularizable properties per person or entity.⁵⁸ Fortunately, this last rule was not approved by the Congress and lost its effects.⁵⁹

These laws are indicative of a Brazilian logic whereby wrongdoings that have gradually become the *status quo* are subsequently legalized. More than merely legitimizing the appropriation of public lands, these practices translate into incentives for the continuity of land grabbing, fostering the vicious cycle of invasion, deforestation, and posterior legalization. The referenced 2019 Provisional Measure,

to take the rule into account in order to understand the broader picture described in this section. See Ato Declaratório No. 36, de 20 de Maio de 2020, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 21.05.2020 (Braz) (regarding the expiration of Provisional Measure n. 910/2019).

⁵⁷ Lei No. 11.952, de 25 de Junho de 2009, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 26.06.2009, art. 5(IV) (Braz.) (amended by Lei No. 13.465, de 6 de Setembro de 2017, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 8.9.2017 and by Provisional Measure No. 910, de 10 de Dezembro de 2019, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 11.12.2019). Law n. 11.952/2009 and Law n. 13.465/2017 were both object of lawsuits before the Brazilian Supreme Court. Law n. 11.952/2009 was held to be partially unconstitutional on the grounds that it permitted regularization without any kind of inspection or control over the lands. The problem concerning land grabbers was not addressed (S.T.F., Pleno, ADI 4,269. Relator: Min. Edson Fachin, 18.10.2017, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 01.02.2019 (Braz.)). In the second lawsuit plaintiffs argue that Law n. 13.465/2017 favors the illegitimate transfer of public goods on behalf of people of medium and high income, and is still pending judgement (S.T.F., Pleno, ADPF 708, Relator: Min. Luís Roberto Barroso, first petition of the plaintiffs (June 5, 2020).

⁵⁸ Lei No. 11.952, de 25 de Junho de 2009, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 26.06.2009, art. 1 (Braz.).

⁵⁹ See *supra* note 56.

similar to previous laws, intended to allow for the acquisition of lands through payments, notably set at sums significantly below market value,⁶⁰ losing billions of Brazilian Reais to the federal government.⁶¹ It also fosters new invasions, for it confirms the expectation that these lands will eventually be legalized.⁶²

Finally, the progressive legalization practice leads to the concentration of lands in the hands of land grabbers and large landowners, as well as violence and disputes in rural areas. Although the Provisional Measure has not been approved by Congress, regularization is still possible for invasions up to 2008 and for very low prices, based on Law n. 13.465/2017.

Additionally, the current government openly refuses to demarcate indigenous reserves or to recognize the property of traditional communities over the land they occupy,⁶³ despite it being their constitutional duty.⁶⁴

B. Rules Concerning Crimes

Impunity is also the general rule when it comes to crimes

⁶⁰ *Id.* art. 12.

⁶¹ The prices vary from 10% to 50% of the value attributed by government officials to the bare land value (“valor da terra nua”), i.e., the value of the land without vegetation.

⁶² Brenda Brito et al., *supra* note 22, at 2.

⁶³ The current Brazilian president has declared that in his government he would not demarcate any centimeter of indigenous lands or of other traditional people lands. Demarcation is understood as an obstacle to the expansion of the agribusiness. *See What Brazil’s President, Jair Bolsonaro, Has Said about Brazilian Indigenous Peoples*, SURVIVAL, <https://www.survivalinternational.org/articles/3540-Bolsonaro> (last visited Jan. 11, 2021); Joelmir Tavares, *Bolsonaro Reaffirms his Power over the Demarcation of New Indigenous Territories*, FOLHA DE SÃO PAULO (Jun. 24, 2019, 1:34 PM), <https://www1.folha.uol.com.br/internacional/en/brazil/2019/06/bolsonaro-reaffirms-his-power-over-the-demarcation-of-new-indigenous-territories.shtml>.

