

# THE AMAZON IS BURNING—IS PARIS, TOO? A COMPARATIVE ANALYSIS BETWEEN THE UNITED STATES AND BRAZIL BASED ON THE PARIS AGREEMENT ON CLIMATE CHANGE

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## ABSTRACT

*On November 4, 2019, the United States confirmed its withdrawal from the Paris Agreement on Climate Change. The Agreement, which is often cited as the only effective institutional solution to climate change, has been judged an overall success. As such, the United States' withdrawal was a contentious topic, even within the Trump administration. Criticism ensued, both domestically and abroad, after it was announced. Despite this backlash, then-presidential candidate Bolsonaro threatened to mimic President Trump's decision to withdraw. For the moment, President Bolsonaro has limited himself to following President Trump's anti-regulatory policies on environmental issues. These policies will make Brazil unlikely to meet its nationally determined contributions (NDCs).*

*Considering that both presidents were singled out for blocking environmental actions at last year's United Nations Summit on Global Climate Negotiations, this Article presents a comparison of the policy choices of the United States and Brazil regarding the Paris Agreement. The baseline for comparison is the period beginning when the Agreement entered into force (2016), until late 2019, when the United States officially notified its withdrawal. This Article also discusses the impact of clauses in the Brazilian Constitution of 1988 that protect the environment vis-à-vis the silence of its U.S. counterpart. It contrasts the U.S. and Brazilian constitutional experiences, focusing on current litigation involving the Paris Agreement and articulating this unique analysis in light of the constitutional design literature.*

*The examination presented herein fills a void in the international environmental law literature, because, to date, no studies comparing the policies of the United States and Brazil with regard to the Paris Agreement have been published. This research is particularly relevant now, as global carbon dioxide (CO<sub>2</sub>) emissions are poised to increase again in 2020. This scenario further advances interest in the United States' withdrawal from the Agreement and related deregulatory measures. Likewise, it increases interest in Brazilian anti-environmental policies, including the conflicting commitment to zero*

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*deforestation by 2030 and the recent Amazon fires, which became a full-blown international crisis.*

*The comprehensive analysis developed in this Article offers relevant insights for the literature on climate change. It demonstrates that the United States' withdrawal from the Agreement and related deregulatory policies, as well as current Brazilian actions, are detrimental to climate governance and may jeopardize the goals of the Paris Agreement. Nonetheless, findings from this analysis indicate that the inclusion of environmental protections in national constitutions has a meaningful impact on advancing such protections, as Brazil remained in the Agreement and its courts have served as an important check on the Executive's deregulatory agenda. The analysis also advances trending topics on U.S. climate litigation. The findings demonstrate that, given the silence of the U.S. Constitution on environmental matters and the decades-long congressional inertia on climate issues, an effective way to update the U.S. constitutional text will be through judicial review. As the comparative analysis of litigation concerning the Paris Agreement in the United States unveiled in this Article shows, standing is a major barrier to judicial review on climate change claims. Accordingly, this Article includes a recommendation for the flexibilization of the traditional standing requirements in order for the United States to achieve effective environmental protection and related mitigation of greenhouse gas (GHG) emissions.*

I.	INTRODUCTION . . . . .	163
II.	THE MAIN U.S. AND BRAZILIAN POLICIES REGARDING THE PARIS AGREEMENT. . . . .	171
	A. <i>Current U.S. Legal Scenario Involving the Paris Agreement</i> . . . . .	171
	B. <i>Current Brazilian Policies Regarding the Paris Agreement</i> . . . . .	176
III.	COMPARING RECENT U.S. AND BRAZILIAN POLICIES AND THEIR CONSEQUENCES FOR THE PARIS AGREEMENT. . . . .	180
	A. <i>Climate Governance and the Legal Framework of the Paris Agreement</i> . . . . .	180
	B. <i>Comparing Current U.S. and Brazilian Policies Regarding the Paris Agreement</i> . . . . .	182
	C. <i>Comparing the Impact of U.S. and Brazilian Policies Regarding Climate Governance</i> . . . . .	188
IV.	COMPARATIVE INSIGHTS BASED ON THE CONSTITUTIONAL DESIGN THEORY . . . . .	194
	A. <i>An Overview of the Constitutional Design Literature</i> . . . . .	195
	B. <i>Comparing Constitutional Provisions and Litigation in Light of the Design Literature</i> . . . . .	197

THE AMAZON IS BURNING—IS PARIS, TOO?

1. Brazilian Constitutional Provisions, the Silence of its U.S. Counterpart, and Climate Change Litigation in Brazil . . . . .	198
2. The Absence of Specific Constitutional Provisions in the U.S. Constitution and its Impact on Climate Change Litigation . . . . .	200
3. Discussing the Findings Based on the Comparison of Constitutional Design and Current Policies . . .	205
V. CONCLUSION . . . . .	207
APPENDIX I: FIGURES. . . . .	210

I. INTRODUCTION

On November 4, 2019,<sup>1</sup> the United States confirmed its withdrawal from the Paris Agreement on Climate Change.<sup>2</sup> This Agreement has been considered a historic breakthrough, as it marked the end of a decade-long stalemate over the full integration of the United States, and developing economies, into the climate regime.<sup>3</sup> The Paris Agreement, which is often cited as the only effective institutional solution to climate change,<sup>4</sup> has been judged an overall success.<sup>5</sup> As such, the United States' withdrawal<sup>6</sup> was a contentious topic, even within the

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1. The United States served notice of the withdrawal on the first date possible under the Paris Agreement. Lisa Friedman, *Trump Serves Notice to Quit Paris Climate Agreement*, N.Y. TIMES (Nov. 4, 2019), <https://www.nytimes.com/2019/11/04/climate/trump-paris-agreement-climate.html>.

2. OFF. OF THE PRESS SECRETARY, THE WHITE HOUSE, STATEMENT BY PRESIDENT TRUMP ON THE PARIS CLIMATE ACCORD (June 1, 2017). For an overview of the Paris Agreement, see Izzet Ari & Ramazan Sari, *Differentiation of Developed and Developing Countries for the Paris Agreement*, 18 ENERGY STRATEGY REV. 175, 175–76 (2017).

3. Meinhard Doelle, *Assessment of Strengths and Weaknesses, in THE PARIS AGREEMENT ON CLIMATE CHANGE: ANALYSIS AND COMMENTARY* 387 (Daniel Klein et al. eds., 2017) (emphasizing the importance of engaging all parties in a global effort to respond effectively to climate change).

4. Mark Cooper, *Governing the Global Commons: The Political Economy of State and Local Action, After the U.S. Flip-Flop on the Paris Agreement*, 118 ENERGY POL'Y 440, 441 (2018).

5. Maria L. Banda, *The Bottom-Up Alternative: The Mitigation Potential of Private Climate Governance After the Paris Agreement*, 47 HARV. ENVTL. L. REV. 325, 330 (2018). Environmentalists criticized the U.S. targets as being very low. See, e.g., Luke Kemp, *Better Out than In*, 7 NATURE CLIMATE CHANGE 458, 458 (2017).

6. Paris Agreement to the United Nations Framework Convention on Climate Change art. 28, Dec. 12, 2015, T.I.A.S. No. 16-1104 [hereinafter Paris Agreement] (outlining the withdrawal mechanism, which did not allow notice of withdrawal within the first three years that the Agreement has entered into force).

Trump administration,<sup>7</sup> and after it was announced, criticisms ensued domestically<sup>8</sup> and abroad.<sup>9</sup> Despite this backlash, Brazilian President Jair Bolsonaro, when he was a candidate, threatened to follow President Trump's decision to withdraw.<sup>10</sup> For the moment, President Bolsonaro has limited himself to following President Trump's anti-regulatory policies on environmental issues. These policies will make Brazil unlikely to meet its nationally determined contributions (NDCs).<sup>11</sup>

Considering that both presidents were singled out for blocking environmental actions at last year's United Nations Summit on Global Climate Negotiations,<sup>12</sup> this Article presents a comparison of the policy choices of the United States and Brazil regarding the Paris Agreement.<sup>13</sup> The baseline for comparison is the period beginning when the

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7. Energy Secretary Rick Perry, former National Security Advisor H. R. McMaster, former Economic Advisor Gary Cohn, and the late Secretary of State Rex Tillerson were against the withdrawal. HAROLD HONGJU KOH, *THE TRUMP ADMINISTRATION AND INTERNATIONAL LAW* 53 (2019).

8. Chief executive officers of major U.S. companies were vocal in critiquing the decision. Richard Luscombe, *Top U.S. Firms Including Walmart and Ford Oppose Trump on Climate Change*, *GUARDIAN* (Dec. 1, 2017), <https://www.theguardian.com/environment/2017/dec/01/trump-climate-change-paris-withdrawal-ford-walmart>. Likewise, members of both political parties expressed their disapproval. Philip Rucker & Jenna Johnson, *Trump Announces U.S. Will Leave Paris Climate Deal, Sparking Criticism at Home and Abroad*, *WASH. POST* (Sep. 5, 2017), [https://www.washingtonpost.com/politics/trump-to-announce-us-will-exit-paris-climate-deal/2017/06/01/fbc0196-46da-11e7-bcde-624ad94170ab\\_story.html](https://www.washingtonpost.com/politics/trump-to-announce-us-will-exit-paris-climate-deal/2017/06/01/fbc0196-46da-11e7-bcde-624ad94170ab_story.html).

9. In a joint statement, French President Emmanuel Macron, German Chancellor Angela Merkel, and then-Italian Prime Minister Paolo Gentiloni rebuked President Trump's intention to renegotiate the Paris Agreement, stating, "[w]e deem the momentum generated in Paris in December 2015 irreversible, and we firmly believe that the Paris Agreement cannot be renegotiated, since it is a vital instrument for our planet, societies and economies." *Paris Agreement Cannot Be Renegotiated*, PERMANENT MISSION FR. TO U.N. IN N.Y. (June 1, 2017), <https://onu.delegfrance.org/Paris-Agreement-cannot-be-renegotiated>.

10. Bolsonaro has pledged to leave the Paris Agreement if elected, but denied ever making such a statement when he was still the front-runner candidate for the Brazilian presidency. Rodrigo Viga Gaier, *Brazil's Bolsonaro Scraps Pledge to Quit Paris Climate Deal*, *REUTERS* (Oct. 25, 2018), <https://www.reuters.com/article/us-brazil-election/brazils-bolsonaro-scraps-pledge-to-quit-paris-climate-deal-idUSKCN1MZ1DB>.

11. Elisângela Mendonça, *Bolsonaro's Brazil Unlikely to Achieve Paris Agreement Goals*, *MONGABAY* (Sep. 22, 2019), <https://news.mongabay.com/2019/09/bolsonaros-brazil-unlikely-to-achieve-paris-agreement-goals-experts/>.

12. Somini Sengupta, *U.N. Climate Talks End with Few Commitments and a 'Lost' Opportunity*, *N.Y. TIMES* (Dec. 15, 2019), <https://www.nytimes.com/2019/12/15/climate/cop25-un-climate-talks-madrid.html> (noting that the Madrid annual encounter was one of the worst outcomes in the previous twenty-five years).

13. The comparison is relevant because the Paris Agreement rests on firmer foundations than its predecessor, the Kyoto Protocol. Daniel Bodansky, *The Paris Climate Change Agreement: A New Hope?*, 110 *AM. J. INT'L L.* 288, 289 (2016).

Agreement entered into force (2016) until late 2019, when the United States officially announced its withdrawal.<sup>14</sup> This Article also discusses the impact of clauses in the Brazilian Constitution of 1988 that protect the environment vis-à-vis the silence of its U.S. counterpart. It contrasts the U.S. and Brazilian constitutional experiences, focusing on current litigation involving the Paris Agreement and articulating this unique analysis in light of the constitutional design literature.

The comprehensive analysis developed in this Article offers insights relevant to the literature on climate change. It demonstrates that the United States' withdrawal from the Agreement and related deregulatory policies as well as Brazil's current actions are detrimental to climate governance and may jeopardize the goals of the Paris Agreement on Climate Change.<sup>15</sup> Nonetheless, findings from this analysis indicate that the inclusion of environmental protections in national constitutions has a meaningful impact in advancing such protections, as Brazil remained in the Agreement and its courts have served as an important check on the Executive's deregulatory agenda. Hence, this research updates previous studies that only targeted instability or lack of overall enforcement of constitutional provisions in Latin America.<sup>16</sup>

The analysis also advances trending topics on U.S. climate litigation. The findings demonstrate that, given the silence of the U.S. Constitution on environmental matters and the decades-long congressional inertia on climate issues, an effective way to update the U.S. constitutional text will be through judicial review. As the comparative analysis of litigation concerning the Paris Agreement in the United States unveiled in this Article

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14. The Agreement entered into force on November 4, 2016. See *Paris Agreement - Status of Ratification*, U.N. CLIMATE CHANGE, <https://unfccc.int/process/the-paris-agreement/status-of-ratification> (last visited Sept. 17, 2020); Paris Agreement, *supra* note 6, art. 21(1).

15. The costs involved with the withdrawal are significant. A recent study on heat-related mortality avoided by lowering current emissions in line with the Paris Agreement found that, with a high degree of confidence and using conservative estimations, the United States would avoid from 70 to 1,980 annual heat-related deaths. Y. T. Eunice Lo, Daniel M. Mitchell, Antonio Gasparrini, Ana M. Vicedo-Cabrera, Kristie L. Ebi, Peter C. Frumhoff, Richard J. Millar, William Roberts, Francesco Sera, Sarah Sparrow, Peter Uhe & Gethin Williams, *Increasing Mitigation Ambition to Meet the Paris Agreement's Temperature Goal Avoids Substantial Heat-Related Mortality in U.S. Cities*, 5 *SCI. ADVANCES* 1, 1, 6–8 (2019). According to the EPA, natural disasters in 2017 (e.g., wildfires, floods, earthquakes, hurricanes, tornados, winter storms) caused \$306.2 billion in cumulative damages, making the year the most expensive on record. The report also emphasized that climate change is expected to increase the frequency and intensity of such events. U.S. ENV'T PROT. AGENCY, *PLANNING FOR NATURAL DISASTER DEBRIS 1* (Apr. 2019), [https://www.epa.gov/sites/production/files/2019-05/documents/final\\_pndd\\_guidance\\_0.pdf](https://www.epa.gov/sites/production/files/2019-05/documents/final_pndd_guidance_0.pdf).

16. Miguel Schor, *Constitutionalism Through the Looking Glass of Latin America*, 41 *TEX. INT'L L.J.* 1, 6 (2006) (arguing how constitutional texts in Latin America are easily ignored).

shows, standing is a major barrier to judicial review on climate change claims. Accordingly, this Article includes a recommendation for the flexibilization of the traditional standing requirements in order for the United States to achieve effective environmental protection and related mitigation of greenhouse gas (GHG) emissions.

A primary goal of the United Nations Framework Convention on Climate Change (UNFCCC) is the stabilization of GHG emissions.<sup>17</sup> This goal is prioritized because scientific consensus correlates climate change with global warming, one human-induced cause of which is the accumulation of GHGs in the atmosphere.<sup>18</sup> One aim of the Paris Agreement, which was signed to implement the goals of the UNFCCC, is to limit the global increase in mean temperature to well below 2°C (35.6 F) compared to pre-industrial levels.<sup>19</sup> The U.N. has been actively involved in mobilizing urgent action due to the dire impacts of climate change.<sup>20</sup> Under the Paris Agreement, effective global cooperation on climate change ultimately rests on a dual approach of motivating and enabling countries to take action beyond what they would consider to be in their own best interest absent such cooperation.<sup>21</sup>

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17. United Nations Framework Convention on Climate Change art. 2, May 9, 1992, 1771 U.N. T.S. 107 [hereinafter UNFCCC]. The UNFCCC entered into force on March 21, 1994. The scientific consensus regarding the existence of climate change and the necessity of mitigation were paramount considerations during UNFCCC negotiations. John Houghton, *Science and International Environmental Policy: The Intergovernmental Panel on Climate Change*, in ENVIRONMENTAL LAW, THE ECONOMY AND SUSTAINABLE DEVELOPMENT 353, 355–58 (Richard Revesz et al. eds., 2000).

18. The scientific community overwhelmingly acknowledges the existence of climate change and identifies GHG emissions as its primary cause. See Richard S. J. Tol, *Quantifying the Consensus on Anthropogenic Global Warming in the Literature: A Re-Analysis*, 73 ENERGY POL'Y 701, 704 (2014); see also J.F. Mitchell & D.J. Karoly et. al, *Detection of Climate Change and Attribution of Causes*, in INTERGOVERNMENTAL PANEL ON CLIMATE, CLIMATE CHANGE 2001: THE SCIENTIFIC BASIS. CONTRIBUTION OF WORKING GROUP I TO THE THIRD ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 695, 697 (2001).

19. “This Agreement, in enhancing the implementation of the Convention, including its objective, aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by: (a) Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change.” Paris Agreement, *supra* note 6, art. 2.

20. See generally INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, GLOBAL WARMING OF 1.5°C 9–13 (2018), [https://report.ipcc.ch/sr15/pdf/sr15\\_spm\\_final.pdf](https://report.ipcc.ch/sr15/pdf/sr15_spm_final.pdf) (detailing the consequences of climate change).

21. Doelle, *supra* note 3, at 375–78.

Because the Paris Agreement targets the reduction of GHGs,<sup>22</sup> it was a controversial topic in the United States even before the country announced its intent to withdraw from the Agreement,<sup>23</sup> despite conclusive findings of the harmful effects of GHG emissions into the atmosphere by national agencies<sup>24</sup> and Congress.<sup>25</sup> President Trump<sup>26</sup> and the U.S. State Department did not pursue any formal efforts to withdraw from the UNFCCC,<sup>27</sup> notwithstanding the United States' withdrawal from the Paris Agreement. Nonetheless, President Trump has engaged in a deregulatory crusade against the environment.<sup>28</sup>

Climate change has significant political, economic, and social impacts, encompassing collective rights beyond national borders.<sup>29</sup> It is a pressing issue for the majority of U.S. adults, who acknowledge climate change as the most important issue currently facing

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22. The Paris Agreement, with its goal for reducing GHGs, was negotiated following the legal framework of the UNFCCC, a treaty with 196 state parties to which the Senate gave its advice and consent in 1992. KOH, *supra* note 7, at 39.

23. Traditionally, coal producers and electric power companies have resisted GHG regulation. For instance, American Electric Power (AEP), then the nation's largest electricity generator and consumer of coal, testified in front of Congress against regulations. Elisabeth Smick, *U.S. Companies and Greenhouse Gas Regulations*, COUNCIL ON FOREIGN REL. (Sept. 14, 2006), <https://www.cfr.org/backgrounder/us-companies-and-greenhouse-gas-regulations>.

