



Summer 2022

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Recommended Citation

Shannon K. Woulfe, *Deciphering Lessons from the Ashes: Saving the Amazon*, 62 NAT. RES. J. 257 (2022).
Available at: <https://digitalrepository.unm.edu/nrj/vol62/iss2/5>

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DECIPHERING LESSONS FROM THE ASHES: SAVING THE AMAZON

ABSTRACT

For over forty years, Brazil, its subnational governments, Indigenous communities, other nations, non-governmental organizations, corporations, and individuals have worked to conserve the Amazon rainforest through a staggering number of diverse international initiatives. While some initiatives have supported Brazil in decreasing the rate of deforestation over the past fifteen years, the 2019 fires demonstrated that destruction continues. Left unchecked, this irreversible destruction promises to amplify. Fortunately, the long history of global involvement in Amazon conservation provides ample lessons for effective, place-based deforestation prevention. Thoughtful and coordinated international action can address the current lethal combination of destructive factors: Brazil's environmentally hostile federal administration, its national economic recession, and surging international demand for deforestation commodities.

This Article curates lessons learned from over four decades of international efforts to conserve the Amazon rainforest and synthesizes them into a more effective and efficient strategy. Due to the urgency caused by the climate crisis and the Amazon's impending "tipping point," this Article analyzes the issue through a retrospective lens, drawing insight from past and existing initiatives—because what has been done is possible. Because this Article's proposal relies on existing global alliances, political motivation, institutions, and mechanisms, the burden of its implementation is considerably reduced. There simply is no time for starting fresh.

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INTRODUCTION

In August 2019 a harrowing scene darkened news pages and social media across the globe: orange smoke and flames streaking through canopies;¹ thin lines of fire separating ashy, skeletal remains of decimated forests from lush, green foliage;² billowing smoke streams visible from space.³ That month alone, 310,000 acres of the Amazon burned.⁴ The world looked on in horror and panic⁵ as the “lungs of the earth” went up in flames.⁶ The hashtags “#prayforamazonia” and “#savetherainforest” garnered hundreds of thousands of entries.⁷

Although the focus was on fires burning within Brazil’s borders, the devastation and loss was felt globally.⁸ These reactions reflect a pervasive and entrenched perception of the Amazon as a global commons.⁹ But the Amazon

1. Roland Hughes, Amazon Fires (photograph), in *Amazon Fires: What’s the Latest in Brazil?* BBC NEWS (Oct. 12, 2019), <https://www.bbc.com/news/world-latin-america-49971563>.

2. Rainforest Alliance, (@rainforestalliance), Amazon Fire (photograph), in INSTAGRAM (Aug. 21, 2019) <https://www.instagram.com/p/B1bx2qRBUp/?hl=en>.

3. NOAA Satellites, (@NOAASatellites), Amazon Rainforest (photograph), in TWITTER (Aug. 6, 2019) <https://twitter.com/NOAASatellites/status/1158766414473416705>.

4. Taran Volckhausen, *Escalating Firestorms Could Turn Amazon from Carbon Sink To Source: Study*, MONGABAY (Feb. 6, 2020), <https://news.mongabay.com/2020/02/escalating-firestorms-could-turn-amazon-from-carbon-sink-to-source-study/>.

5. See, e.g., Terrence McCoy & Maina Lopes, *The World Wants to Save the Amazon Rainforest. Brazil’s Bolsonaro Says Hands Off*, WASH. POST (Aug. 23, 2019), <https://www.washingtonpost.com/world/2019/08/23/amazon-rainforest-fires-brazil-world-reaction/>; Julia Hollingsworth, *Amazon Fires: Madonna and Leonardo DiCaprio Among Celebrities to Speak Out*, CNN (Aug. 23, 2019), <https://www.cnn.com/2019/08/23/americas/amazon-celebrities-social-media-intl-hnk-trnd/index.html>; Sophia Foggin, *What World Leaders Are Saying About The Forest Fires in the Amazon*, LATIN AMERICA REPORTS (Aug. 23, 2019), <https://latinamericareports.com/what-world-leaders-are-saying-about-the-forest-fires-in-the-amazon/2961/>; Maeve Campbell, *The Amazon Rainforest is on Fire, What Can You Do About It?*, EURONEWS: GREEN NEWS (Aug. 23, 2019), <https://www.euronews.com/green/2019/08/22/the-amazon-rainforest-is-on-fire-what-can-you-do-about-it>.

6. Rainforest Alliance, *supra* note 2.

7. Yair Oded, *The Amazon is on Fire, Our Instagram Feeds Will Bury #Prayforamazonia in 2 Days*, FAIR PLANET (Aug. 27, 2019), <https://www.fairplanet.org/story/the-amazon-is-on-fire-our-instagram-feeds-will-bury-prayforamazonia-in-2-days/>.

8. See, e.g., McCoy & Lopes, *supra* note 5 (“Disturbing images of the forest aflame and cities cloaked in smoke this week ignited a rapid and overwhelming international backlash”); Antonio Guterres, Secretary-General of the UN, (@antonioguterres), TWITTER (Aug. 22, 2019), <https://twitter.com/antonioguterres/status/1164586391629705216> (“[W]e cannot afford more damage to a major source of oxygen and biodiversity.”); Emmanuel Macron, (@EmmanuelMacron), TWITTER (Aug. 22, 2019, 3:15 PM), <https://twitter.com/emmanuelmacron/status/1164617008962527232> (tweet of President Macron of France) (“Our house is burning.”); Umair Irfan, *Why It’s Been So Lucrative to Destroy the Amazon Rainforest*, VOX (Aug. 30, 2019), <https://www.vox.com/energy-and-environment/2019/8/30/20835091/amazon-rainforest-fire-wildfire-bolsonaro> (displaying image of protester in Italy holding sign “The Amazon is ours, is everyone’s”).

9. Alexi Barrionuevo, *Whose Rain Forest Is This, Anyways?*, N.Y. TIMES (May 18, 2008) <https://www.nytimes.com/2008/05/18/weekinreview/18barrionuevo.html> (“[A] chorus of international leaders have ever more openly declared the Amazon part of a patrimony far larger than that of the nations that share its territory.”); see ET Edit, Opinion, *Amazon Alight, Global Commons, Sovereignty*, ECON. TIMES (Aug. 27, 2019), <https://economictimes.indiatimes.com/blogs/et-editorials/amazon-alight-global-commons-sovereignty/> (“The Amazon tussle highlights the precarious balance that must be achieved

rainforest, while providing many benefits outside of its political boundaries, is *not* legally a global commons.¹⁰ It is a forest completely within the boundaries of nine nations, sixty percent in Brazil.¹¹ The international community benefits from the conservation of the Amazon, creating persistent tension between the Amazonian states and the rest of the world while also yielding incentives for their cooperation.

For over forty years,¹² Brazil, its subnational governments, Indigenous communities, other nations, non-governmental organizations, corporations, and individuals have been working to protect the rainforest through a staggering number of diverse international initiatives. Many of these initiatives have supported Brazil in decreasing deforestation over the past fifteen years.¹³ Still, as the 2019 fires demonstrated, gaps in this web of initiatives allow for continued destruction of huge swaths of rainforest.¹⁴ Unchecked, the destruction will amplify.¹⁵ Fortunately, the long history of global involvement in the Amazon's conservation provides ample lessons on effective, place-based deforestation prevention tactics.

This Article curates lessons learned from over four decades of international efforts and proposes to synthesize them into a more effective and efficient strategy. Due to the urgency caused by the climate crisis¹⁶ and the Amazon's impending "tipping point,"¹⁷ this Article uses a retrospective lens—because what *has been done* is inherently possible. While others have advanced theoretical proposals,¹⁸ this

between national concerns and international efforts to protect the global commons.”); Manuel Nabais da Furriela, *The Internationalization of the Amazon*, 1 INT’L & COMPAR. ENV’T L., 17–20 (2000) (detailing the history of viewing the Amazon as a “global resource” in need of “coordinated action” from the world); McCoy & Lopes, *supra* note 5 (discussing Foreign Policy magazine’s headline “Who will invade Brazil to save the Amazon?”).

10. See A. Dan Tarlock, *Exclusive Sovereignty Versus Sustainable Development of A Shared Resource: The Dilemma of Latin American Rainforest Management*, 32 TEX. INT’L L.J. 37, 38–40 (1997).

11. Paige Mason, *Inadequacies of the Amazon Fund*, 13 TOURO INT’L L. REV. 116, 117 (2010).

12. See Sandra Nicolle & Maya Leroy, *Advocacy Coalitions and Protected Areas Creation Process: Case Study in the Amazon*, 198 J. ENV’T MGMT. 99, 103 (2017) (describing the 1972 Stockholm Declaration’s impact).

13. See *infra* Part II.

14. See, e.g., Hertón Escobar, *Brazil’s Deforestation is Exploding—and 2020 Will Be Worse*, SCI. (Nov. 22, 2019), <https://www.sciencemag.org/news/2019/11/brazil-s-deforestation-exploding-and-2020-will-be-worse>; *Deforestation in Brazil Continues to Surge, Up 10.7 Percent in June*, YALE ENV’T 360: E360 DIGEST (July 10, 2020), <https://e360.yale.edu/digest/deforestation-in-brazil-continues-to-surge-up-10-7-percent-in-june>.

15. Josh Kaplan, *(Agri)business as Usual: Curbing Deforestation in the Amazon Rainforest*, WILSON CENTER: THINK BRAZIL (Aug. 12, 2019), <https://www.wilsoncenter.org/blog-post/agribusiness-usual-curbing-deforestation-the-amazon-rainforest>.

16. Myles R. Allen et al., *Global Warming of 1.5°C.*, INTERGOVERNMENTAL PANEL CLIMATE CHANGE [IPCC] at (2018), https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_Full_Report_High_Res.pdf.

17. Thomas E. Lovejoy & Carlos Nobre, *Amazon Tipping Point: Last Chance for Action*, SCI. ADVANCES (Dec. 20, 2019), <https://www.science.org/doi/full/10.1126/sciadv.aba2949>; see Gilvan Sampaio et al., *Regional Climate Change Over Eastern Amazonia Caused by Pasture and Soybean Cropland Expansion*, 34 GEOPHYSICAL RSCH. LETTERS 17 (2007); Thomas E. Lovejoy & Carlos Nobre, *Amazon Tipping Point*, 4 SCI. ADVANCES 1 (Feb. 21, 2018), <https://www.science.org/doi/pdf/10.1126/sciadv.aat2340>.

18. Mason, *supra* note 11 (debt-for-nature swaps); Jacqueline Klosek, *The Destruction of the Brazilian Amazon: An International Problem*, 6 CARDOZO J. INT’L & COMP. L. 119, 149 (1998) (an “international tropical moist forest reserve”); Ruslan Klafehn, *Burning Down the House: Do Brazil’s*

Article argues for modifying and supplementing current initiatives rather than implementing novel—and untested—approaches. Because this Article’s proposal relies on existing global alliances, political motivation, institutions, and mechanisms, the burden of implementation is considerably reduced. There simply is no time for starting fresh.

Part I examines the Amazon rainforest, provides a condensed history of its deforestation, and summarizes the current tension between deforestation drivers and conservation efforts. Part II highlights existing mechanisms and institutions designed to protect the forest and attempts to quantify or otherwise describe their impact on deforestation reduction. Part III synthesizes the lessons learned through these initiatives. Part IV then crafts a streamlined framework for conserving the Amazon, arguing that the global community should double down on the strategies that have proven effective—and cease other activities—while enabling greater transparency, supporting third-party monitoring, and increasing the flow of resources to Brazil and Brazilian NGOs. Finally, the Conclusion designates the impetus for this action.

I. THE BRAZILIAN AMAZON

The Amazon rainforest represents “more than half of the world’s rainforests,”¹⁹ covering nine South American countries and occupying over 2.6 million square miles.²⁰ It is the most “biodiverse place on earth,”²¹ and boasts an incredible abundance of nonrenewable resources.²² Additionally, the Amazon rainforest stores billions of tons of carbon²³ and produces six percent of the oxygen released by the world’s photosynthetic organisms.²⁴ “The forest also influences the

Forest Management Policies Violate the No-Harm Rule Under the CBD and Customary International Law?, 35 AM. U. INT’L L. REV. 941, 966 (2020) (“legal personhood for the Amazon Rainforest”); Roger W. Findley, *Legal and Economic Incentives for the Sustainable Use of Rainforests*, 32 TEX. INT’L L.J. 17, 32 (1997) (“capture financial and technological benefits from . . . genetic resources by means of access restrictions and concession contracts”); Tyler E. Hazen, *The Effects of Brazilian Agricultural Property Policies and International Pressures on the Soybean Industry*, 2 SAN DIEGO J. CLIMATE & ENERGY L. 223, 243 (2010) (non-genetically modified soy).

19. Eder Johnson de Area Leão Pereira et al., *Policy in Brazil (2016-2019) Threatens Conservation of the Amazon Rainforest*, 100 ENV’T SCI. & POL’Y 8, 8 (2019).

20. *Brazil and the Amazon Forest*, GREENPEACE, <https://www.greenpeace.org/usa/issues/brazil-and-the-amazon-forest/> (last visited Mar. 28, 2021).

21. Ashley Thomson, *Biodiversity and the Amazon Rainforest*, GREENPEACE (May 22, 2020), <https://www.greenpeace.org/usa/biodiversity-and-the-amazon-rainforest/>.

22. Philip M. Fearnside, Nat’l Inst. Rsch., *The Main Resources of Amazonia at 3–5* (Apr. 16, 1997) (including minerals and agriculture); Ian Sample, *Amazon Rainforest Threatened By New Wave Of Oil and Gas Exploration*, GUARDIAN (Aug. 12, 2008), <https://www.theguardian.com/environment/2008/aug/13/conservation.forests>.

23. Fen Montaigne, *Will Deforestation and Warming Push the Amazon to a Tipping Point?*, YALE ENV’T 360 (Sept. 4, 2019), <https://e360.yale.edu/features/will-deforestation-and-warming-push-the-amazon-to-a-tipping-point>; Philip M. Fearnside, *Deforestation in Brazilian Amazonia: History, Rates, and Consequences*, 19 CONSERV. BIOLOGY 680, 686 (2005) [hereinafter *Deforestation in Brazilian Amazonia*].

24. Peter Brannen, *The Amazon Is Not Earth’s Lungs*, ATLANTIC (Aug. 27, 2019), <https://www.theatlantic.com/science/archive/2019/08/amazon-fire-earth-has-plenty-oxygen/596923/>.

water cycle on a regional and perhaps even global scale.”²⁵ Over 60% of the Amazon rainforest is in Brazil.²⁶

A. A Condensed History of Deforestation

In the Brazilian Amazon, large-scale deforestation can be traced back to the 1970s.²⁷ The Brazilian federal government, under military rule, actively promoted rainforest settlement.²⁸ A new Trans-Amazonian Highway enabled this colonization.²⁹ The project facilitated deforestation by increasing access to the forest.³⁰ Deforestation skyrocketed to 7,876 square miles per year from 1978–1988, an area equivalent to Massachusetts clear cut *annually*.³¹

In 1988, Brazil sank into an economic recession.³² In tandem, the deforestation rate dropped almost in half.³³ To stimulate recovery, the federal government loosened its grip on the national economy and opened Brazil to more global market forces and foreign industry.³⁴ Deforestation rose, despite cessation of government programs that had spurred deforestation previously.³⁵ The increase was due to “an increasing globalization of the forces of deforestation,” such as demand

25. Craig Welch, *How Amazon Forest Loss May Affect Water—and Climate—Far Away*, NAT’L GEOGRAPHIC (Aug. 27, 2019), <https://www.nationalgeographic.com/environment/2018/11/how-cutting-the-amazon-forest-could-affect-weather/>.

26. Kaplan, *supra* note 15.

27. *Deforestation in Brazilian Amazonia*, *supra* note 23, at 680.

28. SERGIO MARGULIS, CAUSES OF DEFORESTATION OF THE BRAZILIAN AMAZON xi (2003), <https://openknowledge.worldbank.org/bitstream/handle/10986/15060/277150PAPER0wbwp0no1022.pdf>; François-Michel Le Tourneau, *Le Brésil Maîtrise-t-il (enfin) la Déforestation en Amazonie?* [*Is Brazil Now in Control of Deforestation in the Amazon?*], *REVUE EUROPÉENNE DE GÉOGRAPHIE* [EUR. J. GEOGR.] 769 (2016) (Fr.), translated in François-Michel Le Tourneau, *Is Brazil Now in Control of Deforestation in the Amazon?*, *CYBERGEO: EUROPEAN JOURNAL OF GEOGRAPHY* (2016), <https://journals.openedition.org/cybergeo/27484>.

29. *The Trans-Amazonian Highway*, MONGABAY, <https://rainforests.mongabay.com/08highway.htm> (last visited Sept. 21, 2020).

30. *Id.*; Tatiana Dias, *Operation Amazon Redux*, THE INTERCEPT (Sept. 19, 2019, 10:01 PM), <https://theintercept.com/2019/09/20/amazon-brazil-army-bolsanaro/>.

31. *Deforestation in Brazilian Amazonia*, *supra* note 23, at 680–681; *State Area Measurements and Internal Point Coordinates*, U.S. CENSUS, <https://www.census.gov/geographies/reference-files/2010/geo/state-area.html> (last visited Sept. 21, 2020).

32. *Deforestation in Brazilian Amazonia*, *supra* note 23, at 681.

33. *Id.*; ANDREW REVKIN, THE BURNING SEASON: THE MURDER OF CHICO MENDES AND THE FIGHT FOR THE AMAZON RAIN FOREST 301 (2004). Brazil has a monitoring system that generates highly specific information on deforestation dating back to 1988. MINISTRY OF THE ENVIRONMENT, BRAZIL, ENREDD+: NATIONAL REDD+ STRATEGY 13 (2016).

34. PETER J. MEYER, CONG. RSCH. SERV., R46236, BRAZIL: BACKGROUND AND U.S. RELATIONS 3–4 (2020).

35. MARGULIS, *supra* note 28, at xi.

for soybeans and beef,³⁶ fueled by the devalued national currency.³⁷ Technological advances, managerial improvements, and adaptation of cattle ranching to the conditions of the Amazon³⁸ also contributed by increasing the profitability of deforestation.³⁹

By the early 2000s, the Amazon became an ideal location for industrial agriculture with its abundance of cheap land,⁴⁰ land tenure insecurity,⁴¹ low labor costs, and amenable temperatures.⁴² A pattern of deforestation emerged that would continue through the next two decades. First, land was cleared by logging and fires.⁴³ “Improved,”⁴⁴ land became pasture for the burgeoning cattle herds of large landowners.⁴⁵ Ever expanding soy farms crept toward the forest frontier, pushing cattle off their pastures and creating demand for more cleared forest.⁴⁶ In 2004, deforestation hit its peak: 11,000 square miles of clear cutting.⁴⁷

36. *Deforestation in Brazilian Amazonia*, *supra* note 23, at 682; Daniel Nepstad et al., *Slowing Amazon Deforestation Through Public Policy and Interventions in Beef and Soy Supply Chains*, 344 SCIENCE 1118, 1118 (2014) [hereinafter *Slowing Amazon Deforestation*]; Sabine Henders et al., *Trading Forests: Land-Use Change and Carbon Emissions Embodied in Production and Exports of Forest-Risk Commodities*, 10 ENVIRON. RES. LETT. 1, 10 (2015).

37. Nathalie F. Walker, Sabrina A. Patel, Kemel A. B. Kalif, *From Amazon Pasture to the High Street: Deforestation and the Brazilian Cattle Product Supply Chain*, 6 TROP. CONSERV. SCI. 446, 447 (2013).

38. MARGULIS, *supra* note 28, at xi.

39. *Id.* at xviii; Umair Irfan, *Why It's Been So Lucrative to Destroy the Amazon Rainforest*, VOX (Aug. 30, 2019, 7:00 AM), <https://www.vox.com/energy-and-environment/2019/8/30/20835091/amazon-rainforest-fire-wildfire-bolsonaro>; Tomas Jusys, *Changing Patterns in Deforestation Avoidance by Different Protection Types in the Brazilian Amazon*, 13 PLOS ONE 1, 2 (2018).

40. Le Tourneau, *supra* note 28 (“[L]and laws in Brazil allow all citizens to settle on undeveloped public lands and to claim ownership if they make private use of them and ‘improve’ them, the transformation of a forest into agricultural fields being the easiest way of proving such an ‘improvement.’”).

41. *Id.*

42. *What's Driving Deforestation?* UNION OF CONCERNED SCIENTISTS (Feb. 8, 2016), <https://www.ucsusa.org/resources/whats-driving-deforestation>.

43. Marcelo Coppola, *Where There's Cattle Ranching and Soybean Farming, There's Fire, Study Finds*, MONGABAY (July 20, 2020), <https://news.mongabay.com/2020/07/where-theres-cattle-ranching-and-soybean-farming-theres-fire-study-finds/>.

44. Le Tourneau, *supra* note 28; *see also* Daniel Nepstad, *How to Help Brazilian Farmers Save the Amazon*, N.Y. TIMES (Dec. 24, 2019), <https://www.nytimes.com/2019/12/24/opinion/amazon-deforestation.html>.

45. V. De Sy et al., *Tropical Deforestation Drivers and Associated Carbon Emission Factors Derived from Remote Sensing Data*, 14 ENVIRON. RES. LETT. (Sept. 20, 2019), <https://iopscience.iop.org/article/10.1088/1748-9326/ab3dc6>; Jan Börner et al., *Direct Conservation Payments in the Brazilian Amazon: Scope and Equity Implications*, 69 ECOL. ECON. 1272, 1280 (2010) (80% of deforestation occurs on land owned by large landowners).

46. Liz Kimbrough, *Soy and Cattle Team Up to Drive Deforestation in South America: Study*, MONGABAY (July 21, 2021), <https://news.mongabay.com/2021/07/study-shows-how-soy-cattle-team-up-to-drive-deforestation-in-south-america/>; Le Tourneau, *supra* note 28.

47. Philip Fearnside, *Business as Usual: A Resurgence of Deforestation in the Brazilian Amazon*, YALE ENVIRONMENT 360 (Apr. 18, 2017), <https://e360.yale.edu/features/business-as-usual-a-resurgence-of-deforestation-in-the-brazilian-amazon> [hereinafter *Business as Usual*].

Starting in the mid-2000s, deforestation abruptly declined.⁴⁸ By 2012, annual deforestation had dropped 84 percent from 2004 levels, to just 1,700 square miles of clearing.⁴⁹ Several factors contributed: strong national enforcement of Brazil's environmental policies,⁵⁰ new international initiatives focused on reducing deforestation,⁵¹ increased yields of cattle on existing pasture,⁵² and decreased undesignated forest land that together made deforestation riskier,⁵³ more difficult, and less profitable.⁵⁴

However, in 2012 Brazil revised its Forest Code, “the most important legal restriction on forest clearing on private lands”⁵⁵ “removing [vital] restrictions on deforestation.”⁵⁶ By 2014, mounting political instability and an economic recession⁵⁷ resulted in further national policy changes enabling deforestation, including a “suspension of demarcation of [I]ndigenous lands, and a reduction of the size of protected areas,” as well as “heavy budgetary cuts” to environment agencies.⁵⁸ The deforestation rate ticked up.⁵⁹

In 2019, deforestation grew 34 percent from the year before.⁶⁰ The rate continued to rise in 2020, with 4,280 square miles deforested by December—a 12-

48. *Slowing Amazon Deforestation*, *supra* note 36, at 1118.

49. *Business as Usual*, *supra* note 47.

50. Nearly 50% of deforestation has been illegal under national law, which means that enforcing national policy can result in a large reduction of deforestation. Duncan Brack, *Background Analytical Study, Forests and Climate Change*, U.N. FORUM ON FORESTS 30 (March 2019), <https://www.un.org/esa/forests/wp-content/uploads/2019/03/UNFF14-BkgdStudy-SDG13-March2019.pdf>; Edenise Garcia et al., *Dealing with Deforestation in the Brazilian Amazon*, in ZERO DEFORESTATION: A COMMITMENT TO CHANGE 143, 144 (Nick Pasiecznik & Herman Savenije eds., 2017).

51. *See infra* Part II.B.

52. *Slowing Amazon Deforestation*, *supra* note 36, at 1120.

53. Deforestation became riskier due to fines and market rejection. *Slowing Amazon Deforestation*, *supra* note 36, at 1120.