⁶⁴ *See supra* section I(A).

related to land grabbing and deforestation of the Amazon. As already mentioned, land grabbing and environmental crimes involve very low prison penalties. Therefore, they do not perform a strong deterrent function. Low penalties favor the extinction of criminal liability, since the statute of limitations is calculated based on the maximum penalty prescribed by law.⁶⁵ They can also be replaced by alternative sanctions of social services to the community or to government entities,⁶⁶ with less moral impact over the offender. Furthermore, only a very low percentage of the fines applied are actually enforced and collected.⁶⁷

Secondly, the identification of invasions of public land and/or of deforestation in the Amazon rely mainly on satellite images, which depend on climate conditions. Illegal logging is even more difficult to uncover because satellite monitoring only detects areas that have been fully cleared.⁶⁸ In addition, these crimes often occur in dense forest areas, which are

⁶⁵ Decreto-Lei No. 2.848, de 7 de Dezembro de 1940, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 31.12.1940, art. 109 (Braz.).

⁶⁶ *Id.*

⁶⁷ TRIBUNAL DE CONTAS DA UNIÃO [FEDERAL AUDIT COURT], *Arrecadação de multas administrativas* (2009) (reporting that between 2005 and 2009 less than 1% of the fines applied by Ibama were effectively collected), https://portal.tcu.gov.br/tcu/paginas/contas_governo/contas_2009/ (click on the tab “Versão simplificada,” then click on “Arrecadação de multas administrativas” report on the top right corner). The situation has not improved much over time. See Bárbara Libório, *Por que o IBAMA arrecada só 5% das multas ambientais que aplica*, AOS FATOS (Jan. 31, 2019, 6:25 PM), <https://aosfatos.org/noticias/por-que-o-ibama-arrecada-so-5-das-multas-ambientais-que-aplica/>.

Ibama – Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais [Brazilian Institute for Environment and Natural Resources] is a federal environmental agency responsible for environmental licensing, authorization for the use of natural resources, and environmental inspection, monitoring and control. Lei No. 7.735, de 22 de Fevereiro de 1989, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 23.02.1989, art. 2(II) (Braz.).

⁶⁸ Human Rights Watch, *supra* note 43, at 31.

difficult to access by the police. Finally, there is a great deficiency in the infrastructure needed to uphold the State apparatus, with a lack of experts, inspectors, police, and prosecutors required for timely investigations, accusation and judgements, and a widespread perception of delay in the judicial response.⁶⁹

C. Lack of Political Will

As the above considerations already seem to point out, the fight against deforestation and other crimes in the Amazon lacks an essential element: the political will of the Brazilian government. Deforestation, illegal timber, and mining generate jobs in many regions with poor economic alternatives. Some towns have up to twenty illegal sawmills, responsible for the employment of hundreds of workers and their families. Because of the scale of these illegal operations, many perpetrators of environmental crimes are elected as mayors, town council members, and state assembly representatives, thereby shaping local politics.⁷⁰

When bribes do not work, illegal loggers and miners frequently resort to intimidation and employ armed militias to escape punishment.⁷¹ According to a Human Rights Watch report, out of three hundred murders of forest defenders recorded by the Pastoral Land Commission since 2009, only fourteen were taken to trial.⁷²

⁶⁹ PAULO BARRETO & MARÍLIA MESQUITA, INSTITUTO DO HOMEM E MEIO AMBIENTE DA AMAZÔNIA, COMO PREVENIR E PUNIR INFRAÇÕES AMBIENTAIS EM ÁREAS PROTEGIDAS NA AMAZÔNIA? 30 (2009).

⁷⁰ See Human Rights Watch, *supra* note 43, at 34-35.

⁷¹ See Human Rights Watch, *supra* note 43, at 34.

⁷² See Human Rights Watch, *supra* note 19, at 5-6.

This reluctance is reflected in a common conception that tackling illegal logging and mining will create a social problem as a result of job losses. In this regard, the regularization of public land invasion is defended on the ground that it is necessary to officialize rural settlements⁷³ for low-income people, who arrived in the region, following encouragement from the government at the beginning of its occupation during the seventies, and still lack formal access to their rural property.⁷⁴ Likewise, it is also said that formalizing property stops deforestation because the owner becomes responsible for any environmental damage.⁷⁵ However, regularizations are evidently not targeted to low-income families and the privatization of public lands encourages new invasions.