24. The EPA, for instance, acknowledges the combustion of fossil fuels is likely the human activity that contributes most to the concentration of carbon dioxide in the atmosphere. U.S. ENV'T PROT. AGENCY, CARBON DIOXIDE EMISSIONS (Sept. 8, 2020), <https://www.epa.gov/gghemissions/overview-greenhouse-gases#carbon-dioxide>.

25. Congress considers climate change a threat to national security. Defense Authorization Act of 2018, Pub. L. No. 115-91, § 335, 131 Stat. 1283, 1358 (2017). Congress is also concerned with the impact of climate change at localities where U.S. Armed Forces operate and where strategic implications for future conflict exist. *Id.*

26. President Trump called climate change a “hoax” invented by China to undermine the competitiveness of U.S. manufacturing. Donald J. Trump (@realDonaldTrump), TWITTER (Nov. 6, 2012, 2:15 PM), <https://twitter.com/realDonaldTrump/status/265895292191248385>. His understanding contradicts the most recent scientific report issued by a panel of experts from thirteen U.S. administrative agencies. *See* U.S. GLOB. CHANGE RES. PROGRAM, CLIMATE SCIENCE SPECIAL REPORT: FOURTH NATIONAL CLIMATE ASSESSMENT, VOLUME I 35–72 (2018), <https://www.globalchange.gov/nca4>.

27. JESSICA WENTZ & MICHAEL B. GERRARD, SABIN CTR. FOR CLIMATE CHANGE L., PERSISTENT REGULATIONS: A DETAILED ASSESSMENT OF THE TRUMP ADMINISTRATION'S EFFORTS TO REPEAL FEDERAL CLIMATE PROTECTIONS 63 (2019), <http://columbiaclimatelaw.com/files/2019/06/Wentz-and-Gerrard-2019-06-Persistent-Regulations.pdf>.

28. *See id.* at 1 (noting the “sweeping deregulatory agenda” pursued by the Trump Administration regarding climate change).

29. *See generally* DOUGLAS A. KY SAR, REGULATING FROM NOWHERE: ENVIRONMENTAL LAW AND THE SEARCH FOR OBJECTIVITY 123–200 (2010) (arguing that environmental policy should include the interests of existing members of the political community as well as those of people overseas, future generations, and even other species).

society.<sup>30</sup> Premature deaths related to air pollution are not confined to state borders,<sup>31</sup> nor are increasing temperatures. According to NASA, 2019 was the second warmest year on record,<sup>32</sup> and the warmest in the oceans.<sup>33</sup> Over 1,300 jurisdictions in twenty-five countries around the world had declared climate emergencies by the end of 2019.<sup>34</sup> The next financial crisis can be caused by climate change, according to a recent report by an umbrella organization for the world's central banks.<sup>35</sup> Unsurprisingly, the current climate crisis was the focus of the recent World Economic Forum.<sup>36</sup> World renowned economists are advocating for governments to become enablers in an economic policy that prioritizes overall well-being and sustainability.<sup>37</sup>

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30. *Majority of U.S. Adults Believe Climate Change Is Most Important Issue Today*, AM. PSYCHOL. ASS'N (Feb. 6, 2020), <https://www.apa.org/news/press/releases/2020/02/climate-change> (finding that fifty-six percent of U.S. adults attribute such paramount relevance to climate change).

31. Irene C. Dedoussi, Sebastian D. Eastham, Erwan Monier & Steven R. H. Barrett, *Premature Mortality Related to United States Cross-State Air Pollution*, 578 NATURE 261, 262–63 (Feb. 13, 2020) (finding that, on average, forty-one to fifty-three percent of air-quality related premature mortality resulting from emissions in a state occurs outside such state and that New York has been a significant importer of pollution of other states, as sixty percent of premature deaths related to pollution in New York occur outside its boundaries).

32. NASA scientists and colleagues from renowned institutions found that the increase in global temperatures primarily has been driven by increased emissions into the atmosphere of carbon dioxide and other greenhouse gases produced by human activities. The agency estimates that the 2019 global mean change is accurate, with a ninety-five percent certainty level. NAT'L AERONAUTICS & SPACE ADMIN., GODDARD INST. FOR SPACE STUD., NASA, NOAA ANALYSES REVEAL 2019 SECOND WARMEST YEAR ON RECORD (Jan. 15, 2020), <https://www.giss.nasa.gov/research/news/20200115/>. *See also infra* Chart 1, Appendix 1.

33. NAT'L AERONAUTICS & SPACE ADMIN., GODDARD INST. FOR SPACE STUD., *supra* note 32.

34. National climate emergencies in 2019 were declared in Australia, Argentina, Canada, France, Isle of Man, Republic of Ireland, Portugal, and the United Kingdom. In the United States, local governments located in California, Colorado, Florida, Hawaii, Indiana, Maine, Maryland, Michigan, Minnesota, Missouri, New Jersey, New Mexico, New York, Oregon, Texas, Vermont, and Virginia have declared climate emergencies. Likewise, Recife, in Brazil. *Climate Emergency Declarations in 1,341 Jurisdictions and Local Governments Covers 803 Million Citizens*, CLIMATE EMERGENCY ORG. (Jan. 20, 2020), <https://climateemergencydeclaration.org/climate-emergency-declarations-cover-15-million-citizens/>.

35. Patrick Bolton, Morgan Despres, Luiz Awazu Pereira Da Silva, Frédéric Samama & Romain Svartzman, *The Green Swan: Central Banking and Financial Stability in the Age of Climate Change*, BANK FOR INT'L SETTLEMENTS 11–17 (2020). The report also called for international monetary and financial cooperation in light of climate change. *Id.* at 59–61.

36. Larry Elliott, *Climate Crisis Fills Top Five Places of World Economic Forum's Risks Report*, GUARDIAN (Jan. 14, 2020), <https://www.theguardian.com/business/2020/jan/15/climate-crisis-environment-top-five-places-world-economic-forum-risks-report>.

37. Italian-American economist Mariana Mazzucato is an authority in the field. Her central thesis is that modern economies reward behavior that extracts value instead of creating it. *See, e.g.*,



Aggravating this crisis is the fact that Brazil, under President Bolsonaro, is no longer a global leader on climate change, and the country is currently threatening progress on this issue.<sup>38</sup> This is particularly concerning, as climate change is the “quintessential global-scale collective action problem”<sup>39</sup> because it affects those who do not contribute to it, while the benefits of carbon abatement are not restricted to those who pursue such mitigation.<sup>40</sup> Therefore, the parties involved have incentives to free-ride.<sup>41</sup> The United States’ deregulatory agenda and withdrawal from the Paris Agreement and current Brazilian environmental policies are examples of free-riding attempts and are jeopardizing the goals of the Agreement. This is quite disturbing, as a recent study by Nobel Laureate William Nordhaus concluded that limited global action on climate change means the reduction of 2°C is unattainable.<sup>42</sup> Therefore, the need for policies to slow climate change is growing more pressing.

The examination presented herein fills a void in the international environmental law literature, because, to date, no studies comparing the actions of the United States and Brazil with regard to the Paris Climate Agreement have been published.<sup>43</sup> This study builds on the law and economics literature to improve the environment,<sup>44</sup> aiming at the maximization of overall well-being.<sup>45</sup> The framework chosen for this

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MARIANA MAZZUCATO, THE VALUE OF EVERYTHING: MAKING AND TAKING THE GLOBAL ECONOMY 8–20 (2018).

38. See, e.g., Lisa Viscidi & Nate Graham, *Brazil Was a Global Leader on Climate Change. Now It’s a Threat*, FOREIGN POL’Y (Jan. 4, 2019), <https://foreignpolicy.com/2019/01/04/brazil-was-a-global-leader-on-climate-change-now-its-a-threat/>.

39. Daniel C. Esty & Anthony L. I. Moffa, *Why Climate Change Collective Action Has Failed and What Needs to Be Done Within and Without the Trade Regime*, 15 J. INT’L ECON. L. 777, 777 (2012). Pollution is the paradigmatic example of the tragedy of the commons, for which coercive laws and taxation are cited as potential solutions. See Garret Hardin, *The Tragedy of the Commons*, 162 SCI. 1243, 1245–47 (1968). Summarizing the tragedy of the commons, he explains: “The rational man finds that his share of the cost of the wastes he discharges into the commons is less than the cost of purifying his wastes before releasing them. Since this is true for everyone, we are locked into a system of ‘fouling our own nest,’ so long as we behave only as independent, rational, free-enterprises.” *Id.* at 1245.

40. MICHAEL J. TREBILCOCK, DEALING WITH LOSERS: THE POLITICAL ECONOMY OF POLICY TRANSITION 120 (2014).

41. *Id.*

42. William Nordhaus, *Projections and Uncertainties about Climate Change in an Era of Minimal Climate Policies*, 10 AM. ECON. J. 333, 358 (2018).

43. According to a Google Scholar search on January 10, 2020.

44. See, e.g., RICHARD R. REVESZ & MICHAEL LIVERMORE, RETAKING RATIONALITY: HOW COST-BENEFIT ANALYSIS CAN BETTER PROTECT THE ENVIRONMENT AND OUR HEALTH (2008).

45. The use of law and economics (and cost-benefit analysis, specifically) is justified as a *welfarist* decision procedure, which maximizes the well-being of the public generally, if not

research also contributes to such literature, because it addresses a contemporary example of a public policy enacted without the normative use of economics.<sup>46</sup> This research is particularly relevant now, as global carbon dioxide (CO<sub>2</sub>) emissions are poised to increase again in 2020,<sup>47</sup> and in light of the recent limited improvement in global energy efficiency, which is attributed to the static global energy policy environment of 2018.<sup>48</sup> This scenario further advances interest in the United States' withdrawal<sup>49</sup> from the Agreement and related deregulatory measures. Likewise, it increases interest in Brazilian anti-environmental policies,<sup>50</sup> including the conflicting commitment to zero deforestation by 2030<sup>51</sup> and the recent Amazon fires, which became a "full-blown international crisis."<sup>52</sup>

Another contribution of this research is the investigation referring to constitutional design, namely, if explicit constitutional provisions on environmental protection, as in the Brazilian case, are meaningful.

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necessarily every member of the public. MATTHEW D. ADLER & ERIC A. POSNER, *NEW FOUNDATIONS OF COST-BENEFIT ANALYSIS* 6 (2006). "Public," for the purpose of this Article, refers to the U.S. general population or the Brazilian population, depending on the context. The constitutional principle of administrative efficiency, of which cost-benefit analysis is a corollary, is addressed in art. 37 of the Brazilian Constitution of 1988. Constituição Federal [C.F.] [Constitution] Oct. 5, 1988, art. 37 (Braz.)

46. This topic is timely because the Trump administration is accused of using law and economics (cost-benefit analysis, in particular) and subverting its methodology without scientific criteria. Antonio M. Bento et al., *Flawed Analyses of U.S. Auto Fuel Standards*, 362 *SCI.* 1119–21 (2018) (noting fundamental flaws and inconsistencies related to basic economic theory and empirical studies in the proposed rule by the Trump Administration).

47. See Robert Jackson, Pierre Friedlingstein, Robbie Andrew, Josep Canadell, Corinne Le Quééré & Glen Peters, *Persistent Fossil Fuel Growth Threatens the Paris Agreement and Planetary Health*, 14 *ENVTL. RES. LETTERS* 1, 6 (2019).

48. *Global Energy & CO<sub>2</sub> Status Report: Emissions*, IEA 2–3 (2019).

49. *Id.* at 3. Carbon dioxide emissions significantly increased in the United States in 2018.

50. At the core of such anti-environmental actions is Bolsonaro's push to open Indigenous reserves and protected areas to mining and agribusiness but no effective action to curb deforestation. Mendonça, *supra* note 11.

51. According to Brazil's official pledge to the UNFCCC, the country has committed to the following, among others: "strengthening policies and measures with a view to achieve, in the Brazilian Amazonia, zero illegal deforestation by 2030 and compensating for greenhouse gas emissions from legal suppression of vegetation by 2030." *Intended Nationally Determined Contribution: Towards Achieving the Objective of the United Nations Framework Convention on Climate Change*, FEDERATIVE REPUBLIC OF BRAZIL, <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Brazil%20First/BRAZIL%20iNDC%20English%20FINAL.pdf> (last visited Nov. 27, 2020).

52. Kendra Pierre-Louis, *The Amazon, Siberia, Indonesia: A World of Fire*, *N.Y. TIMES* (Sept. 4, 2019), <https://www.nytimes.com/2019/08/28/climate/fire-amazon-africa-siberia-worldwide.html>.

After all, “the paper accepts it all.”<sup>53</sup> This Article compares the Brazilian experience with the silence of the U.S. constitutional text and considers litigation in both countries, under both President Bolsonaro and former President Trump, regarding the Paris Agreement’s goals. The comparison is relevant and unique, as the (in)ability of constitutions to address the world’s biggest challenges, such as climate change, has recently been considered among the criteria for “success” on constitutional design.<sup>54</sup>

This Article is organized as follows. Part II presents the main policies of the Trump and Bolsonaro administrations undermining the Paris Agreement. Part III compares both countries’ policies and discusses the main consequences of those actions domestically and internationally. Part IV targets the constitutional design literature, discussing Brazilian constitutional provisions on international environmental law and related protections, and contrasts them with the silence of the U.S. Constitution on the topic. Part V concludes that constitutional environmental protections are meaningful, and that these particular U.S. and Brazilian policies jeopardize climate change governance and the Paris Agreement.

## II. THE MAIN U.S. AND BRAZILIAN POLICIES REGARDING THE PARIS AGREEMENT

This Part provides an overview of the main U.S. and Brazilian environmental policies that may impact the original targets proposed under each of the countries’ NDCs. The first Section discusses the main arguments presented by the Trump administration to justify its decision to withdraw from the Paris Agreement and summarizes the main U.S. policies implementing this controversial choice. Likewise, the second Section assesses the retrocession implemented by the current Brazilian administration.

### A. *Current U.S. Legal Scenario Involving the Paris Agreement*

This Section begins with a discussion on the United States’ withdrawal from the Paris Agreement. It further addresses recent policy changes (particularly deregulatory actions) that are likely to increase GHG emissions.

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53. As Lassalle famously affirmed in 1848 when addressing that constitutions may have clauses granting rights, but this does not necessarily mean such provisions will be consequential. Ferdinand Lassalle, *Qu’est-ce qu’une Constitution?* [What Is a Constitution?] 61 (Apr. 16, 1862).

54. Ran Hirschl, *The “Design Sciences” and Constitutional “Success,”* 87 TEX. L. REV. 1339, 1341 (2009).

According to legal framework of the Paris Agreement, the United States' NDCs<sup>55</sup> require only that the United States continue its trend on reducing carbon emissions.<sup>56</sup> Had the United States not complied with the stipulated targets of its NDCs, no international sanctions would have been imposed; in other words, the country would not have been penalized.<sup>57</sup> While this Article acknowledges the controversy concerning the legal status of the Paris Agreement under U.S. law,<sup>58</sup> it dismisses it because both the Obama and Trump administrations considered it an agreement.<sup>59</sup> Under international law, however, the Paris Agreement is unequivocally a treaty,<sup>60</sup> and international law requires its effectiveness.<sup>61</sup>

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55. "Each Party shall prepare, communicate and maintain successive nationally determined contributions that it intends to achieve. Parties shall pursue domestic mitigation measures, with the aim of achieving the objectives of such contributions." NDCs are voluntary targets determined by each country. Paris Agreement, *supra* note 6, art. 4(2).

56. Dana Nuccitelli, *Fact Check: China Pledged Bigger Climate Action than the USA; Republican Leaders Wrong*, GUARDIAN (Nov. 14, 2014), <https://www.theguardian.com/environment/climate-consensus-97-per-cent/2014/nov/14/fact-check-china-pledged-bigger-climate-action-republican-leaders-wrong>.

57. *Id.*

58. U.S. domestic law on treaties is complex, because the terminology used in international law and U.S. domestic law differs. Under international law, all written international agreements governed by international law are referred to as "treaties," whereas in U.S. law, only some are labeled as such. According to U.S. law, the President has the power to sign a treaty, but it does not go into effect until it is ratified by two-thirds of the Senate. U.S. CONST. art. 2, § 2. *Executive agreements* are international agreements concluded by the President under independent constitutional authority in his or her capacity as commander-in-chief, but these agreements are treaties for international law purposes. BARRY E. CARTER, ALLEN S. WEINER & DUNCAN B. HOLLIS, INTERNATIONAL LAW 70 (7th ed. 2018).

59. For more information, see Daniel Bodansky, *The Legal Character of the Paris Agreement*, 25 REV. EUR. COMMUNITY & INT'L ENVTL. L. 142 (2016). The Department of State determined the Paris Agreement did not address substantive legal obligations beyond those stated in its parent treaty, the UNFCCC and concluded there was no need to submit it to the Senate. See UNFCCC, *supra* note 17; U.S. DEP'T OF STATE, TREATIES AND OTHER INTERNATIONAL AGREEMENTS (2001).

60. The Vienna Convention on the Law of Treaties art. 2(1)(a), May 23, 1969, 1155 U.N.T.S. 332. The United States signed the Paris Agreement on Apr. 22, 2016, and the treaty entered into force on Nov. 4, 2016. Paris Agreement, *supra* note 6, art. 21. See, e.g., Bodansky, *supra* note 59, at 142. *But cf.* Radoslav S. Dimitrov, *The Paris Agreement on Climate Change: Behind Closed Doors*, 16 GLOB. ENVTL. POL. 1, 3 (2016) (detailing the efforts of the Obama administration in negotiating the Paris Agreement as an executive agreement). For purposes of the analysis developed in this Article, this controversy is not determinative, because the United States is legally bound to its provisions under international law, regardless of domestic determinations, until its recent withdrawal.

61. Importantly, "[i]nternational law makes clear that U.S. Presidents cannot simply delete prior signatures from treaties." KOH, *supra* note 7, at 40.

Furthermore, President Trump's decision to withdraw from the Paris Agreement raises concerns. The president preemptively stated the Paris Agreement was exclusively in the interest of foreign countries, without considering the benefits of remaining party to the treaty.<sup>62</sup> Under international law, the definition of "treaty" includes mutual benefits,<sup>63</sup> but the Trump administration departed from the previous policy that rationally established that the Agreement has a net benefit.<sup>64</sup> Moreover, as extreme weather events that scientists attribute to climate change increase, so does the pressure for governmental regulation,<sup>65</sup> and investments in renewables. Both actions have been consistently rejected by the Trump administration.<sup>66</sup> Furthermore, the president presented flawed numbers<sup>67</sup> and used his campaign slogan to justify the decision to withdraw, suggesting that political motivations rather than reasoned decision-making informed his decision.<sup>68</sup>

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62. "As President, I can put no other consideration before the well-being of American citizens. The Paris Climate Accord is simply the latest example of Washington entering into an agreement that disadvantages the U.S. to the *exclusive* benefit of other countries, leaving American workers—who I love—and tax payers to absorb the cost in terms of lost jobs, lower wages, shuttered factories, and vastly diminished economic production." (emphasis added). OFF. OF THE PRESS SECRETARY, THE WHITE HOUSE, *supra* note 2.