54. *Id.*; Doug Boucher, Sarah Roquemore & Estrellita Fitzhugh, *Brazil's Success in Reducing Deforestation*, 6 TROP. CONSERV. SCI. 426, 435 (2013); *see also* Érico Emed Kauano et al., *Do Protected Areas Hamper Economic Development of the Amazon Region?*, 92 LAND USE POLICY 1, 2 (Mar. 2020).

55. *Slowing Amazon Deforestation*, *supra* note 36, at 1118; *see also* Christoph Nolte et al., *Governance Regime and Location Influence Avoided Deforestation Success of Protected Areas in the Brazilian Amazon*, 110 PNAS 4956, 4957 (2013).

56. *Business as Usual*, *supra* note 47; Le Tourneau, *supra* note 28.

57. Matt Sandy, *'The Amazon is Completely Lawless': The Rainforest After Bolsonaro's First Year*, N.Y. TIMES (Dec. 5, 2019), <https://www.nytimes.com/2019/12/05/world/americas/amazon-fires-bolsonaro-photos.html>; William D. Carvalho et al., *Deforestation Control in the Brazilian Amazon*, 17 PERSPS. ECOLOGY & CONSERVATION 122, 123 (2019).

58. NYDF ASSESSMENT PARTNERS, NEW YORK DECLARATION ON FORESTS FIVE-YEAR ASSESSMENT REPORT 75 (2019); Stephen Eisenhammer, *Rush for the Rainforest: One Brazilian Farmer Tried—and Failed—to Ranch More Responsibly in the Amazon*, REUTERS (Aug. 28, 2020), <https://www.reuters.com/investigates/special-report/brazil-deforestation-cattle/>.

59. Lisa Song, *An Even More Inconvenient Truth*, PROPUBLICA (May 22, 2019), <https://features.propublica.org/brazil-carbon-offsets/inconvenient-truth-carbon-credits-dont-work-deforestation-redd-acre-cambodia/>.

60. *Monitoramento do Desmatamento da Floresta Amazônica Brasileira por Satélite* [Monitoring Deforestation of the Brazilian Amazon Forest by Satellite], PRODES <http://www.obt.inpe.br/OBT/assuntos/programas/amazonia/prodes/>.

year high.⁶¹ 2021 was no different: it saw 5,100 square miles deforested—a 15-year high.⁶² The ongoing recession⁶³ and overwhelming political support for development⁶⁴ has combined with surging international soy demand⁶⁵ and record beef exports⁶⁶ to increase deforestation.

Today, the cattle industry is responsible for 80 percent of continued Amazon deforestation.⁶⁷ Ever-increasing soybean production continues to push cattle pastures into the forest as soy farms expand.⁶⁸ Of Brazil's total national production, it exports 20 percent of its cattle⁶⁹ and 77 percent of its soy products.⁷⁰ Most of these exports are consumed by China and the European Union.⁷¹ While Brazil has commendable national environmental laws, it currently lacks the financial ability and political motivation to enforce them due to the ongoing recession and the pro-economic growth stance of President Jair Bolsonaro.⁷²

61. Reuters, *Brazil Amazon Deforestation hits 12-Year High Under Bolsonaro*, N.Y. TIMES (Nov. 30, 2020), <https://www.nytimes.com/2020/11/30/world/americas/brazil-amazon-rainforest-deforestation.html>.

62. Manuela Andreoni, *Amazon Deforestation Soars to 15-Year High*, N.Y. TIMES (Nov. 19, 2021), <https://www.nytimes.com/2021/11/19/world/americas/brazil-amazon-deforestation.html>.

63. Ignacio Amigo, *When Will the Amazon Hit a Tipping Point?*, NATURE (Feb. 25, 2020), <https://www.nature.com/articles/d41586-020-00508-4>; *The World Bank in Brazil*, WORLD BANK, <https://www.worldbank.org/en/country/brazil/overview> (last visited Dec. 6, 2020).

64. Ernesto Londoño & Letícia Casado, *As Bolsonaro Keeps Amazon Vows, Brazil's Indigenous Fear 'Ethnocide'*, N.Y. TIMES (Apr. 19, 2020), <https://www.nytimes.com/2020/04/19/world/americas/bolsonaro-brazil-amazon-indigenous.html>.

65. Sal Gilbertie, *The World's Largest Soybean Exporter Wants to Import Soybeans. What Happened?*, FORBES (Oct. 20, 2020), <https://www.forbes.com/sites/salgilbertie/2020/10/20/the-worlds-largest-soybean-exporter-wants-to-import-soybeans-what-happened/?sh=5e740fdc67d4>.

66. Ana Mano, *Brazil's Beef Export Hit Record, Prospects Bright on China Demand*, REUTERS (Dec. 10, 2019), <https://www.reuters.com/article/us-brazil-beef/brazils-beef-export-hit-record-prospects-bright-on-china-demand-idUSKBN1YEITS>.

67. Sandy, *supra* note 57; Henders, et al., *supra* note 36, at 10.

68. De Sy et al., *supra* note 45; see Henders et al., *supra* note 36, at 6.

69. *The Chain: Brazilian Beef Linked to Deforestation May Re-enter U.S. Market*, CHAIN REACTION RSCH. (Apr. 4, 2019), <https://chainreactionresearch.com/the-chain-brazilian-beef-linked-to-deforestation-may-re-enter-u-s-market/>.

70. *Feed and Livestock in Brazil, China, EU Consume Most Cerrado Soy*, CHAIN REACTION RSCH. (Dec. 17, 2019), <https://chainreactionresearch.com/report/feed-and-livestock-in-brazil-china-eu-consume-most-cerrado-soy/>.

71. Jake Spring, *A Fifth of EU Soy Imports from Brazil Could Be Tainted By Deforestation, Study Says*, REUTERS (July 16, 2020), <https://www.reuters.com/article/us-brazil-environment/a-fifth-of-eu-soy-imports-from-brazil-could-be-tainted-by-deforestation-study-says-idUSKCN24H2XN>; *Record Export of Brazilian Beef in July; China Becomes the Insatiable Client*, MERCOPRESS (Aug. 11, 2020), <https://en.mercopress.com/2020/08/11/record-export-of-brazilian-beef-in-july-china-becomes-the-insatiable-client>; Katy Askew, *EU-Mercosur Deal Faces Mounting Opposition as Soy and Beef Exports Drive Deforestation in Brazil*, FOODNAVIGATOR (July 22, 2020), <https://www.foodnavigator.com/Article/2020/07/22/EU-Mercosur-deal-faces-mounting-opposition-as-soy-and-beef-exports-drive-deforestation-in-Brazil#>.

72. Londoño & Casado, *supra* note 64; Daniel Gallas & Daniele Palumbo, *What's Gone Wrong with Brazil's Economy*, BBC (May 27, 2019), <https://www.bbc.com/news/business-48386415>; Mariana Simões, *Brazil's Bolsonaro on the Environment, in His Own Words*, N.Y. TIMES (Aug. 27, 2019), <https://www.nytimes.com/2019/08/27/world/americas/bolsonaro-brazil-environment.html>; "Pro-growth" is defined as "favoring or advocating the commercial development or exploitation of land and other natural

In summary, about twenty percent of the Brazilian Amazon has been deforested since the 1970s.⁷³ As documented above, deforestation rates are responsive to both market forces and national policy.⁷⁴

B. International Impact of Deforestation

Deforestation has reduced the Amazon to 82 percent of its former area, dangerously close to a feared “tipping point” where the amount of deforested land will spur a negative feedback loop, resulting in the “savannization” of the rainforest.⁷⁵

Much of the international concern over deforestation stems from its impact on climate change. Because standing forests store carbon and the process of deforestation emits greenhouse gases,⁷⁶ deforestation is doubly detrimental as “the second largest anthropogenic source of carbon dioxide.”⁷⁷ Conversely, forest conservation has been identified as one of the most effective climate change mitigation strategies.⁷⁸

The Amazon removes one to two billion tons of carbon from the atmosphere per year, about five percent of annual human atmospheric releases.⁷⁹ Deforestation and fires release 500–700 million tons of carbon a year, reducing the net benefit of the Amazon’s carbon capture by half.⁸⁰ This contributes to Brazil’s position as the world’s seventh largest emitter of greenhouse gases,⁸¹ with the greatest proportion of its emissions⁸² from deforestation.⁸³

resources, especially with minimal government restriction and regulation.” *Pro-growth*, DICTIONARY.COM, <https://www.dictionary.com/browse/pro-growth> (last visited Dec. 14, 2021).

73. Rhett A. Butler, *Calculating Deforestation Figures for the Amazon*, MONGABAY (Jan. 4, 2020), https://rainforests.mongabay.com/amazon/deforestation_calculations.html.

74. See, e.g., Carvalho et al., *supra* note 57, at 122–23; *Slowing Amazon Deforestation*, *supra* note 36, at 1118; Edenise Garcia et al., *supra* note 50, at 144; Rhett A. Butler, *Brazil’s Plan to Save the Amazon Rainforest*, MONGABAY (June 2, 2009), <https://news.mongabay.com/2009/06/brazils-plan-to-save-the-amazon-rainforest/>.

75. Sampaio et al., *supra* note 17; Lovejoy & Nobre, *supra* note 17.

76. *At COP25, a Call to Turn the Tide on Deforestation*, U.N. CLIMATE CHANGE (Dec. 12, 2019), <https://unfccc.int/news/at-cop25-a-call-to-turn-the-tide-on-deforestation>.

77. Xiao-Peng Song et al., *Annual Carbon Emissions from Deforestation in the Amazon Basin between 2000 and 2010*, PLOS ONE (May 7, 2015), <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0126754>.

78. Myles R. Allen et al., *supra* note 16; Claudia Stickler et al., *The Rio Branco Declaration*, FRONTIER GLOBAL CHANGE at 2 (June 26, 2020), <https://www.frontiersin.org/articles/10.3389/ffgc.2020.00050/full>.

79. Montaigne, *supra* note 23.

80. *Id.*

81. Elisângela Mendonça, *Bolsonaro’s Brazil Unlikely to Achieve Paris Agreement Goals: Experts*, MONGABAY (Sept. 22, 2019), <https://news.mongabay.com/2019/09/bolsonaros-brazil-unlikely-to-achieve-paris-agreement-goals-experts/>; *Brazil Cuts Deforestation Emissions Below 2020 Targets*, REUTERS (Aug. 9, 2018), <https://www.reuters.com/article/us-brazil-climate/brazil-cuts-deforestation-emissions-below-2020-targets-idUSKBN1KV03X>.

82. Le Tourneau, *supra* note 28.

83. Brack, *supra* note 50, at 3 (showing one third of Brazil’s total emissions is from deforestation); REUTERS, *Brazil Cuts Deforestation Emissions Below 2020 Targets*, *supra* note 81; *Brazil’s Carbon Emissions Rose in 2019 With Amazon Deforestation*, ALJAZEERA (Nov. 7, 2020), <https://www.aljazeera.com/news/2020/11/7/brazils-carbon-emissions-rose-in-2019-with-amazon->

Deforestation also threatens the ecosystem services provided by the Amazon rainforest.⁸⁴ The Amazon rainforest contributes to the global water cycle,⁸⁵ “helping to propagate rainfall and other climate patterns globally.”⁸⁶ Deforestation in Brazil leads to decreased precipitation and snowpack in California and the Pacific Northwest.⁸⁷ Additionally, deforestation imperils the incredible biodiversity in the Amazon, a global concern since the 1980s.⁸⁸

C. Sovereignty Concerns

While Brazil has been a sovereign nation since 1822,⁸⁹ the echoes of Portuguese colonization and subsequent economic exploitation by foreign states and corporations haunt the nation.⁹⁰ Starting with a rubber boom in the late 1830s, a large and continued international presence in the Brazilian Amazon has focused on exploiting its natural resources.⁹¹

From 1970–1990, Brazil was under military rule⁹² that promoted nationalism and labeled globalization a threat.⁹³ To further this narrative, the government promoted Amazonian settlement, “argu[ing] that a thinly populated Amazon might create avenues for foreign powers to invade.”⁹⁴ By the 1980s, that campaign had spurred massive deforestation and catapulted Brazil onto the global stage as an “environmental villain.”⁹⁵ The country’s leaders viewed the following international “calls for preservation . . . with great suspicion,” regarding them as

deforestation (“The growth of emissions in 2019 was driven by skyrocketing deforestation in the Amazon rain forest, which accounted for 44 percent of Brazil’s total CO2 emissions, the study said.”).

84. Umair Irfan, *Why It’s Been So Lucrative to Destroy the Amazon Rainforest*, VOX (Aug. 30, 2019 7:00 AM), <https://www.vox.com/energy-and-environment/2019/8/30/20835091/amazon-rainforest-fire-wildfire-bolsonaro>; David M. Lapola et al., *Limiting the High Impacts of Amazon Forest Dieback with No-Regrets Science and Policy Action*, 115 PROC. OF THE NAT’L ACAD. OF SCIENCES 11671, 11673 (2018) (estimating the socioeconomic cost of degradation of the Brazilian Amazon to be in the range of \$49–\$456 billion (USD)).

85. Michael Wolosin & Nancy Harris, *Tropical Forests and Climate Change: The Latest Science*, WORLD RES. INST., June 2018, at 1.

86. Jonah Wittkamper, *Investing in Amazon Rainforest Conservation: A Foreigner’s Perspective*, MONGABAY (Apr. 21, 2020), <https://news.mongabay.com/2020/04/investing-in-amazon-rainforest-conservation/>.

87. David Medvigy et al., *Stimulated Changes in Northwest U.S. Climate in Response to Amazon Deforestation*, 26 AM. METEOROLOGICAL SOC’Y 9115, 9115 (2013).

88. Jane E. Brody, *Concern for Rain Forest Has Begun to Blossom*, N.Y. TIMES (Oct. 13, 1987), <https://www.nytimes.com/1987/10/13/science/concern-for-rain-forest-has-begun-to-blossom.html>.

89. José Fonseca, *A Brief History of Brazil*, N.Y. TIMES, https://archive.nytimes.com/www.nytimes.com/fodors/top/features/travel/destinations/centralandsouthamerica/brazil/riodejaneiro/fdrs_feat_129_9.html?n=Top%252FFeatures%252FTravel%252FDestination%252FCentral+and+South+America%252FBrazil%252FRio+de+Janeiro (last visited Jan. 10, 2022).

90. Furriela, *supra* note 8, at 17, 18.

91. Manuela Picq, *Rethinking IR from the Amazon*, 59 REV. BRASILEIRA DE POL. INT’L, Apr. 19, 2016, at 6.

92. Fonseca, *supra* note 89.

93. ANNE MARIE TODD, ENVIRONMENTAL SOVEREIGNTY DISCLOSURE OF THE BRAZILIAN AMAZON: NATIONAL POLITICS AND THE GLOBALIZATION OF INDIGENOUS RESISTANCE, SAN JOSE STATE UNIV. SCHOLARWORKS (2003).

94. Dias, *supra* note 30.

95. Luiz C. BARBOSA, THE BRAZILIAN AMAZON RAINFOREST 83 (2000).

veiled attempts to interfere with Brazilian sovereignty and to “internationalize” the Amazon.⁹⁶ This suspicion was not assuaged when international figures, including Al Gore, started espousing the view that, “[c]ontrary to what Brazilians think, the Amazon is not their property, it belongs to all of us.”⁹⁷ These comments “reignited old attitudes of territorial protectionism” in Brazil and fueled “long-held suspicion . . . that the real goal of foreigners is to take control.”⁹⁸

Brazil’s leaders continued to evince wariness toward international influence in the Amazon decades later, with its president advocating in 2008 to restrict international access to the forest.⁹⁹ Its civilians espouse similar views: in a 2005 poll “75 percent said that Brazil’s natural riches could provoke a foreign invasion, and nearly three out of five distrusted the activities of environmental groups.”¹⁰⁰

With the election of Jair Bolsonaro in 2018, nationalism has surged in Brazil. President Bolsonaro has repeatedly accused international actors of exhibiting a “colonialist mindset.”¹⁰¹ Bolsonaro also suggests that “radical environmentalists” are exploiting Brazil to “further the economic interests of foreign countries,”¹⁰² stoking his constituents’ long-held fears. This distrust of international involvement in the Amazon has significant implications for international efforts to reduce deforestation.¹⁰³

Today, deforestation rates are climbing steadily.¹⁰⁴ This is due to the deep economic recession Brazil has been experiencing since 2014, heightened international demand for deforestation-causing commodities, a weakened national Forest Code, the gutting of environmental enforcement agencies’ budgets, and a federal administration openly hostile to forest conservation.¹⁰⁵ Meanwhile, the Amazon’s conservation remains a crucial strategy in every global climate change response.¹⁰⁶

The current conflict between these priorities—economic development and climate change mitigation¹⁰⁷—and the recent increase in deforestation indicate that

96. *Id.* at 83, 87.

97. Barrionuevo, *supra* note 8 (quoting then-senator Al Gore in 1989); REVKIN, *supra* note 33, at 289.

98. Barrionuevo, *supra* note 8; see also Larry Rohter, *In the Amazon: Conservation or Colonialism?* N.Y. TIMES (July 27, 2007), <https://www.nytimes.com/2007/07/27/world/americas/27amazon.html>.

99. Barrionuevo, *supra* note 8 (discussing President Lula da Silva’s proposed law).

100. Rohter, *supra* note 98.

101. Dr. Theodore Karasik, *Sovereignty Trumps Climate Concerns for Bolsonaro*, ARAB NEWS (Sept. 26, 2019), <https://www.arabnews.com/node/1560196>.

102. Travis Waldron & Alexander C. Kaufman, *Brazil’s Jair Bolsonaro Defends Deforestation: ‘The Amazon Is Not Being Devastated’*, HUFFPOST (Sept. 24, 2019), https://www.huffpost.com/entry/bolsonaro-un_n_5d8a2989e4b0c2a85cb1ac8c; Jake Spring, *Brazil’s Bolsonaro Slams Biden for ‘Coward Threats’ Over Amazon*, REUTERS (Sept. 30, 2020), <https://www.reuters.com/article/us-usa-brazil-environment/brazils-bolsonaro-slams-biden-for-coward-threats-over-amazon-idUSKBN26L2US>.

103. See generally Andréa Zhouri, “Adverse Forces” in the Brazilian Amazon: Developmentalism Versus Environmentalism and Indigenous Rights, 19 J. ENV’T & DEV. 252, 256 (2010).

104. See *supra* text accompanying notes 60–62.

105. See *supra* Part I.A.

106. See *supra* notes 76–78.

107. Alexei Barrionuevo, *Brazil Rainforest Analysis Sets Off Political Debate*, N.Y. TIMES (May 25, 2008), <https://www.nytimes.com/2008/05/25/world/americas/25amazon.html>.

international initiatives are not effectively influencing the drivers of deforestation to promote conservation. While international actors may not be able to enact or enforce Brazilian law directly, they can assert political and market pressure to effectuate conservation. The next Part will survey current international initiatives seeking to do so.

II. EXISTING INTERNATIONAL INITIATIVES TO CONSERVE THE AMAZON

As Part I discussed, the global community—including Brazil—has major incentives to conserve the Amazon rainforest: climate change mitigation, biodiversity preservation, and global water cycle maintenance. The initiatives, institutions, and mechanisms created to protect such functions have woven an incredibly complex regime, involving traditional and innovative strategies, partnerships, collaborations, and incentives. While detailing every such international initiative is outside the scope of this Article, this Part identifies the most prominent ones to showcase the diverse actors and strategic approaches at play, highlights their actions toward deforestation reduction, and evaluates their effectiveness.

A. *International Agreements, Organizations, and Markets*

Many interactions among nations are pursuant to treaties and agreements. While no treaty or international custom has been interpreted to create enforceable international rules preventing deforestation in the Brazilian Amazon,¹⁰⁸ a multitude of treaties, agreements, and conventions focus on its conservation by other means. Such international agreements include treaties creating duties to share technology or conserve specific endangered species, intergovernmental organizations encouraging sustainable forestry management, intergovernmental trade organizations requiring environmental protections, emissions trading markets, and state-run schemes funding forest conservation.

1. Amazon-Specific Treaties

One regional treaty involves all Amazon rainforest states: the Treaty for Amazonian Cooperation (“ACT”).¹⁰⁹ Under the 1976 treaty, Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname, and Venezuela agree to “promote the harmonious development of their respective Amazonian territories” to “produce equitable and mutually beneficial results and achieve also the preservation of the environment, and the conservation and rational utilization of the natural resources.”¹¹⁰ While ACT was created “as a cooperation mechanism . . . to reinforce sovereignty and promote regional development – not to protect the Amazonian

108. Henry W. McGee Jr. & Kurt Zimmerman, *The Deforestation of the Brazilian Amazon: Law, Politics, and International Cooperation*, 21 UNIV. MIA. INTER-AM. L. REV. 513, 539-340 (1990).

109. BEATRIZ GARCIA, *THE AMAZON FROM AN INTERNATIONAL LAW PERSPECTIVE* 121 (2011).

110. Treaty for Amazonian Cooperation, art. I, July 3, 1978, 1202 U.N.T.S. 51.

environment,”¹¹¹ it contains several provisions that signal a joint interest in its conservation.¹¹²

As a framework treaty, ACT’s aspirational—and vague—goals have been underwhelming “best-endeavor commitments to achieving further cooperation.”¹¹³ ACT’s procedural obligations are similarly flimsy, “involv[ing] no more than the exchange and dissemination of information,”¹¹⁴ and even these undemanding duties go unfulfilled.¹¹⁵ As the treaty lacks both a conflict-resolution and enforcement mechanism,¹¹⁶ there is little potential for intervention.¹¹⁷ Further, while the treaty’s organization (“ACTO”) has repeatedly signaled interest in ACT serving as a springboard for forest conservation among its parties,¹¹⁸ its intentions are impeded by “scarce human and financial resources.”¹¹⁹ Member countries contribute to cover ACTO’s institutional budget, but its projects are financed by “irregular and unreliable” external sources including multi-lateral organizations and non-government organizations.¹²⁰ As a result, the “great majority of projects approved by the ACTO have not been executed.”¹²¹

Even in light of these shortcomings, the United Nations has “hailed” ACT as a “model for regional conservation efforts” because it provides a stable “platform to coordinate action”¹²² such as monitoring forest cover “and promot[ing] international cooperation to combat illegal logging.”¹²³ Other observers have been

111. MARIA ANTONIA TIGRE, *REGIONAL COOPERATION IN AMAZONIA: A COMPARATIVE ENVIRONMENTAL LAW ANALYSIS* 355 (2017); Elizabeth G. Ferris, *The Andean Pact and the Amazon Treaty: Reflections of Changing Latin American Relations*, 23 J. INTERAMERICAN STUD. & WORLD AFF. 147, 162 (1981) (quoting Brazilian president Ernesto Geisel).

112. Treaty for Amazonian Cooperation, *supra* note 109, at art. VII (for example, Article 7 specifically seeks to “maintain the ecological balance within the region and preserve the species” by promoting research and the exchange of information on conservation measures adopted by member states”).

113. GARCIA, *supra* note 109, at 95; *see also* Ferris, *supra* note 111, at 157; TIGRE, *supra* note 111, at 390.

114. GARCIA, *supra* note 109, at 124.

115. *Id.*

116. Treaty for Amazonian Cooperation, *supra* note 110; TIGRE, *supra* note 111, at 390.

117. TIGRE, *supra* note 111, at 353.

118. *Id.* at 354.

119. GARCIA, *supra* note 109, at 120; *see also* TIGRE, *supra* note 111, at 353 (“While the bureaucracy expanded, there are still no actual enforceable rules that ensure results.”); *see also* Int’l Waters Learning Exch. & Res. Network, *Documents: Legal Frameworks, AMAZON BASIN*, <https://iwlearn.net/documents/legal-frameworks/amazon-basin> (last visited Dec. 14, 2021) (“The Amazon Cooperation Treaty has no explicit provision addressing funding and financing, . . . although the Member States are required to contribute funds to the” treaty organization.); *id.* (“According to the Strategic Plan, ACTO is studying alternative mechanisms for funding . . . in order to move beyond ACTO’s dependence on foreign funds.”); *id.* (“Many of the project activities are financed with money from international organizations (such as the European Union, various entities of the United Nations, the Inter-American Development Bank, and the Organization of American States).”).

120. TIGRE, *supra* note 111, at 372–73.

121. *Id.* at 371.