According to environmentalists and scientists, the current environmental policy of the federal government worsens the situation. It is characterized by: (i) an apparent dismantling of environmental institutions, including the suppression of environmental agencies,⁷⁶ the alteration of the composition of

73 A rural settlement is formed by a set of independent agricultural units, installed by the government, generally favoring poor families, small farmers and/or rural workers who are unable to acquire rural property on their own, enabling their access to land. *See Assentamentos*, MINISTÉRIO DA AGRICULTURA, PECUÁRIA E ABASTECIMENTO [MINISTRY OF AGRICULTURE, LIVESTOCK AND FOOD SUPPLY] (Jan 28, 2020), <https://www.gov.br/incra/pt-br/assuntos/reforma-agraria/assentamentos>.

74 MINISTÉRIO DA AGRICULTURA, PECUÁRIA E ABASTECIMENTO [MINISTRY OF AGRICULTURE, LIVESTOCK AND FOOD SUPPLY], *REGULARIZAÇÃO FUNDIÁRIA: CENÁRIO E LEGISLAÇÃO 1* (2020), <https://www.gov.br/agricultura/pt-br/assuntos/noticias/cartilha-explica-processo-de-regularizacao-fundiaria-na-amazonia/regularizacao-fundiaria-cenario-legislacao.pdf>.

75 *See id.* at 10-11.

76 Decreto No. 9.672, de 2 de Janeiro de 2019, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 2.1.2019 (Braz.) (extinguished the Secretariat of Climate Change and Forest of the

collegiate environmental bodies in order to control their decisions,⁷⁷ and the dismissal of civil servants committed to environmental protection;⁷⁸ (ii) repeal of rules concerning the protection of areas for permanent preservation;⁷⁹ (iii) alleged non-use of budgetary resources directed to public environmental policies;⁸⁰ and, finally, (iv) alleged paralysis of funds responsible for financing actions against climate change and deforestation.⁸¹

In fact, in 2019, the federal government did away with the Amazon Fund Steering Committee, which was responsible for establishing the criteria for the monitoring of the use of the

Ministry of Environment); Decreto No. 9.683, de 9 de Janeiro de 2019, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 10.1.2019 (Braz.) (extinguished the Subsecretariat of Environment, Energy, Science and Technology of the Foreign Ministry). One year and a half later, Decreto No. 10.455, de 11 de Agosto de 2020, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 12.8.2020 (Braz.) repealed Decreto No. 9.672, de 2 de Janeiro de 2019 (replacing the old Secretary of International Relations of the Ministry of Environment by a Secretary of Climate and International Relations). The concrete results of this measure are still unclear.

77 Decreto No. 9.806, de 28 de Maio de 2019, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 29.5.2019 (Braz.).

78 *Id.*

79 Resolução CONAMA/MMA No. 500, de 19 de Outubro de 2020, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 21.10.2020 (Braz.).

80 SUELY ARAÚJO, OBSERVATÓRIO DO CLIMA [CLIMATE OBSERVATORY], (IN)EXECUÇÃO DOS RECURSOS ORÇAMENTÁRIOS DO MMA – ADMINISTRAÇÃO DIRETA (2020), at. 3, 20.

81 S.T.F., ADPF 708, Relator: Min. Luís Roberto Barroso, first petition of the plaintiffs (June 5, 2020) (concerning the government's omission to use the resources of the National Fund for Climate Change); ADO 59, Relator: Min. Rosa Weber, first petition of the plaintiffs (June 5, 2020) (regarding the paralysis of the Amazon Fund, whose purpose is to finance the fight against deforestation in the forest). Both lawsuits, yet to be decided, held public hearings with considerable visibility. At the public hearing of the first lawsuit, the government informed the release of the resources of the first fund.

fund's resources.⁸² This measure deepened the diplomatic crisis between Brazil, on the one side, and Germany and Norway on the other, the two most important donor countries for conservation initiatives in the Amazon region, leading to the suspension of donations. The situation undermines the operation of the fund which was one of the main financiers of actions to protect the Amazon and aggravates the setbacks already experienced. Despite (but possibly because of) international pressure, new command-and-control operations in the Amazon have been recently triggered.⁸³ However, it is important to measure its effectiveness in terms of reducing deforestation.