63. Vienna Convention on the Law of Treaties arts. 2, 26, 27, May 23, 1969, 1155 U.N.T.S. 331. For an overview of the literature discussing the normative dimension of international law, see Allen Buchanan & David Golove, *Philosophy of International Law*, in THE OXFORD HANDBOOK OF JURISPRUDENCE AND PHILOSOPHY OF THE LAW 868 (Jules Coleman et al. eds., 2002).

64. Barack Obama, *The Irreversible Momentum of Clean Energy*, 355 SCI. 126–29 (2017) (arguing the Paris Agreement is not a partisan issue, as it fosters the U.S. low emissions economy and its renewable energy industry and employment therein, maintaining U.S. competitiveness while enhancing the country's climate security).

65. Michael B. Gerrard, *United States Climate Change Law*, in THE OXFORD HANDBOOK OF INTERNATIONAL CLIMATE CHANGE LAW 631 (Cinnamon P. Carlarne et al. eds., 2016).

66. It is beyond the Paris Agreement withdrawal, as President Trump has, apparently, withheld significant investments in renewable energy. Ari Natter, *Trump Withholding \$823 Million for Clean Energy, Democrats Say*, BLOOMBERG (Feb. 5, 2020), <https://www.bloomberg.com/news/articles/2020-02-05/trump-withholding-823-million-for-clean-energy-democrats-say> (also noting that the Office of Energy Efficiency and Renewable Energy was targeted to suffer an eighty percent budget cut from the White House, with Congress ultimately increasing its funding).

67. President Trump invoked a study by National Economic Research Associates (NERA) Economic Consulting. One of the primary flaws of the study is that only the costs of compliance with the Paris Agreement were factored in; benefits were disregarded. Jon Greenberg, *Fact-Checking Donald Trump's Statement Withdrawing from the Paris Climate Agreement*, POLITIFACT (June 1, 2017), <https://www.politifact.com/article/2017/jun/01/fact-checking-donald-trumps-statement-withdrawing/>.

68. The President stated: "The Paris Agreement handicaps the United States' economy in order to win praise from the very foreign capitalists and global activists that have long sought to gain wealth at our country's expense. They don't put America first. I do, and I always will." OFF. OF THE PRESS SECRETARY, THE WHITE HOUSE, *supra* note 2.

Research on deregulation efforts related to the environment and public health shows the Trump administration has suffered significant and recurrent losses since the presidential inauguration.<sup>69</sup> A top panel of government-appointed scientists, several of them selected by the Trump administration, concluded that recent deregulatory actions were not supported by established science.<sup>70</sup> Recent rollbacks on drilling on public land, such as in Alaska's Arctic National Wildlife Refuge,<sup>71</sup> are unpopular and had energy companies and investors themselves vowing not to take advantage of such an uncertain regulatory scheme, which is being contested in courts and can also be modified by a future president.<sup>72</sup> The opening of natural conservation resources and the criticisms of oil companies are evidence of the irrationality of the actions of the Trump Administration with regard to environmental and energy policies, and are likely to increase litigation.

Similarly, the U.S. Environmental Protection Agency's (EPA) proposed rule on unifying fuel economy standards<sup>73</sup> sparked criticism<sup>74</sup> because it is estimated to cost more than \$400 billion by 2050 and may increase GHGs related to transportation emissions by ten percent.<sup>75</sup> California, twenty-two other states, and the cities of Los Angeles and New York are suing the administration based on such revocation.<sup>76</sup> In the same vein, the proposed rule by the Council of Environmental Quality arguably aims to enhance efficiency and foster economic

69. See *Roundup: Trump Era Deregulation in the Courts*, INST. POL'Y INTEGRITY (Oct. 7, 2020), <https://policyintegrity.org/deregulation-roundup>.

70. SCIENCE ADVISORY BOARD (SAP), EPA, SCIENCE ADVISORY BOARD: DRAFT COMMENTARY 1/20/20 (Jan. 20, 2020) [https://yosemite.epa.gov/sab/sabproduct.nsf/547F1883CD4EF72C852584F8003C2030/\\$File/WOTUS+SAB+Draft+Commentary\\_1\\_20\\_20.pdf](https://yosemite.epa.gov/sab/sabproduct.nsf/547F1883CD4EF72C852584F8003C2030/$File/WOTUS+SAB+Draft+Commentary_1_20_20.pdf) (finding that the proposed deregulatory rule concerning the Clean Water Act to "not present a scientific basis").

71. Timothy Gardner, *Investors Urge Drillers, Miners Not to Take Advantage of Trump Environmental Rollbacks*, REUTERS (Jan. 29, 2020), <https://www.reuters.com/article/us-usa-environment-investors/investors-urge-drillers-miners-not-to-take-advantage-of-trump-environmental-rollbacks-idUSKBN1ZS1VK>.

72. *Id.*

73. 84 Fed. Reg. 188 (proposed Sept. 27, 2019) (codified at 40 C.F.R. pt. 85, 86, and 49 C.F.R. pt. 531, 533).

74. Consumer reports show that the proposed rule would be too costly, and, significantly, without the improvements on security that the President has claimed. Chris Harto, Shannon Baker-Branstetter & Jamie Hall, *The UN-Safe Rule: How a Fuel Economy Rollback Costs Americans Billions in Fuel Savings and Does Not Improve Safety*, CONSUMER REP. (Aug. 7, 2019), <https://advocacy.consumerreports.org/wp-content/uploads/2019/08/The-Un-SAFE-Rule-How-a-Fuel-Economy-Rollback-Costs-Americans-Billions-in-Fuel-Savings-and-Does-Not-Improve-Safety-2.pdf>.

75. Megan Mahajan, *Trump's Clean Car Rollback Will Cost up to \$400 Billion, Increase Transport Emissions 10%*, FORBES (Aug. 7, 2019), <https://www.forbes.com/sites/energyinnovation/2019/08/07/trumps-clean-car-rollback-could-cost-up-to-400-billion-increase-transport-emissions-10/#3b7617da3b46>.

76. *State of California v. United States*, Case 1:19-cv-02826(D.D.C. Sept. 20, 2019).

growth by reforming the National Environmental Policy Act (NEPA).<sup>77</sup> Nonetheless, it clearly does so at the expense of federal environmental reviews.<sup>78</sup> The combination of these policies contributes to increasing emissions, thus negatively impacting the country's NDCs.

The Trump administration also intends to repeal the Clean Power Plan,<sup>79</sup> which was crucial to the United States' ability to reach its intended NDCs.<sup>80</sup> The EPA claims the repeal will save \$33 billion in avoided compliance costs by 2030.<sup>81</sup> As this calculation is disputed,<sup>82</sup> litigation ensued. Other recent modifications implemented by the EPA are also dubious.<sup>83</sup> These changes are particularly concerning because the Clean Power Plan is an example of how stable regulation fosters voluntary climate action.<sup>84</sup> Related litigation has already commenced.<sup>85</sup>

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77. Council of Environmental Quality, *Notice of Proposed Rule Making on the Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act*, CEQ (2020), <https://www.regulations.gov/document?D=CEQ-2019-0003-0001>.

78. Joseph DeQuarto, *Landmark Environmental Rules Slated for Overhaul*, REG. REV. (Feb. 18, 2020), <https://www.theregreview.org/2020/02/18/dequarto-landmark-environmental-rules-slanted-overhaul/>.

79. ENVTL. PROT. AGENCY, *ELECTRIC UTILITY GENERATING UNITS: REPEALING THE CLEAN POWER PLAN: PROPOSAL* (2017), <https://www.epa.gov/stationary-sources-air-pollution/electric-utility-generating-units-repealing-clean-power-plan-0>.

80. See Anna McGinn, *Understanding the Paris Agreement*, SCHOLARS STRATEGY NETWORK (Apr. 12, 2019), <https://scholars.org/contribution/understanding-paris-agreement> (explaining that the NDC contributions of the United States were based almost entirely on the Clean Power Plan).

81. ENVTL. PROT. AGENCY, *FACT SHEET FOR THE PROPOSAL TO REPEAL THE CLEAN POWER PLAN* (2017), <https://www.epa.gov/stationary-sources-air-pollution/electric-utility-generating-units-repealing-clean-power-plan-0>.

82. Stuart Shapiro, *Opinion, A Recipe for Improving Regulatory Analysis*, REG. REV. (Feb. 28, 2018), <https://www.theregreview.org/2018/02/28/shapiro-improving-regulatory-analysis/> (explaining that, under the Trump administration, regulatory agencies have been criticized for their use of “shoddy analysis” and for concealing the regulatory process from the public).

83. The EPA's fact sheet acknowledges other changes that differ from the Obama administration, such as: no longer are domestic costs compared to domestic benefits, nor is energy efficiency viewed as a benefit but rather as an avoided cost showing “the true magnitude of the Clean Power Plant's costs.” ENVTL. PROT. AGENCY *supra* note 81. See NAT'L ACAD. SCIS. ENG'G MED., *VALUING CLIMATE DAMAGES: UPDATING ESTIMATION OF THE SOCIAL COST OF CARBON DIOXIDE* 51 (2017) (disputing the administration's focus on domestic contributions instead of considering the global impact of emissions and climate change). Contending the change from global to domestic emissions is unjustified as “the height of arbitrariness.” CASS R. SUNSTEIN, *THE COST-BENEFIT REVOLUTION* 159 (2018).

84. See Lily Hsueh, *Credible and Stable Regulation Encourages Voluntary Climate Action*, REG. REV. (Sept. 19, 2018), <https://www.theregreview.org/2018/09/19/hsueh-credible-stable-regulation-voluntary-climate-action/> (arguing that, under the Clean Power Plan, companies increased transparency regarding their carbon emissions).

85. See, e.g., *Petition for Review, Am. Lung Ass'n v. EPA* (D.C. Cir. July 8, 2019) (No. 19-1140) (appeal of Repeal of the Clean Power Plan; Emission Guidelines for Greenhouse Gas Emissions

Accordingly, the United States' withdrawal is just the tip of the iceberg in the implementation of a deregulatory agenda that brings uncertainty to the legal order. This administration also appears to nurture a disdain for science, environmental protections, and international law. As discussed, those policies have been considered unreasoned in multiple instances.

B. *Current Brazilian Policies Regarding the Paris Agreement*

This Section focuses on recent Brazilian actions regarding the implementation of the Paris Agreement, and shows how current Brazilian President Jair Bolsonaro is closely following President's Trump playbook, sharing much of his provocative rhetoric, attention-seeking tactics, and disdain for science.<sup>86</sup> Under Bolsonaro, Brazil became an obstructor of environmental policies, damaging its traditional reputation as a leader in environmental protection actions.<sup>87</sup> The president's racist broadcasts against indigenous people were noticed,<sup>88</sup> and his comments and policies were internationally criticized.<sup>89</sup> As the Amazon burned, Bolsonaro blamed the actor Leonardo DiCaprio for the fires.<sup>90</sup> Nowadays, as droughts, wildfires, and other damaging human activities

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From Existing Electric Utility Generating Units; Revisions to Emission Guidelines Implementing Regulations, 84 Fed. Reg. 32,520 (U.S. Env'tl. Prot. Agency July 8, 2019)).

86. Mendonça, *supra* note 11 (providing evidence for such comparison). The disdain for science is clear in recent cabinet choices. Under Bolsonaro, a creationist was chosen to lead Brazil's higher education agency, namely, CAPES, which is responsible for overseeing the country's graduate programs. See Herton Escobar, *Brazil's Pick of a Creationist to Lead Its Higher Education Agency Rattles Scientists*, SCI. NEWS (Jan. 26, 2020), <https://www.sciencemag.org/news/2020/01/brazil-s-pick-creationist-lead-its-higher-education-agency-rattles-scientists>.

87. Nathalia Passarinho, *Como a política ambiental de Bolsonaro afetou imagem do Brasil em 2019 e quais as consequências disso [How Bolsonaro's Environmental Policy Impacted Brazilian Image in 2019 and Related Consequences]*, BBC NEWS BRAZ. LONDON (Braz.) (Dec. 31, 2019), <https://www.bbc.com/portuguese/brasil-50851921> (noting the shift in Brazil's international image, and emphasizing how the country has been the host of Rio 92 and Rio +20, both important conferences under the UNFCCC).

88. Tom Phillips, *'He Wants to Destroy Us': Bolsonaro Poses Gravest Threat in Decades, Amazon Tribes Say*, GUARDIAN (Jul. 26, 2019), <https://www.theguardian.com/world/2019/jul/26/bolsonaro-amazon-tribes-indigenous-brazil-dictatorship>.

89. See Tom Phillips, *Jair Bolsonaro's Racist Comment Sparks Outrage from Indigenous People*, GUARDIAN (Jan. 24, 2020), <https://www.theguardian.com/world/2020/jan/24/jair-bolsonaro-racist-comment-sparks-outrage-indigenous-groups>. (the President stating the following in one of his broadcasts on Facebook: "Indians are undoubtedly changing . . . They are increasingly becoming human beings just like us.").

90. Editorial, *The Amazon Is Approaching an Irreversible Tipping Point*, ECONOMIST (Aug. 1, 2019), <https://www.economist.com/briefing/2019/08/01/the-amazon-is-approaching-an-irreversible-tipping-point>.



## THE AMAZON IS BURNING—IS PARIS, TOO?

are coupled with deforestation and international scrutiny, Brazil's lack of enforcement on environmental protections has been criticized by the world press,<sup>91</sup> who recently awarded Bolsonaro the title of “the most environmentally dangerous head of state in the world.”<sup>92</sup>

Brazil is the sixth top emitter of GHGs,<sup>93</sup> but unlike China, the United States, Japan, and India, its emissions are not based on large scale utilization of fossil fuels to produce energy for industry and transportation sectors.<sup>94</sup> Those countries' emissions are considered more difficult to abate, as significant investments and technological innovation are required.<sup>95</sup> Brazil's emissions are not considered difficult to abate, as more than half of the carbon emissions in Brazil are produced by deforestation.<sup>96</sup> Brazil is internationally committed to reducing GHG emissions by 37% below 2005 levels by 2025, and by 43% below 2005 levels by 2030.<sup>97</sup> Hence, it is necessary for the country to take immediate and effective measures to curb deforestation, specifically in its Amazon. Deforestation during the term of Bolsonaro's predecessor,

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91. Editorial, *Deathwatch for the Amazon*, *ECONOMIST* (Aug. 1, 2019), <https://www.economist.com/leaders/2019/08/01/deathwatch-for-the-amazon>.

92. The actor and environmentalist, in a statement after the Brazilian President falsely accused him of financing fires recently set in the Brazilian Amazon, expressed support for “the people of Brazil working to save their natural and cultural heritage.” Aimee Ortiz, *Leonardo DiCaprio Responds to Brazil's President About Amazon Fires*, *N.Y. TIMES* (Nov. 30, 2019), <https://www.nytimes.com/2019/11/30/world/americas/Jair-bolsonaro-amazon-fires-Leonardo-DiCaprio.html>.

93. See Chart 2 and Table 1 in Annex I, and sources thereafter.

94. Ricardo Abramovay, *Preservar a Amazônia é mais lucrativo que desmatar, diz economista [Preserving the Amazon Is More Lucrative than Destroying It]*, *FOLHA DE S.P. (BRAZ.)* (Sept. 1, 2019), <https://www1.folha.uol.com.br/ilustrissima/2019/09/preservar-amazonia-e-mais-lucrativo-que-desmatar-diz-economista.shtml>.

95. The concept of “hard to abate emissions” is defined by the Energy Transition Commission (ETC). Such “harder-to-abate” emissions comprise those of sectors in heavy industry (in particular cement, steel and chemicals) and heavy-duty transport (heavy-duty road transport, shipping, and aviation). These sectors currently account for 10Gt (thirty percent) of total global CO<sub>2</sub> emissions. ENERGY TRANSITIONS COMM'N, *MISSION POSSIBLE: REACHING NET-ZERO CARBON EMISSIONS FROM HARDER-TO-ABATE SECTORS BY MID-CENTURY 11, 15* (2018), [http://www.energy-transitions.org/sites/default/files/ETC\\_MissionPossible\\_FullReport.pdf](http://www.energy-transitions.org/sites/default/files/ETC_MissionPossible_FullReport.pdf).

96. Abramovay, *supra* note 94.

97. According to Brazil's official pledge to the UNFCCC, the country has committed to the following: “strengthening policies and measures with a view to achieve, in the Brazilian Amazonia, zero illegal deforestation by 2030 and compensating for greenhouse gas emissions from legal suppression of vegetation by 2030.” FED. REPUBLIC BRAZ., *INTENDED NATIONALLY DETERMINED CONTRIBUTION: TOWARDS ACHIEVING THE OBJECTIVE OF THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE 3* (2015), <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Brazil%20First/BRAZIL%20INDC%20English%20FINAL.pdf> (last visited Nov. 27, 2020).

Michel Temer, decreased.<sup>98</sup> Nonetheless, under Bolsonaro, fires in the Amazon increased forty percent.<sup>99</sup>

The main economic activities in the Brazilian Amazon that are associated with deforestation include soybean cropping, beef production, and hydroelectricity generation.<sup>100</sup> The importance of the Brazilian Amazon cannot be overstated. Its deforestation adversely affects human and nonhuman life and impacts the whole world, but Brazil the most, as its environmental services include carbon storage (thus mitigating climate change), recycling water, maintaining biodiversity, and producing a variety of products, such as timber, rubber, and Brazil nuts, which support local populations and represent lost opportunities for sustainable use when deforestation occurs.<sup>101</sup>

Moreover, the biological resources of the Brazilian Amazon are particularly difficult to value, as “the Amazon forest has more distinct and unique species than any other similarly sized geographical region on Earth,” and its resources “have non-use (existence and preservation) values to humanity, inside and outside the region, for generations to come.”<sup>102</sup> Moreover, research shows that older trees are better for carbon capture.<sup>103</sup> This makes the forest itself even more valuable as a carbon sink.

The crisis that devastated the Brazilian Amazon in mid-to-late 2019 is the tragic outcome of Bolsonaro’s domestic policies that have dismantled federal agencies and ministries that are responsible for protecting

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98. See John C. Cannon, *Brazil Hits Target Early, but Rising Deforestation Risks Reversal*, MONGABAY (Aug. 23, 2018), <https://news.mongabay.com/2018/08/brazil-hits-emissions-target-early-but-rising-deforestation-risks-reversal/>.

99. Jon Lee Anderson, *Blood Gold: Brazil Indigenous People and Illegal Miners Are Engaged in a Fight that May Help Decide the Future of the Planet*, THE NEW YORKER 43 (Nov. 11, 2019), <https://www.newyorker.com/magazine/2019/11/11/blood-gold-in-the-brazilian-rain-forest> (noting that, for Bolsonaro, interest in the Amazon isn’t about the Indians or the trees, but about mining, as he declared in a speech last October; and for him, gold prospectors serve as a symbol of the country’s pioneer spirit in the same way West Virginia coal miners do for Trump).