122. UN Dep’t of Econ. And Soc. Aff.: Forests, *Amazon Treaty Body Hailed as Model for Regional Conservation Efforts*, (Apr. 18, 2013), <https://www.un.org/esa/forests/news/2013/04/amazon-treaty-body-hailed-as-model-for-regional-conservation-efforts/index.html>.

123. *Id.*

less generous, faulting ACT for its failure to halt deforestation.¹²⁴ For a treaty that was never intended to promote forest conservation,¹²⁵ the lack of impact on reducing deforestation is unsurprising.

Brazil has also entered into several bilateral treaties surrounding the Amazon.¹²⁶ In the US-Brazil Partnership for the Conservation of Amazon Biodiversity (“PCAB”),¹²⁷ the U.S. and Brazil “jointly promote new and more sustainable models for socioeconomic development of the region that will ultimately conserve forests and biodiversity.”¹²⁸ PCAB’s four objectives include creating “sustainable value chains and economic activities,” consolidating protected areas, engaging the private sector to “foster[] a sustainable-based economy,” and advancing relevant technology.¹²⁹

The U.S. Agency for International Development (“USAID”) describes its role in PCAB as a “convener and facilitator between government, civil society and the private sector,” but notably, the U.S. has committed \$80 million.¹³⁰ The funding supports 66 Protected Areas,¹³¹ conservation tracts that are hugely effective in preventing deforestation.¹³² The partnership also lobbies for “the adoption or implementation of [national] laws, policies and/or regulations that facilitate conservation.”¹³³

In addition, USAID sponsors the Partnership Platform for the Amazon (“PPA”) to further PCAB’s economic goals.¹³⁴ PPA “catalyzes private sector engagement”¹³⁵ to support start-ups that “foster sustainable use of forest and biodiversity resources and decrease deforestation.”¹³⁶ Incentivized by USAID’s “co-financing” and “co-investing” commitments, private sector partners have invested

124. See GARCIA, *supra* note 109, at 120 (stating that the ACTO is currently ineffective and questioning if the changes necessary to make the treaty effective will ever be adopted); see also TIGRE, *supra* note 111, at 354 (arguing that the ACTO’s weaknesses “ultimately prevent more effective regional cooperation” in reducing deforestation); see also Klafehn, *supra* note 18, at 962–64 (arguing that because Brazil and other nations are not bound by the ACTO to consider conservation, the ACTO has failed to regulate deforestation).

125. McGee & Zimmerman, *supra* note 108, at 539.

126. See GARCIA, *supra* note 109, at 67.

127. USAID: Partnership for the Conservation of Amazon Biodiversity, *About*, <https://pcabhub.org/en-us/about> (last visited Dec. 8, 2020).

128. USAID, *Bilateral Biodiversity Conservation, BRAZIL* (last updated July 12, 2021), <https://www.usaid.gov/brazil/our-work/environmental-partnerships>.

129. USAID, 2018 ANNUAL REPORT: PARTNERSHIP FOR THE CONSERVATION OF AMAZON BIODIVERSITY, at 14 (2018) [hereinafter 2018 PCAB ANNUAL REPORT].

130. *Id.* at 6, 8.

131. *Id.* at 16, 20.

132. See *infra* Part II.B.4.

133. 2018 PCAB ANNUAL REPORT, *supra* note 129, at 20.

134. *Id.* at 52.

135. *Partnership Platform for the Amazon–PPA*, USAID: PCAB, <https://pcabhub.org/en-us/about/projects/partners-for-the-amazon-platform-ppa> (last visited Dec. 15, 2021).

136. *Id.*

over \$1 million in PPA activities.¹³⁷ These partners include some of the largest multinational corporations on the planet.¹³⁸

This bilateral partnership has strong Brazilian support, and in 2018 it was extended for another six years.¹³⁹ PCAB's framework as a "strategic partnership" rather than a "traditional" donor-recipient-relationship likely contributes to its approval.¹⁴⁰

Despite its popularity, PCAB's impact on forest conservation is difficult to quantify since its goal is to "strengthen" areas already designated as protected.¹⁴¹ In its own assessments, PCAB evaluates data on biophysical conditions rather than deforestation prevention.¹⁴² Noting this deficiency, PCAB began developing an "innovative tool" called TerraBio to assess its impact on deforestation in 2020.¹⁴³

PCAB is noteworthy because Brazil, perpetually concerned about the Amazon's internationalization, has committed to an agreement in which the U.S. invests directly into Brazil's protected areas and attempts to influence national policy. This suggests that when international agreements are framed in terms of cooperation and include peripheral economic investment, Brazil is a more willing partner.

2. Global Forest Conservation Treaties and Organizations

The United Nations ("UN") has facilitated the mass proliferation of international agreements involving forest conservation due to the relevance of forests to manifold international goals and objectives.¹⁴⁴

137. *Partnership Platform for the Amazon-PPA*, *supra* note 135.

138. 2018 PCAB ANNUAL REPORT, *supra* note 129, at 53 (showing logos of multi-national corporations such as Dow, Coca-Cola, Bemol, Cargill, and Whirlpool).

139. USAID – Partnership for the Conservation of Amazon Biodiversity, *US-Brazil Partnership Is Extended Until 2024*, <https://pcabhub.org/en-us/news/pcab-news-highlights/us-brazil-partnership-is-extended-until-2024> (last visited 1/10/2022).

140. *See Brazil*, USAID (Jan. 25, 2021), <https://www.usaid.gov/brazil>.

141. *See* 2018 PCAB ANNUAL REPORT, *supra* note 129, at 19.

142. *See id.* at 17.

143. USAID – Partnership for the Conservation of Amazon Biodiversity, *USAID Partnership Launches Innovative Tool to Assess the Impact of Investment on Biodiversity Conservation*, <https://pcabhub.org/en-us/news/pcab-news-highlights/usaaid-partnership-launches-innovative-tool-to-assess-the-impact-of-investment-on-biodiversity-conservation> (last visited 1/10/2022).

144. *See* DAVID HUMPHREYS, LOGJAM: DEFORESTATION AND THE CRISIS OF GLOBAL GOVERNANCE 212–13 (2006). Because of the connection between forests and economic/sustainable development, human rights, biodiversity, culture, and climate change, some of the UN's other organizations have gone on to create their own deforestation-prevention initiatives. *Id.* For example, the Food and Agriculture Organization of the UN, the Global Environmental Facility, the UN Convention to Combat Desertification, the UN Development Programme, the UN Environment Programme, and the World Bank are member organizations of the Collaborative Partnership on Forests, a group of established at the recommendation of the UN to "promote sustainable management of all types of forests and to strengthen long-term political commitment to this end." *Id.*; *see also* R. Persson, *Where is the United Nations Forum on Forests Going?* 7(4) INT'L FORESTRY REV. 348, 348–49 (Dec. 2005) (highlighting 25 years of UN efforts; a UN forestry program, panel, and forum; "forest issues . . . discussed in other for a" including the Convention for Biological Diversity, UN Framework Convention on Climate Change, the UN Convention to Combat Desertification, and CITES; and 270 proposals for action); CRISTINA MULLER, EUROPEAN PARLIAMENT, *Brazil and the Amazon Rainforest* 27 (2020).

This plethora of international organizations and agreements has established a global norm of forest conservation,¹⁴⁵ which has had two effects. First, it has created social pressure on Brazil to pledge its commitment to combating deforestation, starting at the Rio Earth Summit in 1992.¹⁴⁶ This global norm continues to exert influence on Brazil. Pursuant to the 2015 Paris Accord, Brazil promised to “significantly reduce its illegal deforestation rates in the Amazon by 2030, as well as restore and reforest . . . 4.6 million square miles of forest.”¹⁴⁷ In 2021, it announced its plans to “step up” its pledge, committing to end illegal deforestation by 2028.¹⁴⁸

Second, this norm created the reciprocal duty of nations to assist Brazil with its commitment to combating deforestation.¹⁴⁹ This assistance has mostly taken the form of research, which is critical to understand effective conservation strategies.¹⁵⁰ The financing aspect of this duty—wealth transfer from richer nations to Brazil to fund Amazon conservation¹⁵¹—has been woefully limited.¹⁵²

Counterintuitively, the sheer number of UN initiatives “does not imply better environmental protection,” as evidenced by the recent increase in fires and deforestation in the Amazon.¹⁵³ For several reasons, these institutions operate largely independently, without “exploit[ing] areas of synergy,” resulting in a “disconnected and multicentric” international forest regime.¹⁵⁴

First, the overabundance of institutions creates competition for the same limited resources.¹⁵⁵ Second, these initiatives “are weak and ambiguous” because

145. See generally Kaplan, *supra* note 15 (noting international treaties, “pressure from civil society” and foreign governments compels states to protect forests).

146. Statement of Principles for a Global Consensus on the Management, Conservation, and Sustainable Development of All Types of Forests, June 13, 1992, 31 I.L.M. 881 (establishing a set of Forest Principles).

147. Fabiola Ortiz, *Ten Years On, Amazon Fund Receives Applause, Criticism, Faces New Tests*, MONGABAY (Dec. 21, 2018), <https://news.mongabay.com/2018/12/ten-years-on-amazon-fund-receives-applause-criticism-faces-new-tests/>.

148. Manuela Andreoni, *Once a Climate Leader, Brazil Falls Short in Glasgow*, N.Y. TIMES (Nov. 2, 2021), <https://www.nytimes.com/2021/11/02/world/americas/brazil-climate.html>.

149. GARCIA, *supra* note 109, at 225.

150. See *id.* at 205; but see *id.* at 216 (“information on the Amazon is still fragmented and varies in quality among Amazon States.”).

151. See, e.g., Statement of Principles for a Global Consensus on the Management, Conservation, and Sustainable Development of All Types of Forests, *supra* note 146, at art. 9(a)–11.

152. Raymond Cléménçon, *From Rio 1992 to Rio 2012 and Beyond: Revisiting the Role of Trade Rules and Financial Transfers for Sustainable Development*, 21 J. ENV’T & DEV. 5, 11 (2012); see also Mahesh Poudyal et al., *Who Bears the Cost of Forest Conservation?* PEERJ 3, July 5, 2018, at 3.

153. GARCIA, *supra* note 109, at 225; see also John Vidal, *Many Treaties to Save the Earth, But Where’s The Will To Implement Them?* GUARDIAN (June 7, 2012), <https://www.theguardian.com/environment/blog/2012/jun/07/earth-treaties-environmental-agreements>.

154. HUMPHREYS, *supra* note 144, at 212–13.

155. See, e.g., GARCIA, *supra* note 109, at 225–26; See, e.g., R. Persson, *Where is the United Nations Forum on Forests Going?* 7 INT’L FORESTRY REV. 348, 351 (Dec. 2005) (discussing how the UN Forum on Forests was created because of a conflict between other UN organizations, in turn creating “two parallel, and possibly competing, processes.”); HUMPHREYS, *supra* note 158, at 212–213 (“[I]n the absence of a forests convention the consensus on forest-related issues is fragmentary and incomplete. Several international institutions deal with the different dimensions of forest conservation and use, and obvious connections between these institutions are often not made. International forest policy-making

global politics constrain the negotiating parties from implementing the bold measures scientists assert are needed.¹⁵⁶ Brazil itself has obstructed global forest governance. In the UN Forum on Forests negotiations in the 2000s, Brazil negotiated aggressively *against* “quantifiable and time-bound targets” which would have provided the specificity that many international agreements lack.¹⁵⁷ Additionally, Brazil has consistently demonstrated its resistance to any “global forests convention in which trade liberalization would . . . become entangled with conservationist and human rights issues.”¹⁵⁸ This inability to build consensus and coordinate action on scientifically supported forest conservation measures greatly hampers the effectiveness of these international institutions.¹⁵⁹

Due to these impediments, critics characterize UN forest efforts as “costly, time-consuming” initiatives that “benefit very few people and have only few tangible results.”¹⁶⁰ Further, some UN efforts, “even if well-intended, can be detrimental to the environment.”¹⁶¹ The Pilot Program to Conserve the Brazilian Rain Forest (“PPG7”) and the International Tropical Timber Organization illustrate these criticisms.

PPG7 was launched in 1992 to “support[] an integrated set of projects [to] contribute to a reduction in the rate of deforestation of Brazil’s rain forests in a manner consistent with [its] sustainable development.”¹⁶² Born out of the UN Conference on Environment and Development and coordinated by the World Bank, PPG7 connected the financial support of G7 countries, the EU, and Norway to forest conservation in the Amazon.¹⁶³ PPG7 developed a multitude of efforts focused on “improving policies, institutional strengthening, and supporting pilot projects,”¹⁶⁴ including the demarcation of Indigenous lands and creating extractive reserves.¹⁶⁵

However, PPG7’s impact was diluted due to divergent and competing aims of its funders,¹⁶⁶ the lack of a “well-articulated overall policy for the region,”¹⁶⁷ and

remains scattered among an array of institutions, and the parties to one legal instrument are not bound in any formal or legal sense by the decisions of any other.”); Sergio Margulis, *Working Paper No. 22: Causes of Deforestation of the Brazilian Amazon*, WORLD BANK at XXII (Dec. 2003), <https://openknowledge.worldbank.org/bitstream/handle/10986/15060/277150PAPER0wbwp0no1022.pdf>.

156. HUMPHREYS, *supra* note 144, at 214.

157. *Id.* at 112. For an example of a treaty without specific goals, consider ACT. *See supra* Part II.A.1.

158. HUMPHREYS, *supra* note 144, at 221–222.

159. *Id.* at 214–215.

160. GARCIA, *supra* note 109, at 225.

161. *Id.* (citing Daniel Howden, *World Bank Pledges to Save Trees . . . Then Helps Cut Down Amazon Forest*, INDEPENDENT (Jan. 13, 2008), <https://www.independent.co.uk/environment/climate-change/world-bank-pledges-to-save-trees-then-helps-cut-down-amazon-forest-769997.html>); *See Generally* McGee & Zimmerman, *supra* note 108, at 544–547.

162. World Bank, *Brazil Rain Forest Pilot Program Update* (2000), <https://documents1.worldbank.org/curated/en/146171468742149803/pdf/multi0page.pdf>

163. *Id.*

164. Shoana Humphries et al., *Searching for Win-Win Forest Outcomes*, 125 WORLD DEV. 1, 2 (2020).

165. GARCIA, *supra* note 109, at 209.

166. Diógenes Salas Alves, *Taking Things Public: A Contribution to Address Human Dimensions of Environmental Change*, 363 PHIL. TRANSACTIONS: BIOLOGICAL SCI. 1903, 1906–07 (2008).

167. Marko S.A. Monteiro et al., *The Politics of Amazonian Deforestation*, 5 WIRES CLIMATE CHANGE 689, 691 (2014).

“costly and time-consuming project processing.”¹⁶⁸ In a ten-year evaluation, the program conspicuously avoided quantifying its impact on deforestation reduction¹⁶⁹—likely because deforestation was almost double the 1994 rate by 2004.¹⁷⁰ PPG7 was phased out in the mid-2000s.¹⁷¹

The International Tropical Timber Organization (“ITTO”)¹⁷² is “essentially a trade association that brings together producers and importers of tropical timber to encourage production.”¹⁷³ It aims to “promote the conservation *and* sustainable development of tropical forests”¹⁷⁴ by helping producer countries adopt sustainable forestry management practices.¹⁷⁵ However, international timber demand is not a leading driver of deforestation in the Amazon.¹⁷⁶ Over the past 34 years, ITTO has enabled the *expansion* of logging operations rather than limiting them.¹⁷⁷ To this day, ITTO’s prioritization of development is clear: in 2020, ITTO assigned Brazil’s “minimal” production of Amazonian timber a low “effectiveness index score,” framing conservation as undesirable.¹⁷⁸ While ITTO has also funded important

168. GARCIA, *supra* note 109, at 210.

169. Imme Scholz & Regine Schönenberg, *The Pilot Programme To Conserve the Brazilian Rainforests*, GERMAN DEV. INSTITUTE 97, 107-8 (2005).

170. Rhett A. Butler, *Calculating Deforestation Figures for the Amazon*, MONGABAY (Apr. 24, 2018), https://rainforests.mongabay.com/amazon/deforestation_calculations.html.

171. Richard van der Hoff et al., *Clashing Interpretations of REDD+ “Results” in the Amazon Fund*, 150 CLIMATIC CHANGE 433, 438 (2018).

172. ITTA, the agreement creating ITTO, was developed in 1983 by 64 countries through the UN Conference on Trade and Development. TIMOTHY CADMAN, QUALITY AND LEGITIMACY OF GLOBAL GOVERNANCE: CASE LESSONS FROM FORESTRY 41 (2011). ITTO “was established under the auspices of the UN in 1986.” *International Tropical Timber Organization (ITTO)*, UNITED NATIONS, <https://www.un.org/ldcportal/international-tropical-timber-organization-itto/> (last visited Dec. 11, 2020).

173. McGee & Zimmerman, *supra* note 108, at 542.

174. ITTO, *From Liability to Asset*, 29 TROPICAL FOREST UPDATE, 1 (2020), https://www.itto.int/direct/topics/topics_pdf_download/topics_id=6529&no=1&disp=inline#page=20.

175. *About ITTO*, ITTO, https://www.itto.int/about_itto/ (last visited Oct. 26, 2020).

176. *Drivers of Forest Loss in the Brazilian Amazon*, OUR WORLD IN DATA (2017) <https://ourworldindata.org/grapher/drivers-forest-loss-brazil-amazon> (showing that selective logging accounted for just under 10% of deforestation in 2013 and 3% in 2011); Christopher Ingraham, *How Beef Demand Is Accelerating the Amazon’s Deforestation and Climate Peril*, WASH. POST (Aug. 27, 2019), <https://www.washingtonpost.com/business/2019/08/27/how-beef-demand-is-accelerating-amazons-deforestation-climate-peril/> (Cattle ranchers have “become the single biggest driver of the Amazon’s deforestation, causing about 80 percent of it.”).

177. See, e.g., David Humphreys, *Redefining the Issues: NGO Influence on International Forest Negotiations*, 4 GLOBAL ENV’T POL. 51, 55 (2004) (“The consumer countries have pushed for a greater emphasis on conservation, but without directly challenging the emphasis of the producers and trade federations on expanding the volume of timber traded.”); Brian F. Chase, *Tropical Forests and Trade Policy: The Legality of Unilateral Attempts to Promote Sustainable Development under the GATT*, 14 THIRD WORLD Q. 749, 758 (1993) (“The [ITTO’s predecessor organization’s] voting structure thereby ensures that the goal of promoting the international trade in tropical timber outweighs its secondary conservation role.”); McGee & Zimmerman, *supra* note 108, at 543, 549 (highlighting the potential for “Japan’s transformation of the [ITTO] into an importers’ cartel”); Marlise Simons, *Brazilian Is Looking to Japan to Link Amazon to the Pacific*, N.Y. TIMES, Feb. 19, 1989 at 20, <https://www.nytimes.com/1989/02/19/world/brazilian-is-looking-to-japan-to-link-amazon-to-the-pacific.html> (discussing Japan’s potential investment in an Amazonian highway to increase access).

178. ITTO, *supra* note 174, at 20.

projects that focus on monitoring and data collection,¹⁷⁹ it remains unable to decrease Amazonian deforestation because it targets the wrong industry and prioritizes consumption.¹⁸⁰

As these examples illustrate, UN forest conservation efforts have been inconsistent and largely ineffective in the Amazon.¹⁸¹ There has been a complete failure to “forge a coherent, performance-based approach that addresses . . . the basic forces driving forest destruction;”¹⁸² most of the efforts have fallen short of *any* direct, quantifiable impact on the rate of deforestation in the Amazon;¹⁸³ and some have actually *increased* deforestation.¹⁸⁴

Although its efforts fall short of effecting significant change in the Amazon, the UN has repeatedly demonstrated its ability to stimulate and enable forest conservation efforts globally.¹⁸⁵ The UN’s greatest strengths lie in its ability to assemble world leaders together to discuss the topic,¹⁸⁶ to raise funds from the Global North,¹⁸⁷ and to enable technical support including the collection and dissemination of data.¹⁸⁸

179. See e.g., ACTO, *Completion Report: Monitoring Deforestation, Logging, and Land Use Change in the Pan Amazonian Forest – Panamazon II* (Dec. 27, 2018), https://www.itto.int/files/itto_project_db_input/2980/Competition/CompletionReport-REDPD02909R1F-ENG.pdf; see also *Project/Activity Search*, ITTO, https://www.itto.int/project_search/ (last visited Oct. 26, 2020) (listing ITTO projects).

180. See, e.g., CADMAN, *supra* note 172, at 31; *Deforestation in Brazilian Amazonia*, *supra* note 23, at 682 (“Understanding who is to blame for deforestation is vital for any program that attempts to reduce it.”).

181. William Boyd, *Ways of Seeing in Environmental Law: How Deforestation Became an Object of Climate Governance* 37 *ECOLOGY L. Q.* 843, 864 (2010).

182. *Id.* at 866.

183. See, e.g., UMA LELE ET AL., *FORESTS IN THE BALANCE: CHALLENGES OF CONSERVATION WITH DEVELOPMENT, EVALUATION COUNTRY CASE STUDY SERIES 128* (World Bank, 2000). The past four-decades of UN initiatives show a myriad of attempts to make progress toward a goal associated with forest conservation, often abandoned when it detracted from progress toward a different goal, or projects at small enough scales not to infringe on any other projects and also too small to make a large impact on forest conservation. CADMAN, *supra* note 172, at 29–30. Others of the projects, funded by the World Bank, simply do not measure deforestation reduction as a “result.” See, e.g., RF Forest Resources Management Project, *Developing New Approaches to Sustainable Forest Management in Brazil*, Dec. 13, 2005 Doc. 92580 (omitting any reference to deforestation but noting “the Forest Resources Management Project has supported 78 community driven initiatives involving 10,000 local villagers and has trained 5,000 people in forestry management.”).

184. See Barbara L. Zimmerman & Cyril F. Kormos, *Prospects for Sustainable Logging in Tropical Forests*, 62 *BIOSCIENCE* 479, 479 (2012).

185. To be clear, it has not repeatedly demonstrated its ability to achieve forest conservation results. See *Our Impact*, UN-REDD, <https://www.un-redd.org/our-work/our-impact> (last visited Dec. 15, 2021); see also *Project Map*, UN FOOD & AGRICULTURE ORGANIZATION: FORESTRY, <https://www.fao.org/forestry/project-map/en/> (last visited Dec. 15, 2021) (displaying global forestry projects); see also *Forum on Forests*, United Nations, <https://www.un.org/esa/forests/index.html> (last visited Dec. 15, 2021); see also *World Leaders, Corporations at COP26, Take Major Step to Restore and Protect Forests*, UN: NEWS (Nov. 2, 2021).

186. See HUMPHREYS, *supra* note 144, at 192.

187. The Global North is “the group of countries that are in Europe, North America, and the developed parts of Asia. Global North, Cambridge Dictionary, <https://dictionary.cambridge.org/us/dictionary/english/global-north> (last visited Oct. 24, 2020).

188. See TIGRE, *supra* note 111, at 314; sources cited *supra* note 150.

3. Free Trade Agreements with Forest Conservation Agendas

Brazil is a member of the Organization of American States (“OAS”)¹⁸⁹ and the Common Market of the South (“Mercosur”).¹⁹⁰ Both of these intergovernmental trade organizations (“ITOs”) have adopted frameworks, regional agreements, or projects supporting environmental protection in the Amazon.¹⁹¹ Additionally, Brazil is negotiating agreements with two other ITOs—the Organization for Economic Cooperation and Development (“OECD”) and the European Union (“EU”)—that would require Brazil to adopt certain environmental standards.