III. SOLUTION

Although the proper conservation of the Amazon goes beyond merely reforming the existing legal framework, some changes in the Brazilian legal framework can contribute in a very relevant way to this objective. In the first place, a constitutional amendment should be passed establishing a prohibition against the regularization of any and all invasions of public areas that resulted in environmental damages, except for old and low-income occupations. This measure would remove from ordinary politics any possibility of

⁸² Decreto No. 9.759, de 11 de Abril de 2019, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 11.4.2019 (Braz.). This decree extinguished all federal collegiate bodies created by decree, including the Amazon Committee. See *Comitê Orientador do Fundo Amazônia*, FUNDO AMAZÔNIA, <http://www.fundoamazonia.gov.br/pt/fundo-amazonia/governanca/COFA/> (last visited Feb. 11, 2021).

⁸³ *Operação Verde Brasil aplica cerca de R\$ 142 milhões em multas e combate 1.835 focos de incêndio*, GOVERNO DO BRASIL (Oct. 30, 2019), <https://www.gov.br/pt-br/noticias/meio-ambiente-e-clima/2019/10/operacao-verde-brasil-aplica-cerca-de-r-142-milhoes-em-multas-e-combate-1-835-focos-de-incendio>.

professional land grabbing regularization and would limit it to old properties of low-income people.⁸⁴ In addition, the latter should be subjected to a prohibition on transferring ownership or land exploration to third parties for an extended period of time, in order to avoid real estate speculation over the low-income areas. Constitutional amendments in Brazil depend on a qualified quorum of 3/5 of the votes of all Congress members and on a two-round voting procedure in the Chamber of Deputies and in the Senate.⁸⁵ It is a process that is much tougher than the one to approve regular laws, but that already proved to be viable with adequate political coordination and mobilization.⁸⁶ In the past, the Brazilian Congress had successfully passed measures designed to protect the Amazon, without which significant environmental setbacks might have been experienced.⁸⁷ That being said, a

84 As for the latter group, as well as in cases of land reform in favor of low-income groups (“*reforma agrária*”), which are not the object of this paper, specific public policies need to be developed. These are groups whose families have been encouraged by the government to migrate to the region in the past and/or who are in irregular situations in part due to poverty and lack of government support. *See supra* section II(C), concerning low-income settlements.

85 CONSTITUIÇÃO FEDERAL [C.F.] [CONSTITUTION] art. 60(para. 2).

86 The Brazilian Constitution has undergone 116 amendments in the 32 years that it has been in force.

87 As an example, it rejected a Provisional Measure that provided for the transfer of the authority to demarcate indigenous lands from the National Indian Foundation (“FUNAI”) to the Ministry of Agriculture, which is in charge of agribusiness interests. *See Congresso cancela trecho de MP que pôs demarcação de terra indígena na Agricultura*, CÂMARA DOS DEPUTADOS [CHAMBER OF DEPUTIES] (Jun. 26, 2019), <https://www.camara.leg.br/noticias/560846-congresso-cancela-trecho-de-mp-que-pos-demarcacao-de-terra-indigena-na-agricultura/>. It also approved the Paris Agreement, the Biologic Diversity Statute and the National Policy on Climate Change. *See Decreto Legislativo No. 140, de 16 de Agosto de 2016*, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 17.08.2016, art. 1 (Braz.); *Lei No. 13.123, de 20 de Maio de 2015*, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 14.05.2015 (Braz.); *Lei No. 12.187, de 29 de Dezembro de 2009*, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 30.12.2009 (Braz.).

robust amendment setting such protections on a constitutional footing would certainly face resistance from significant rural political forces in the parliamentary body. For this reason, international criticism will likely be an important influence for moving the agenda forward. In addition, any reversal of a constitutional amendment, once approved, would need the same qualified quorum and procedure, and any repeal would face high political costs on the international stage that any new government would seek to avoid.

The protection of public areas also depends on their legal destination as conservation units or as indigenous reserves. The government's resistance to concluding demarcation processes is a grave problem, depending principally on the executive branch. Undoubtedly, it is not a matter of political whims, but a constitutional duty. In this regard, the Constitution allows for lawsuits to overcome government omissions that violate constitutional rights.⁸⁸ In fact, most recently, lawsuits have been filed before the Brazilian Supreme Court, seeking to hold the executive to its constitutional duties, and to challenge ostensibly unconstitutional omissions of protective action.⁸⁹

⁸⁸ CONSTITUIÇÃO FEDERAL [C.F.] [CONSTITUTION] arts. 102(para. 1), 103(para. 2); Lei No. 9.868, de 10 de Novembro de 1999, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 11.11.1999, arts. 12-A, 12-B (Braz.); Lei No. 9.882, de 3 de Dezembro de 1999, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 6.12.1999, art. 1 (Braz.).