100. See generally Phillip Fearnside, *Deforestation of the Brazilian Amazon*, in OXFORD RESEARCH ENCYCLOPEDIA OF ENVIRONMENTAL SCIENCE (H. Shugart ed., 2017).

101. *Id.*

102. For both quotes in this paragraph: Jon Strand, Britaldo Soares-Filho, Marcos Heil Costa, Ubirajara Oliveira, Sonia Carvalho Ribeiro, Gabrielle Ferreira Pires, Aline Oliveira, Raoni Rajão, Peter May, Richard van der Hoff, Juha Siikamäki, Ronaldo Seroa da Motta & Michael Toman, *Spatially Explicit Valuation of the Brazilian Amazon Forest’s Ecosystem Services*, 1 NAT. SUSTAINABILITY 657, 659 (2018).

103. Nathan Stephenson, Adrian Das et. al., *Rate of Tree Carbon Accumulation Increases Continuously with Tree Size*, 504 NATURE 90, 90–91 (2014).

the region.<sup>104</sup> Once elected president, Bolsonaro immediately moved the control sector from the Environment Ministry to the Agriculture Ministry, which is headed by a “ruralist” (large landholders and their representatives who are a significant part of Bolsonaro’s political base).<sup>105</sup> The Brazilian agency in charge of enforcing environmental regulations, IBAMA, has its lowest performance on record under Bolsonaro, with IBAMA now warning in advance where it will carry out inspections.<sup>106</sup> A comment by a Brazilian expert who has dedicated his life to studying the region defined the situation:

It’s a catastrophic situation! A large front of destruction was opened up this year, exacerbated by the actions of the federal government, whose rhetoric recruits mainly land grabbers on the front lines of deforestation. These thieves invade public lands and conservation areas, they occupy, and later sell the land to cattle breeders. The cattlemen expand the deforestation and sell the areas to soybean farmers, who consolidate the devastation. It came to the point that the loggers planned the ‘Day of Fire’ as a way of expressing their glowing thanks, visible from space, for the new policy for the Amazon.<sup>107</sup>

In light of this state of affairs, environmentalists’ concerns skyrocketed after a meeting between Brazil’s Foreign Minister and the U.S. Secretary of State had both administrations pledging to promote private-sector sustainable development in the Amazon and committing to a US \$100 million biodiversity conservation fund.<sup>108</sup>

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104. Lucas Ferrante & Phillip M. Fearnside, *Brazil’s New President and ‘Ruralists’ Threaten Amazonia’s Environment, Traditional Peoples and the Climate*, 46 ENVTL. CONSERVATION 261, 261–62 (2019) (noting that Bolsonaro wanted to extinguish the Environment Ministry, but “ruralists” convinced him that this may jeopardize Brazilian exports).

105. *Id.* at 261.

106. *Id.*

107. Sibélia Zanon, *Antonio Donato Nobre: “The Forest Is Sick and Losing Its Carbon Sequestration Capacity,”* MONGABAY (Matt Rinaldi trans., Dec. 23, 2019), <https://news.mongabay.com/2019/12/antonio-donato-nobre-the-forest-is-sick-and-losing-its-carbon-sequestration-capacity/> (emphasizing that the forest may be reaching its tipping point, and after it the forest will no longer be capable of self-regeneration).

108. Roger Harrabin, *U.S. and Brazil Agree to Amazon Development: Environmentalists Will Be Skeptical*, BBC NEWS (Sept. 14, 2019), [https://www.bbc.com/news/world-latin-america-49694516?fbclid=IwAR37Dx4NNGOvQjpBwhiVXZSGtXrDBM\\_6Ii3qWeb9Cw7xzGY8-YLSMzajD8U](https://www.bbc.com/news/world-latin-america-49694516?fbclid=IwAR37Dx4NNGOvQjpBwhiVXZSGtXrDBM_6Ii3qWeb9Cw7xzGY8-YLSMzajD8U).

III. COMPARING RECENT U.S. AND BRAZILIAN POLICIES AND THEIR  
CONSEQUENCES FOR THE PARIS AGREEMENT

This Part outlines the framework of the Paris Agreement, targeting the complexity of climate governance and highlighting how the Agreement demonstrates attempts to reconcile the interests of the developing and developed worlds. With this foundation established, the focus shifts to the comparison of U.S. and Brazilian policies and their consequences for the Paris Agreement.<sup>109</sup>

A. *Climate Governance and the Legal Framework of the Paris Agreement*

As discussed in the introduction to this Article, climate change is the “quintessential global-scale collective action problem.”<sup>110</sup> Climate change has also been classified as a “wicked” policy challenge, as it is informed by a maximized collective action problem that requires cooperation among countries, while being a “deeply individually sourced problem to which virtually everyone contributes.”<sup>111</sup> Climate change is a highly intricate policy problem also because the public does not clearly recognize the connection between the risks of climate change (storms, rising sea levels, fires, floods) and climate change itself.<sup>112</sup> Beyond its global scale and “wickedness,” climate change is unique because it refers primarily to future events,<sup>113</sup> with consequences that must be addressed through policy coordination and multi-level governance (national and international levels, specifically).<sup>114</sup> Estimations include market damages (infrastructure, tourism, and increased energy demand) and non-market damages (ecological impact and cultural values).<sup>115</sup>

Climate governance has become increasingly more difficult due to additional hurdles imposed by opposing actions from different fronts.

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109. Some of the arguments discussed in this Part appear in a previous work of mine: Carolina Arlota, *Does the United States' Withdrawal from the Paris Agreement Pass the Cost-Benefit Analysis Test?*, 41 U. PA. J. INT'L L. 881, 889–90 (2020).

110. Esty & Moffa, *supra* note 39, at 777.

111. Cary Coglianese, *Climate Change Necessitates Normative Change*, REG. REV. (Jan. 27, 2020), <https://www.theregreview.org/2020/01/27/coglianese-climate-change-necessitates-normative-change/>.

112. *Id.*

113. ANTHONY GIDDENS, *THE POLITICS OF CLIMATE CHANGE 2* (2d ed. 2011).

114. Esty & Moffa, *supra* note 39, at 777.

115. Intergovernmental Panel on Climate Change, *Climate Change 2014: Mitigation of Climate Change*, IPCC 212 (2014), [https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc\\_wg3\\_ar5\\_chapter3.pdf](https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_chapter3.pdf).

Contrarian scientists, fossil fuel corporations, conservative organizations, and celebrity bloggers have engaged in actions to discredit not only climate science but also the international organizations and scientists advancing it.<sup>116</sup> The motivations of these engines of the denial machine vary, but they all share a strong opposition to regulatory efforts to ameliorate climate change, such as the restriction of carbon emissions,<sup>117</sup> which is at the core of the Paris Agreement.

The Paris Agreement, which is aligned with the modern framework on climate governance, reconciles elements of bottom-top measures, such as the NDCs,<sup>118</sup> with the joint efforts of member states to reduce carbon emissions (top-down mechanisms).<sup>119</sup> The Agreement, thus, is founded on sustainable development. The concept of sustainable development, which dates back to 1945, is a global one and requires analysis of the interplay between economic growth, social development, and environmental protection.<sup>120</sup>

Accordingly, the Agreement obligates all countries to establish a target and to report and evaluate their progress toward reaching that goal within two years after signing, and every five years after.<sup>121</sup> The Agreement, despite not imposing sanctions, encourages all countries to review their targets, under the assumption that countries will become

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116. RILEY E. DUNLAP & AARON M. MCRIGHT, *Organized Climate Change Denial*, in THE OXFORD HANDBOOK OF CLIMATE CHANGE AND SOCIETY 144 (John S. Dryzik et al., eds., 2011). For an example of scientific community discrediting climate change in the United States, see NONGOVERNMENTAL INTERNATIONAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE RECONSIDERED II: FOSSIL FUELS 109 (Joseph L. Bast & Carol Bast eds., 2019) (arguing bias and lack of causation).

117. DUNLAP & MCRIGHT, *supra* note 116, at 144–45 (“Viewed through a broader theoretical lens, climate change denial can be seen as part of a more sweeping effort to defend the modern Western social order which has been built by an industrial capitalism powered by fossil fuels.”).

118. Paris Agreement, *supra* note 6, at arts. 3, 4, 6.

119. These bottom-top measures require countries to establish NDCs with more demanding targets than those set in the past. Each country voluntarily determines its targets, considering its own national priorities, circumstances, and capabilities. Jennifer Morgan, Yamide Dagnet & Dennis Tirpa, *Elements and Ideas for the 2015 Paris Agreement*, WORLD RES. INST. 12 (2015), [https://files.wri.org/s3fs-public/ACT\\_Elements\\_Ideas\\_FullPaper\\_FINAL.PDF](https://files.wri.org/s3fs-public/ACT_Elements_Ideas_FullPaper_FINAL.PDF).

120. Bimal N. Patel & Ranita Nagar, *Introduction*, in SUSTAINABLE DEVELOPMENT AND INDIA: CONVERGENCE OF LAW, ECONOMICS, SCIENCE, AND POLITICS 1–2 (Bimal N. Patel & Ranita Nagar eds., 2018) (noting, at 1, that the concept of sustainable development was created at the U.N. Conference on Human Environment in 1972, despite the term’s not being specifically used until the 1980’s, when the Brundtland Commission Report defined it as “development which meets the needs of the current generations without compromising the ability of future generations to meet their own needs”).

121. Paris Agreement, *supra* note 6, art. 4(2), (3), (9), (11).

more ambitious over time.<sup>122</sup> Developing countries have greater incentives to reduce GHG emissions, due to the likelihood that developing nations will suffer more from harm related to climate change than those in the developed world.<sup>123</sup> Developed countries, by contrast, have more resources and are located primarily in the Northern Hemisphere, where temperatures are likely to be more temperate than in the Southern Hemisphere.<sup>124</sup>

Under the Agreement, developed countries should lead by meeting their absolute emission reduction targets, while developing countries should reduce their emissions in accordance with their unique national circumstances.<sup>125</sup> The Agreement promotes each country's review of its own targets and overall progress as well as of those of other parties.<sup>126</sup> Civil society also scrutinizes each country's decisions.<sup>127</sup> Accordingly, developing countries—Brazil included—have strong interests in pursuing policies to combat climate change; the developed world has to lead by example and take immediate action—not foster denial—and advance the Paris Agreement's goals, instead of trying to tear it apart, as the United States' withdrawal did.

#### B. *Comparing Current U.S. and Brazilian Policies Regarding the Paris Agreement*

This Section turns to the strict comparison of current U.S. and Brazilian policies regarding the Paris Agreement, based on the assumption that economic growth and environmental preservation are not exclusionary goals, as emphasized by the goals of the UNFCCC, which provided the umbrella under which the Paris Agreement was built.<sup>128</sup>

122. See Hai-Bin Zhang, Han-Cheng Dai, Hua-Xia Lai & Wen-Tao Wang, *U.S. Withdrawal from the Paris Agreement: Reasons, Impacts, and China's Response*, 8 *ADVANCES IN CLIMATE CHANGE RES.* 220, 222 (2017).

123. ERIC A. POSNER & ALAN O. SYKES, *ECONOMIC FOUNDATIONS OF INTERNATIONAL LAW* 232 (2013).

124. *Id.* See also INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *supra* note 20, at 7 (finding, with high confidence, that the impact of climate change varies in accordance with the geographical location and level of development, among other factors).

125. Paris Agreement, *supra* note 6, art. 4(4). The treaty itself does not define those circumstances.

126. Paris Agreement, *supra* note 6, arts. 3–7.

127. Paris Agreement, *supra* note 6, art. 6. See also Jennifer Jacquet & Dale Jamieson, *Soft but Significant Power in the Paris Agreement*, 6 *NATURE CLIMATE CHANGE* 643, 644 (2016) (detailing how civil society may help mobilize climate action fostering the goals of the Paris Agreement).

128. Paris Agreement, *supra* note 6, arts. 4, 6.

THE AMAZON IS BURNING—IS PARIS, TOO?

The Article proceeds by enumerating and comparing relevant policy choices regarding the Paris Agreement.

The first similarity between U.S. and Brazilian policies related to the Paris Agreement is that both sets of policies include principles that ignore the social cost of carbon, the present value of which is measured according to the cost of damages incurred from the presence of an additional ton of carbon dioxide in the atmosphere.<sup>129</sup> The social cost of carbon is derived from three estimations: first, environmental scientists measure the relationship between carbon dioxide emissions and ambient carbon dioxide concentrations; second, atmospheric scientists calculate the relationship between ambient carbon dioxide concentrations and temperature, determining the climate sensitivity parameter; and third, economists estimate the causal effects of rising average temperature on measures of economic activity.<sup>130</sup>

The social cost of carbon is of paramount importance in climate policy,<sup>131</sup> although estimating it is notoriously difficult.<sup>132</sup> Experts contend the social cost of carbon is typically underestimated in climate policies.<sup>133</sup> The National Academy of Sciences argued that global warming is subject to global emissions, so damages should be considered globally.<sup>134</sup> The Trump administration disagreed, although it did not provide a reason;<sup>135</sup>

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129. Nordhaus, *supra* note 42, at 350.

130. Matthew E. Kahn, Kamiar Mohaddes, Ryan N. C. Ng, M. Hashem Pesaran, Mehdi Raissi & Jui-Chung Yang, *Long Term Macroeconomic Effects of Climate Change: A Cross-Country Analysis* 1–2 (Nat'l Bureau Econ. Rsch, Working Paper No. 26167, 2019).

131. *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1203 (9th Cir. 2008) (determining that agency regulations must consider the social cost of carbon).

132. INTERAGENCY WORKING GROUP ON SOCIAL COST OF CARBON, U.S. GOV'T, TECHNICAL SUPPORT DOCUMENT: SOCIAL COST OF CARBON FOR REGULATORY IMPACT ANALYSIS UNDER EXECUTIVE ORDER 12866, at 3 (Aug. 2016), [https://www.epa.gov/sites/production/files/2016-12/documents/sc\\_co2\\_tsd\\_august\\_2016.pdf](https://www.epa.gov/sites/production/files/2016-12/documents/sc_co2_tsd_august_2016.pdf). Monetized damages associated with an incremental increase in carbon emissions per year are intended to include—but are not limited to—human health, net agricultural productivity, property damages from increased flood risk, and the value of ecosystem services due to climate change.

133. Richard L. Revesz, Peter H. Howard, Kenneth Arrow, Lawrence H. Goulder, Robert E. Kopp, Michael A. Livermore, Michael Oppenheimer & Thomas Sterner, *Global Warming: Improve Economic Models of Climate Change*, 508 NATURE 173, 174–75 (2014) (discussing discounting rates and the fact that models tend to omit damages to labor productivity and growth productivity, among other factors, and contending that social cost of carbon estimations are conservative).

134. NAT'L ACAD. SCIS. ENG'G MED., *supra* note 83, at 50–51.

135. The Trump administration's departure from the previous use of the global figure for the social cost of carbon in favor of the domestic figure is a decision that "may or may not be justifiable. But it was not justified. No explanation was given. That is the high of arbitrariness, and it should be invalidated in court." SUNSTEIN, *supra* note 83, at 159.

its proposed new rule to replace the Clean Power Plan estimates the social cost of carbon at 1 USD to 6 USD.<sup>136</sup>

Nonetheless, current research on country-level contributions to the social cost of carbon, which quantifies the amount of marginal damage (or benefit, if negative) expected to occur in an individual country as a consequence of additional CO<sub>2</sub> emissions, estimates that the United States has the second highest number (48 USD per tCO<sub>2</sub>),<sup>137</sup> followed by Saudi Arabia (47 USD per tCO<sub>2</sub>), and then Brazil, China, and the United Emirates (all with 24 USD per tCO<sub>2</sub>).<sup>138</sup> This means that such countries will suffer significant damage if they continue to pollute, despite developing nations facing increasing pressure to achieve economic prosperity, frequently at the expense of the environment.<sup>139</sup> Moreover, they will be implementing policies that have long been proven equivocal, as the growth of renewable energy has rebuked the myth that economic development and increasing GHG emissions must co-exist.<sup>140</sup> It also means that these countries will not benefit from the positive synergies that result from reducing GHG emissions, such as the improvement of air quality and overall welfare.<sup>141</sup>

The second way that the United States and Brazil share similar policies related to the Paris Agreement is that neither country's president considers the perverse scheme of subsidies to fossil fuels, in sharp contrast with the recent decision of the European Investment Bank to no longer finance fossil fuel projects within the European Union.<sup>142</sup> A

136. During the Trump administration, scientists subjected the EPA's proposed new regulation on the Clean Power Plan to significant criticism because it disregarded, for instance, the impact of global emissions. By considering only domestic emissions, it ultimately increased costs while reducing the benefits of regulatory action, which contributed to lowering the social cost of carbon significantly. See, e.g., Jason Bordoff, *Trump vs. Obama on the Social Cost of Carbon—and Why It Matters*, WALL ST. J. (Nov. 15, 2017, 1:04 PM), <https://blogs.wsj.com/experts/2017/11/15/trump-vs-obama-on-the-social-cost-of-carbon-and-why-it-matters/>. See also generally criticisms by the NAT'L ACAD. SCIS. ENG'G MED., *supra* note 83.

137. Katharine Ricke, Laurent Drouet, Ken Caldeira & Massimo Tavoni, *Country-Level Social Cost of Carbon*, 8 NATURE CLIMATE CHANGE 895, 895–97 (2018) (noting that India is the highest, with 86 USD per tCO<sub>2</sub>).

138. *Id.* at 897 (despite different confidence intervals).

139. Andrew Watson Samaan, *Enforcement of International Environmental Treaties: An Analysis*, 5 FORDHAM ENVTL. L. REV. 261, 272 (2011) (discussing conflicting policy choices).

140. Brian Deese, *Paris Isn't Burning: Why the Climate Agreement Will Survive Trump*, 96 FOREIGN AFF. 83, 83–84 (2017) (emphasizing how urgency was replaced by skepticism under Trump's policies on climate change).