Forest conservation is imbedded in each of these ITOs. The OAS, which has embraced environmental conservation since 1940,¹⁹² hosts environmental summits,¹⁹³ maintains a sustainable development policy,¹⁹⁴ curates the Inter-American Biodiversity Information Network,¹⁹⁵ and executes conservation projects.¹⁹⁶ Mercosur’s founding treaty included “preservation of the environment . . . as one of [its] overarching guidelines” and its documents also “regularly list . . . sustainable development as among [its] broader aims.”¹⁹⁷ In 2001, Mercosur adopted a Framework Agreement on the Environment that “requires States to cooperate by exchanging information on environmental laws, policies, and practices.”¹⁹⁸ The new free trade agreement with the EU¹⁹⁹ “includes commitments

189. Organization of American States, Apr. 30, 1948, 119 U.N.T.S. 3.

190. Mercosur Free Trade Agreement, Mar. 26, 1991, 30 I.L.M. 1041.

191. For the Mercosur, see Framework Agreement on the Environment of Mercosur art. 6, June 22, 2001; Declaration of Taranco; for the OAS, see *Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere*, DEPARTMENT OF INTERNATIONAL LAW, OAS: MULTILATERAL TREATIES, <https://www.oas.org/juridico/english/treaties/c-8.html> (last visited Dec. 16, 2021); *Inter-American Biodiversity Information Network (IABIN)*, OAS, <https://www.oas.org/en/sedi/dsd/iabin/> (last visited Jan. 6, 2022); *The Andes Amazon Protected Areas Database (AAPAD)*, OAS, <https://www.oas.org/dsd/AAPAD2/AAPAD2.htm> (last visited Jan. 6, 2022); *Sustainable Development and Bio-Cultural Conservation in the Brazil-Suriname Border Region*, OAS, http://www.oas.org/dsd/su_br/index.html (last visited Jan. 6, 2022).

192. See 1940 Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere, OAS: MULTILATERAL TREATIES, <https://www.oas.org/juridico/english/treaties/c-8.html> (last visited Dec. 16, 2021).

193. *Environment, Follow-up and Implementation: Mandates*, OAS: Summit of the Americas, <http://www.summit-america.org/sisca/env.html> (last visited Dec. 16, 2021).

194. *Inter-American Committee for Sustainable Development*, OAS, <https://www.oas.org/en/cidi/cids.asp> (last visited Dec. 16, 2021).

195. *Inter-American Biodiversity Information Network*, OAS, <https://www.oas.org/en/sedi/dsd/iabin/> (last visited Dec. 16, 2021).

196. See, e.g., Press Release, Multi-lateral Project Launched in Suriname, OAS (Jan. 26, 2004), https://207.237.157.11/en/media_center/press_release.asp?sCodigo=SU-012604.

197. Kathryn Hochstetler, *Fading Green? Environmental Politics in the Mercosur Free Trade Agreement*, 45 LATIN AM. POLITICS & SOCIETY 1, 5–7 (2003).

198. GARCIA, *supra* note 109, at 224.

199. *Brazil*, EUROPEAN COMM’N (Apr. 22, 2021), <https://ec.europa.eu/trade/policy/countries-and-regions/countries/brazil/>.

to fight deforestation.”²⁰⁰ Membership in the OECD²⁰¹ would require existing members to agree that Brazil is complying with the group’s recommended environmental standards.²⁰²

While these ITOs expressly embrace environmental protection as a goal, evidence of their impact is “scarce”²⁰³ for several reasons. To begin, when conflicts between trade and conservation arise, trade is—unsurprisingly—prioritized.²⁰⁴ Other trade agreements “have attempted to address the deforestation crisis” and have ultimately had little impact or failed.²⁰⁵ Further, the ambitiousness of ITOs’ environmental goals are constrained by group membership. In Mercosur, Brazil is the member-state with the most protective environmental laws, making it unlikely that the ITO will have an impact on deforestation in the Brazilian Amazon.²⁰⁶

Fascinatingly, there is evidence that participation in Mercosur has decreased Brazil’s greenhouse gas emissions.²⁰⁷ As “[o]ver 60 percent of Brazil’s emissions come from land use changes and deforestation . . . “²⁰⁸ and a further 20 percent come from the agricultural sector which is inextricably linked to deforestation,²⁰⁹ the emission decrease may result in part from deforestation prevention.²¹⁰ Unfortunately, it is unlikely that these results will be replicated by participation in the developing OECD or EU trade agreements. Research predicts that trade liberalization between Brazil and Global North nations will decrease

200. Maria Laura Canineu & Daniel Wilkinson, *How the EU Can Help Brazil Save Its Rainforest*, HUM. RIGHTS WATCH (July 8, 2020 5:37 PM), <https://www.hrw.org/news/2020/07/08/how-eu-can-help-brazil-save-its-rainforest#>.

201. *About*, OECD, <https://www.oecd.org/about/> (last visited Mar. 27, 2022).

202. Anthony Boadle, *Amazon Fires Could Burn Brazil’s Bid to Join OECD Rich Nations Club*, REUTERS (Aug. 23, 2019, 1:40 PM), <https://www.reuters.com/places/brazil/article/us-brazil-environment-wildfires-oecd/amazon-fires-could-burn-brazils-bid-to-join-oecd-rich-nations-club-idUSKCN1VD2A9>; see generally *Discover the OECD*, OECD, <http://www.oecd.org/general/Key-information-about-the-OECD.pdf> (last visited Jan. 6, 2022) (“the OECD helps countries develop better policies for better lives, boosting prospects for stronger, fairer and cleaner economies and societies.”).

203. Inmaculada Martínez Zarzoso, *Assessing the Effectiveness of Environmental Provisions in Regional Trade Agreements: An Empirical Analysis*, OECD TRADE AND ENV’T WORKING PAPERS, Feb. 2018, at 2.

204. GARCIA, *supra* note 109, at 145.

205. Andrew E. Miller, *A Trump-Bolsonaro Free-Trade Agreement Is an Apocalyptically Bad Idea*, THE HILL (Aug. 9, 2019, 5:03 PM), <https://thehill.com/opinion/energy-environment/456912-a-trump-bolsonaro-free-trade-agreement-is-an-apocalyptically-bad>; see also Lee C. Rarrick, *Biodiversity Impacts of Investment and Free Trade Agreements*, 37 PACE ENV’T. L. REV. 67, 93–96 (2019) (discussing a US-Peru free trade agreement).

206. See Hochstetler, *supra* note 197, at 7.

207. Mehdi Nemati et al., *Are Free Trade Agreements Good for the Environment?*, 23 REV. DEV. ECON. 435, 445 (2018).

208. Luiza Martins Karpavicius, *120.24% Increase in Greenhouse Gas Emission Levels in Brazil Since 1990*, CLIMATE SCORECARD (Dec. 17, 2020), <https://www.climatescorecard.org/2020/12/120-24-increase-in-greenhouse-gas-emission-levels-in-brazil-since-1990/>.

209. *Id.*

210. *But see, e.g., supra* notes 69–71 and accompanying text (explaining that in reality, the decrease in emissions is likely not from deforestation reduction as Mercosur does not involve the major importers of Brazil’s deforestation commodities—most beef and soy exports go to China and the E.U.).

“overall environmental quality”²¹¹ due to market actors taking advantage of Brazil’s less-enforced environmental standards.²¹²

In summary, it appears that intergovernmental trade organizations play a role in reaffirming the global norm of forest conservation. A lack of research inhibits a conclusion on the direct impact of existing agreements on Amazon deforestation, although logic dictates that the impact, if any, is not great. Brazil is *not* (yet) engaged in trade organizations with the largest importers of the commodities that drive deforestation: soy and cattle.²¹³ While trade deals may provide leverage for the international community to pressure Brazil to address deforestation, there is concern that once the deals are signed, they will spur more deforestation.²¹⁴

4. Intergovernmental Markets: Emissions Trading

Emissions trading is a system in which carbon emission limits are established and carbon emissions, carbon storage, and emission reductions become commodities that can be traded internationally.²¹⁵ In some trading schemes, nations with standing forests may sell emissions credits equivalent to the amount of carbon storage achieved by those forests.

Brazil considered entering into a forest emissions offset trading market in 2007,²¹⁶ but ultimately decided against it due to feared consequences to its sovereignty.²¹⁷ Still, some subnational Brazilian entities have forayed into the

211. Nemati et al., *supra* note 207, at 435.

212. See Xing Yao et al., *Free Trade Agreements and Environment for Sustainable Development: A Gravity Model Analysis*, 11 SUSTAINABILITY 1, 14 (2019); *Brazil Has Weakened Dozens of Environmental Laws During the Pandemic*, YALE ENV’T 360 (Feb. 24, 2021), <https://e360.yale.edu/digest/brazil-has-weakened-dozens-of-environmental-laws-during-the-pandemic> (“The current administration is taking advantage of the Covid-19 pandemic to intensify a pattern of weakening environmental protection in Brazil.”).

213. See *supra* notes 69–71 and accompanying text (identifying China and the EU as the largest consumers of Brazilian exports of beef and soy). Brazil is not yet engaged in a trade organization with either the EU or China.

214. See Yao et al., *supra* note 212, at 1; Nemati et al., *supra* note 207, at 445; Luciana Ghiotto & Javier Echaide, *Analysis of the Agreement Between the European Union and the Mercosur*, GREENS/EFA EUROPEAN PARLIAMENT 1, 64–66 (2019), <https://www.annacavazzini.eu/wp-content/uploads/2020/01/Study-on-the-EU-Mercosur-agreement-09.01.2020-1.pdf>.

215. See *Emissions Trading*, U.N. CLIMATE CHANGE, <https://unfccc.int/process/the-kyoto-protocol/mechanisms/emissions-trading> (last visited Oct. 25, 2020).

216. See James Kanter, *Brazil, Guyana and Rainforest Emissions Credits*, N.Y. TIMES (Aug. 1, 2007, 7:22 PM), <https://green.blogs.nytimes.com/2007/08/01/brazil-guyana-and-rainforest-emissions-credits/> (describing Brazil as “volunteering” to sell “avoided rainforest destruction credit on the international carbon market”).

217. FRANCES SEYMOUR & JONAH BUSCH, WHY FORESTS? WHY NOW?, CTR. GLOBAL DEV. 258–259, 264–268, 281 (2016) (noting “the Brazilian government [had] long- and firmly-maintained opposition to internationalizing the deforestation issue in the climate change policy arena” when it came to considering emissions trading, that Brazil remained an “opponent[] of market-based finance” and that “the Brazilian delegation insisted that [an independent verification] mechanism would compromise national sovereignty”); see also U.N. Climate Change, Federative Republic of Brazil, Intended Nationally Determined Contribution 2 (2015), <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Brazil%20First/BRAZIL%20iNDC%20english%20FINAL.pdf> (“Brazil will not recognize the use by other Parties of any units resulting from mitigation outcomes achieved in the Brazilian territory that have

emissions trading market. Currently, the UN's Framework Convention on Climate Change's Reducing Emissions from Deforestation and Forest Degradation ("REDD+")²¹⁸ initiative coordinates several "voluntary" projects in which subnational governments, nonprofits, and companies sell credits outside of an established legal framework.²¹⁹ Brazil's Paiter-Suruí Indigenous community began a REDD+ project in 2009, selling carbon credits to those who invested in forest conservation.²²⁰ Unfortunately, the Suruí "project was suspended . . . after the loggers destroyed more trees than all the credits sold."²²¹ The Paiter-Suruí experience is not uncommon: a study of all the voluntary REDD+ projects found that there was no corresponding increase in carbon storage for the buyer's emissions.²²²

As this study suggests, the efficacy of rainforests as reliable carbon sinks for emissions trading is in doubt.²²³ First, quantifying credits is incredibly difficult, and variables like fire create the potential for assigning credits more value than they actually offset.²²⁴ Carbon offsets assume that a tree will store the carbon for a century after the offset is sold on the market²²⁵—but with fires, illegal deforestation, poor monitoring, and a lack of enforcement, the trees sold as offsets are unlikely to live for 100 years.²²⁶ Second, emissions trading can create leakage, a negative spillover effect in which "deforestation regulations that pertain to a bounded geographical region can result in a displacement of deforestation-related activities to other areas."²²⁷ Finally, offsets may not *cause* forest conservation; instead, they may

been acquired through any mechanism, instrument or arrangement established outside the Convention, its Kyoto Protocol or its Paris agreement.").

218. Thales A. P. West et al., *Overstated Carbon Emissions Reductions from Voluntary REDD+ Projects in the Brazilian Amazon*, 117 PNAS 24188, 24188 (2020); Arild Angelsen, *REDD+ as Result-based Aid: General Lessons and Bilateral Agreements of Norway*, 21 REV. DEV. ECONS. 237, 238–239 (2017); see generally U.N. Framework Convention on Climate Change, *Report of the Conference of the Parties on Its Thirteenth Session, Held in Bali from 3 to 15 December 2007*, U.N. Doc. FCCC/CP/2007/6/Add.1.

219. Peter Yeung, *REDD+ Carbon and Deforestation Cuts in Amazon Overestimated: Study*, MONGABAY (Nov. 2, 2020), <https://news.mongabay.com/2020/11/279al-carbon-and-deforestation-cuts-in-amazon-overestimated-study/> ("Unlike official REDD+ programs, grounded in federal law, the voluntary projects are "decentralized" and only subject to rules set by Verra, a leading carbon-offset scheme . . .").

220. Max Nathanson, *World's First Indigenous Carbon Offset Project Suspended Due to Illegal Mining*, MONGABAY (Sept. 11, 2018), <https://news.mongabay.com/2018/09/worlds-first-indigenous-redd-program-ended-due-to-illegal-mining/>; West et al., *supra* note 218, at 24191.

221. Song, *supra* note 59; see also Nathanson, *supra* note 220.

222. West et al., *supra* note 218, at 24189–190; Song, *supra* note 59 (explaining that the voluntary REDD+ have sold hundreds of thousands of credits. For example, in 2014 FIFA bought 250,000 credits to offset the carbon emissions generated by the World Cup).

223. West et al., *supra* note 218, at 24190–191.

224. See Song, *supra* note 59; accord Kanter, *supra* note 216.

225. See Song, *supra* note 59.

226. *Id.*

227. Yann le Polain de Warouz et al., *The Restructuring of South American Soy and Beef Production and Trade Under Changing Environmental Regulations*, 121 WORLD DEV. 188, 191 (2019).

simply enable polluters to claim carbon offsets when no reciprocal offset has taken place.²²⁸

The current situation in Brazil demonstrates grave weaknesses in the carbon offset system for forest conservation. Emissions trading requires active monitoring for lengths of time that extend far beyond the term of any elected official, and it is highly susceptible to immediate destruction from natural disasters such as wildfire.²²⁹ Still, emissions trading remains enticing because it is an effective way to incentivize rich countries and corporations to invest the funding necessary to conserve forests.²³⁰ However, an effective regime would have to ease Brazil's sovereignty concerns.

5. Voluntary Donations

Voluntary donations are a non-market approach that enables the Global North to finance deforestation prevention without any individual reciprocal benefit.²³¹ There is only one large scale voluntary donation mechanism: the Amazon Fund. Designed in 2007 and managed by Brazil as an offshoot of the UN's REDD+ initiative, it crowd-funds from corporations and foreign nations.²³² As a "merit-based" mechanism, the contributions *reward* Brazil for preventing deforestation as measured by the annual deforestation rate.²³³ The "reward" is then used to support measures "to prevent, monitor, and combat deforestation in the Amazon."²³⁴ Over the past 12 years, the fund has received \$1.2 billion, and it has funneled the majority to Brazil's federal environmental agency.²³⁵ Some funds have also gone to innovative, smaller-scale projects.²³⁶ Norway is the largest contributor to the fund, accounting for 94 percent of the amount pledged, followed by Germany (5%) and Petrobras (.06%).²³⁷

Notably, the Amazon Fund differs from emissions-trading markets in that it gives greater priority to Brazil's sovereignty. No credit is awarded to its donors,²³⁸ and donors are unable to direct how the donations are used.²³⁹ Brazil and its UN collaborators created it as a non-market mechanism precisely because the Brazilian government feared "that if someone donates US\$10 he will soon think that he owns

228. See Julia Rosen, *The World Is Watching as California Weighs Controversial Plan to Save Tropical Forests*, L.A. TIMES (Sept. 13, 2019, 6:00 AM), <https://www.latimes.com/environment/story/2019-09-12/280California-tropical-forest-standard>.

229. See Song, *supra* note 59.

230. See *id.*

231. Rhett A. Butler, *Brazil's Plan to Save the Amazon Rainforest*, MONGABAY (Jun. 2, 2009), <https://news.mongabay.com/2009/06/brazils-plan-to-save-the-amazon-rainforest/>.

232. GARCIA, *supra* note 109, at 242; Boucher, Roquemore & Fitzhugh, *supra* note 54, at 439.

233. Ortiz, *supra* note 147.

234. AMAZON FUND, <http://www.amazonfund.gov.br/en/home/> (last visited Oct. 29, 2020).

235. Ortiz, *supra* note 147.

236. *Id.*

237. See *Donations*, AMAZON FUND, <http://www.amazonfund.gov.br/en/donations/> (last visited Oct. 2, 2020).

238. Van der Hoff et al., *supra* note 171, at 437.

239. Mason, *supra* note 11, at 133.

the Amazon.”²⁴⁰ Instead, the fund is a “reward . . . rather than a contractual commitment to provide further reductions.”²⁴¹

It is difficult to evaluate *how* effective the Amazon Fund has been at reducing deforestation, largely because the fund is results-based and collects data accordingly.²⁴² Still, independent consultants have concluded that “without [the Amazon Fund’s] implementation, deforestation would have been even more widespread.”²⁴³

Unfortunately, the amount currently contributed does not “cover even half of the cost being incurred by Brazil” to prevent deforestation.²⁴⁴ Additionally, because the reward is tied to deforestation rates, as rates tick up, funding decreases commensurately, perversely creating less financial aid to prevent deforestation rates from increasing further.²⁴⁵ Compounding that, the fund is susceptible to political whims as it is run largely by the Brazilian government.²⁴⁶ Due to the current president’s open hostility to rainforest conservation and the corresponding increase in deforestation, the fund’s largest contributors have suspended their pledged donations.²⁴⁷

In summary, while there is no shortage of initiatives among nations seeking to reduce Amazonian deforestation, the impact of these efforts remains elusive. First, many of the initiatives, such as ACT and Mercosur, do not detail specific deforestation goals, which makes their impact difficult to evaluate.²⁴⁸ Second, most do not include a mechanism to evaluate their impact on deforestation. While it took five years for PCAB to commission a measurement tool, many of these initiatives have simply never endeavored to do so.²⁴⁹ When these efforts have included a measurement tool or are amenable to third party monitoring, the effort’s impact on deforestation has often been poor or abysmal.²⁵⁰ These poor results stem from overreliance and overdependence on Brazilian national actors for program

240. Erlend A. T. Hermansen et al., *Co-Operation or Co-Optation? NGOs’ Roles in Norway’s International Climate and Forest Initiative*, 8 *FORESTS* 1, 12 (2017).

241. Van der Hoff et al., *supra* note 171, at 437.

242. *Id.* at 434.

243. *Mid-Term Evaluation Report on the Effectiveness of the Amazon Fund 2008-2018*, AMAZON FUND 23 (Dec. 2019), <http://www.fundoamazonia.gov.br/export/sites/default/en/.galleries/documentos/monitoring-evaluation/Mid-Term-Evaluation-Report-Effectiveness-Amazon-Fund.pdf>. *But see* Song, *supra* note 59 (“Recent research on Norway’s contributions to the Amazon Fund noted that “a causal link to decreasing Brazilian deforestation rates is yet to be proven with analytical rigour [sic].”).

244. Boucher, Roquemore & Fitzhugh, *supra* note 54, at 442.

245. Carvalho et al., *supra* note 57, at 123.

246. *See Management*, AMAZON FUND, <http://www.amazonfund.gov.br/en/amazon-fund/> (last visited Oct. 2, 2020) (“The presidential decree enacted on April 11 2019 (Decree n. 9759/2019) extinguished all committees created by decrees or other administrative acts before January, 1st 2019 . . . To date, the new governance of the Amazon Fund has not been established.”).

247. *Norway Stops Amazon Fund Contribution in Dispute with Brazil*, REUTERS (Aug. 15, 2019), <https://www.reuters.com/article/us-brazil-environment-norway-idUSKCN1V52C9>.

248. Treaty for Amazonian Cooperation, *supra* note 110; Mercosur Free Trade Agreement, *supra* note 190.

249. USAID – Partnership for the Conservation of Amazon Biodiversity, *supra* note 143.

250. *See supra* discussion on voluntary REDD+ projects, notes 218–222 and accompanying text.

implementation,²⁵¹ a lack of adequate funding,²⁵² and the failure to target the overwhelming power of certain market influences due to the generic, one-size-fits-all nature of many international agreements.²⁵³ Third, even when goals are specific enough to highlight when Brazil is out of compliance, many initiatives lack an enforcement mechanism.²⁵⁴ Finally, forest conservation suffers from “treaty congestion” and the dilution of resources, a common syndrome of global environmental issues which ultimately “hampers implementation”²⁵⁵ as well as evaluation.²⁵⁶

The Amazon Fund stands out as an international mechanism that has proven effective at reducing deforestation.²⁵⁷ This is because, although prompted by the UN’s REDD+ initiative, Brazil was able to design the program to fit its unique circumstances.²⁵⁸ Additionally, the Amazon Fund has a specific goal (deforestation prevention), includes an evaluation mechanism (satellite monitoring), supports an activity known to influence deforestation (enforcement of environmental laws), and has an effective incentive (funding).²⁵⁹

Even for all the identified shortcomings, international institutions play a vital role in forest conservation.²⁶⁰ They are effective at convening global leaders, enabling discussions about forest conservation, creating broad international norms and obligations condemning deforestation, and facilitating financial and technological assistance. These actions have created the structures, relationships, and resources that enable on the ground deforestation prevention.

251. See *supra* notes 246–247 and accompanying text (discussing President Bolsonaro’s unilateral extinguishment of the Amazon Fund’s management committee); see also Arno Fritz das Neves Brandes et al., *Endangered Species Account for 10% of Brazil’s Documented Timber Trade*, J. NATURE CONSERVATION, June 2020, at 2 (discussion of how, at the national level, poorly equipped environmental agencies, loopholes in legislation, and a failure to fund conservation efforts has enabled logging of these protected species under CITES).

252. See Boucher, Roquemore & Fitzhugh, *supra* note 54, at 442.

253. See *supra* Part II.A.2 (discussion of ITTO); see N. MARK COLLINS ET AL., CONSERVATION ATLAS TROPICAL FORESTS ASIA & PACIFIC 70 (1991); TIGRE, *supra* note 111, at 357.

254. Klosek, *supra* note 18, at 147. For example, consider the Paris Agreement.

255. DONALD K. ANTON, ‘TREATY CONGESTION’ IN CONTEMPORARY INTERNATIONAL ENVIRONMENTAL LAW 8 (Austl. Nat’l Univ. Coll. L., 2012) Research Paper No. 12-05, <https://ssrn.com/abstract=1988579>.

256. See RÜDIFER WOLFRUM & NELE MATZ, CONFLICTS IN INTERNATIONAL ENVIRONMENTAL LAW (2003); Chenaz B. Seelarbokus, *Assessing the Effectiveness of International Environmental Agreements (IEAs): Demystifying the Issue of Data Unavailability*, SAGE J., 2-4 (2014); Erica Lymann, *Rethinking International Environmental Linkages: A Functional Cohesion Agenda for Species Conservation in a Time of Climate Change*, 27 FORDHAM ENV’T L. REV. 1 (2015).

257. See *supra* Part II.A.5.

258. *Id.*

259. *Id.*

260. TIGRE, *supra* note 111, at 357 (“The global level is essential to discuss solutions for global problems,” even if it has “proven insufficient to halt deforestation, or face the challenges of climate change.”); GARCIA, *supra* note 109, at 224–226.

B. Multi-Stakeholder Initiatives

Multi-stakeholder initiatives are “hybrid mechanisms” that “engag[e] a larger set of actors to tackle the specific drivers of deforestation.”²⁶¹ Multi-stakeholder initiatives include partnerships among multinational companies, industry associations, nongovernmental organizations (“NGOs”), civil society organizations, governments, and Indigenous communities; strategic pairings that increase resources, expertise, compliance, and ownership involved in forest conservation efforts.²⁶² Conceptually, this carefully-assembled team approach makes them more effective at managing global problems than state actors alone.²⁶³

Many multi-stakeholder initiatives have sprouted up around the Amazon, mostly due to the perception that states are not able to solve the problem of deforestation.²⁶⁴ Most of these initiatives utilize market-based instruments aimed at “alter[ing] markets facing the private sector in order to make sustainable practices more profitable and attractive than unsustainable ones.”²⁶⁵ This reflects the reality that some drivers of deforestation are both economic and international in nature, and therefore receptive to international market manipulation.²⁶⁶ Such mechanisms include certification schemes; bans, boycotts, and moratoria; agreements to manage supply chains sustainably; and the creation of new markets for environmental services.