⁸⁹ See *supra* note 81. Recently, a BBC News report denounced that plots of the Amazon Forest located in indigenous lands were being sold through Facebook. See João Fellet & Charlotte Pamment, *Amazon Rainforest Plots Sold via Facebook Marketplace Ads*, BBC NEWS (Feb. 26, 2021), <https://www.bbc.com/news/technology-56168844>. The justice rapporteur of the related constitutional lawsuit determined to the Attorney General's Office and to the Ministry of Justice and Public Security to

Additionally, the Constitution also provides for class action lawsuits that can be filed before trial level courts by an even broader group of representative entities in defense of the environment.⁹⁰ Although the option for litigation is not ideal and should be understood as the last resort, absent other solutions, these lawsuits could challenge the government's regrettable inactions.

Further, other essential reforms for tackling impunity include amending relevant laws to increase prison sentences for environmental crimes and crimes related to the invasion of public lands. The measure would not only impose more proportional penalties in view of the seriousness of the offenses, but also make it more difficult to extinguish criminal liability through statutes of limitation and replace prison sentences with alternative penalties. Finally, when the latter are inevitable, they must be related to damage restoration or environmental protection. It is possible to foresee a resistance from the rural parliamentary representation on this matter, but it can be overcome with adequate political mobilization and international interest. In fact, the attitude from the international community and consumer markets are likely to significantly weigh in on the matter.⁹¹

investigate the facts. S.T.F., Pleno, ADPF 709, Relator: Min. Luís Roberto Barroso (March 2, 2021). This lawsuit is also pending final judgement.

⁹⁰ CONSTITUIÇÃO FEDERAL [C.F.] [CONSTITUTION] art. 129(III); Lei No. 7.347, de 24 de Julho de 1985, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 25.07.1985, arts. 1(I), 3, 5 (Braz.).

⁹¹ For examples of the strength of the international community on the matter, it is worth noting the cases related to the soy and beef moratorium, in which the international pressure has led to the execution of agreements by means of which soy and meat producers committed themselves to abolish deforestation from their production chains. See Holly Gibbs et al., *Brazil's Soy Moratorium*, 347 SCIENCE 377

IV. CONCLUSION

The Amazon forest is approaching its tipping point from which an irreversible process of savannization will take place, with immeasurable losses for the planet and for Brazil. There is no more time to be lost in its protection. Part of the problems faced in the fight against deforestation are related to: (i) laws that provide for the regularization of deforested public lands in favor of land grabbers; (ii) the omission of the federal government to conclude the demarcation of indigenous reserves and conservation units, legal destinations which have proved to reduce deforestation; and (iii) deficiencies in the legislation aimed at punishing environmental crimes and its enforcement.

This essay proposes to face this scenario by: (i) a constitutional amendment prohibiting the regularization of deforested public lands (except for old occupation of low-income people, who deserve a special treatment); (ii) judicial actions aimed at addressing unconstitutional omissions on the demarcation of indigenous lands and conservation units; and (iii) improvement and better enforcement of laws punishing environmental crimes.

Other initiatives concerning public policies should be associated with those proposed above to fully address deforestation in the Amazon. It is imperative to strengthen institutions dedicated to environmental protection, providing them with adequate personnel, resources and structure, and

(2015); Daniel Nepstad et al., *Slowing Amazon Deforestation through Public Policy and Interventions in Beef and Soy Supply Chains*, 344 *SCIENCE* 1118 (2014); Christian Brannstrom et al., *Compliance and Market Exclusion in Brazilian Agriculture: Analysis and Implications for “Soft” Governance*, 29 *LAND USE POLICY* 357 (2012).

ensuring their independent performance. It is important to restore public policies of monitoring and command-and-control actions, and to commit with zero deforestation. Finally, it is necessary to produce an “economy of the forest” that offers sustainable jobs to the local population and technological support for small producers, develops the bioeconomy of the forest, and makes it more valuable to have the Amazon protected than destroyed. These are themes for a future essay, but the solutions proposed here will be an essential start to this journey.