141. Ricke, Drouet, Caldeira & Tavoni, *supra* note 137, at 898–99.

142. Emanuela Barbiroglio, *European Investment Bank Will Stop Financing New Fossil Fuels Projects*, FORBES (Nov. 15, 2019, 11:13AM), <https://www.forbes.com/sites/emanuelabarbiroglio/2019/11/15/european-investment-bank-will-stop-financing-new-fossil-fuels-projects/#2458b1a19253>.



recent report of the International Monetary Fund found that coal, diesel, and natural gas subsidies do not reflect environmental costs.<sup>143</sup> The same research concluded that post-tax fossil fuel subsidies, which have been reasonably stable, varied between 5.4% and 6.5% of the global gross domestic product (GDP) from 2010 to 2017.<sup>144</sup>

In such a context, the regressive nature of carbon-pricing is pervasive. This is the case regardless of the country, but this pervasiveness is particularly acute in Brazil, where economic inequality reigns.<sup>145</sup> Certain segments of the population will feel the effects of climate change and extreme weather much more than others. This so-called regressive nature of carbon-pricing means consumers bear the costs, and those with lower incomes who spend a greater percentage of their income on non-discretionary goods and services will be hit the hardest.<sup>146</sup>

Furthermore, climate change does not affect people in isolation, and it certainly affects less advantaged populations disproportionately, creating a vicious cycle.<sup>147</sup> Native and indigenous peoples will experience more difficulties due to their lifestyles, as they rely more on nature.<sup>148</sup> Moreover, the lack of access to energy disproportionately affects women.<sup>149</sup> Hence,

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143. David Coady, Ian Parry, Nghia-Piotr Le & Baoping Shang, *Global Fossil Fuel Subsidies Remain Large: An Update Based on Country-Level Estimates* 17–19 (IMF, Working Paper No. 19/89, 2019).

144. *Id.* at 19.

145. The World Bank reported the following about Brazil in 2020: “With significant income disruptions especially for informal and own-account workers, the COVID-19 pandemic is expected to increase poverty in 2020 . . . The crisis, and to a lesser degree the uneven recovery . . .” from Brazil’s 2014–16 recession “. . . has led to a significant rise in income inequality”: the income-based Gini index has increased to 53.9 by 2018, compared to 51.9 in 2015 and 53.3 in 2016. Significant disparities are found between demographic groups and regions in Brazil. The poverty rates in rural areas (39%) are double those of urban areas (17%) and much higher in the North and Northeast than in the rest of the country. And while poverty rates are low for the sixty-five and older population thanks to wide coverage of pensions and social assistance, over a third (35%) of Brazilian children under fifteen live in poverty. *Poverty & Equity Data Portal: Brief on Latin America & The Caribbean, Brazil*, WBG 1 (Apr. 2020), [https://databank.worldbank.org/data/download/poverty/33EF03BB-9722-4AE2-ABC7-AA2972D68AFE/Global\\_POVEQ\\_BRA.pdf](https://databank.worldbank.org/data/download/poverty/33EF03BB-9722-4AE2-ABC7-AA2972D68AFE/Global_POVEQ_BRA.pdf).

146. TREBILCOCK, *supra* note 40, at 121.

147. Mark Nuttall, *Environmental Institutions and Governance*, WILEY ONLINE LIBR. 1, 3 (2018), <https://onlinelibrary.wiley.com/doi/abs/10.1002/9781118924396.wbiea2284> (contending that climate change does not affect people in isolation but may impact Indigenous people more severely).

148. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *supra* note 20, at 11 (emphasizing, with high confidence, that Indigenous people, coastal and island populations, and developing world inhabitants would be more exposed to the consequences of climate change).

149. Lakshman Guruswamy, *Sustainable Development: Energy, Justice, and Women*, 36 WIS. INT’L L. J. 397, 411–21 (2019). Cooking, childbearing, and family responsibilities contribute to this disparate effect.

the United States' and Brazil's fulfillment of their NDCs is required according to a distributional basis under *prioritarianism*, the understanding that regulations should maximize the well-being of all, with priority given to those who find themselves economically worse off.<sup>150</sup>

The third comparison between the United States and Brazil regarding policies related to the Paris Agreement refers to the economic benefits that would accrue if both countries fulfilled the Paris Agreement's goals. President Bolsonaro's policies ignore the potential economic benefits of preserving the Amazon.<sup>151</sup> Likewise, President Trump's decision to withdraw from the Agreement and his administration's related deregulatory actions disregard studies estimating that the United States stands to gain 2 trillion USD in direct benefits from global environmental action by 2030.<sup>152</sup>

In addition, novel studies estimate that all countries and all regions of the world (temperate or warm, rich or poor) "would experience a relatively large fall in GDP per capita by 2100 in the absence of climate change policies."<sup>153</sup> The economic impact varies across countries, depending on the estimated paths of temperatures; in the United States the losses are at 10.52% of the GDP, compared to 1.88% under the Paris Agreement.<sup>154</sup> Importantly, all U.S. states have experienced warmer trends than the global average throughout the period from 1963 to 2016.<sup>155</sup> Predictions considering the long-term effect of higher temperatures estimate GDP will decrease by as much as 10% from 2070 to 2099, with reductions being more significant in the higher emission scenario considered by the World Bank.<sup>156</sup> It is noteworthy that the

150. Mathew D. Adler, *Future Generations: A Prioritarian View*, 77 GEO. WASH. L. REV. 1478 (2009).

151. Strand, Soares-Filho, Costa, Oliveira, Ribeiro, Pires, Oliveira, Rajão, May, van der Hoff, Siikamäki, Seroa da Motta & Toman, *supra* note 102, at 657–59.

152. Peter Howard & Jason Schwartz, *Foreign Action, Domestic Windfall*, INST. FOR POL'Y INTEGRITY 2 (2015) (from saving on non-incurred costs of pollution, including health and avoided environmental harms).

153. Kahn, Mohaddes, Ng, Pesaran, Raissi & Yang, *supra* note 130, at 5, 32.

154. *Id.* at 5–6 (noting that how fast countries respond to climate change impacts the negative growth effects but does not cancel these effects).

155. *Id.* at 35 (noting that the states that have warmed the most are, in decreasing order, the following: Delaware, New Jersey, Minnesota, Rhode Island, Vermont, Arizona, Connecticut, and New York).

156. Martha Vogel et. al., *Concurrent 2018 Hot Extremes Across Northern Hemisphere Due to Human Induced Climate Change*, EARTH'S FUTURE 692–93 (2019) (noting that the impact per year on GDP may not be significant in the short term); Kahn, Mohaddes, Ng, Pesaran, Raissi & Yang, *supra* note 130, at 5 (10% of decrease in GDP considering the impact for the year 2100 and in the United States).

Intergovernmental Panel on Climate Change estimates, with high confidence, that extreme events may be more devastating economically than the impact of climate change overall.<sup>157</sup>

In such a scenario, there are strong incentives for investing in renewables. As countries see the benefit of adopting clean energy practices, they are more likely to increase their targets to enable them to profit more from this industry.<sup>158</sup> This, of course, will not be the case after the United States' effective withdrawal from the Paris Agreement nor in light of Brazil's anti-environmental policies. The United States' withdrawal, in and of itself, opened the country to carbon-tariff conflicts, as China and the European Union may impose retaliatory tariffs on all goods imported from the United States.<sup>159</sup> Brazil's current policies have already threatened an important trade agreement between Mercosur and the European Union.<sup>160</sup>

This Section compared U.S. and Brazilian policies regarding the Paris Agreement. It specifically discussed: first, how both countries are ignoring the social costs of carbon; second, and as a natural development of the previous point, this Section advanced such topic by showing how the policies currently in place in both countries are subsidizing fossil fuels. Consequently, the third and final topic discussed how the policy choices currently in place in both countries are detrimental to their domestic economy, as these policy choices disregard the economic benefits of fulfilling the targets of the Paris Agreement.

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157. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2014: MITIGATION OF CLIMATE CHANGE 212 (2014), [https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc\\_wg3\\_ar5\\_chapter3.pdf](https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_chapter3.pdf).

158. See Zhang, Dai, Lai & Wang, *supra* note 122, at 223.

159. Christoph Böhringer & Thomas Rutherford, *U.S. Withdrawal from the Paris Agreement: Economic Implications of Carbon-Tariff Conflicts*, HARV. PROJECT ON CLIMATE AGREEMENTS (Aug. 2017), [https://www.belfercenter.org/sites/default/files/files/publication/dp89\\_bohringer-rutherford.pdf](https://www.belfercenter.org/sites/default/files/files/publication/dp89_bohringer-rutherford.pdf); Edward Taylor, *German Carmakers Fear Losing Competitive Edge After U.S. Paris Exit*, REUTERS (June 2, 2017, 8:25 AM), <https://www.reuters.com/article/us-usa-climatechange-german-carmakers/german-carmakers-fear-losing-competitive-edge-after-u-s-paris-exit-idUSKBN18T1Q0> (following the announcement of the United States' withdrawal, German interest groups expressed concerns about the competitiveness of their automobiles in relation to those produced in the United States).

160. Jana Titievskaia, *Using Trade Policy to Tackle Climate Change*, EUR. PARLIMENT RES. SERV. (Oct. 2019), [https://www.europarl.europa.eu/RegData/etudes/ATAG/2019/642231/EPRS\\_ATA\(2019\)642231\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/ATAG/2019/642231/EPRS_ATA(2019)642231_EN.pdf) (stating the following: "During the recent massive Amazon fires, on which Parliament held a debate in September 2019, leaders of France and Ireland, as well as a number of civil society petitions, called for the EU-Mercosur Trade Agreement to be frozen or rejected, to leverage stronger action to tackle climate and environmental concerns in partner countries.").

C. *Comparing the Impact of U.S. and Brazilian Policies Regarding Climate Governance*

This Section builds on its predecessor and is, technically, the last broad (and more complex) point of comparison, which considers how current U.S. and Brazilian policies are undermining climate governance and international law. The principle of common but differentiated responsibilities and respective capabilities refers specifically to different responsibilities allocated among countries.<sup>161</sup> Under this principle, which still binds the United States because the country remains party to the UNFCCC,<sup>162</sup> responsibility for current and historical emissions needs to be factored in.<sup>163</sup> The principle also obligates developing countries (and Brazil is no exception) to consider the impact of their policies on GHG emissions.

As the world becomes warmer, raising global sea levels and forcing migration due to desertification, competition for energy resources and land intensifies.<sup>164</sup> As increased GHGs is among the leading causes of climate change, an ineffective Paris Agreement increases the likelihood of a greater frequency of excessive rain, snow, tornados, flooding, droughts, tsunamis, famines, and natural disasters.<sup>165</sup> Climate change negatively affects health, causing illnesses that incapacitate and even kill.<sup>166</sup> This decreases productivity and devastates family unity and related social networks.<sup>167</sup> Accordingly, the likelihood for international conflicts arising out of changes related to climate increases significantly.

Another adverse consequence of both countries' current policies refers to global climate action. Its withdrawal will enable the United

161. UNFCCC, *supra* note 17, art. 3(1) (“The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities.”).

162. *United States of America*, UNFCCC, <https://unfccc.int/node/61231> (last visited Nov. 30, 2020) (confirming that the United States remains a party to the UNFCCC treaty).

163. The principle itself is disputed, because even when costs and benefits are carefully calculated and the policy choices and related values are explicit, different countries may reach different conclusions regarding the optimal level of emission reduction. *See, e.g.*, Esty & Moffa, *supra* note 39, at 779.

164. For a legal discussion about the causes of climate change, see CHRIS WOLD, DAVID HUNTER & MELISSA POWERS, *CLIMATE CHANGE AND THE LAW* 5–31 (2009).

165. *Id.*

166. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *supra* note 20, at 10–12 (explaining the increase in number of deaths as well as the costs of malnutrition, respiratory conditions, infectious vector-borne diseases and other public health costs).

167. *See* INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *supra* note 20, at 20–25 (discussing global predictions on the increase in temperature that the Paris Agreement aims to avoid).

States to emit more pollutants and reduce its mitigation costs. After the withdrawal, the United States will begin “squeezing other countries’ emission space and raising their mitigation costs.”<sup>168</sup> Game theory suggests this opportunistic behavior may lead to U.S. isolation and perhaps even retaliatory actions by other parties to the Paris Agreement.<sup>169</sup> World leaders, after all, will behave to avoid uncertainty, namely, to avert granting an opportunity for the United States to tear apart international agreements.<sup>170</sup>

A related issue refers to potential international shaming (which is also linked to potential challenges to business and the creation of tariffs), as Brazil and the United States opt to not fulfill their NDC commitments. Under the Paris Agreement, emissions targets for each country are quite different, but “the inclusivity of the agreement motivates each country to scrutinize the performance of others. When participation rates in social dilemmas are very high or very low, both stigma and honor are maximized for deviant behavior.”<sup>171</sup> The Trump administration’s decision to withdraw could turn the United States into a climate pariah.<sup>172</sup> Similar concerns are applicable to Brazil, as the country ignores its NDCs and lets its Amazon burn. Accordingly, countries that do not fulfill their NDCs, the argument goes, will be subject to stigma which may have indirect economic impacts, such as mobilizing consumers to boycott their goods.

Furthermore, current U.S. policy assumes the United States is free-riding, when novel research shows that the country will be among those hit the hardest by climate change.<sup>173</sup> Among the countries that may

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168. Zhang, Dai, Lai & Wang, *supra* note 122, at 222.

169. This argument assumes treaties are evidence of true cooperation among states, rather than representative of interests that coincide. A related argument is that states would find themselves in a repeated prisoner’s dilemma or a coordination game. A situation may also develop that involves the retaliation effect. See Mark A. Chinen, *Game Theory and Customary International Law: A Response to Professors Goldsmith and Posner*, 23 MICH. J. INT’L L. 143, 160–70 (2001).

170. These claims are based on the economic assumptions that, other things being equal, human beings are reluctant to change (status quo bias) and risk averse consequences. For a renowned study on such concepts, see Daniel Kahneman, Jack L. Knetsch & Richard H. Thaler, *Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias*, 5 J. ECON. PERSP. 193, 197–203 (1991).

171. Jacquet & Jamieson, *supra* note 127, at 645.

172. Kemp, *supra* note 5, at 460. Of the top twenty emitting nations, only Iran and Turkey have not ratified the Paris Agreement. *Paris Climate Agreement Countries 2020*, WORLD POPULATION REV. (2019), <http://worldpopulationreview.com/countries/paris-climate-agreement-countries/>.

173. Kahn, Mohaddes, Ng, Pesaran, Raissi & Yang, *supra* note 130, at 5–32 (considering the economic impact).

gain from climate change is Russia.<sup>174</sup> Notwithstanding such potential gains, the country ratified the Paris Agreement last year due to pressure from European countries, specifically Germany.<sup>175</sup> This shows the vacuum of U.S. leadership. Despite its free-riding policies, the weight of the United States on climate leadership is still significant. The overwhelming majority of experts contends that U.S. leadership is crucial to expand climate action beyond the Paris Agreement.<sup>176</sup> The nation's withdrawal is perceived as undermining the legitimacy of the Agreement and jeopardizing the effectiveness of climate change governance.<sup>177</sup>

After the United States withdrew from the Agreement, local opposition to global action on climate change increased.<sup>178</sup> The change in U.S. leadership has provided incentives for Brazil's current policies, to say the least. The absence of the United States as a global player leaves a leadership vacuum,<sup>179</sup> providing an unprecedented opportunity for China and India to boost their international reputations and soft power.<sup>180</sup> With Brazil outside the environmental leadership picture, China and India will have even more space. Moreover, the absence of the United States from the climate change arena provides additional incentives for other countries to behave strategically.<sup>181</sup>

174. POSNER & SYKES, *supra* note 123, at 231–32 (contending that territory currently frozen would be accessible).

175. Alec Luhn, *Russia Ratifies Paris Climate Accord but Targets Are 'Critically Insufficient,'* TELEGRAPH (Sept. 23, 2019), <https://www.telegraph.co.uk/news/2019/09/23/russia-ratifies-paris-climate-accord-targets-critically-insufficient/>. International organizations classified the Russian targets as “critically insufficient,” as Russia committed to such weak targets (twenty-five to thirty percent reduction in relation to 1990, when the country was dealing with a severe crisis) that reductions of current emissions are not required. See *Russia Federation: Assessment*, CLIMATE ACTION TRACKER (Dec. 2, 2019), <https://climateactiontracker.org/countries/russian-federation/>.

176. David G. Victor, *Order from Chaos: America Exits the Climate Stage*, BROOKINGS INST. (June 1, 2017), <https://www.brookings.edu/blog/order-from-chaos/2017/06/01/america-exits-the-climate-stage/>.

177. Zhang, Dai, Lai & Wang, *supra* note 122, at 222.

178. Because of the United States' withdrawal, the European Union, China, and Canada face increased domestic opposition, despite being committed to the Paris Agreement. Emre Peker, *Around the World, Climate Goals Clash with Reality*, WALL ST. J. (Dec. 12, 2018, 3:39 PM), <https://www.wsj.com/articles/around-the-world-climate-goals-clash-with-reality-11544616000>.

179. KOH, *supra* note 7, at 42 (arguing that despite presidential claims that U.S. leadership has been enhanced, the withdrawal will galvanize China and other BASIC (Brazil, South Africa, India, China) countries to reinforce their environmental commitments).

180. Kemp, *supra* note 5, at 460.

181. Strategic thinking is defined as determining a particular course of action in relation to the behavior of the counterpart(s) involved. “To illustrate, a player in American football often runs around the right side as a decoy to fool the other team while the player carrying the ball runs

It is possible that countries will elect to sign on to the Agreement or decide to make their voluntary compliance more effective in light of U.S. and Brazilian policies. Furthermore, other countries rely heavily on U.S. leadership to reach more ambitious goals.<sup>182</sup> China, the world's largest emitter of GHGs, is expected to consider what path the United States decides to take before committing to new targets of its own.<sup>183</sup> This shows the complexity of climate governance and the importance of the United States in the field. This scenario becomes much more dire when we consider that President Trump's decision may mean the world misses its one window of opportunity regarding climate change mitigation,<sup>184</sup> particularly as research shows that actions implemented until 2026 are crucial for achieving the targets of the Paris Agreement.<sup>185</sup>

U.S. leadership and Brazilian engagement are necessary because mitigation is vital.<sup>186</sup> Mitigation is the only way to effectively reduce carbon emissions.<sup>187</sup> In a recent article, the Intergovernmental Panel on Climate Change experts argued that, in light of the current literature, the case for deepening both commitment and actions to reduce the global mean surface temperature (GMST) at 1.5°C above the pre-industrial period is even more compelling today.<sup>188</sup> According to these authors, projecting future risks based on the 0.5°C warming that occurred in the recent past (from 1950 to 2000, or 1980 to 2018), is at the very best conservative, due to the increasing impact of climate change.<sup>189</sup> The impact described is not proportional or linear, so the longer that ecosystems, services, and human beings are exposed to their temperature threshold, the faster they are expected to collapse. Moreover, the synergistic nature of climate threats has not been fully

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around the left side. In contrast, a mountain climber never starts up the south slope as a decoy to fool the mountain while the main party ascends the north slope. Football is strategic and mountain climbing is nonstrategic." ROBERT C. COOTER, *THE STRATEGIC CONSTITUTION* 9 (2002).

182. Paris Agreement, *supra* note 6, arts. 4, 9(3), (4).

183. Sengupta, *supra* note 12.

184. The urgency of climate change action was a significant factor addressed in the Paris Agreement, and there was international consensus about the need for immediate action. See Morgan, Dagnet & Tirpa, *supra* note 119, at 9.