1. Certification Schemes

Forest certification “is a process through which transnational networks of diverse actors set and enforce standards for the management of forests.”²⁶⁷ These standards create “market mechanism[s] with market access, price premiums, and reputation as potential incentives”²⁶⁸ through the issuance of certificates “by an independent third-party, attesting to the location and management status of a forest

261. Paulo Eduardo Dos Santos Massoca, Martin Delaroche & Gabriel Lui, *Lessons from the Soy and Beef Moratoria in Brazil*, in ZERO DEFORESTATION: A COMMITMENT TO CHANGE 151, 157 (2017).

262. Ayelet Berman, *The Rise of Multistakeholder Partnerships*, 111 AM. SOC’Y INT’L L. PROC. 205, 205 (2017).

263. *Id.* at 206.

264. *See, e.g.*, CADMAN, *supra* note 172, at 28 (“UNCED’s inability to combat deforestation comprehensively has been identified as a catalyst for the growth of forest certification.”).

265. GARCIA, *supra* note 109, at 229.

266. *E.g.*, Polain de Qarouz et al., *supra* note 227, at 191 (stating that 73% of the soybeans grown in Brazil and 20% of Brazilian cattle product are sold internationally.); Mustafa Zia et al., *Brazil Once Again Becomes the World’s Largest Beef Exporter*, USDA ECON. RSCH. SERV. (July 1, 2019), <https://www.ers.usda.gov/amber-waves/2019/july/brazil-once-again-becomes-the-world-s-largest-beef-exporter/> (Brazil is the “world’s largest exporter of beef, providing close to 20 percent of total global beef exports.”).

267. ERROL E. MEIDINGER, *Forest Certification as a Global Civil Society Regulatory Institution*, in SOC. AND POL. DIMENSIONS OF FOREST CERTIFICATION, 265 (Errol Meidinger, Chris Elliot, and Gerhard Oesten eds., 2002).

268. Axel Marx & Dieter Cuypers, *Forest Certification as a Global Environmental Governance Tool: What Is the Macro-Effectiveness of the Forest Stewardship Council?* 4 REGUL. & GOVERNANCE 408, 410 (2010).

which is producing timber.”²⁶⁹ Introduced in the 1990s, certification schemes offered a promising alternative to inter-state governance because they target markets directly²⁷⁰ and therefore might create change much faster than international norms or national policy revisions.²⁷¹

More than 50 certification schemes address forest products and services.²⁷² These certification schemes “opt[] to address the ‘problem’ of deforestation through the ‘solution’ of sustainable development.”²⁷³ In theory, customers would seek out certified products and pay higher prices for them, incentivizing producers to become and stay certified.

FSC certification, “generally regarded as the most effective and legitimate scheme” for timber certification,²⁷⁴ was created in 1991 by timber traders and NGOs who wanted to “develop an independently audited global system for ‘good forest management.’”²⁷⁵ It creates both international and national standards to “ensure[] that products come from responsibly managed forests that provide environmental, social and economic benefits.”²⁷⁶

FSC approved Brazil’s first national standard in 1997.²⁷⁷ While as of 2005 Brazil boasted rates of FSC certification similar to Canada and the U.S., most of the certified forests are plantations and “less than one-half of one percent of total native forest area is certified.”²⁷⁸ Additionally, those native forests owners who sought FSC certification “already tend[ed] to manage their forests with care in order to distinguish themselves from typical Amazonian forestry operations.”²⁷⁹

Notably, Brazilian corporations faced little pressure from activists to become FSC-certified because “deforestation in Brazil is due mostly to illegal logging and the clearing of land for agriculture, not to formal forestry operations.”²⁸⁰ By targeting a commodity (timber) that is not a major driver of deforestation in the

269. CHRIS ELLIOTT & RODOLPE SCHLAEPFER, *Global Governance and Forest Certification: A Fast Track Process for Policy Change*, in ERROL MEIDINGER ET AL., SOC. AND POL. DIMENSIONS OF FOREST CERTIFICATION 199, 200 (Errol Meidinger, Chris Elliot, and Gerhard Oesten eds., 2002).

270. *Id.* at 199–200; GARCIA, *supra* note 109, at 231 (explaining that forest certification can also be mandated by national law).

271. ELLIOTT & SCHLAEPFER, *supra* note 269, at 206.

272. FOOD & AGRIC. ORG. UNITED NATIONS, SUSTAINABLE FOREST MANAGEMENT TOOLBOX, FOREST CERTIFICATION, <http://www.fao.org/sustainable-forest-management/toolbox/modules/forest-certification/in-more-depth/en/>.

273. CADMAN, *supra* note 172, at 188.

274. Marx & Cuypers, *supra* note 268, at 409.

275. CADMAN, *supra* note 172, at 45.

276. FSC, *Certification*, <https://us.fsc.org/en-us/certification> (last visited Oct. 26, 2020).

277. Ralph H. Espach, *When Is Sustainable Forestry Sustainable? The Forest Stewardship Council in Argentina and Brazil*, 6 GLOB. ENV’T POL. 55, 65 (2006).

278. *Id.* at 70–71; Julie Mollins, *Tougher FSC Certification Guidelines Would Make Forest Oversight More Transparent in Brazil*, FOREST NEWS (Nov. 18, 2018), <https://forestsnews.cifor.org/58693/tougher-fsc-certification-guidelines-would-make-forest-oversight-more-transparent-in-brazil?fnl=en>.

279. Espach, *supra* note 277, at 72; see e.g., Maria Fernanda Ribeiro, *A Brazilian Forest Community Shows Certified Timber Really Does Work*, MONGABAY (July 22, 2020), <https://news.mongabay.com/2020/07/a-brazilian-forest-community-shows-certified-timber-really-does-work/>.

280. Espach, *supra* note 277, at 75; see also Marx & Cuypers, *supra* note 268, at 429–430.

Amazon nor a significant international export,²⁸¹ FSC certification's impact on reducing deforestation is extremely limited.²⁸²

Consider instead a certification scheme that *does* target a major export market contributing to deforestation in the Amazon: the Round Table on Responsible Soy ("RTRS"). RTRS is a "voluntary environmental program[] developed by voting members from industry and civil society that define social, environmental, and economic guidelines for crop production."²⁸³ The first RTRS certifications were issued in 2011²⁸⁴ to incentivize producers to adopt sustainable practices to ensure competitiveness on the global market.²⁸⁵

Adoption of RTRS has been sluggish. In Brazil, less than one percent of soy was RTRS certified by 2017.²⁸⁶ This abysmal adoption rate is due to "low demand for certified soy and the high cost of becoming certified."²⁸⁷ The lack of demand stems from the fact that many consumers are unaware the products they purchase contain soybeans, such as dog food, eggs, or bacon.²⁸⁸ Additionally, due to selective adoption, even certified Brazilian soy farms have not prevented deforestation.²⁸⁹

The impact of any certification scheme on deforestation reduction in the Amazon is unconfirmed, yet likely minimal.²⁹⁰ Certification schemes face a number of barriers that prevent success in the Amazon. First, such schemes lack clarity of definitions and concepts.²⁹¹ Second, because certification is optional, it allows for leakage: other companies will fill the market demand for non-certified, cheaper products.²⁹² Third, it is difficult to determine to what extent such market interventions generate additionality or "outcomes *beyond* business as usual;" suppliers who opt into certification often do so precisely because it requires minimal

281. See *supra* note 176 and accompanying text.

282. See Marx & Cuypers, *supra* note 268, at 427–428.

283. Rachael D. Garrett et al., *Assessing the Potential Additionality of Certification by the Roundtable on Responsible Soybeans and the Roundtable on Sustainable Palm Oil*, 11 ENV'T RSCH. LETTERS, Apr. 2016, at 2.

284. *Id.*

285. Blair Cameron, *A Step Toward Supply Chain Sustainability: The Round Table On Responsible Soy in Brazil, 2005–2017*, INNOVATIONS FOR SUCCESSFUL SOCIETIES 1, 6 (2017).

286. *Id.* at 1.

287. *Id.*

288. *Id.* at 20; Garrett et al., *supra* note 283, at 13 (explaining that as "[s]oy production occurs on thousands of individual farms, and each producer has little or no brand identity," farms have little fear of damaging their reputations by deforestation activities).

289. Cameron, *supra* note 285, at 19.

290. See Shreya Dasgupta, *Does Forest Certification Really Work?* MONGABAY (Sept. 21, 2017), <https://news.mongabay.com/2017/09/does-forest-certification-really-work/> ("But for one of certification's primary environmental goals — reducing deforestation — the evidence is currently poor."); Terry Slavin, *Deadline 2020: 'We Won't End Deforestation Through Certification Schemes,' Brands Admit*, REUTERS (Nov. 1, 2018), <https://www.reuters.com/sustainability/deadline-2020-we-wont-end-deforestation-through-certification-schemes-brands-admit>.

291. Thaís Linhares-Juvenal & Till Neeff, *Definitions Matter: Zero Deforestation Concepts and Performance Indicators*, 58 ETFRN NEWS 3 (2017), https://www.tropicalforestalliance.org/assets/Uploads/ETFRN_News_58.pdf; see also Mollins, *supra* note 279.

292. Meine van Noordwijk et al., *Deforestation-Free Claims: Scam or Substance?*, 58 ETFRN NEWS 11, 12 (2017), https://www.tropicalforestalliance.org/assets/Uploads/ETFRN_News_58.pdf.

change to their existing practices.²⁹³ Fourth, the chain of custody for some products, such as beef, is difficult to verify and susceptible to laundering.²⁹⁴ Fifth, such schemes are unable to “impose compliance on forest actors”²⁹⁵—there are no enforcement mechanisms, only the risk of de-certification.

However, some remain optimistic about certification because these “non-state regulatory mechanisms [are] an accepted complement to tackling problems when the state proves insufficient.”²⁹⁶ The strategies posited to make certification schemes more effective include focusing on clarifying definitions, creating comprehensive monitoring of supply chains, and collaborating with governments.²⁹⁷

2. Voluntary Corporate Commitments

Voluntary commitments are goals for deforestation reduction publicly announced by corporations and industry associations, often in coordination with NGOs, states, subnational governments, or Indigenous communities. Corporations have relied on voluntary commitments as a response to consumer demand for forest conservation for over 40 years.²⁹⁸ In the last decade alone, 400 members of the Consumer Goods Forum “pledged to help achieve zero net deforestation in their supply chains by 2020.”²⁹⁹ In 2014 the New York Declaration on Forests (“NYDF”), “a broad coalition of governments, companies, civil society, and [I]ndigenous peoples’ organizations,” set a similarly ambitious goal: halve tropical deforestation by 2020 and end it by 2030.³⁰⁰ As applicable to the Brazilian Amazon, these voluntary commitments focus on timber, soy, and cattle supply chains.

Some voluntary commitments are simply empty promises, lacking any level of detail necessary for implementation and evaluation.³⁰¹ These corporations pledged admirable goals but “failed to specify concrete implementation mechanisms.”³⁰² Others chose certification schemes as the implementation mechanism, which are

293. Garrett et al., *supra* note 283, at 2 (emphasis added).

294. Claire Asher, *Deforestation-linked Brazilian Beef Still Flowing Into International Markets: Report*, MONGABAY (Nov. 6, 2018), <https://news.mongabay.com/2018/11/deforestation-linked-brazilian-beef-still-flowing-into-international-markets-report/>.

295. CADMAN, *supra* note 172, at 188.

296. *Id.*

297. Till Neeff & Thaís Linhares-Juvenal, *Zero Deforestation Initiatives and Their Impacts on Commodity Supply Chains*, FOOD & AGRIC. ORG. U.N. 27–28 (June 22, 2016), <http://www.fao.org/3/a-i6857e.pdf>.

298. *See infra* Part II.C.1.

299. Nick Pasiecznik, Herman Savenije, Christophe van Orshoven, Jan Bock, & Pablo Pacheco, *Key Issues: Making Zero Deforestation Commitments Work Better*, 58 ETFRN NEWS viii, xi (2017), https://www.tropicalforestalliance.org/assets/Uploads/ETFRN_News_58.pdf; Slavin, *supra* note 290; *see also* Sabine Henders et al., *Do National Strategies Under the UN Biodiversity and Climate Conventions Address Agricultural Commodity Consumption as Deforestation Driver?*, 70 LAND USE POL’Y 580, 582 (2018) [hereinafter *Do National Strategies*].

300. *About*, NEW YORK DECLARATION ON FORESTS: PROGRESS ASSESSMENT, <https://forestdeclaration.org/about/> (last visited Feb. 5, 2022).

301. *Do National Strategies*, *supra* note 299, at 582.

302. Peter Jopke & George C. Schoneveld, *Corporate Commitments to Zero Deforestation: An Evaluation of Externality Problems and Implementation Gaps*, CTR. FOR INT’L FORESTRY RSCH. 25 (2018), https://www.cifor.org/publications/pdf_files/OccPapers/OP-181.pdf.

notably unproven to be effective in the Amazon.³⁰³ These corporations are now reevaluating such strategies, setting them back years in progress toward their commitments.³⁰⁴

Further, selective participation and a lack of consensus on the definition of relevant terms, such as “zero deforestation,”³⁰⁵ hampers the effectiveness of commitments³⁰⁶ and inhibits public accountability. These shortcomings create leakage between supply chains rather than an overall reduction of deforestation.³⁰⁷ In a study of 250 companies deemed powerful enough to effect market change, only 50 participated in voluntary commitments.³⁰⁸ Of those 50, the majority did not require their suppliers to adhere to the same commitment.³⁰⁹ This loophole enabled suppliers to participate in deforestation activities and simply sell those products to non-participating companies.³¹⁰

In program evaluations, studies have discovered “some progress” among about half of the over 700 commitments analyzed, while up to a third of the commitments were “dormant or delayed.”³¹¹ Notably, the 2010 Consumer Goods Forum commitment to zero deforestation by 2020 has “abjectly fail[ed] to meet the deadline,” and only six percent of companies that have made similar commitments “are actually taking steps to address their high-risk facilities, suppliers, and/or regions of operation.”³¹²

Crucially, many of these commitments are “distracting attention” from initiatives that are known to work.³¹³ Voluntary corporate commitments grant multinational corporations a reputational boost without actually requiring much, if any, corporate investment or proven deforestation prevention.³¹⁴ To make these commitments effective, analysts posit increasing coordination with national governments to develop supply-side pressures, designating geographical boundaries, improving transparency within the supply chain, and removing any participation of uncertified suppliers.³¹⁵ Interestingly, these recommendations make voluntary corporate commitments begin to resemble supply chain governance agreements.

303. See *supra* Part II.B.1.

304. *Implementing and Scaling Up the CGF Zero Net Deforestation Commitment*, CONSUMER GOODS F. (Apr. 12, 2017), <https://www.theconsumergoodsforum.com/blog/implementing-and-scaling-up-the-cgf-zero-net-deforestation-commitment/>.

305. *Do National Strategies*, *supra* note 299, at 582.

306. Sam Lawson, *The Flawed Focus on Corporate Voluntary Actions*, 58 ETFRN NEWS 111, 114 (2017), https://www.tropicalforestalliance.org/assets/Uploads/ETFRN_News_58.pdf; Polain de Qarouz et al., *supra* note 227, at 200 (advocating for “harmoniz[ing] corporate commitments across regions”).

307. Lawson, *supra* note 306, at 114-115; Polain de Warouz et al., *supra* note 227, at 201.

308. Jopke & Schoneveld, *supra* note 302, at 13.

309. *Id.*

310. *Id.* at 27.

311. Pasiecznik, Savenije, van Orshoven, Bock, & Pacheco, *supra* note 299, at x; see also Jopke & Schoneveld, *supra* note 302, at 7.

312. Slavin, *supra* note 290.

313. Lawson, *supra* note 306, at 111.

314. See Slavin, *supra* note 290; Jopke & Schoneveld, *supra* note 302 at 1.

315. Jopke & Schoneveld, *supra* note 302, at 27-28; see also *Implementing and Scaling Up the CGF Zero Net Deforestation Commitment*, *supra* note 304.

3. Supply Chain Governance: Zero Deforestation Agreements

Zero deforestation agreements are multi-stakeholder initiatives that create supply side interventions targeting entire industrial sectors rather than one corporation's supply chain.³¹⁶ Unlike voluntary commitments, these efforts coordinate key strategic players within targeted industries to set specific methods for reducing deforestation and procedures for ensuring monitoring and accountability. Further, these agreements establish a clear goal: the cessation of purchases from non-complying suppliers within a certain location or after a certain date.³¹⁷ Corporations and industry associations often enter into these agreements due to public pressure, usually following a scathing international report and the corresponding increased public demand for corporate accountability.³¹⁸

The 2006 Amazon Soy Moratorium ("SoyM") emerged due to public pressure to lessen deforestation caused by soy farm expansion in Brazil following Greenpeace's *Eating Up The Amazon* report.³¹⁹ The two largest purchasers of Brazilian soy, representing 90 percent of the market,³²⁰ voluntarily agreed not to purchase or finance soy grown on Amazonian lands deforested after 2008.³²¹ To ensure compliance with the moratorium, the two trade associations joined with Greenpeace, other NGOs, banks, and government officials to form the Soy Working Group ("GTS").³²² The GTS "hire[s] an audit firm to check participants in the moratorium for compliance" every year.³²³ Violating farms are identified by "satellite and airborne monitoring system" and "blocked from selling to SoyM signatories."³²⁴ The success of this initiative has been its "strategic[] pressure on a small number of powerful actors" who are susceptible to international reputational harm,³²⁵ its reliance on "detailed and reliable information," and its long-term involvement of a "diverse set of stakeholders" including the Brazilian government.³²⁶

The 2009 Cattle Agreement is similar to SoyM, except that the agreement does not call for zero deforestation but rather prohibits *illegal* deforestation, only requires members to trace cattle to the fattening farm (not the beginning of the supply chain), and only applies to 38 percent of the market.³²⁷ Other differences lie in the

316. Holly K. Gibbs et al., *Did Ranches and Slaughterhouses Respond to Zero-Deforestation Agreements in the Brazilian Amazon?*, 9 CONSERVATION LETTERS 32 (Apr. 21, 2015) [hereinafter Gibbs II]; NEW YORK DECLARATION ON FORESTS, *Protecting and restoring forests: A Story of Large Commitments yet Limited Progress, Five-Year Assessment Report* 16 (2019) ("There is evidence that sector-wide approaches lead to a reduction in deforestation").

317. Polain de Warouz et al., *supra* note 227, at 188–189.

318. Dos Santos Massoca, Delaroche, & Lui, *supra* note 261, at 153.

319. *Id.*

320. These trade associations are the Brazilian Association of Cereal Exporters and the Brazilian Association of Vegetable Oil Industries. Dos Santos Massoca, Delaroche, & Lui, *supra* note 261, at 153.

321. Cameron, *supra* note 284, at 5.

322. *Id.* at 5; Dos Santos Massoca, Delaroche, & Lui, *supra* note 261, at 153.

323. Cameron, *supra* note 286, at 5.

324. H. K. Gibbs et al., *Brazil's Soy Moratorium*, 347 SCIENCE 377, 377 (Jan. 23, 2015).

325. Dos Santos Massoca, Delaroche, & Lui, *supra* note 262, at 151.

326. *Id.* at 158; *see also* Gibbs et al., *supra* note 324, at 378.

327. Dos Santos Massoca, Delaroche, & Lui, *supra* note 261, at 154–157; *see also* Alexei Barrionuevo, *Giants in Cattle Industry Agree to Help Fight Deforestation*, N.Y. TIMES (Oct. 6, 2009),

characteristics of the cattle industry.³²⁸ First, the supply chain is longer for cattle, which are bred, calved, and fattened on one or more farms, then sold to a direct supplier, then to a meat packing company, then to retailers.³²⁹ Second, there is no “harvest” season for cattle;³³⁰ most are slaughtered after moving among several farms.³³¹ Third, the cattle industry is composed of many small farms and slaughterhouses, and most of the cattle products are sold on Brazil’s large national market,³³² restricting the role of international actors.³³³

The impact of both SoyM and the Cattle Agreement on deforestation has been notable. Studies show that these agreements have “incentivized rapid change in [supplier] behavior related to deforestation”³³⁴ and “dramatically decreased” land deforested by these suppliers.³³⁵ The Cattle Agreement decreased the industry’s deforestation by 32 percent,³³⁶ and SoyM reduced “soybean expansion over forestlands . . . from around 30% before the moratorium to 1% after it.”³³⁷ The consensus is that these agreements are “effective mechanisms to reduce deforestation for major export commodities on private lands.”³³⁸

However, exposed loopholes in the deals allow for leakage of deforestation into other geographical areas or industries.³³⁹ In the Cattle Agreement, difficulty with monitoring compliance prompted Greenpeace to abandon the agreement with regard to one of the three meat packers in 2017: JBS had been discovered buying thousands of cattle from an illegally deforested area.³⁴⁰

Even while their impact may be less than initially proposed,³⁴¹ these initiatives have verifiably “contributed to the reduction of illegal deforestation in their supply chains.”³⁴² Their proven success is notable among international initiatives.

<https://www.nytimes.com/2009/10/07/world/americas/07deforest.html> [hereinafter *Giants in Cattle Industry*].

328. Dos Santos Massoca, Delaroche, & Lui, *supra* note 261, at 154.

329. *Id.* (in contrast, the soybean supply chain is farms to trade associations to retailers); Polain de Warouz et al., *supra* note 227, at 191.

330. Dos Santos Massoca, Delaroche, & Lui, *supra* note 261, at 154.

331. *Id.* at 154, 157.

332. Polain de Warouz et al., *supra* note 227, at 191 (“80% of Brazilian beef production goes to domestic markets.”).

333. Dos Santos Massoca, Delaroche, & Lui, *supra* note 261, at 157.

334. Gibbs II, *supra* note 316, at 38.

335. Gibbs et al., *supra* note 324, at 377.

336. Gibbs II, *supra* note 316, at 36.

337. Dos Santos Massoca, Delaroche & Lui, *supra* note 261, at 156.

338. Polain de Warouz et al., *supra* note 227, at 188, 189.

339. Henders et al., *supra* note 36, at 11.

340. Dom Phillips, *Meat Company Faces Heat Over ‘Cattle Laundering’ In Amazon Supply Chain*, GUARDIAN (Feb. 20, 2020, 9:13 PM), <https://www.theguardian.com/environment/2020/feb/20/meat-company-faces-heat-over-cattle-laundering-in-amazon-supply-chain>.

341. Sue Branford & Mauricio Torres, *Amazon Soy Moratorium: Defeating Deforestation or Greenwash Diversion?*, MONGABAY (Mar. 8, 2017), <https://news.mongabay.com/2017/03/amazon-soy-moratorium-defeating-deforestation-or-greenwash-diversion/>.

342. Dos Santos Massoca, Delaroche & Lui, *supra* note 261, at 158.

4. Amazon Region Protected Areas Program

One of the simplest multi-stakeholder initiatives, the Amazon Region Protected Areas Program (“ARPA”) conserves land within the Amazon as parks and reserves.³⁴³ Launched in 2002, ARPA is a partnership among Brazil, the Brazilian Biodiversity Fund (“FUNBIO”), Germany, the Global Environment Facility, the World Bank, and the World Wildlife Foundation.³⁴⁴

ARPA facilitates the transfer of funds from donors to FUNBIO, a private non-profit, which then disburses money to Brazilian environmental agencies.³⁴⁵ One of the most innovative features is ARPA’s conjoined accounts.³⁴⁶ These accounts enable FUNBIO to circumvent Brazilian bureaucracy and transfer funds directly to protected area managers, increasing efficiency and ensuring that the government does not divert resources.³⁴⁷

By 2017, ARPA had expanded to protect 48 percent of the Amazon biome in Brazil.³⁴⁸ Incredibly, the “expansion of [protected areas] in the Brazilian Amazon . . . contributed to a 75% decrease in deforestation . . . from 2004–2009.”³⁴⁹ While some deforestation still occurs within ARPA designated units,³⁵⁰ these

343. WORLD WILDLIFE FUND, AMAZON REGION PROTECTED AREAS PROGRAM (Jan. 2018), https://www.thegef.org/sites/default/files/publications/Arpa_GEF%202018_22.01.18-v2.pdf.

344. *Establishing Protected Areas Across the Amazon*, WORLD WILDLIFE FUND, https://wwf.panda.org/discover/knowledge_hub/where_we_work/amazon/vision_amazon/models/amazon_protected_areas/establishment/ (last visited Nov. 24, 2020). Protected areas include indigenous reserves, “parks, biological reserves, ecological stations, natural heritage reserves, wildlife refuges[,] . . . production forests, extractive reserves, sustainable development reserves, environmental protection areas, and private natural heritage reserves.” Robert Walker et al., *Protecting the Amazon with Protected Areas*, 106 PROCS. NAT’L ACAD. SCIS. 10582, 10582 (June 30, 2009) (citing to Brazilian Law 9985, July 18, 2000 and Decree 4340, Aug. 2002).