185. Zhang, Dai, Lai & Wang, *supra* note 122, at 223.

186. WBG, *supra* note 145, at 2.

187. BENJAMIN K. SOVACOO, MARILYN A. BROWN & SCOTT VICTOR VALENTINE, *FACT AND FICTION IN GLOBAL ENERGY POLICY* 184 (2016).

188. Ove Hoegh-Guldberg et. al., *The Human Imperative of Stabilizing Global Climate Change at 1.5°C*, 365 *SCI.* 1, 1–11 (2019).

189. *Id.* at 2.

assessed, but the outcomes are likely to be worse than the sum of the parts.<sup>190</sup>

Therefore, it is crucial to enact climate change regulation under international treaties.<sup>191</sup> Moreover, law and economics theorists have long advocated respect for international law,<sup>192</sup> and increasingly, the energy sector of each country is being influenced by international law, with the boundaries of many operations being traced or molded by this body of laws.<sup>193</sup> Actions against international treaties jeopardize the whole system of international law, undermining the protection of human dignity, which is, after all, the ultimate goal of international law.<sup>194</sup>

Similarly undermining international law and cooperation among countries, the United States' withdrawal is likely to jeopardize climate financing and data sharing. Brazil, being a developing nation, is not expected to engage in such actions. As developing states have had a far lesser impact on the current concentration of GHGs and the overall threshold of carbon saturation,<sup>195</sup> developed countries must provide climate financing to less developed countries in the terms determined in the Paris Agreement.<sup>196</sup> The United States has contributed the most carbon emissions in history,<sup>197</sup> yet it is committed to a rather small financial contribution under the Paris Agreement.<sup>198</sup> The contributions of the parties to the Paris Agreement finance the Green Climate Fund, which was established by the Conference of the Parties in 2010 (under

190. *Id.* at 3. The study is categorical. *See id.* at 7 (“Aiming to limit warming to 1.5°C is now a human imperative if escalating risks of dangerous if not catastrophic tipping points and climate change hotspots are to be avoided.”). The phase out of fossil fuel use and more stringent NDCs are required to achieve the 1.5°C limitation under the Paris Agreement. *See id.* at 7–9.

191. Charles F. Sabel & David G. Victor, *Governing Global Problems Under Uncertainty: Making Bottom-Up Climate Policy Work*, 144 CLIMATE CHANGE 15, 18 (2017).

192. JACK L. GOLDSMITH & ERIC POSNER, THE LIMITS OF INTERNATIONAL LAW 185 (2005).

193. Kim Talus, *Internationalization of Energy Law*, in RESEARCH HANDBOOK ON INTERNATIONAL ENERGY LAW 17 (Kim Talus ed., 2014) (noting also the reciprocal influence of domestic law in the field of international energy law).

194. PATRICIA PARK, INTERNATIONAL LAW FOR ENERGY AND THE ENVIRONMENT 3 (2d ed. 2013).

195. *See, e.g.*, Justin Gillis & Nadja Popovich, *The U.S. Is the Biggest Carbon Polluter in History. It Just Walked Away from the Paris Climate Deal*, N.Y. TIMES (June 1, 2017), <https://www.nytimes.com/interactive/2017/06/01/climate/us-biggest-carbon-polluter-in-history-will-it-walk-away-from-the-paris-climate-deal.html>.

196. Paris Agreement, *supra* note 6, art. 9. *See also* Zhang, Dai, Lai & Wang, *supra* note 122, at 222 (discussing the cumulative impact of developing countries' emissions).

197. Gillis & Popovich, *supra* note 195; *see also infra* Table 1 in Appendix I (showing the top emitters of carbon dioxide).

198. Paris Agreement, *supra* note 6, art. 9 (outlining the guidelines for financial contributions).



the UNFCCC, and as part of the Convention's financial mechanism).<sup>199</sup> Because the United States suspended its financial contributions to the Green Climate Fund,<sup>200</sup> which promotes adaptation to climate change as well as the reduction of GHG emissions in the developing world,<sup>201</sup> another major consequence of the United States backing out of the Agreement is the adverse impact on climate financing.

Moreover, scientific data produced by U.S. researchers regarding climate change may no longer be available, which is likely to have an adverse effect on global data sharing related to climate change.<sup>202</sup> Another potential negative effect of the U.S. withdrawal is the lack of U.S. involvement in the development and transfer of technology to developing countries.<sup>203</sup> This will be the case because the United States will no longer be determined to share technology and development of technical expertise with developing countries once the country leaves the Paris Agreement. Accordingly, the U.S. withdrawal is likely to adversely impact the achievement of sustainable development goals in those countries because those countries may struggle with the development and application of mitigation technology.

Considering the discussions presented in all sections of this Part of the Article, clearly the United States and Brazil have chosen policies that are detrimental to their economies. These policies also jeopardize the overall welfare of their populations and threaten the Paris Agreement itself. Accordingly, the findings of this Part are consistent with previous literature, which articulates that the solution to climate change ultimately rests on normative change: "It must become viewed as deeply unacceptable for nations and their leaders to overlook

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199. The Green Climate Fund technically aims to finance equal amounts to mitigation and adaptation initiatives under the UNFCCC. Its initial mobilization started in 2014, and since the Paris Agreement (2015), it has played a key role in fostering the goals of the agreement. *Green Climate Fund*, U.N. CLIMATE CHANGE (Jan. 23, 2019), <https://unfccc.int/process/bodies/funds-and-financial-entities/green-climate-fund>.

200. OFF. OF THE PRESS SECRETARY, THE WHITE HOUSE, *supra* note 2. Kemp, *supra* note 5, at 459 (revealing that although the United States pledged to contribute \$3 billion, it has paid only a third of that amount). For complete data regarding the pledges of each country, its GDP, and its contribution per capita, see Table 1 in Appendix I.

201. The fund is attentive to the needs of those who are highly vulnerable to the effects of climate change, specifically in Least Developed Countries (LDCs), Small Island Developing States (SIDs), and African States. U.N. CLIMATE CHANGE, *supra* note 199.

202. If U.S. scientists do not share their data, it is likely that global data on the subject will be far less comprehensive. Coral Davenport & Mark Landler, *Trump Administration Hardens Its Attack on Climate Science*, N.Y. TIMES (May 27, 2019), <https://www.nytimes.com/2019/05/27/us/politics/trump-climate-science.html>.

203. Paris Agreement, *supra* note 6, art. 10.

suffering, mortality, disease, and property damage that climate change exacerbates.”<sup>204</sup>

The findings advanced in this Part are also aligned with earlier works contending that dismantling the Paris Agreement will not be favored by the plurality of actors involved.<sup>205</sup> Additionally, the findings provide cautionary evidence that countries will test the boundaries of the Agreement itself, specifically after the United States’ withdrawal. Brazil’s recent policies are evidence of how the country is testing the Agreement from inside its framework. This puts extra pressure on the U.N. and international actors to require Brazil to fulfill its obligations (specifically, its own NDCs) under the Paris Agreement. The Agreement was flexible enough on allowing countries to determine their own commitment; the international community should not allow a selective approach to the fulfillment of a country’s contribution. Otherwise, the whole edifice of the Paris Agreement risks collapsing, more so considering recent Brazilian and U.S. obstructionist conduct.<sup>206</sup>

#### IV. COMPARATIVE INSIGHTS BASED ON THE CONSTITUTIONAL DESIGN THEORY

Environmental protection and related regulatory actions are disputed today in the United States and in Brazil, as the comparisons in Parts II and III show. This Part begins with an overview of the pertinent literature on constitutional design, followed by a discussion on Brazilian constitutional provisions on environmental protection, contrasting those with the silence of the U.S. Constitution on such matters and related consequences for litigation. The study of comparative constitutional law was founded on the U.S. Constitution,<sup>207</sup> despite the traditional resistance of the Supreme Court of the United States to comparative law insights.<sup>208</sup> This research also aims to mitigate the

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204. Coglianesi, *supra* note 111.

205. Rafael Leal-Arcas & Antonio Morelli, *The Resilience of the Paris Agreement: Negotiating and Implementing the Climate Change Regime*, 31 GEO. ENVTL. L. REV. 1, 61 (2018).

206. Sengupta, *supra* note 12.

207. In this direction: Mark Tushnet, *Comparative Law and National Identity*, in THE OXFORD HANDBOOK OF COMPARATIVE LAW 1254–55 (Mathias Reimann & Reinhard Zimmermann eds., 2008).

208. For an overview of the different instances when the SCOTUS has considered comparative constitutional law, see Mark Tushnet, *The Possibilities of Comparative Constitutional Law*, 108 YALE L. J. 1225, 1230–41 (1999) (describing how comparative law arguments grounded on the denial of the capital punishment in the developed world have been dismissed by the Court, based on the understanding that U.S. conceptions shall be dispositive when judging a case). Noting this understanding as among the factors that have been reducing the influence of U.S.

parochialism in the current U.S. scholarship.<sup>209</sup> On a methodological note, this study approaches the U.S. and Brazilian constitutional experiences with no preconceptions.

A. *An Overview of the Constitutional Design Literature*

Historical reasons and related differences concerning their democratic processes explain the two countries' distinct choices of constitutional design and the inclusion of environmental protection clauses in the Brazilian Constitution of 1988.<sup>210</sup> This Constitution belongs to the third wave of democratization, while the U.S. text was among the first, dating back to 1787.<sup>211</sup> The U.S. Constitution predates the environmental movement.<sup>212</sup> Protection of rights increased after World War II,<sup>213</sup> as the importance of constitutional adjudication increased in the United States in order to grant protection to minorities.<sup>214</sup> The U.S. constitutional experience is founded in multiple traditions and has a controversial record on environmental issues.<sup>215</sup>

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constitutionalism internationally: David S. Law & Mila Versteeg, *The Declining Influence of the United States Constitution*, 87 N.Y.U. L. REV. 762, 852 (2012).

209. For an empirical study finding evidence of U.S. parochialism regarding federalism scholarship, see Carol S. Weissert, *Beyond Marble Cakes and Picket Fences: What U.S. Federalism Scholars Can Learn from Comparative Work*, 73 J. POL. 965, 967–68 (2011). Bruce Ackerman, *The Rise of World Constitutionalism*, 83 VA. L. REV. 771, 771–73 (1997) (highlighting, long ago, the necessity of further research about comparative constitutional law).

210. See Constituição Federal [C.F.] [Constitution] Oct. 5, 1988, arts. 5(73), 24(6), (8), 129(3), 170, 225 (Braz.).

211. TOM GINSBURG & ROSALIND DIXON, *Comparative Constitutional Law*, in COMPARATIVE CONSTITUTIONAL LAW 2–3 (Tom Ginsburg & Rosalind Dixon eds., 2011) (noting that the U.S. Constitution was a pioneer in the concept of written constitutions and that the third wave of constitutions began after 1975).

212. Richard J. Lazarus, *The Greening of America and the Graying of United States Environmental Law: Reflections on Environmental Law's First Three Decades in the United States*, 20 VA. ENVTL. L. J. 75, 76–77 (2001) (emphasizing how environmental protection law was essentially non-existent in the United States before 1970 and that the NEPA was signed into law on the first day of such year).

213. CHARLES R. EPP, THE RIGHTS REVOLUTION: LAWYERS, ACTIVISTS AND SUPREME COURTS IN COMPARATIVE PERSPECTIVE 38–39 (1998). The professor notes that the increased presence of cases involving the due process clause and equality actually started in 1918 (after World War I), but the SCOTUS rejected such claims until the sixties. See also MARY ANN GLENDON, RIGHTS TALK: THE IMPOVERISHMENT OF POLITICAL DISCOURSE 163 (1991) (arguing that the increased litigation took place after World War II in the United States).

214. Mauro Cappelletti, *Repudiating Montesquieu? The Expansion and Legitimacy of "Constitutional Justice"*, 35 CATH. U. L. REV. 1, 6 (1986).

215. CASS R. SUNSTEIN, DESIGNING DEMOCRACY: WHAT CONSTITUTIONS DO 81–83 (2001) (considering the U.S. constitutional tradition on race and environment, for example, controversial, and criticizing its use).

Constitutional design is a controversial topic. Even its definition is subject to different interpretations.<sup>216</sup> Some will emphasize the process and the continuing idea of construction embedded in it.<sup>217</sup> Nonetheless, all agree as to the importance of the debate, in particular, because “non-ideational obstacles are strong, . . . the interests affected are non uniform, and retrogression is possible after adoption.”<sup>218</sup> Hence, constitutional design is a work in progress, and federalism arrangements are key to its understanding. The literature reveals limited attempts to “evaluate the success of the design choices made by different federations,”<sup>219</sup> with classical studies drawing comparisons between countries in the developed world.<sup>220</sup> Comparisons with federations located in the developing world are rare. Federalism, after all, is perceived as being integral to the success of the U.S. experience, but is often subject to criticism when transplanted to Latin America.<sup>221</sup>

In addition, constitutional design matters for policies,<sup>222</sup> and its insights point to the scope and territorial size as factors of interest.<sup>223</sup> Therefore, the comparison between Brazil and the United States is one of relevance. Both countries display continental dimensions with

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216. This research uses the term *constitutional design*, being aware of its intrinsic limitations, including the connotation of precision often associated with the hard sciences. Discussing such limitations, see TOM GINSBURG, *COMPARATIVE CONSTITUTIONAL DESIGN* 1–2 (2012): “Design implies a technocratic, architectural paradigm that does not easily fit the messy realities of social institutions, especially not the messy process of constitutional making.”

217. Donald Horowitz, *Constitutional Design: Proposals versus Process*, in *THE ARCHITECTURE OF DEMOCRACY: CONSTITUTIONAL DESIGN, CONFLICT MANAGEMENT AND DEMOCRACY* 16 (Laurence Whitehead ed., 2002).

218. *Id.* at 18.

219. Sujit Choudhry & Nathan Hume, *Federalism, Devolution and Secession: From Classical to Post-Conflict Federalism*, in *COMPARATIVE CONSTITUTIONAL LAW* 359 (Tom Ginsburg & Rosalind Dixon eds., 2011). For a contemporary comparison, see Carolina Arlota, *Should Local Governments Be Included in the Constitution? A Comparative Analysis Between the U.S. and Brazilian Supreme Courts’ Reasoning Regarding Annexation Law*, 2 U. BOLOGNA L. REV. 149 (2017).

220. Such as the United States, Australia, Canada, and Switzerland. Choudhry & Hume, *supra* note 219, at 356.

221. See, e.g., Keith S. Rosenn, *The Success of Constitutionalism in the United States and Its Failure in Latin America: An Explanation*, 22 U. MIAMI INTER-AM. L. REV. 1, 9–20, 24, 26 (1990) (contending that one of the failures of Latin American constitutionalism is the transplant of constitutional provisions without considering the particular realities of the country that is importing them).

222. Ran Hirschl, *The Theocratic Challenge to Constitution Drafting in Post-Conflict States*, 49 WM. & MARY L. REV. 1179, 1181–82 (2008) (noting that the literature about constitutional design and engineering is vast and has as a foundation the understanding of constitutionalization “as a pragmatic ‘second order’ measure,” in contrast with constitutionalization as a first order, i.e., as a direct consequence of the will of the people).

223. Hirschl, *supra* note 54, at 1343.

complex federal systems, including several potential problems related to the implementation of policies on different levels.<sup>224</sup> This impacts environmental policy and the implementation of the commitments pledged under the Paris Agreement in both countries. In Brazil, the federal government is in charge of overall policies, but states and municipalities have a concurrent constitutional obligation to actively protect the environment.<sup>225</sup> In the U.S. federal system, states are more independent, so “the more that state and local governments enhance or reduce federal efforts to mitigate climate change, then the more or less the United States does with respect to addressing this global problem.”<sup>226</sup> The commitments to the intended NDCs presented by the United States were enhanced by state environmental actions previously undertaken by California, for instance.<sup>227</sup> Nonetheless, state and local actions alone are insufficient for meaningful national reduction of GHGs.<sup>228</sup>

B. *Comparing Constitutional Provisions and Litigation in Light of the Design Literature*

This Section compares the U.S. and Brazilian constitutional texts, focusing on current litigation involving the Paris Agreement and articulating this unique analysis in light of the constitutional design literature.

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224. Hirschl, *supra* note 54, at 1344–45, 64 (discussing problems of implementation of federal level policies and arguing, at 1364, that constitutional design might be of increased impact in matters concerning national challenges, including: “limiting governments to a degree, . . . enhancing awareness of rights and liberties, and possibly providing for some institutional predictability, which in turn may promote economic growth”).

225. Constituição Federal [C.F.] [Constitution] Oct. 5, 1988, art. 23 (Braz.) (“The Union, States, Federal District and Counties, shall have joint powers to: . . . VI. protect the environment and combat pollution in any of its forms.”).

226. Jean Galbraith, *Cooperative and Uncooperative Foreign Affairs Federalism*, 130 HARV. L. REV. 2131, 2154 (2017).

227. *Id.*

228. Cary Coglianese & Shana Starobin, *The Legal Risks of Regulating Climate Change at the Subnational Level*, REG. REV. 2–5 (Sept. 18, 2017), <https://www.theregreview.org/2017/09/18/coglianese-starobin-legal-risks-climate-change-subnational/>. Jonathan B. Wiener, *Think Globally, Act Globally: The Limits of Local Climate Policies*, 155 U. PA. L. REV. 1961, 1964 (2007) (cautioning that local action may lead to increased harm due to reallocation of polluting industries to less regulated—and less prepared regions, in the so-called leakage).

1. Brazilian Constitutional Provisions, the Silence of its U.S. Counterpart, and Climate Change Litigation in Brazil

This Subsection considers the Brazilian constitutional text in light of the literature on constitutional design (contrasting with the silence of the U.S. Constitution), and its consequence for strategic litigation.

The Brazilian Constitution of 1988 was the first one in the country's history to specifically address environmental rights, principles, and duties for all citizens and the public administration.<sup>229</sup> Since its promulgation, the Brazilian government (in all three of its federal spheres: union, state, and local governments) and society have had the duty to protect and promote the environment.<sup>230</sup> The Constitution mentions environmental protection in conjunction with the general determinations for the economic order,<sup>231</sup> which shall embrace the constitutional duty to build a republic that is protective of the environment.<sup>232</sup> The Brazilian Constitution of 1988 also determines that the international relations of the Federative Republic of Brazil are governed by the principles of the prevalence of human rights, the defense of peace, and the cooperation among people for the progress of mankind, among others.<sup>233</sup>

Those principles are particularly relevant for international action on climate change, because consequences related to climate change impact national security (energy access, access to food and water, infrastructure, general health, *inter alia*) as well as international security.<sup>234</sup> By contrast, the U.S. Constitution is silent on environmental rights and protections, with U.S. environmental law being an object of federal statutes only in the early seventies.<sup>235</sup>

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229. Antonio Herman Benjamin, *O Meio Ambiente na Constituição Federal de 1988* [The Environment in the Brazilian Constitution of 1988], 19 in *INFORMATIVO JURÍDICO DA BIBLIOTECA MINISTRO OSCAR SARAIVA* 37, 41–48 (2008), <https://ww2.stj.jus.br/publicacaoainstitucional/index.php/informativo/article/download/449/407>.

230. Constituição Federal [C.F.] [Constitution] Oct. 5, 1988, art. 225 (Braz.) (stating that “[e]veryone has the right to an ecologically balanced environment, which is a public good for the people’s use and is essential for a healthy life. The Government and the community have a duty to defend and to preserve the environment for present and future generations.”).

231. Constituição Federal [C.F.] [Constitution] Oct. 5, 1988, art. 170 (Braz.).

232. Because the principle of environmental protection is also the founding principle of the economic order as mentioned in Art. 170 of the Constitution, it demands that public policies are targeted toward fulfilling this goal. EROS ROBERTO GRAU, *A ORDEM ECONÔMICA NA CONSTITUIÇÃO DE 1988*, 208–09 (2004).

233. Constituição Federal [C.F.] [Constitution] Oct. 5, 1988, art. 4 (Braz.).

234. See INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *supra* note 20, at 9–13 (discussing the impact of climate change).

235. Lazarus, *supra* note 212, at 77.

In both countries, as citizens, non-governmental organizations (NGOs), and governments at every level become more knowledgeable about climate change, litigation becomes a valid alternative to set a policy agenda that is protective of the environment. This Section now turns its analysis to litigation specifically addressing the Paris Agreement's goals previously addressed.

Such cases in Brazil are limited because Brazil is still a party to the Agreement (due, in large part, to its constitutional provisions) and because President Bolsonaro was sworn into office fourteen months ago.<sup>236</sup> That said, the courts have served as an important check on President Bolsonaro's general deregulatory actions, with recent decisions of the Brazilian Supreme Court (*Supremo Tribunal Federal*—STF) clearly limiting his deregulatory agenda.<sup>237</sup> In his attempt to transfer the power of demarcation of indigenous lands to the Agriculture Ministry, the STF unanimously referred to constitutional provisions to invalidate the presidential actions as an usurpation of legislative competence.<sup>238</sup> In a recent lawsuit, the presiding Justice is likely to invalidate a presidential decree cancelling, in advance, punishment of perpetrators of environmental crimes.<sup>239</sup> Brazil's highest administrative court, the

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236. Due to the configuration of Brazilian system, the search for all lawsuits addressing specifically the Paris Agreement is not consolidated in a single public website encompassing all twenty-seven states and federal jurisdictions. Bolsonaro became President January 1, 2019, and the following day he met with U.S. Secretary of State Mike Pompeo. See Equipe HuffPost, *Em Primeiro Dia de Governo Bolsonaro se Encontra com Líderes Estrangeiros* [On First Day of the Bolsonaro Administration, Meets with Foreign Leaders], HUFFPOST, [https://www.huffpostbrasil.com/2019/01/02/em-primeiro-dia-de-governo-bolsonaro-se-encontra-com-lideres-estrangeiros\\_a\\_23631728/](https://www.huffpostbrasil.com/2019/01/02/em-primeiro-dia-de-governo-bolsonaro-se-encontra-com-lideres-estrangeiros_a_23631728/) (last updated Jan. 2, 2019, 9:50 AM).

237. See, e.g., Thais Borges & Sue Branford, *Former Brazilian Environ Ministers Blast Bolsonaro Environmental Assaults*, MONGABAY (May 23, 2019), <https://news.mongabay.com/2019/05/former-brazilian-enviro-ministers-blast-bolsonaro-environmental-assaults/> (commenting that the STF has prohibited changes by presidential decrees, i.e., provisional measures in Brazilian constitutional parlance, in environmentally protected areas and hose changes, according to the STF, can only be implemented by legislative action). This is coherent with the STF's tradition of being an independent court, despite recent empirical work finding some alignment between revealed judicial preferences in adjudicating cases and presidential appointments in Brazil. See Carolina Arlota & Nuno Garoupa, *Addressing Federal Conflicts: An Empirical Analysis of the Brazilian Supreme Court, 1988–2010*, 10 REV. L. ECON. 137, 154–58 (2014).

238. Rosanne D'Agostino, Mariana Oliveira & Luiz Felipe Barbieri, *STF mantém suspenso trecho de MP que transferiu demarcação de terras indígenas para Agricultura*, O GLOBO, <https://g1.globo.com/politica/noticia/2019/08/01/stf-mantem-suspenso-trecho-de-mp-que-transferiu-demarcacao-de-terras-indigenas-para-agricultura.ghtml> (last updated Aug. 1, 2019, 4:06 PM).

239. See *Ministra questiona Bolsonaro sobre decreto que anistia crimes ambientais*, SÉC. DIÁRIO, <https://seculodiarario.com.br/public/jornal/materia/ministra-questiona-bolsonaro-sobre-decreto-que-anistia-crimes-ambientais> (last updated Sept. 3, 2020, 12:36 AM).

*Tribunal de Contas da União* [Federal Court of Accounts] (TCU), has been actively involved in combating the deregulatory agenda involving the flexibilization of standards for pesticides, the increased deforestation in the Amazon, the opening of oil exploitation in environmentally protected areas, and the exclusion of public participation in environmental matters, among others.<sup>240</sup>

On the international front, a task force of human rights lawyers asked the International Criminal Court to investigate Bolsonaro's actions against indigenous people.<sup>241</sup> This brings additional scrutiny to his policies. Hence, the constitutional clauses have been effective in providing different avenues for redress and checking the abuses of the Executive.

## 2. The Absence of Specific Constitutional Provisions in the U.S. Constitution and its Impact on Climate Change Litigation

This Subsection considers the U.S. scenario, focusing on the silence of the U.S. Constitution regarding environmental protection and its consequences for litigation on climate change domestically and internationally.<sup>242</sup>

As of February 2020, a comprehensive search for cases specifically addressing the Paris Agreement yielded only five cases, excluding false positives.<sup>243</sup> According to this search, the only case that refers to the United States' withdrawal from the Paris Agreement does so incidentally, as the defendant, B.P., cited the Agreement in seeking removal to federal court, which the Maryland District Court denied.<sup>244</sup> Litigation related to the United States' November 4, 2019, notice of withdrawal

240. For a reference explaining the powers and attributions of the TCU in English, see *The Court*, PORTAL TCU, [https://portal.tcu.gov.br/en\\_us/english/inside-tcu/the-court/](https://portal.tcu.gov.br/en_us/english/inside-tcu/the-court/) (last updated Dec. 17, 2020).

241. *Informative Note to the Prosecutor: International Criminal Court Pursuant to Article 15 of the Rome Statute Requesting a Preliminary Examination into Incitement to Genocide and Widespread Systematic Attacks Against Indigenous Peoples by President Jair Messias Bolsonaro in Brazil*, HUM. RTS. ADVOC. COLLECTIVE (CADHU) & ARNS COMM'N OF SÃO PAULO (Nov. 2019), <https://apublica.org/wp-content/uploads/2019/11/e-muito-triste-levar-um-brasileiro-para-o-tribunal-penal-internacional-diz-co-autora-da-peticao.pdf>.

242. See generally U.S. GLOB. CHANGE RES. PROGRAM, *supra* note 26, at 35–72 (describing the dire impact of climate change for the United States).

243. A Westlaw search reveals the existence of five cases specifically mentioning the Paris Agreement: *In re Haw. Elec. Light Co.*, 445 P.3d 673, 695 (Haw. 2019); *Cleveland Nat'l Forest Found. v. San Diego Ass'n of Gov'ts*, 397 P.3d 989, 1000 (Cal. 2017); *W. Org. of Res. Councils v. U.S. Bureau of Land Mgmt.*, 2018 WL 1456624, at \*14 (D. Mont. Mar. 23, 2018); *People v. Exxon Mobil Corp.*, 2019 WL 6795771, at \*9 (N.Y. Sup. Ct. 2019); and *Mayor of Baltimore v. BP P.L.C.*, 388 F. Supp. 3d 538, 559 (D. Md. 2019). Elsewhere, I have discussed in detail such litigation: *Arlota*, *supra* note 109, at 901–06.

244. *Mayor of Baltimore v. BP P.L.C.*, 388 F. Supp. 3d at 559.



regarding presidential limits to unilaterally withdrawing is likely to ensue.<sup>245</sup> Although the U.S. President has significant authority regarding foreign affairs (and despite the related political question doctrine),<sup>246</sup> he must comply with legal requirements.<sup>247</sup>

Commentators argue that President Trump's decision to withdraw from the North American Free Trade Agreement (NAFTA) should be barred due to congressional authority to regulate commerce under the Commerce Clause.<sup>248</sup> Applying the same rationale, scholars argue that withdrawing from a climate change agreement, which has a significant impact on domestic and foreign commerce, would also be prohibited.<sup>249</sup> International climate litigation has already started. Recently, four Louisiana Tribes filed a complaint to the U.N. arguing displacement and the loss of land, burial sites, food sources, physical and mental health, and culture, among others, due to climate change.<sup>250</sup>

Domestically, the silence of constitutional protections in the United States has not precluded litigation. A report details all the ongoing environmental cases against the Trump administration, ultimately finding 129 cases on the rollback of climate change regulation during the first two years of the Trump administration.<sup>251</sup> This number is likely to increase as the administration advances its deregulatory actions from proposed to finalized rules.<sup>252</sup>

Such silence has not prevented plaintiffs from claiming constitutional rights to a meaningful climate policy based on substantive due process, under the Due Process Clause of the Fourteenth Amendment,

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245. KOH, *supra* note 7, at 50.

246. ERWIN CHEMERINSKY, *CONSTITUTIONAL LAW: PRINCIPLES AND POLICIES* 140–43 (Vicky Been et al. eds., 3d ed. 2006) (noting the difficulty in determining which foreign policy issues are justifiable and which actually present political questions).

247. *Zivotofsky v. Clinton*, 566 U.S. 189 (2012) (redrawing the legal boundaries of presidential powers involving the denunciation of treaties); *Id.* at 201; KOH, *supra* note 7, at 173–74 (discussing the omission in *Zivotofsky* of the famous political question test introduced in *Baker v. Carr*, 369 U.S. 186 (1962)). In *Zivotofsky*, Chief Justice John Roberts asserted that the political question doctrine did not bar judicial review.

248. KOH, *supra* note 7, at 50–51.

249. *Id.*

250. The complaint to the U.N. was justified, as such tribes lack federal recognition. *Complaint to the United Nations: Rights of Indigenous People in Addressing Climate-Forced Displacement*, THE ALASKA INSTITUTE FOR JUSTICE (Jan. 15, 2020), <https://assets.documentcloud.org/documents/6656724/Louisiana-Tribes-Complaint-to-UN.pdf>.

251. Dena P. Adler, *U.S. Climate Change Litigation in the Age of Trump: Year Two*, SABIN CTR. FOR CLIMATE CHANGE L. 25 (June 2019), <http://columbiaclimatelaw.com/files/2019/06/Adler-2019-06-US-Climate-Change-Litigation-in-Age-of-Trump-Year-2-Report.pdf>.

252. As in the Clean Power Plan, for example. See WENTZ & GERRARD, *supra* note 27, at 1 n.2.

in a lawsuit expanded to include governments.<sup>253</sup> Recently, in *Juliana*, twenty-one youth plaintiffs asserted their rights to a healthy environment, first against President Obama, and later against President Trump.<sup>254</sup> Nonetheless, early last year, a divided panel of the U.S. Appeals Court dismissed this lawsuit on standing grounds, despite acknowledging that the plaintiffs had adequately proved that the government has long understood the risks of climate change and that its conduct contributes to climate change, due to the fact that the government actively promotes the use of fossil fuels in several ways, such as beneficial tax provisions, subsidies for domestic and overseas projects, and leases for fuel extraction on federal land.<sup>255</sup>

As such litigation shows, the breadth of the protection of fundamental rights under substantive due process of the Fourteenth Amendment<sup>256</sup> is convoluted.<sup>257</sup> Other avenues for constitutional environmental protection related litigation include the Commerce Clause as well as the First and the Fifth Amendments.<sup>258</sup> For instance, a recent lawsuit seeking environmental protection (and the reduction of GHG emissions) argued that climate-related harms infringe plaintiffs' First Amendment Freedom of Association rights, "right to wilderness" based on the substantive due process of the Fifth Amendment, and the right to self-determination protected in the Ninth Amendment.<sup>259</sup> These claims were dismissed by the District Court, which held that plaintiffs lack standing, as their claims are "general grievances," which were not

253. See, e.g., *Juliana v. United States*, 217 F. Supp. 3d 1224 (D. Or. 2016).

254. Twenty-one environmentalists who are too young to vote, calling themselves guardians of future generations, filed suit seeking declaratory and injunctive relief against the U.S. President and several executive agencies. The plaintiffs claim, *inter alia*, that GHG emissions from carbon dioxide—produced by burning fossil fuels—jeopardize the environment, violating their due process and the defendants' "obligation to hold natural resources in public trust." *Juliana v. United States*, 217 F. Supp. 3d 1224, 1224–33 (D. Or. 2016).

255. *Juliana v. United States*, 947 F.3d 1159, 1175 (9th Cir. 2020) (noting that plaintiffs presented a compelling case but dismissing it).

256. For a comprehensive historical account on the reluctance of the SCOTUS regarding substantive due process based on the Fourteenth Amendment, see Erwin Chemerinsky, *Substantive Due Process*, 15 *TOURO L. REV.* 1501, 1502–27 (1999).

257. Charles R. Corbett, *Substantive Due Process, Climate change, and Flint, Michigan*, *LEGAL PLANET* (Feb. 3, 2020), <https://legal-planet.org/2020/02/03/substantive-due-process-climate-change-and-flint-michigan/> (addressing the *Juliana* panel decision of Ninth Circuit).

258. According to the current litigation profile available at *U.S. Climate Change Litigation*, SABIN CTR. FOR CLIMATE CHANGE L., <http://climatecasechart.com/us-climate-change-litigation/> (last visited Sept. 19, 2020).

259. See First Amended Complaint for Declaratory and Injunctive Relief at 33–34, *Animal Legal Def. Fund v. United States*, 404 F. Supp. 3d 1294 (D. Or. 2019) (No. 18-cv-1860), 2019 WL 3024127.

particularized enough.<sup>260</sup> The district court also observed that: “plaintiffs urge this Court to engage in ‘nothing short of revolutionary thinking’ by recognizing ‘a right to wilderness’ under the First, Fifth, Ninth, and Fourteenth Amendments,”<sup>261</sup> concluding that plaintiffs claims ask the court to create new fundamental rights which are not enumerated in the Constitution or found in precedents of the Supreme Court.<sup>262</sup>

Previous judicial inquiries into the existence of a constitutional environmental right found no such a right.<sup>263</sup> Hence, it is only rational to assume that the existence of constitutional clauses specifically protecting the environment (and precluding environmental injury) would facilitate legal redress by decreasing transaction costs for plaintiffs and courts.<sup>264</sup> Constitutional status to environmental protection would also depoliticize the issue, fostering consensus.<sup>265</sup> Such constitutional inclusion would facilitate claims litigated under substantive due process, in particular, because they would directly meet the textual requirement.<sup>266</sup> Hence, claims for amending the U.S. Constitution to include environmental protection have merit. These claims are not new; their rationale

260. See *Animal Legal Def. Fund v. United States*, 404 F. Supp. 3d 1294, 1300 (D. Or. 2019). The Court made an important distinction regarding standing: “Plaintiffs cite *Juliana v. United States* for the proposition that there exists a ‘right to a climate system capable of sustaining human life’ as a necessary condition to exercising other rights to life, liberty, and property’ and the government has a ‘continued affirmative duty to safeguard public trust assets, or the literal state of nature.’” The *Juliana* court, however, noted that plaintiffs did not object to the government’s role in just any pollution or climate change, but rather *catastrophic* levels of pollution or climate change. *Id.* at 1250. The court specifically held that: “[W]here a complaint alleges governmental action is affirmatively and substantially damaging the climate system in a way that will cause human deaths, shorten human lifespans, result in widespread damage to property, threaten human food sources, and dramatically alter the planet’s ecosystem, it states a claim for a due process violation.” Plaintiffs here allege nothing of the sort. Moreover, the right to a ‘stable climate system’ is narrower than the ‘right to wilderness’ Plaintiffs advocate for, as evidenced by the sweeping relief they request.” *Id.* at 1302 (emphasis in the original) (citations omitted).

261. *Id.* at 1298.

262. *Id.*

263. Caleb Hall, *A Right Most Dear: The Case for a Constitutional Environmental Right*, 30 *TULANE ENVTL. L.J.* 85, 101 (2016).

264. ROBERT COOTER & THOMAS ULEN, *LAW AND ECONOMICS* 400–04 (6th ed. 2016) (contending that legal uncertainty is likely to foster litigation, increasing transaction costs).

265. Hope M. Babcock, *The Federal Government Has an Implied Moral Constitutional Duty to Protect Individuals from Harm due to Climate Change: Throwing Spaghetti Against the Wall to See What Sticks*, 45 *ECOLOGY L. Q.* 735, 747–48 (2018).

266. Chemerinsky, *supra* note 256, at 1517 (citing Justice White’s majority opinion in *Stanley v. Georgia*, 394 U.S. 557, 565 (1969): “rights should be protected under substantive due process only if they are *enumerated in the text*, clearly intended by the framers, or there is a tradition of protecting such rights.” (emphasis added)).

rests on the concentration of powers in the Executive branch and its damaging potential to reverse environmental commitments.<sup>267</sup>

Accordingly, the existence of constitutional clauses protecting the environment would promote coherency in U.S. international environmental policy, avoiding flip-flops such as those on the Kyoto and Paris Agreements. It would not stifle international environmental policy but would provide a firm direction. It would also combat claims that human rights related to the environment are merely a creation of the U.N., with the support of the developing world and without a presence in the United States, for instance.<sup>268</sup> Domestically, such an amendment would foster environmental protection, as examined in the context of the litigation involving due process in particular.

Nonetheless, it is highly unlikely that a constitutional amendment to include environmental protections will occur due to the formal rigidity of the U.S. Constitution.<sup>269</sup> Absent such an amendment, and considering both the impact of climate change and Congress's failure to pass a relevant environmental statute in over twenty-five years, limiting itself to incremental reforms concerning federal energy legislation during the same period,<sup>270</sup> it falls on the judiciary to update the Constitution through judicial review. After all, informal flexibility and updating of the U.S. constitutional text is granted by judicial review.<sup>271</sup>

267. Lynton K. Caldwell, *The Case for an Amendment to the Constitution of the United States for the Protection of the Environment*, 1 DUKE ENVTL. L. & POL'Y F. 1, 8 (1991) (asserting that "[i]t is still possible, as under the Reagan presidency, for the federal government to reverse commitments and, where there is no clear, substantive mandate, to ignore the constitutional obligation of the President to ensure that the laws be faithfully executed. Except in cases of clear dereliction, the President is the sole judge of his or her 'faithful execution' of the laws.").