345. *Amazon Region Protected Areas (GEF)*, WORLD BANK, <https://projects.worldbank.org/en/projects-operations/project-detail/P058503> (last visited Nov. 24, 2020).

346. WORLD BANK, IMPLEMENTATION COMPLETION AND RESULTS REPORT ON A GRANT FROM THE GLOBAL ENVIRONMENT FACILITY TRUST FUND IN THE AMOUNT OF USD 30 MILLION TO THE FUNDO BRASILEIRO PARA A BIODIVERSIDADE (FUNBIO) FOR AN AMAZON REGION PROTECTED AREAS PROJECT (June 22, 2009), accessed at <http://documents1.worldbank.org/curated/en/785201468229178280/pdf/ICR11260P058501IC0disclosed08131091.pdf>.

347. *Id.*; The conjoined account solution “gives protected areas’ site managers small amounts of cash. ‘The resources help them do small things which have a great impact, such as buying gasoline for enforcement work without having to wait for the government to give them the fuel.’” Carlos Augusto, *Brazil: Government and Communities Work Together to Protect the Amazon Rainforest*, WORLD BANK (Oct. 17, 2012), <https://www.worldbank.org/en/news/feature/2012/10/17/ARPA-program-protected-areas-Amazon-results-challenges>.

348. Kauano et al., *supra* note 54, at 1.

349. Britaldo Soares-Filho et al., *Role of Brazilian Amazon Protected Areas in Climate Change Mitigation*, 107 PROCS. NAT’L ACAD. SCI. 10821, 10821 (June 15, 2010); *see also* Cabral, Saito, Pereira, & Laques, *supra* note 348, at 101.

350. Rhett A. Butler, *Protected Areas Cover 44% of the Brazilian Amazon*, MONGABAY (Apr. 20, 2011), <https://news.mongabay.com/2011/04/protected-areas-cover-44-of-the-brazilian-amazon/> (noting that deforestation still occurs within protected areas, with 4,712 square miles of forest lost between 1998 and 2009); Cabral, Saito, Pereira, & Laques, *supra* note 348, at 101.

protected areas have “effectively halted the expansion of agricultural frontiers and prevented deforestation on an unprecedented scale.”³⁵¹

From the perspective of sovereignty, the program has been criticized as “a new form of colonialism, an open conspiracy in which economic and financial interests . . . block the development of Brazil and the Amazon region.”³⁵² This description of the coordination of international funds to support a program enshrined in Brazil’s democratically-created law may seem outlandish, but it is a widely held view in Brazil.³⁵³ This suggests that while the program is hugely successful at preventing deforestation, it has a reputational image that may make it vulnerable politically.

In summary, multi-stakeholder initiatives are incredibly diverse in terms of participants, programmatic structure, strategic focus, and efficacy at reducing deforestation. Still, important lessons can be distilled. First, a failure to enable transparency and monitoring can be fatal to an initiative’s effectiveness, and mechanisms for ensuring accountability are vital. Initiatives that strategically adjust incentives for participation, adhere to standards, effectively monitor actions, coordinate with the Brazilian federal government, and hold actors accountable to reduce deforestation are effective, as are programs that focus on conserving specific geographic areas. SoyM and ARPA are the most effective multi-stakeholder mechanisms, reducing deforestation within their target industries or areas by 34 percent and 75 percent, respectively.

C. Grassroots Activism

Grassroots activism is a “type of movement or campaign that attempts to mobilize individuals to take some action to influence an outcome, often of a political nature.”³⁵⁴ Unlike the other international mechanisms discussed *supra*, these are “bottom-up initiatives” rather than top-down, and typically involve NGOs in organizing or supporting roles.³⁵⁵ There is a long history of grassroots activism in the Brazilian Amazon, beginning in the 1950s and blossoming into an international force in the 1980s.³⁵⁶ By then, deforestation was proceeding at a breathtaking speed: at the end of the decade, “10% of the whole Amazon rainforest had disappeared.”³⁵⁷ As Brazilian and Indigenous labor and environmental activists rose up in response,³⁵⁸

351. Stephan Schwartzman et al., *Social Movements and Large-Scale Tropical Forest Protection on the Amazon Frontier*, 19 J. ENV'T & DEV. 274, 278 (2010); see also Walker, *supra* note 344; Alexander Pfaff et al., *Protected Areas' Impacts on Brazilian Amazon Deforestation*, PLOS ONE 1, 15 (2015).

352. Rohter, *supra* note 98.

353. *Id.*

354. *Grassroots*, BRITANNICA, <https://www.britannica.com/topic/grassroots> (last visited Oct. 3, 2020).

355. See Skaidrė Žičkienė, *ENCYCLOPEDIA OF SUSTAINABILITY IN HIGHER EDUC.*, *Grassroots Activism and Sustainable Development* (Walter Leal Filho ed., living ed. 2019).

356. BARBOSA, *supra* note 95, at 90.

357. Le Tourneau, *supra* note 28.

358. See generally, REVKIN, *supra* note 33; see also BARBOSA, *supra* note 95, at 90. In 1992, there were 100 Brazilian environmental groups in the Amazon. Elizabeth Heilman Brooke, *As Forests Fall, Environmental Movement Rises in Brazil*, N.Y. TIMES (June 2, 1992), <https://www.nytimes.com/1992/06/02/news/as-forests-fall-environmental-movement-rises-in-brazil.html>. This wealth of groups enabled international actors to get involved. *Id.*

activists worldwide followed in support of the movement against deforestation.³⁵⁹ The activism can be grouped into two categories based on the activists' target: corporations through consumer pressure or Brazil's government through political pressure.

1. Consumer Pressure

In the 1980s, news coverage of large wildfires in Brazil, the assassination of the famous Brazilian activist Chico Mendes, and increased nature programming on television “fueled a rising popular upsurge of support for taking action to save the world’s forests.”³⁶⁰ Consumers, realizing the power of their purchasing decisions, started organizing boycotts and pressuring corporations to remove deforestation from their supply chains.³⁶¹

Multi-national corporations were alarmed. Concerned about the value of their brands,³⁶² they responded with the now ubiquitous triple bottom line corporate stance, performatively incorporating environmental sustainability into the corporation’s main measure of success.³⁶³ Fear of being targeted by a consumer activism campaign also prompted self- and co-regulatory initiatives such as certifications.³⁶⁴ These certification schemes in turn gave consumers a tangible “ask,” such as demanding government bodies require FSC-certified lumber in building contracts.³⁶⁵ By the mid-2000s, as public concern heightened about the role of deforestation in greenhouse gas emissions,³⁶⁶ global brands tried a third response: voluntary zero deforestation commitments such as the Consumer Goods Forum’s Deforestation Resolution.³⁶⁷

359. BARBOSA, *supra* note 94, at 91.

360. David Kaimowitz, *Forestry Assistance and Tropical Deforestation: Why the Public Doesn’t Get What It Pays For*, 2 INT’L FORESTRY REV. 225, 226 (2000).

361. CAROLINE HELDMAN, PROTEST POLITICS IN THE MARKETPLACE: CONSUMER ACTIVISM IN THE CORPORATE AGE 59 (2017); Brendan Borrell, *What Ever Happened to the Amazon Rain Forest? Did We Save It Or What?* SLATE (Nov. 3, 2009), <https://slate.com/technology/2009/11/what-ever-happened-to-the-amazon-rain-forest-did-we-save-it.html>.

362. See Tarun Banerjee & Benjamin Case, *The Leverage of Protest: Market, Media, and Reputational Disruption in Social Movement Success*, 35 SOCIO. F. 95, 98–99 (2020); Tharic Pires Dias Galuchi et al., *Management of Socioenvironmental Factors of Reputational Risk in the Beef Supply Chain in the Brazilian Amazon Region*, 22 INT’L FOOD & AGRIBUSINESS MGMT. REV. 155, 159 (2019) (“The competitiveness of supply chains is linked to the ability of their agents to meet consumer and stakeholder expectations. Failure of some agents in a supply chain to satisfy this public can cause a negative reaction that affects the entire chain’s reputation in a spill over effect. This new reality has led food corporations to adopt more sustainable production practices.” (citations omitted)).

363. Jopke & Schoneveld, *supra* note 302, at 3.

364. *Id.*; See also *supra* Part II.B.1.

365. See, e.g., Jill P. Capuzzo, *Rainforest Politics Strides Onto the Boardwalk*, N.Y. TIMES (June 24, 2007), <https://www.nytimes.com/2007/06/24/nyregion/nyregionspecial2/24mainnj.html>.

366. Jopke & Schoneveld, *supra* note 302, at 1. See also Christianna Parr et al., *The Amazon Isn’t the Only Forest That’s Burning. Can Consumer Pressure Stop the Destruction?*, WASH. POST (Oct. 14, 2019), <https://www.washingtonpost.com/politics/2019/10/14/amazon-isnt-only-forest-thats-burning-can-consumer-pressure-stop-destruction/>; Ylan Q. Mui, *Wal-Mart Extends its Influence to Washington*, WASH. POST, Nov. 24, 2007.

367. Jopke & Schoneveld, *supra* note 302, at 1. See *supra* Part II.B.2. Most of these corporate responses have “fail[ed] to deliver strong enough results.” Parr et. al., *supra* note 368.

Some consumer pressure has been more brazen. Between 2005 and 2009, Greenpeace published two scathing reports highlighting the devastating deforestation perpetrated by soy farming and cattle ranching in the Amazon. Its first report spurred “public campaigns and protests” against soy purchasers and retailers.³⁶⁸ This consumer activism “pushed supermarket chains and food companies such as McDonald’s to declare a boycott on the purchase of illegally farmed soy[]” due to fear of reputational damage.³⁶⁹ These boycotts, in turn, led to SoyM.³⁷⁰

Greenpeace’s sequel report, *Slaughtering the Amazon*,³⁷¹ alleged certain “global brands [were] silent partners to crime”³⁷² and generated public outcry, “result[ing] in retailers and importers immediately bann[ing] Brazilian beef imports.”³⁷³ Exporters panicked about losing market share,³⁷⁴ and within months, Brazil’s four largest meatpacking corporations signed the Cattle Agreement.³⁷⁵

Other less coordinated activism has focused pressure on international corporations to reduce their demand for deforestation in Brazil. In 2019, following the outcry over the Brazilian Amazon fires in the press,³⁷⁶ on social media,³⁷⁷ and in world-wide public demonstrations,³⁷⁸ “the world’s second-biggest fashion retailer” H&M, as well as international brands including The North Face and Timberland, announced they would stop purchasing leather from Brazil.³⁷⁹ Other companies declared they would stop buying Brazilian soy.³⁸⁰ A major European investment firm dropped one of Brazil’s largest meatpackers—the same corporation that had been

368. Dos Santos Massoca et al., *supra* note 261, at 152–53.

369. Jeff Tollefson, *Stopping Deforestation: Battle for the Amazon*, 520 NATURE 20, 21 (Apr. 2, 2015); Marc Kaufman, *New Allies on the Amazon*, WASH. POST (Apr. 24, 2007), <https://www.washingtonpost.com/wpdyn/content/article/2007/04/23/AR2007042301903.html>.

370. Le Tourneau, *supra* note 28. See also Kaufman, *supra* note 369.

371. GREENPEACE, *SLAUGHTERING THE AMAZON* (2009), <https://www.greenpeace.org/usa/wp-content/uploads/legacy/Global/usa/planet3/PDFs/slaughtering-the-amazon-part-1.pdf>.

372. *Id.* at iv.

373. Luciana M. Vieira et al., *Multi-Stakeholder Initiative For Sustainable Beef Production Standards*, in *A STAKEHOLDER APPROACH TO MANAGING FOOD 8* (Adam Lindgreen et al., eds., 2017); *Giants in Cattle Industry*, *supra* note 327.

374. Dos Santos Massoca, Delaroche, & Lui, *supra* note 261, at 153.

375. Polain de Warouz et al., *supra* note 227, at 190.

376. E.g., Roland Hughes, *Amazon Fires: What’s the Latest in Brazil?* BBC NEWS (Oct. 12, 2019), <https://www.bbc.com/news/world-latin-america-49971563>; Moriyama & Sandy, *supra* note 57; Colin Dwyer, *Tens of Thousands of Fires Ravage Brazilian Amazon, Where Deforestation Has Spiked*, NPR (Aug. 21, 2019) <https://www.npr.org/2019/08/21/753140642/tens-of-thousands-of-fires-ravage-brazilian-amazon-where-deforestation-has-spike>.

377. E.g., Hollingsworth, *supra* note 5; Campbell, *supra* note 5.

378. E.g., Tom Phillips & Dom Phillips, *Protesters Besiege Brazilian Embassies Worldwide Over Amazon Fires*, THE GUARDIAN (Aug. 23, 2019), <https://www.theguardian.com/world/2019/aug/23/brazil-protests-amazon-bolsonaro-failure-protect>.

379. Manuela Andreoni & Sapna Maheshwari, *Is Brazilian Leather Out of Fashion? H&M Stops Buying Over Amazon Fires*, N.Y. TIMES (Sept. 5, 2019), <https://www.nytimes.com/2019/09/05/world/americas/h-m-leather-brazil-amazon-fires.html>.

380. Glenn Hurowitz, Opinion, *How Pressuring Corporations Can Save the Amazon from Destruction*, YALE ENV’T 360 (Sept. 10, 2020), <https://e360.yale.edu/features/how-pressuring-corporations-can-save-the-amazon-from-destruction>.

expelled from the Cattle Agreement—”over the company’s role in deforestation.”³⁸¹ Six other European investment firms followed, declaring their intent to “divest from beef producers, grains traders and even government bonds in Brazil.”³⁸² Germany passed a “due diligence law on supply chains” that enables it to hold businesses accountable for deforestation by their suppliers.³⁸³ Consumers also poured hundreds of thousands of dollars in donations to NGOs.³⁸⁴

However, cattle producers in Brazil have been remarkably resilient to consumer pressure.³⁸⁵ While their buyers—fast food chains and supermarkets—have made deforestation commitments and have expressed their concern to the beef suppliers, their “gentle urging just isn’t enough.”³⁸⁶ The meatpackers’ incentive to change is lacking when, “for all their handwringing, [customers] ke[ep] buying billions of dollars in products.”³⁸⁷ Still, the pressure generated by the 2019 outcry may have finally persuaded one major Brazilian cattle supplier to change: in September 2020, JBS announced “it plans to combat destruction in the Amazon by monitoring its entire supply chain for deforestation by 2025.”³⁸⁸

2. Political Pressure

International influence in Brazilian politics promoting Amazonian conservation began proceeding the 1972 Stockholm Conference.³⁸⁹ There, “international pressure persuaded the Brazilian dictatorial government to create

381. Ernesto Londoño & Leticia Casado, *Under Pressure, Brazil’s Bolsonaro Forced to Fight Deforestation*, N.Y. TIMES (Aug. 28, 2020), <https://www.nytimes.com/2020/08/01/world/americas/Brazil-amazon-deforestation-bolsonaro.html> [hereinafter *Under Pressure*].

382. Tom Phillips, *Trillion-dollar Investors Warn Brazil Over ‘Dismantling’ of Environmental Policies*, GUARDIAN (June 23, 2020 11:01 AM), <https://www.theguardian.com/environment/2020/jun/23/trillion-dollar-investors-warn-brazil-over-dismantling-of-environmental-policies>.

383. Dom Phillips, *Tesco Urged to Ditch Meat Company Over Alleged Links to Amazon Deforestation*, GUARDIAN (Aug. 5, 2020), <https://www.theguardian.com/environment/2020/aug/05/tesco-urged-to-ditch-meat-company-over-alleged-links-to-amazon-deforestation>; Jenny Gesley, *Germany: New Law Obligates Companies to Establish Due Diligence Procedures in Global Supply Chains to Safeguard Human Rights and the Environment*, L. LIBR. CONG. (2021), <https://www.loc.gov/item/global-legal-monitor/2021-08-17/germany-new-law-obligates-companies-to-establish-due-diligence-procedures-in-global-supply-chains-to-safeguard-human-rights-and-the-environment/>.

384. Allie Nawrat, *Have You Heard The Amazon Is On Fire? The Power Of Social Media In Awareness Raising*, VERDICT (Sept. 6, 2019), [https://www.verdict.co.uk/amazon-fires-social-media/\(considering the broader NGO community, “the total charitable donations, particularly through Leonardo diCaprio’s partnership with the Earth Alliance, probably now matches the G7’s commitment” of \\$22 million\).](https://www.verdict.co.uk/amazon-fires-social-media/(considering%20the%20broader%20NGO%20community,%20%E2%80%9Cthe%20total%20charitable%20donations,%20particularly%20through%20Leonardo%20diCaprio%E2%80%99s%20partnership%20with%20the%20Earth%20Alliance,%20probably%20now%20matches%20the%20G7%E2%80%99s%20commitment%E2%80%9C%20of%20$22%20million).)

385. Hurowitz, *supra* note 380.

386. *Id.*

387. *Id.*

388. Roberto Samora, *Brazil’s JBS Vows to Monitor Deforestation Through Whole Cattle Supply Chain*, REUTERS (Sept. 23, 2020), <https://www.reuters.com/article/us-jbs-amazon/brazils-jbs-vows-to-monitor-deforestation-through-whole-cattle-supply-chain-idUSKCN26E20I>; Dom Philips, *Brazil Meat Giant JBS Pledges to Axe Suppliers Linked to Deforestation*, GUARDIAN (Sept. 23, 2020), <https://www.theguardian.com/environment/2020/sep/23/brazil-meat-giant-jbs-pledges-to-axe-suppliers-linked-to-deforestation>.

389. Nicolle & Leroy, *supra* note 12, at 103.

dedicated environmental institutions”—agencies that would designate the first Amazon protected areas.³⁹⁰

As the military rule phased out, increased tolerance for political dissidence enabled social movements to gain strength.³⁹¹ In the 1980s, Brazilian activist Chico Mendes organized the Peoples of the Forest movement to advocate against commercial deforestation.³⁹² Sponsored by international NGOs, Mendes and other activists traveled widely and appeared on popular television shows to elevate concern about the Amazon to a global audience.³⁹³ Mendes described NGOs and the international press as “our biggest assets” because only after their involvement did Mendes’ movement “start[] to get support from the rest of Brazil.”³⁹⁴ Mendes’ international strategy was highly successful. By 1989, federal representatives in the U.S. were championing the Amazon’s protection.³⁹⁵

Mendes’ strategy has been replicated multiple times over the intervening thirty years, with varying degrees of success. His method of engaging celebrities to receive press coverage gives “political leverage to environmentalists and grassroots organizations” because it keeps international attention on the Amazon.³⁹⁶ For example, when the Brazilian government initiated a road to Peru in the 1980s, international celebrities from Phil Collins to Gabriel García Márquez called on the government to stop, resulting in some gains in conservation measures and at least temporarily halting the project.³⁹⁷ The Kayapó, an Amazonian Indigenous group, also applied this strategy in an effort to stop a hydroelectric project in 1989. Six hundred people, including international NGO activists and the musician Sting, converged in the area of the proposed dam.³⁹⁸ Just as the Kayapó organizers had hoped, the highly critical international press coverage shamed the Brazilian government into shelving the plans for the dam.³⁹⁹

390. *Id.*

391. BARBOSA, *supra* note 95, at 2.

392. Kate Evans, *Martyr of the Amazon*, FOREST NEWS (Nov. 5, 2013), <https://forestsnews.cifor.org/17295/martyr-of-the-amazon-the-legacy-of-chico-mendes?fnl=en>

393. BARBOSA, *supra* note 95, at 2; Evans, *supra* note 394.

394. BARBOSA, *supra* note 95, at 117 (quoting Chico Mendes); *see also* Nicolle & Leroy, *supra* note 12, at 104 (“The Brazilian case is symbolic of a multiscale coalition, as it connected very local actors, who were defending their way of life against direct threats, and actors on the international scene, mobilized in favour [sic] of the protection of Amazonia.”).

395. *See supra* note 97 and accompanying text.

396. BARBOSA, *supra* note 95, at 3.

397. Borrell, *supra* note 361.

398. BARBOSA, *supra* note 95, at 111–112; Terrence Turner, *The Role of Indigenous Peoples in the Environmental Crisis: The Example of the Kayapo of the Brazilian Amazon*, 36 PERSP. IN BIOLOGY & MED. 526, 540 (1993); *see also* Schwartzman et al., *supra* note 351, at 285.

399. Terence Turner, Megaron Txukarramãe, & Luis Carlos, *Kayapó Set To Fight Massive Dam Project*, SURVIVAL INT’L (Apr. 27, 2006), <https://www.survivalinternational.org/news/1577>. This protest prompted the pop star Sting to found the Rainforest Foundation. Elzio Barreto, *Brazil Should Hear Amazon Indians on Dam: Sting*, REUTERS (Nov. 22, 2009), <https://www.reuters.com/article/us-brazil-amazon-sting/brazil-should-hear-amazon-indians-on-dam-sting-idUSTRE5AL15C20091122>. After that success, the activist appetite for on-the-ground protests grew, and in 2002 an Amazon dam protest drew over 2,000. Schwartzman et al., *supra* note 351, at 285.

As international criticism toward Brazil continued to rise toward the end of the century, then-President José Sarney “reacted with nationalistic belligerence.”⁴⁰⁰ But, due to the country’s dependence on foreign investments,⁴⁰¹ the federal government implemented Program Nossa Natureza.⁴⁰² Nossa Natureza eliminated tax incentives for development in the rainforest, created a unified environmental agency, and “enacted stiff penalties for illegal burnings,” contributing to the reduction of the deforestation rate in the early 1990s.⁴⁰³ Through the 2000s and 2010s, local and Indigenous activists continued to implement Mendes’ strategy, holding international demonstrations protesting national policies that would increase deforestation,⁴⁰⁴ engaging Greenpeace and other international NGOs, and using the sway of celebrities such as Sigourney Weaver⁴⁰⁵ and Arnold Schwarzenegger.⁴⁰⁶

As media coverage of deforestation grew, so did concern among Global North residents.⁴⁰⁷ Through NGOs, they lobbied their governments to provide financial resources for forest conservation, and the governments obliged with billions of dollars in official development assistance.⁴⁰⁸ In tandem within the international regime, environmental groups implemented a successful campaign to pressure the World Bank to stop funding projects that increased deforestation.⁴⁰⁹

Setting their sights on broader policy shifts within Brazil, local activists, with support from international environmental organizations, also organized around the creation of forest reserves.⁴¹⁰ Brazil’s president obliged and established several large Indigenous land reservations⁴¹¹ as well as several extractive reserves in the

400. BARBOSA, *supra* note 95, at 8.

401. *Id.*; see also Nader Nazmi, *The Impact of Foreign Capital on the Brazilian Economy*, 38 Q. REV. ECON. & FIN 483, 484–489 (1998) (discussing the increase of foreign direct investment from 1945–1990).

402. BARBOSA, *supra* note 95, at 87.

403. *Id.*, at 87–88; see also Kaplan, *supra* note 15 (attributing the landmark 2004 Action Plan for the Protection and Control of Deforestation in the Amazon to “pressure from civil society and international governments”).

404. Jose Pedro Martins, *Brazil: Environmentalists and Church Protest Legalization of Fraudulently Obtained Lands in the Amazon*, NOTISUR – S. AM. POL. & ECON. AFFS., Aug. 7, 2009.

405. *New Protest Paralyzes Brazil’s Belo Monte Dam Indigenous and Riverbank Communities Occupy Key Work Camp of Amazon Megaproject*, AMAZON WATCH (Mar. 21, 2013) <https://amazonwatch.org/news/2013/0321-new-protest-paralyzes-brazils-belo-monte-dam>; *Brazil Dam Tender Triggers Protest*, ALJAZEERA (Apr. 21, 2010), <https://www.aljazeera.com/news/2010/4/21/brazil-dam-tender-triggers-protest>; *Background Briefing: Belo Monte Dam*, SURVIVAL INT’L, <https://www.survivalinternational.org/about/belo-monte-dam> (last visited Oct. 5, 2020).

406. Maximo Anderson & Aaron Vincent Elkaim, *Belo Monte Legacy*, MONGABAY (Feb. 26, 2018), <https://news.mongabay.com/2018/02/belo-monte-legacy-harm-from-amazon-dam-didnt-end-with-construction/>.

407. Kaimowitz, *supra* note 360, at 226.

408. *Id.*

409. *Id.* at 226–227; accord Brody, *supra* note 88.

410. Schwartzman et al., *supra* note 351, at 287; see also Nicolle & Leroy, *supra* note 12, at 107 (“in Brazil, the coalitions which defended the indigenous population’s rights, were well structured with correspondents based on the local to the international level, and mobilised NGOs, researchers, and the media.”).

411. Two were the size of Switzerland and Portugal. BARBOSA, *supra* note 95, at 121.

Amazon.⁴¹² Indigenous groups have zealously guarded these lands from illegal development.⁴¹³ Continued pressure leading up to the World Conference on Sustainable Development in 2002 led Brazil to announce ARPA.⁴¹⁴ Under the new program, activists successfully advocated for 5.6 million hectare reserves strategically positioned to “imped[e] the advance of, the most rapidly expanding agricultur[al] frontier in the Amazon.”⁴¹⁵ Researchers have postulated that without the international pressure, “the process [of demarcation] may not have occurred,”⁴¹⁶ and further that activism is behind the creation and continued existence of “the preponderance” of protected areas in the Amazon.⁴¹⁷

Most recently, in 2019, global activists, leaders, and organizations demonstrated⁴¹⁸ and made public statements⁴¹⁹ pressuring President Bolsonaro’s government to put out the staggering number of fires ablaze in the Amazon.⁴²⁰ Additionally, investors used their clout, with “more than two dozen financial institutions that collectively control some \$3.7 billion in assets . . . warning the Brazilian government . . . that investors were steering away from countries that are accelerating the degradation of ecosystems.”⁴²¹ Because Brazil benefits from tens of billions of dollars in foreign direct investment,⁴²² the threat of losing that investment creates extraordinary pressure on the government to respond to investor concerns. The overwhelming international criticism led the president to cave,⁴²³ “ban[ning]

412. *Id.* at 8; Raimundo Cláudio Gomes Maciel et al., *The “Chico Mendes” Extractive Reserve and Land Governance in the Amazon: Some Lessons from the Two Last Decades*, 223 J. ENV’T MGMT. 403, 404 (2018).

413. Salomé Gómez-Upegui, *The Amazon Rainforest’s Most Dogged Defenders Are in Peril*, VOX (Sept. 1, 2021), <https://www.vox.com/down-to-earth/22641038/indigenous-forest-guardians-brazil-guajajara>.

414. Pol’y Dep’t for External Rel., Challenges for Environmental and Indigenous Peoples’ Rights in the Amazon Region, at 16, EUR. PARL. DOC. (PE603.488) (June 2020). *See supra* Part II.B.4; *see also* News Advisory, *Brazilian Government Announces Creation Of New Protected Areas In the Amazon Region; Visiting Official to Announce Conservation*, U.S. NEWswire, Mar. 5, 2002.

415. Schwartzman et al., *supra* note 351, at 275; *see generally id.*

416. BARBOSA, *supra* note 95, at 123; *accord* Schwartzman et al., *supra* note 351, at 275; Nicolle & Leroy, *supra* note 12, at 107.

417. Schwartzman et al., *supra* note 351, at 275; *see also* Jusys, *supra* note 39, at 2.

418. Press Release, Amazon Watch, Amazon Fires Inspire Global Day of Action to Hold Politicians and Corporations Accountable (Sept. 10, 2019), <https://amazonwatch.org/news/2019/0910-amazon-fires-inspire-global-day-of-action>.

419. Sophia Foggin, *What World Leaders Are Saying About The Forest Fires in the Amazon*, LATIN AM. REPORTS (Aug. 23, 2019), <https://latinamericareports.com/what-world-leaders-are-saying-about-the-forest-fires-in-the-amazon/2961/>.

420. *See Burns*, NATIONAL INSTITUTE FOR SPACE RESEARCH, <http://queimadas.dgi.inpe.br/queimadas/portal-static/situacao-atual/> (last visited Nov. 4, 2020) (showing number of fires in Brazil in 2019 up 75% from 2018).

421. *Under Pressure*, *supra* note 381; *see also* Tom Phillips, *Trillion-dollar Investors Warn Brazil Over ‘Dismantling’ of Environmental Policies*, GUARDIAN (June 23, 2020), <https://www.theguardian.com/environment/2020/jun/23/trillion-dollar-investors-warn-brazil-over-dismantling-of-environmental-policies>.

422. *Foreign Direct Investment, Net Inflows (BoP, current US\$) – Brazil*, INTERNATIONAL MONETARY FUND, <https://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD?locations=BR> (last visited Oct. 19, 2020).

423. *Under Pressure*, *supra* note 381.

Amazon fires by decree, deploy[ing] the army to combat illegal loggers, set[ting] up a . . . Amazonian Council, and propos[ing] a scheme where the private sector would pay to preserve parts of the rainforest.”⁴²⁴

Significantly, environmental activism in Brazil has stirred concerns over sovereignty since the 1980s.⁴²⁵ Calls for forest conservation “were viewed as using the environment . . . as an excuse to internationalize the region, thus giving the rich countries control over its vast natural resources.”⁴²⁶ Unsurprisingly, this rhetoric is spouted by President Bolsonaro to this day.⁴²⁷ During the international outcry over the increased forest fires in 2019, Bolsonaro baselessly suggested that environmental groups had started the fires.⁴²⁸ As this fear of corrupt motives behind environmental activism in the Amazon seems likely to persist, transparency is crucial.⁴²⁹ However, as long as Brazil seeks to participate in international markets and among international institutions, sovereignty concerns are unlikely to be determinative when the Brazilian government faces international pressure.

In summary, while sporadic, international activism has played a clear role in catalyzing responsible actors to reduce deforestation, with a major victory in compelling the establishment of designated protected areas in the Amazon.⁴³⁰ However, activism often lacks the attention span to hold actors accountable for their refusal or failure to follow through on conservation commitments and is often pacified with lackluster voluntary commitments. Such initiatives have been most successful at spurring successful deforestation prevention measures when coordinated by an NGO that has a specific solution for corporations and governments to implement.

III. LESSONS LEARNED

The successes and failures of the initiatives discussed in Part II provide insight and evidence into which actions prevent Amazonian deforestation. Namely, effective initiatives (A) target influential sectors and actors; (B) respect Brazil’s sovereignty; (C) are specific in their goals and procedures; (D) have a singular goal of forest conservation, (E) enable monitoring; (F) include accountability mechanisms; and (G) are well-funded.

424. Oliver Stuenkel, Opinion, *International Pressure Can Save the Amazon from Bolsonaro*, FINANCIAL TIMES (Aug. 10, 2020), <https://www.ft.com/content/0f97c674-b7aa-4ec4-8fa1-88b810bc3dc7>. Unfortunately, but predictably, President Bolsonaro’s concessions appear largely performative. See, e.g., Fiona Harvey & Dom Phillips, *A Fifth of Brazilian Soy in Europe is Result of Deforestation*, THE GUARDIAN (Jul. 16, 2020), <https://www.theguardian.com/environment/2020/jul/16/a-fifth-of-brazilian-soy-in-europe-is-result-of-deforestation-amazon-jair-bolsonaro>.

425. See BARBOSA, *supra* note 95, at 83–136.

426. See *id.* at 83.

427. Jonathan Watts, *Jair Bolsonaro Claims NGOs Behind Amazon Forest Fire Surge – But Provides No Evidence*, GUARDIAN (Aug. 21, 2019), <https://www.theguardian.com/world/2019/aug/21/jair-bolsonaro-accuses-ngos-setting-fire-amazon-rainforest>.

428. *Id.*

429. Consider the backlash as media consumers realized pictures widely shared in 2019 were of forest fires from previous years. Adrianna Rodriguez, *Raising awareness about fires in the Amazon? Share these photos, not dated stock images*, USA TODAY (Aug. 23, 2019, 1:18 PM), <https://www.usatoday.com/story/news/world/2019/08/23/amazon-rainforest-fires-some-viral-photos-up-30-years-old/2093922001/>.

430. See Nicolle & Leroy, *supra* note 12, at 107–08.

A. Target Influential Sectors and Actors

As discussed in Part I, Brazil's federal policies and international market forces are the two factors that best explain deforestation rates in the Brazilian Amazon.⁴³¹

1. International Market Forces: Industries and Actors

Industrial cattle and soy operations are responsible for *over 80 percent* of Amazon deforestation.⁴³² International initiatives that target these industries are vastly more successful at preventing deforestation. As illustrated by the FSC and ITTO, deforestation prevention efforts that target other industries do not foster Amazonian conservation for the simple reason that those industries are not causing Amazonian deforestation.⁴³³

Successful initiatives apply pressure to the most responsive part of these industries' supply chains: the large downstream corporations. These actors are the most likely to be concerned with their reputation because they are "more visible to stakeholders,"⁴³⁴ or they are susceptible to the secondary impacts of such concern. These actors also have the power to demand change within the supply chain.⁴³⁵

Consider SoyM, which targets large Brazilian soy industry associations that trade internationally.⁴³⁶ Due to this international orientation, the associations are susceptible to the secondary effects of reputational harm. In 2006, when large soy buyers—including McDonalds and grocery chains—consolidated purchasing power and demanded deforestation-free soy following Greenpeace's *Eating Up the Amazon* report,⁴³⁷ the associations had to respond. They feared losing market share if they failed to offer the "hot new" product (deforestation-free soy). These associations had the power to set and enforce standards among their suppliers. As the direct buyers of soy from farms, the association's refusal to purchase soy from out-of-compliance farms significantly impedes farmers' ability to market their crop.⁴³⁸ So, the associations implemented SoyM in 2008, enabling the soy associations to provide their customers with the desired deforestation-free soy.⁴³⁹ Today, the soy associations still acknowledge the importance of SoyM's reputational protection, warning that ending SoyM "could hurt farmers [by] creating backlash against

431. See *supra* Part I.A. See Philip Fearnside, *Business as Usual*, YALE ENV'T 360 (Apr. 18, 2017), <https://e360.yale.edu/features/business-as-usual-a-resurgence-of-deforestation-in-the-brazilian-amazon>; Lawson, *supra* note 306, at 114.

432. *Drivers of Forest Loss in the Brazilian Amazon*, OUR WORLD IN DATA (2017) <https://ourworldindata.org/grapher/drivers-forest-loss-brazil-amazon>.

433. See *supra* Part II.B.1, Part II.A.2.

434. Hannes Hofmann, Martin C. Schleper & Constantin Blome, *Conflict Minerals and Supply Chain Due Diligence*, 147 J. BUS. ETHICS 115, 116 (2018). See generally Galuchi et al., *supra* note 365.

435. Dos Santos Massoca, Delaroche & Lui, *supra* note 261, at 158.

436. *Id.* at 153.

437. Dos Santos Massoca et al., *supra* note 261, at 152–55; Kaufman, *supra* note 369.

438. See Gibbs et al., *supra* note 324, at 378.

439. See generally *supra* notes 367–73 and accompanying text (discussing Greenpeace's *Eating Up the Amazon* report and public outcry).

Brazilian goods in European markets, where consumers demand more environmentally sustainable farming.”⁴⁴⁰

Conversely, many certification schemes—a type of initiative not proven to be effective at preventing Amazonian deforestation—focus on upstream actors: the farms or ranches. Farmers and ranchers have little concern about their reputation because they do not sell directly to consumers and have little power to influence the actions of their buyers.⁴⁴¹ The market penalty for opting out simply is not harsh enough to incentivize certification.⁴⁴²

Engaging a high percentage of powerful actors helps to effect change, ensure continuity, and avoid leakage. For example, over 90 percent of Brazilian soy production is controlled by members of SoyM, compared to around a third of cattle exports represented in the Cattle Agreement.⁴⁴³ With greater participation within a target industry, the more incentive smaller suppliers have to comply and ensure their market access. Broad participation lessens the market opportunity that induces leakage.⁴⁴⁴ The failure of most certification schemes and voluntary commitments to decrease deforestation highlights the importance of near-universal participation. Selective participation inhibits the effectiveness of such schemes.

Intriguing new developments are supply chain due diligence laws emerging in Europe.⁴⁴⁵ These laws “oblige companies to identify, address and remedy aspects of their value chain (all operation, direct or indirect business relations, investment chains) that could or do infringe on . . . the environment” to ensure “companies are held accountable and liable when they [do] harm.”⁴⁴⁶ In 2021, Indigenous activists and international environmental organizations sued a European supermarket chain under France’s due diligence law.⁴⁴⁷ They allege “systemic violations of . . . environmental laws in the company’s supply chains” in Brazil, where the company “sourced cattle from 592 suppliers responsible for at least 50,000 hectares of deforestation between 2008 and 2020.”⁴⁴⁸ The plaintiffs are requesting \$3.7 million

440. Roberto Samora, *Brazil Farmers Push Traders to End Amazon Soy Moratorium* (2019), <https://www.reuters.com/article/us-brazil-soybeans-moratorium/brazil-farmers-push-traders-to-end-amazon-soy-moratorium-idUSKBN1XF2J6>.

441. Eisenhammer, *supra* note 58 (detailing the inability of a Brazilian rancher to remove deforestation from his position in the supply chain).

442. *See supra* notes 290–295 (discussion of flaws of certification schemes).

443. Dos Santos Massoca, Delaroche & Lui, *supra* note 261, at 156.

444. *See generally* Jopke & Schoneveld, *supra* note 302.

445. Simon Jennings, *Firms Face Deforestation Laws to Tackle Environmental and Human Rights Risks in the Amazon*, (2021), <https://www.aperio-intelligence.com/2021/03/09/firms-face-deforestation-laws-to-tackle-environmental-and-human-rights-risks-in-the-amazon/> ; *see also* European Union Press Release, MEPs: Hold Companies Accountable for Harm Caused to People and Planet, (Jan. 27, 2021), <https://www.europarl.europa.eu/news/en/press-room/20210122IPR96215/meps-hold-companies-accountable-for-harm-caused-to-people-and-planet>.

446. European Union Press Release, *supra* note 445.

447. *French Supermarket Giant Casino Sued Over Links to Amazon Deforestation*, BUSINESS AND HUMAN RIGHTS RESOURCE CENTRE, (2021), <https://www.business-humanrights.org/en/latest-news/french-supermarket-giant-casino-sued-over-links-to-amazon-deforestation/>.

448. Aude Mazoue, *Indigenous Groups Sue French Retailer over Destruction of Amazon Rainforest*, FRANCE24 (2021), <https://www.france24.com/en/americas/20210304-indigenous-groups-sue-french-retailer-over-destruction-of-amazon-rainforest>.

in damages.⁴⁴⁹ Already, global business associations are responding, seeking to urge and facilitate their Brazilian members to comply with these laws to prevent further litigation.⁴⁵⁰ Such national-level laws could prove an effective tool in targeting international industries responsible for the bulk of deforestation.

2. Federal Policies: Governing Bodies and Actors

Political strategies that target the Brazilian federal government are more effective than those that focus on subnational governments. The federal government has demonstrated its power to influence deforestation numerous times: its adoption and expansion of protected areas,⁴⁵¹ its strict enforcement of environmental policies in the early 2000s,⁴⁵² its participation in SoyM and the Cattle Agreement,⁴⁵³ and its deployment of the military and prohibition on fires during the dry season in 2019.⁴⁵⁴

With the current pro-economic growth stance of the federal administration, many international actors are turning their focus on subnational entities rather than attempting to negotiate with President Bolsonaro.⁴⁵⁵ However, the past 40 years have demonstrated that efforts that circumvent the entire federal government are not as effective. For example, protected areas under ARPA that are administered by subnational governments and Indigenous communities experience more nearby leakage than nationally-administered protected areas.⁴⁵⁶ Additionally, the voluntary REDD+ emission trading projects administered by subnational governments and Indigenous communities were unable to protect the forests sold as carbon credits due to limited capacity.⁴⁵⁷ While Indigenous groups and state governments within Brazil are crucial defenders of forest conservation, they lack the resources—labor, capital, and technology—and jurisdiction to control both legal and illegal deforestation. This capacity issue is compounded when the federal government itself paves the way for deforestation activities.⁴⁵⁸

Conversely, deforestation prevention efforts involving the federal government, such as the Amazon Fund, nationally-administered ARPA units, and to some extent SoyM and the Cattle Agreement have proven effective because the

449. *Id.*

450. *The Changing Business and Human Rights Legal Landscape Means for Businesses in Brazil*, WORLD BUSINESS COUNCIL FOR SUSTAINABLE DEVELOPMENT (2021), <https://www.wbcsd.org/Programs/People-and-Society/Tackling-Inequality/News/What-the-changing-business-and-human-rights-legal-landscape-means-for-businesses-in-Brazil>.

451. See *supra* notes 341–45, 410–19 and accompanying text.

452. See *supra* notes 48–51.

453. See *supra* Part II.B.3.

454. *Under Pressure*, *supra* note 381.

455. See, e.g., Bruno Vander Velde, *France Backs Bold New Pact to Save Amazon*, CONSERVATION.ORG (2019), <https://www.conservation.org/blog/france-backs-bold-new-pact-to-save-amazon> (describing France’s pledge of \$100 million to the pact, and Conservation International’s additional \$20 million—noting that it would go directly to “indigenous peoples and civil society” rather than the governments).

456. Diego Herrera et al., *Impacts of Protected Areas Vary with the Level Of Government*, PNAS (2019), <https://www.pnas.org/content/116/30/14916>. For a definition of leakage, see *supra* text accompanying footnote 227.

457. See *supra* Part II.A.5.

458. Gómez-Upegui, *supra* note 413.

federal government has the resources and authority to administer and enforce such initiatives. Further, a federal program is less prone to suffering geographical leakage in the same way a program within a subnational jurisdiction might. Negotiating with the federal government and securing its participation—or at least its non-defiance—is critical for successful initiatives.

B. *Respect Brazil's Sovereignty*

International initiatives that respect Brazilian sovereignty are most successful at preventing deforestation. This is because the lasting scars of colonization and the fear of the “internationalization” of the Amazon persist in the national psyche.⁴⁵⁹ around 60 percent of Brazilians “distrust” environmental NGOs.⁴⁶⁰

Effective deforestation strategies either reserve Brazil managerial authority or support Brazilian laws and legislation *while* contributing funding. For example, international contributors to the Amazon Fund do not dictate how the funds are used, and Brazil has autonomy to spend the money it earns as it deems fit.⁴⁶¹ ARPA is another example: while foreign interests directly support conservation efforts that “lock up” areas from commercial exploitation, it has survived for 18 years because it supports a democratically enshrined federal law.⁴⁶²

Brazil's continuing engagement in PCAB highlights the importance of program design and its rhetorical framework. Through PCAB, a foreign government invests financially in Brazil's protected areas while it also lobbies for the political protection of such areas through new laws.⁴⁶³ By framing PCAB as a “strategic partnership” in which the U.S. *supports* Brazil's protected land, it does not ignite Brazil's sovereignty concerns. Similarly, in 2019, Bolsonaro proposed “a scheme where the private sector would pay to preserve parts of the rainforest,” showing his openness to foreign-supported conservation when Brazil remains in control of the program and adequate funding is present.⁴⁶⁴

By contrast, initiatives that appear to infringe too severely on Brazil's sovereignty are dead on arrival. For example, Brazil has refused to engage in carbon emission trading with forest conservation credits because to sell such credits would directly enable foreign actors to control land within Brazil.⁴⁶⁵ The same forces were at play when then-U.S.-presidential candidate Biden offered \$20 billion for Brazil to “stop tearing down the forest” and suggested there would be “significant economic consequences” if Brazil did not end deforestation.⁴⁶⁶ This political strong-arming was not well received by a country that places heightened importance on its

459. See generally Furriela, *supra* note 8.

460. Rohter, *supra* note 98 (“Winning the battle for Brazilian public opinion is crucial to any global effort to preserve the environment.”).

461. See *supra* Part II.A.5.

462. See Walker et al., *supra* note 344, at 10582 (discussing ARPA's legal framework).

463. See *supra* Part II.A.1.

464. Stuenkel, *supra* note 424.

465. See generally SEYMOUR & BUSCH, *supra* note 217.

466. Flora Charner & Ivana Kottasová, *Brazil's Bolsonaro Rejects Biden's Offer of \$20 Billion To Protect The Amazon*, CNN (Sept. 30, 2020) <https://www.cnn.com/2020/09/30/americas/brazil-bolsonaro-biden-amazon-intl/index.html>.

sovereignty. It backfired, with Bolsonaro labeling it a “bribe,” a “threat,” and refusing it.⁴⁶⁷ Thus, international action that *supports* Brazilian-led efforts to protect the Amazon are more successful than those that threaten Brazil’s sovereignty.

C. Increase Specificity

Forest conservation initiatives that include specific outcomes and processes are more successful at reducing deforestation. Lack of specificity in treaties, agreements, and certification schemes inhibits their success. For example, in the Treaty for Amazonian Cooperation member states pledge to “maintain the ecological balance within the region and preserve the species” without defining *what* that entails.⁴⁶⁸ Similarly, voluntary corporate commitments and certification schemes often fail to define “zero-deforestation” or “acceptable deforestation,” contributing to a lack of meaningful changes in procurement guidelines as well as deceptive advertising.⁴⁶⁹

When international initiatives set specific goals for deforestation prevention, deforestation reduction is more likely to follow. Examples of concrete and workable goals include SoyM—a moratorium on soy grown on land deforested after 2008—and the Paris Agreement, in which Brazil committed “to achieve, in the Brazilian Amazonia, zero illegal deforestation by 2030.”⁴⁷⁰ The Paris Agreement lacks an enforcement mechanism,⁴⁷¹ illustrating the importance of its specificity: it is clear to non-participants when an actor is out of compliance. The Consumer Good Forum’s pledge for deforestation-free supply chains by 2020⁴⁷² is similar: while the voluntary commitment lacked other significant details, the inclusion of a deadline enabled the assessment that it had “abjectly fail[ed].”⁴⁷³ The knowledge that Brazil is lagging in its Paris commitment and that the Consumer Goods Forum failed enables other actors to use accountability mechanisms—such as grassroots activism—to pressure Brazil into compliance or corporations to fulfill their promise.⁴⁷⁴

Specificity within agreements is also a characteristic of successful initiatives. Both SoyM and ARPA are extremely effective at preventing deforestation in part due to detailed parameters defining what is or is not allowable.⁴⁷⁵ ARPA assigns conservation units a designation and the uses permitted within the unit are

467. *Id.*

468. Treaty for Amazonian Cooperation, *supra* note 110, at art. VII.

469. See *Do National Strategies*, *supra* note 300, at 582; see also *Implementing and Scaling Up the CGF Zero Net Deforestation Commitment*, *supra* note 304.

470. BRAZIL, INTENDED NATIONALLY DETERMINED CONTRIBUTION TOWARDS ACHIEVING THE OBJECTIVE OF THE U.N. FRAMEWORK CONVENTION ON CLIMATE CHANGE (2015), <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Brazil%20First/BRAZIL%20iNDC%20english%20FINAL.pdf>. Brazil also committed to “restoring and reforesting 12 million hectares of forests by 2030.” *Id.*

471. Paris Agreement to the United Nations Framework Convention on Climate Change, Apr. 22, 2016, T.I.A.S. No. 16-1104, 1771 U.N.T.S. 107.

472. See *Implementing and Scaling Up the CGF Zero Net Deforestation Commitment*, *supra* note 304.

473. *Id.*

474. See *supra* Part II.C.2.

475. See *supra* Part II.B.3, Part II.B.4.

enforced accordingly.⁴⁷⁶ SoyM specified its approval of soy grown on land considered cleared before 2008 and its prohibition on soy grown on land cleared after that date.⁴⁷⁷

Interrelatedly, a lack of specificity prevents effective evaluation. When actors cannot agree on whether a certain initiative is preventing deforestation or not, resources are wasted. For example, the voluntary REDD+ projects measured their success at forest conservation based on an inconsistent baseline.⁴⁷⁸ Projects boasted deforestation prevention by cherry-picking the year from which the prevention was calculated and claiming the drastic reduction in deforestation from 2004 to 2012—the result of a combination of factors⁴⁷⁹—as solely the impact of the voluntary REDD+ projects.⁴⁸⁰ The lack of specificity resulted in the squandering of 12 years and millions of dollars spent on carbon credits that did not actually remove carbon from the atmosphere.⁴⁸¹ As a project coordinated by the UNFCCC,⁴⁸² there was a missed opportunity for setting specific and uniform parameters for measuring impact.