268. Luis E. Rodriguez-Rivera, *The Human Right to Environment in the 21<sup>st</sup> Century: A Case for Its Recognition and Comments on the Systemic Barriers It Encounters*, 34 AM. U. INT'L L. REV. 144, 196 (2018).

269. This is the case because of Article V of the U.S. Constitution, which asserts, in the relevant part: "The Congress, whenever two thirds of both houses shall deem it necessary, shall propose amendments to this Constitution, or, on the application of the legislatures of two thirds of the several states, shall call a convention for proposing amendments, which, in either case, shall be valid to all intents and purposes, as part of this Constitution, when ratified by the legislatures of three fourths of the several states, or by conventions in three fourths thereof, as the one or the other mode of ratification may be proposed by the Congress." U.S. CONST. art. V. SANFORD LEVINSON, *OUR UNDEMOCRATIC CONSTITUTION* 21 (2006) (locating the U.S. Constitution among those most difficult to amend in the world).

270. Jody Freeman & David B. Spence, *Old Statutes, New Problems*, 163 U. PA. L. REV. 1, 4–5 (2014) (calling such period "unprecedented congressional paralysis").

271. ZACHARY ELKINS, TOM GINSBURG & JAMES MELTON, *THE ENDURANCE OF NATIONAL CONSTITUTIONS* 163 (2009).

3. Discussing the Findings Based on the Comparison of Constitutional Design and Current Policies

This Subsection discusses the silence of the U.S. Constitution on environmental matters and the decades-long inertia on climate change issues and how judicial review may be a constitutional alternative to mitigate the absence of Executive and Legislative actions regarding environmental protection and related climate change litigation. It also contrasts the U.S. scenario with the Brazilian experience, analyzing the findings of the previous Subsections.

As the analysis of the U.S. litigation shows, standing is a barrier for judicial review on climate change claims and environmental protections.<sup>272</sup> Standing refers, primarily, to the case or controversy requirement of Article III of the Constitution,<sup>273</sup> but commentators, and the Supreme Court itself, have acknowledged the difficulties inherent in such a requirement.<sup>274</sup> The findings of such analysis are consistent with the current literature advocating for more flexible requirements for standing in environmental claims.<sup>275</sup> Hopefully, as the litigation on climate change increases, courts will be more informed about the dire impact of their potential omission and more willing to expand their role from the traditional (and very restrictive) standing doctrines.<sup>276</sup> Therefore, the flexibilization of standing requirements would be a meaningful first step to maximize environmental protections regarding climate action domestically,<sup>277</sup> despite not being effective at precluding the United States from withdrawing from the Paris Agreement itself.<sup>278</sup>

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272. Despite judicial review being the corollary of the supremacy of the Constitution. See *Marbury v. Madison*, 5 U.S. 137, 137–38 (1803).

273. LAURENCE H. TRIBE, *AMERICAN CONSTITUTIONAL LAW* 385–86 (3d ed., 2000).

274. ERWIN CHEMERINSKY, *FEDERAL JURISDICTION* 57–58 (5th ed., 2007) (noting that there is a sense that the Supreme Court has modified its interpretation according to its willingness to adjudicate—or not—particular cases). An in-depth analysis of standing requirements is beyond the scope of the insights on constitutional design.

275. Scott W. Stern, *Standing for Everyone: Sierra Club v. Morton, Justice Blackmun's Dissent, and Solving the Problem of Environmental Standing*, 49 ENVTL. L. REP. NEWS AND ANALYSIS 10063, 10064 (2019) (concluding how standing on environmental law is incredibly restrictive today and advocating for its flexibilization).

276. The potential omission is based on the understanding of the powers of the judicial branch. *Marbury v. Madison*, 5 U.S. at 137–38.

277. A more flexible standing requirement will avoid the outcome that the majority of the Ninth Circuit reached in *Juliana v. United States*, 947 F.3d 1159, 1175 (9th Cir. 2020) (Staton, J., dissenting).

278. Presidential powers to unilaterally withdraw from agreements (technically, denouncing treaties) remain to be litigated in the context of the Paris Agreement. KOH, *supra* note 7, at 50.

On a related note, such flexibilization would tend to maximize enforcement of environmental protection.<sup>279</sup> Enforcement of such protections has been viewed as taking precedence over the existence of constitutional provisions.<sup>280</sup> This Article offers evidence that in addition to enforcement, the existence of constitutional provisions also matters. It is not an all or nothing approach, but a dynamic relationship. As the Brazilian case shows,<sup>281</sup> the existence of constitutional environmental protections may be determinative when it comes to international environmental law. It is true that this research cannot prove causation,<sup>282</sup> but the evidence strongly indicates that President Bolsonaro did not withdraw from the Paris Agreement, in part, because of the existence of constitutional environmental protections.<sup>283</sup>

This research finds that the constitutional protection of the environment has ultimately supported the country's continued participation in the Agreement and allows Brazilian courts to safeguard the environment. This research reviews previous studies that argued that the impact of constitutional law in Latin America is different than it is in the United States due to the ease with which constitutional provisions can be ignored or changed in the former.<sup>284</sup> Because Brazil is not ignoring its Constitution, this research updates previous literature, which only observed instability or lack of overall enforcement of constitutional provisions in Latin America.

In light of such findings, this research contributes to the literature on constitutional design, specifically as it relates to understanding constitution-making as a response to concrete challenges and as a mechanism to maximize the public good.<sup>285</sup> Back in 1787, no one would have expected the environment to be included in the U.S. Constitution. Nowadays, however, the ability of constitutions to address the world's biggest challenges, such as climate change, is among the criteria for

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279. Not all litigation necessarily advances environmental protection. *See, e.g.*, Ann E. Carlson, *Standing for the Environment*, 45 UCLA L. REV. 931, 934–35 (1998).

280. Kyle Burns, *Constitutions & the Environment: Comparative Approaches to Environmental Protection and the Struggle to Translate Rights into Enforcement*, ENVTL. L. REV. SYNDICATE 810–11 (Nov. 14, 2016), <https://harvardelr.com/2016/11/14/constitutions-the-environment-comparative-approaches-to-environmental-protection-and-the-struggle-to-translate-rights-into-enforcement/>.

281. Constituição Federal [C.F.] [Constitution] Oct. 5, 1988, art. 3 (Braz.).

282. Technically, only empirical work is capable of doing so, and even then, controversies will linger. *See, e.g.*, ROBERT M. LAWLESS, JENNIFER K. ROBBENOLT & THOMAS S. ULEN, *EMPIRICAL METHODS IN LAW* 245–87 (2016).

283. As discussed in Part III, Section B, trade considerations were probably relevant as well.

284. Schor, *supra* note 16, at 6.

285. Hirsch, *supra* note 54, at 1340.

“success” in constitutional design.<sup>286</sup> In this light, unsuccessful constitutional design is one incapable of addressing climate change.

The Brazilian experience provides evidence that the existence of constitutional provisions on the environment are meaningful, as President Bolsonaro did not withdraw from the Paris Agreement. Nonetheless, he may be undermining the Agreement from the inside if he pursues deregulatory agendas. It may be too early to completely assess the situation. However, as the country stays in the Agreement and constitutional checks clearly remain in place, Brazilian constitutional design can be considered an improvement, as of today. For the United States, it remains to be seen if the courts will effectively respond to climate change and consider flexibilizing standing on such matters. They are currently the only hope—not only for the United States, but for the world. Accordingly, constitutional design in both countries remains a work in progress.

#### V. CONCLUSION

This Article establishes that the United States’ withdrawal from the Paris Agreement and related deregulatory agenda, as well as Brazil’s recent anti-environmental policies, have had—and will continue to have—an adverse global impact on climate change. These actions lessened the leadership roles of both countries in the international arena, which will take several years to recover, and may prove detrimental to immediate trade considerations for both countries.

More significantly, the policies pursued by both countries may cause the United States, Brazil, and the world to miss out on a narrow window of opportunity to combat climate change. Consequently, all are more susceptible to the devastating consequences of climate change. Because of such policies, developing nations across the globe will be even more exposed to climate change. Regardless of location, the economically less advantaged will be hit the hardest, due to the regressive nature of carbon pricing. Women, children, and native and indigenous populations are likely to be more exposed to the impacts of climate change. Therefore, *prioritarianism* urges both countries to reverse deregulatory actions that work against the Paris Agreement’s goals. Moreover, the evidence presented in this Article demonstrates that both presidents have engaged in policies that are clearly unsound domestically, as they are not aligned with economic growth.

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286. *Id.* at 1341.

This Article, in light of the constitutional design literature, detailed a comparison of the Brazilian and the U.S. constitutions, considering litigation on advancing the goals of the Paris Agreement. Back in 1787, no one would have expected the environment to be included in the Constitution. Nowadays, however, the ability of constitutions to address the world's biggest challenges, such as climate change, is among the criteria for evaluating constitutional design. Stating it differently: the better a constitutional design is in addressing climate change, the higher the likelihood for such constitutional design being classified as successful.

The Brazilian experience provides evidence that the existence of constitutional provisions on protecting the environment are meaningful, as President Bolsonaro has not withdrawn from the Paris Agreement, and the courts have served as an important check on his deregulatory agenda. While he may be undermining the Agreement from the inside if he pursues deregulatory agendas, as the country stays in the Agreement and constitutional checks remain in place, Brazilian constitutional design can be considered to be improved. These findings update previous literature that documented only instability or lack of overall enforcement of constitutional provisions in Latin America.

The findings of this research also contradict previous claims that enforcement, not constitutional provisions, are of relevance in the United States by offering evidence that both are meaningful. As our analysis of U.S. litigation on the goals of the Paris Agreement shows, because of the U.S. Constitution's silence on environmental issues and the decades-long congressional inertia on climate changes issues, judicial review is currently the only way to update the constitutional text. That said, standing is a major barrier to judicial review and effective climate change litigation. These findings are consistent with the current literature advocating more flexible requirements for standing in environmental claims. Hence, this Article concludes that courts should consider flexibilizing standing on climate change, in light of a silent constitution, an inert Congress, and an Executive who reversed rational course on climate change policy. Courts are currently the only hope—not only for the United States, but for the world—due to the weight of U.S. leadership and to the extent that the United States is historically the greatest polluter of GHGs.

Finally, this Article demonstrates that the United States should have remained in the Agreement and strived to be a leading force in reducing GHG emissions and mitigating the effects of climate change. Likewise, Brazil should change its current policies, specifically regarding its inaction on protecting the Amazon, and recover its leadership



*THE AMAZON IS BURNING—IS PARIS, TOO?*

on climate action. The U.S. and Brazilian policies discussed in this Article jeopardize the Paris Agreement and global climate change. Accordingly, criticism regarding the policy choices of the President of United States and those of his Brazilian counterpart will continue, as will the desire for climate change to be taken seriously. For the moment, the Paris Agreement is in jeopardy, but hopefully, it has not completely burned yet, despite the actions of President Trump and President Bolsonaro. There is still time to reverse course, because both countries—and the world—need the Paris Agreement to be effective.

APPENDIX I: FIGURES

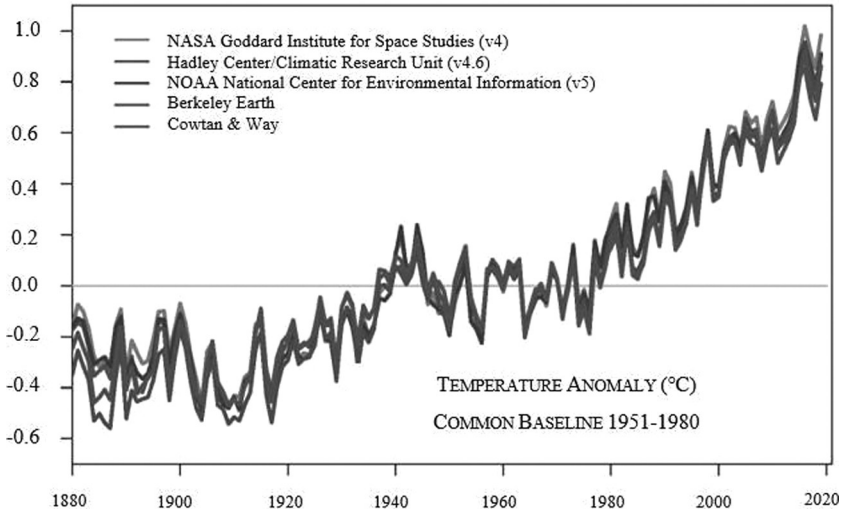


CHART 1: TEMPERATURE ANOMALY<sup>287</sup>

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287. NASA, *NOAA Analyses Reveal 2019 Second Warmest Year on Record*, NAT'L AERONAUTICS & SPACE ADMIN.: GODDARD INST. FOR SPACE STUD. (Jan. 15, 2020), <https://www.giss.nasa.gov/research/news/20200115/> ("The plot above shows yearly temperature anomalies from 1880 to 2019, with respect to the 1951-1980 mean, as recorded by NASA, NOAA, the Berkeley Earth research group, the Met Office Hadley Centre (UK), and the Cowtan and Way analysis. Though there are minor variations from year to year, all five temperature records show peaks and valleys in sync with each other. All show rapid warming in the past few decades, and all show the past decade has been the warmest.") (Credits regarding the plot: NASA GISS/Gavin Schmidt).

*THE AMAZON IS BURNING—IS PARIS, TOO?*

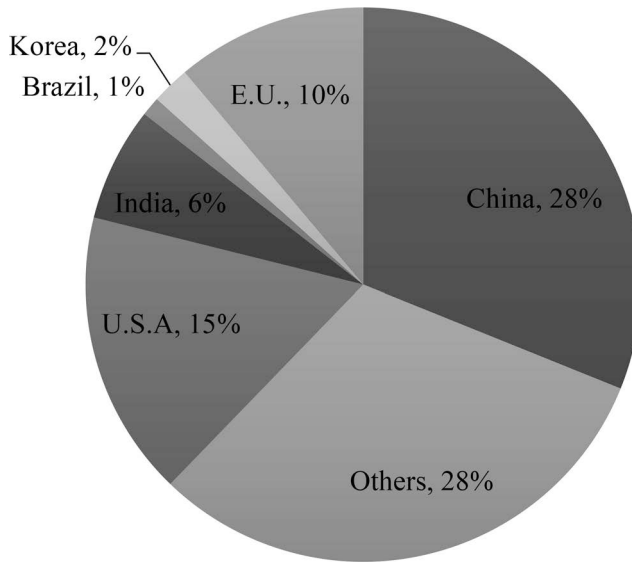


CHART 2: GLOBAL CARBON DIOXIDE EMISSIONS IN 2016<sup>288</sup>

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288. This chart was developed by the author based on the carbon emissions of fossil combustibles during 2016. *IEA Atlas of Energy*, INT'L ENERGY AGENCY (2016), <http://energyatlas.iea.org/#!/tellmap/1378539487> (last visited Sept. 20, 2020). For per capita emissions, see Table 1.

TABLE 1: CONTRIBUTIONS TO THE GREEN FUND BY COUNTRY AND EMISSIONS PER CAPITA<sup>289</sup>

<b>Contributor</b>	<b>Announced (Millions, USD)</b>	<b>Signed Per Capita</b>	<b>GDP Per Capita (K)</b>	<b>Emissions Per Capita (Rounded metric tons per capita)</b>
Australia	187.3	7.92	62	17
Austria	34.8	4.01	51	8
Belgium	66.9	6.18	48	9
Brazil*	–	–	8.72	2.2
Bulgaria	0.10	0.02	8	7
Canada	278	7.79	50	14
Chile	0.30	0.02	15	5
Colombia	0.30	<0.01	8	2
Cyprus	0.50	0.40	27	7
Czech Republic	5.30	0.57	20	10
Denmark	71.8	12.73	61	7
Estonia	1.30	0.99	20	14

289. *Status of Pledges and Contributions Made to the Green Climate Fund*, GREEN CLIMATE FUND (July 31, 2020), [https://www.greenclimate.fund/sites/default/files/document/status-pledges-irm\\_1.pdf](https://www.greenclimate.fund/sites/default/files/document/status-pledges-irm_1.pdf). Brazil was not included in the Green Climate Fund website, as it did not pledge. Brazil's GDP information refers to 2019, whereas its per capita emissions refers to 2016. The same applies to the Russian Federation. *The World Bank Databank: Global Indicators*, WBG, <https://data.worldbank.org/indicator/EN.ATM.CO2E.PC?view=chart> (scrolling down per country's name for carbon dioxide emissions); and <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD> (scrolling down per country's name for GDP) (last visited Sept. 20, 2020).

*THE AMAZON IS BURNING—IS PARIS, TOO?*

CONTINUED				
<b>Contributor</b>	<b>Announced (Millions, USD)</b>	<b>Signed Per Capita</b>	<b>GDP Per Capita (K)</b>	<b>Emissions Per Capita (Rounded metric tons per capita)</b>
Finland	107	19.40	50	10
France	1036.8	15.64	43	5
Germany	1003.3	12.40	48	9
Hungary	4.30	0.43	14	5
Iceland	1.0	2.10	52	6
Indonesia	0.30	<0.01	4	2
Ireland	10.7	0.58	53	8
Italy	334.4	4.54	35	7
Japan	1,500.0	11.80	36	9
Latvia	0.50	0.24	16	4
Liechtenstein	0.10	1.48	135	1
Lithuania	0.10	0.04	16	5
Luxembourg	46.8	58.63	111	21
Malta	0.60	0.70	23	6
Mexico	10.0	0.08	10	4
Monaco	2.30	28.89	163	Not available
Mongolia	0.1	0.02	4	7
Netherlands	133.8	7.94	52	10
New Zealand	2.6	0.57	42	7

CONTINUED				
<b>Contributor</b>	<b>Announced (Millions, USD)</b>	<b>Signed Per Capita</b>	<b>GDP Per Capita (K)</b>	<b>Emissions Per Capita (Rounded metric tons per capita)</b>
Norway	272.2	50.56	97	9
Panama	1.00	0.25	12	3
Peru	6.00	0	7	2
Poland	0.10	<0.01	14	8
Portugal	2.70	0.26	22	5
Rep. of Korea	100.0	1.99	28	12
Romania	0.10	<0.01	10	4
Russian Federation	3.0	Not available	11.6	12
Spain	160.5	3.46	30	6
Sweden	581.2	59.31	59	6
Switzerland	100	12.21	85	5
United Kingdom	1,211.0	18.77	46	7
United States	1,000	9.41	55	17
Vietnam	1.00	Not available	2	2