D. Singular Forest Conservation Goal

Initiatives are most effective when their goal is *zero* deforestation, defined literally as the complete cessation of all new deforestation. Initiatives like SoyM, ARPA, and the Amazon Fund that focus (or are evaluated) solely on prevention of deforestation are most successful.⁴⁸³

Several initiatives considered in Part II focus on sustainable forestry management (ITTO, PPG7, FSC), coupling the goals of economic development and forest conservation.⁴⁸⁴ Initiatives with these dual goals have consistently failed to decrease the rate of deforestation,⁴⁸⁵ and some may have contributed to increased deforestation.⁴⁸⁶ History illustrates that such initiatives evaluate their success by considering their economic impact rather than any impact on deforestation prevention.⁴⁸⁷

Dual-goal initiatives are less successful because most deforestation in the Amazon is not driven by poverty.⁴⁸⁸ Instead, 80 percent occurs on large landowners'

476. See generally José Augusto Drummond, José Luiz de Andrade Franco, & Alessandra Bortoni Ninis, *Brazilian Federal Conservation Units*, 15 ENV'T & HIST. 463 (2009).

477. See *supra* note 322.

478. West et al., *supra* note 218, at 24188.

479. See *supra* notes 64–70 and accompanying text.

480. West et al., *supra* note 218, at 24188.

481. *Id.*

482. See *supra* note 218–222 and accompanying text.

483. See *supra* Part II.B.

484. For ITTO, see *supra* Part II.A.3. For the FSC, see *supra* Part II.B.1. For the PPA, see *supra* Part II.A.1.

485. See generally Benno Pokorny, Imme Scholz, & Wil de Jong, *REDD+ for the Poor or the Poor for REDD+?*, 18 ECOLOGY & SOCIETY 1, 7 (2015) (finding “a rather limited success of the major strategies to fight environmental destruction and poverty in achieving the twin goals of environmental protection and local development”).

486. See *supra* note 184 and accompanying text.

487. See *supra* note 183 and accompanying text.

488. See *Deforestation in Brazilian Amazonia*, *supra* note 23, at 682.

properties, driven by market forces enabled (or uninhibited) by national policies.⁴⁸⁹ Dual-goal initiatives, in their effort to promote economic development, are limited to focusing on the remaining 20 percent of deforestation. As one study concluded, “strategies such as those that promote agroforestry among small farmers are likely to be ineffectual when cattle ranchers with large estates are the principal villains.”⁴⁹⁰ Experience indicates that initiatives that succeed at reducing deforestation are those that focus on only that.

Unfortunately, many international actors continue to favor the dual-goal strategy of tackling deforestation with sustainable development. As discussed above, PCAB sponsored the Partnership Platform for the Amazon,⁴⁹¹ a “collective action platform”⁴⁹² supporting start-ups to create “economic models built on legal and sustainable use of forest products.”⁴⁹³ If history offers any lessons, this sustainable development approach will likely end up contributing to increased deforestation through expanded market and forest access.⁴⁹⁴

E. Monitoring and Transparency

Monitoring and transparency are crucial components of successful forest conservation efforts.⁴⁹⁵ There are two types of monitoring: monitoring pursuant to an agreement or program and independent monitoring by third parties. Both advance forest conservation when they are transparent in their data collection methods and when they share the data publicly.

Initiatives with robust monitoring mechanisms either succeed, allow for informed recalibration, or support program termination. For example, SoyM hires a third party to perform annual systematic monitoring via satellite and aerial surveying, which encourages compliance and enables trust among stakeholders that the initiative is working.⁴⁹⁶ Contrast this with the Cattle Agreement, in which the responsibility for monitoring was designated to the meat-packing companies and never fully developed⁴⁹⁷—only 17 percent of *direct* suppliers to slaughterhouses are monitored.⁴⁹⁸

Monitoring completed by third parties, with or without the consent of those observed, also has a vital role in ensuring forest conservation. Much of the data that

489. Jan Börner et al., *supra* note 45, at 1280 (finding that “large landowners . . . are the ones doing most of the deforestation;” “most” being 80 percent).

490. *Deforestation in Brazilian Amazonia*, *supra* note 23, at 682.

491. 2018 PCAB ANNUAL REPORT, *supra* note 129, at 52.

492. *Id.*

493. *Private Sector Engagement: Partnership Platform for the Amazon (PPA)*, USAID, <https://pcabhub.org/en-us/resources/fact-sheets/ppa-fact-sheet.pdf/view> (last visited Dec. 16, 2021).

494. For ITTO, see *supra* Part II.A.2.

495. Ruth DeFries & Doug Morton, *The Amazon Is In Flames. But Brazil’s Past Can Show the Path Forward*, WASH. POST (Aug. 22, 2019, 10:38 AM), <https://www.washingtonpost.com/opinions/2019/08/22/amazon-is-flames-brazils-past-can-show-path-forward/>.

496. See Gibbs et al., *supra* note 324, at 377.

497. Dom Phillips, *Meat Company Faces Heat Over ‘Cattle Laundering’ In Amazon Supply Chain*, GUARDIAN (Feb. 20, 2020, 9:13 PM), <https://www.theguardian.com/environment/2020/feb/20/meat-company-faces-heat-over-cattle-laundering-in-amazon-supply-chain>.

498. Breanna Lujan, *A Comparison of Supply Chain Tracking Tools for Tropical Forest Commodities in Brazil*, ENV’T DEFENSE FUND 43 (2019).

allows for this monitoring is produced by Brazil's National Institute for Space Research (INPE), which has been monitoring deforestation in the Amazon through the Satellite Monitoring of the Brazilian Amazon Forest Project (PRODES) since 1988.⁴⁹⁹ This monitoring and data transparency resulted from inter-state efforts through ACT, bilateral US-Brazil relations, and UN organizations.⁵⁰⁰ While these initiatives may not be able to directly claim deforestation prevention as a result of their activities, the significance of thirty-two years of monitoring the rainforest cannot be understated. Long-term monitoring efforts are a crucial component of evaluating initiatives, determining the causes of deforestation, and enforcing environmental laws.

Third-party monitoring enabled Greenpeace's 2006 and 2009 reports—reports that ignited the public in demanding more sustainable practices from the soy and cattle industries.⁵⁰¹ Additionally, third-party monitoring led Norway and Germany to reduce their contributions to the Amazon Fund⁵⁰² and focused the world's attention on the fires in the Amazon in 2019.⁵⁰³ In 2017, the government of Brazil, pursuant to its prosecution agreement negotiated with meat packers to parallel the Cattle Agreement, noticed that JBS was sourcing thousands of cattle from an illegally deforested area.⁵⁰⁴ This monitoring enabled Greenpeace to reflect on the viability of the Cattle Agreement, which it ultimately suspended with regard to JBS.⁵⁰⁵

An intriguing development is California's endorsed "Tropical Forest Standard" (TFS) for its existing cap-and-trade program.⁵⁰⁶ This unconventional standard would allow California polluters to offset their pollution through the purchase of forest credits in rainforests such as the Amazon.⁵⁰⁷ The TFS, attempting to learn from past emissions trading failures, only allows certified subnational or national governments to participate in the hopes of decreasing leakage and increasing transparency.⁵⁰⁸ The TFS also builds in third-party verification of the tropical

499. *PRODES – Amazon, BRAZIL: GENERAL COORDINATION OF EARTH OBSERVATION*, <http://www.obt.inpe.br/OBT/assuntos/programas/amazonia/prodes> (last visited Dec. 9, 2020).

500. For ACT, *see supra* Part II.A.1; for US-Brazil, *see supra* Part II.A.4; for UN organizations, *see supra* Part II.A.2.

501. *See, e.g.*, Kaufman, *supra* note 369.

502. *See supra* notes 246–48 and accompanying text.

503. *See supra* note 5 and accompanying text.

504. Rodrigo Estrada, *Greenpeace Brazil Suspends Negotiations with Cattle Giant JBS*, GREENPEACE (Mar. 23, 2017), <https://www.greenpeace.org/usa/news/greenpeace-brazil-suspends-negotiations-cattle-giant-jbs/>.

505. *Id.* In 2020, due to rising international pressure from purchasers, JBS announced that it would spend almost \$2 million in environmental actions, including complete supply-chain monitoring by 2025. Roberto Samora, *Brazil's JBS Vows to Monitor Deforestation Through Whole Cattle Supply Chain*, REUTERS (Sept. 23, 2020), <https://www.reuters.com/article/us-jbs-amazon/brazils-jbs-vows-to-monitor-deforestation-through-whole-cattle-supply-chain-idUSKCN26E20I>.

506. *California Tropical Forest Standard*, CAL. AIR RESOURCES BD., <https://ww2.arb.ca.gov/our-work/programs/california-tropical-forest-standard> (last visited Oct. 3, 2020).

507. Julia Rosen, *The World Is Watching as California Weighs Controversial Plan to Save Tropical Forests*, L.A. TIMES (Sept. 13, 2019, 6:00 AM), <https://www.latimes.com/environment/story/2019-09-12/california-tropical-forest-standard> (detailing past attempts "fund forest protection through carbon offsets" and their unintended detrimental consequences).

508. *Id.*

offsets.⁵⁰⁹ Further, it requires certified participants to “insure” offsets with extra credits, “in case fires or other natural disasters accidentally release carbon that was stored for offsets.”⁵¹⁰ While California has yet to certify any tropical forest jurisdictions to participate, this standard may “translate . . . voluntary corporate commitments into hundreds of millions of dollars or more over the next few years to finance conservation efforts in the Amazon,” finally creating financial incentives that are stronger than other market forces.⁵¹¹

F. Accountability Mechanisms

Accountability plays a key role in the success of international initiatives, providing a substitute for elusive enforcement duties. Accountability mechanisms penalize an actor’s failure to fulfill its obligation pursuant to an agreement, standard, or norm. As with monitoring, there are two types of accountability mechanisms: those relying on outside actors, and those building accountability into the initiative.

When the accountability mechanism relies on outside actors, successful initiatives require two components. First, they must involve actors who are susceptible to public accountability. These include institutions and individuals who are receptive to political and consumer pressure, such as President Bolsonaro, who eventually deployed fire fighters during the 2019 blazes to preserve his reputation.⁵¹² Second, the initiative must be specific enough so the actor’s compliance or noncompliance is clear.

Both factors are present in initiatives that prevent deforestation. For example, with ARPA, it is clear when the initiative is failing (there is deforestation in a protected area), and the actor (the Brazilian government) is susceptible to public accountability (elections). In 1996, the Brazilian president removed protections from reserves, thereby enabling deforestation.⁵¹³ As an elected official, he was held accountable both nationally and internationally. He was condemned by a multifaceted international campaign involving the G-7 and the World Bank and lost political capital at home.⁵¹⁴ Both components were also present in 2007 when Greenpeace tracked soy from the deforestation frontier to Cargill and McDonald’s and confronted McDonald’s with those data.⁵¹⁵ Greenpeace was able to hold McDonald’s accountable to its own policy against using “products that come from the rainforest” because McDonald’s brand is susceptible to reputational harm

509. *California Tropical Forest Standard, Criteria for Assessing Jurisdiction-Scale Programs that Reduce Emissions from Tropical Deforestation*, CAL. AIR RESOURCES BD., 17, https://ww2.arb.ca.gov/sites/default/files/classic/cc/ghgsectors/tropicalforests/draft_ca_tropical_forest_standard.pdf (last visited Dec. 16, 2021).

510. Rosen, *supra* note 507.

511. Daniel Nepstad, Opinion, *How to Help Brazilian Farmers Save the Amazon*, N.Y. TIMES (Dec. 24, 2019), <https://www.nytimes.com/2019/12/24/opinion/amazon-deforestation.html>.

512. Stuenkel, *supra* note 424.

513. See BARBOSA, *supra* note 95, at 9; Terence Turner, *Brazilian Presidential Decree 1775 Poses Threat*, CULTURAL SURVIVAL QUARTERLY MAG. (Mar. 1996), <https://www.culturalsurvival.org/publications/cultural-survival-quarterly/brazilian-presidential-decree-1775-poses-threat>.

514. *Id.*

515. Kaufman, *supra* note 369.

(consumer boycotts) and its failure to adhere to its voluntary commitment was clear.⁵¹⁶

Other successful international initiatives build accountability mechanisms into the commitment. These initiatives ensure accountability by setting specific objectives, incorporating monitoring mechanisms, and providing appropriate incentives and disincentives to participants. Such initiatives include SoyM, which audits and blocks the sale of crops grown on deforested land, and the Amazon Fund, which only rewards Brazil *after* the deforestation reduction has been achieved.

To emphasize the importance of accountability mechanisms, initiatives that lack them like voluntary corporate commitments, certification schemes, and REDD+ rainforest carbon credits, have been unsuccessful at preventing deforestation. When these initiatives fail to achieve their goal, they rarely face any ramifications or public accounting. For example, when the Consumer Goods Forum's goal to achieve zero net-deforestation in supply chains by 2020 was resoundingly ineffective,⁵¹⁷ it simply publicized its new deforestation prevention plan: the Forest Positive Coalition of Action.⁵¹⁸ It did not face any consumer backlash. As many of these commitments are made under the umbrella of a larger association, the companies that claimed the benefit of the positive press when the commitment was announced were shielded from the—albeit, scant—negative coverage when the commitment failed to deliver.⁵¹⁹

G. Adequate Funding

The widespread assumption is that if the rainforest becomes more lucrative through conservation than by deforestation, commodity-driven deforestation will cease.⁵²⁰ This means decreasing the relative profitability of deforestation activities—by increasing the cost of deforestation through fines and restricted market access—while raising the value of forested land. However, adequate funding from the

516. *Id.*

517. Catherine Boudreau, *Out on a Limb On Deforestation*, POLITICO (Oct. 6, 2020), <https://www.politico.com/newsletters/the-long-game/2020/10/06/out-on-limb-deforestation-490527>; *Leading Consumer Goods Companies Directly Linked to Deforestation*, CDP (Nov. 18, 2019), <https://www.cdp.net/es/articles/media/leading-consumer-goods-companies-directly-linked-to-deforestation-soybean-cattle-paper-palm-oil-risks-potential-threat-to-global-supply-chains#1>.

518. Press Release, *New Consumer Goods Coalition to Accelerate Systemic Effort to Remove Deforestation and Forest Degradation from Key Commodity Supply Chains*, CONSUMER GOODSFORUM (Sept. 22, 2020), https://www.theconsumergoodsforum.com/press_releases/new-consumer-goods-coalition-to-accelerate-systemic-effort-to-remove-deforestation-and-forest-degradation-from-key-commodity-supply-chains/.

519. Every corporation sets its own individual targets and measures of success. In the news coverage, several corporations were highlighted and allowed to spin the commitments into successes. See Emanuela Barbiroglio, *Deforestation Pledges Are Easy to Make and Easier to Forget About*, FORBES (Feb. 14, 2020), <https://www.forbes.com/sites/emanuelabarbiroglio/2020/02/14/brands-alone-fail-to-make-publicly-available-commitments-against-deforestation/?sh=242275896455>.

520. See, e.g., Steven D. Levitt, *The Simple Economics of Saving the Amazon Rainforest*, FREAKONOMICS, at 30:15 (July 29, 2020), <https://freakonomics.com/podcast/the-simple-economics-of-saving-the-amazon-rainforest/> (“[F]rom a purely economic perspective, Brazil should be willing to stop deforestation for \$1 to 2 billion per year. The rich nations of the world should be willing to pay up to \$40 billion.”); Klafehn, *supra* note 18, at 983.

international community has failed to materialize. Forest conservation is not cheap.⁵²¹

The Amazon Fund, for example, has had limited success due to an insufficient amount of funding.⁵²² The Fund channels financial support from wealthier nations and multinational corporations to Brazil to reward it for forest conservation, creating a monetary incentive for forest conservation that is, in theory, higher than market demand for deforestation. However, while many countries expressed interest in supporting the fund, only two countries and one multi-national corporation have invested in it over the past decade.⁵²³ As deforestation has continued, the amount invested is clearly inadequate to sufficiently distort the market.⁵²⁴

The need for adequate funding must be understood as intricately interwoven with a respect for Brazil's sovereignty. Therefore, funding for NGOs to purchase large tracts of rainforest to conserve would not be effective, as it would impinge on Brazil's sovereignty. Additionally, one-off, highly publicized funding for Brazil to enforce its environmental policies during a time of heightened international condemnation is not effective.⁵²⁵ Instead, such funding puts Brazil in a defensive position and, in the eyes of Brazilians, incites fears of international interference with national policy.⁵²⁶ A more productive approach, demonstrated by PCAB, is to quietly negotiate a deal similar in content but, critically, without public bullying.⁵²⁷

In summary, international institutions that are effective at preventing deforestation target specific market industries or the national governmental, respect Brazil's sovereignty, include specific goals and procedures, focus solely on forest conservation, are subject to monitoring, include accountability mechanisms, and are adequately funded.

IV. A STREAMLINED FRAMEWORK FOR AMAZON PROTECTION

Existing international initiatives are not effectively conserving the Brazilian Amazon, evidenced by the deforestation rate rising since 2012 and its recent, three-year surge. As the rainforest teeters on the brink of its tipping point, the situation for

521. Motoe Miyamoto, *Poverty Reduction Saves Forests Sustainably*, 127 WORLD DEV. 1, 2 (2020) (estimating total cost of protected areas in Brazil to be "approximately US \$147 billion"); Felipe de Figueiredo Silva et al., *The Cost of Forest Preservation in the Brazilian Amazon: The "Arc of Deforestation"*, 44 J. OF AGRIC. RESOURCE ECON. 497, 497 (2019); Levitt, *supra* note 526 ("A hectare of Amazon land cleared for raising cattle . . . sells for less than \$1,000. With a social cost of carbon of \$50 per ton of CO₂ and the current best estimates of the carbon stored in the Amazon, each hectare of land preserved as forest is worth over \$28,000 based on the carbon alone.").

522. *See supra* notes 326–329 and accompanying text.

523. *See supra* note 238 and accompanying text.

524. *See supra* Part I.A.

525. *See* Charner & Kottasová, *supra* note 466.

526. *See, e.g.*, Bill Chappell, *Brazil Reject's G-7's Offer of \$22 Million to Fight Amazon Fires*, NPR (Aug. 27, 2019), <https://www.npr.org/2019/08/27/754687137/brazil-rejects-g-7s-offer-of-22-million-to-fight-amazon-fires>; Simone Preissler Iglesias & Shannon Sims, *Bolsonaro Slams Biden's Plan to Stop Amazon Deforestation*, BLOOMBERG (Sept. 30, 2020, 8:10 AM), <https://www.bloomberg.com/news/articles/2020-09-30/biden-pledges-to-slow-destruction-of-brazil-s-amazon-rainforest>.

527. *See supra* Part II.A.1.

Brazil and for the international community is dire.⁵²⁸ To conserve the Amazon's climate change mitigation capacity, the global water cycle, and an incredible amount of biodiversity, action must be swift and efficacious. The international community has had over 40 years to experiment with strategies. The lessons from those experiments now must be integrated into a streamlined framework for the Amazon's conservation.

As described in Part II, an astounding number and wide diversity of initiatives are aimed at this common objective. A new framework that incorporates the lessons highlighted in Part III can be more effective and efficient at protecting the Amazon rainforest. Through coordination, cooperation, and built-in redundancy for emergency situations, the international community can expand and channel resources into successful or promising initiatives such as SoyM, a new CattleM, the Amazon Fund, and ARPA, while ceasing and eliminating the enormous bloat of ineffective actions. The following four recommendations will create a coordinated and effective international strategy for assisting Brazil to immediately decrease deforestation.

A. *Double Down on Successful Strategies and Cease Other Activities*

SoyM, ARPA, and the Amazon Fund have demonstrated the most proven success at deforestation prevention and offer promise for scaling up. These initiatives should be slightly modified, expanded, and supported.⁵²⁹

SoyM should be expanded to cover *all* soy produced in and near the Brazilian Amazon and then be replicated for the cattle industry.⁵³⁰ Learning from the lesson of the 2009 Cattle Agreement, this new "CattleM" must involve a greater percentage of the actors engaged in the cattle industry (as opposed to the 30 percent of meat-packers previously committed),⁵³¹ include a monitoring mechanism that eliminates cattle laundering,⁵³² and apply to the entire Brazilian Amazon. Drawing on the successes of SoyM, NGOs and the Brazilian government must be members to the CattleM to monitor compliance, enforce regulations, and broadcast failures to consumers. These agreements must remain transparent and facilitate the sharing of

528. Thomas E. Lovejoy & Carlos Nobre, Editorial, *Amazon Tipping Point*, 5 SCI. ADVANCES 1 (Dec. 20, 2019).

529. See generally Daniel Nepstad et al., *More Food, More Forests, Fewer Emissions, Better Livelihoods*, 4 CARBON MGMT. 639 (2013).

530. Both SoyM and ARPA demonstrate that an initiative confined to a certain geographic and/or market space allow for leakage of deforestation activities into other areas not covered by the measure. See Jeremy Hance, *Cerrado: Brazil's Tropical Woodland*, MONGABAY (July 29, 2020), <https://rainforests.mongabay.com/cerrado/>.

531. Engaging a large percentage of the relevant actors should be prioritized to avoid leakage. With greater participation within a market sector, the opportunity for leakage dwindles. To illustrate, a soy farmer violating SoyM is blocked from selling to SoyM exporters. This limits her ability to sell crops; but there is a small percentage of the market that will accept them, enabling the deforestation-laden commodity to "leak." If SoyM and a new Cattle Agreement could achieve close to 100% participation at the top-supplier tier of the supply chain, this market initiative will be even more effective at reducing deforestation.

532. See generally BRAZIL COALITION ON CLIMATE, FORESTS, AND AGRICULTURE: BEEF CHAIN TRACEABILITY IN BRAZIL, CHALLENGES AND OPPORTUNITIES (2020) (highlighting solutions for monitoring that eliminates cattle laundering).

information with all partners and the larger national and international communities. Participants could mimic PRODE's database to share their data and use a web platform to disseminate annual reports.

ARPA's success must be reinforced by international funding, technological support, and grassroots activism. Expansion of ARPA to cover and protect the entire deforestation frontier, creating a barrier against the expansion of pastures, offers incredible promise for preventing commercial interests from advancing further into the forest. This will require sustained activism to pressure both the federal government into designating more reserves and the international community into increasing financial support for the management of those areas once designated—similar to PCAB.

International actors must increase their contributions to the Amazon Fund to price forest conservation competitively against deforestation activities. If more states and multinational corporations invested, the increased amount would provide greater support for Brazil to conserve forest; currently, the contributions do not “cover even half of the cost [of forest conservation] being incurred by Brazil.”⁵³³ Additionally, international actors must not regard their investment as a political lever, as the Fund already has a mechanism for signaling to Brazil that increased deforestation is disfavored: a reduced reward.⁵³⁴ Instead of using financing as an ephemeral and unpredictable negotiation tool,⁵³⁵ international funders should stabilize their donations, demonstrating to Brazil that their commitments are reliable and lasting.

Due to the lack of evidence to support the impact of certification schemes in the Amazon, the focus should remain on industry-wide agreements such as SoyM and the proposed CattleM. Voluntary corporate commitments should either invest in the structures enabling SoyM and CattleM or donate directly to the Amazon Fund, ceasing the expenditure of resources on company-specific commitments. The EU-Mercosur trade agreement should be postponed, at least until the other recommendations included here are implemented.

Finally, the UN must consolidate its organizations, conventions, forums, and projects that touch on forest conservation to reduce waste and increase synergy. In doing so, the UN must critically analyze the impact of some of its own initiatives, such as the ITTO, and terminate those that have proven harmful to forest conservation.⁵³⁶ These actions will improve the UN's efficiency, create greater coordination (and ideally an overarching framework), and enable the UN to play to its strength: convening global leaders to build consensus and momentum.

533. Boucher, Roquemore, & Fitzhugh, *supra* note 54, at 442.

534. When Germany and Norway suspended their funding (combined, 99% of the fund's income) after the fires in 2019, they removed any incentive that the fund might have been creating to deter President Bolsonaro from allowing or enabling more deforestation. See Rueters Staff, *supra* note 246 and accompanying text.

535. Consider also the divergent impact of presidential candidate Biden's \$20 billion offer and the \$80 million investment in the ongoing PCAB. See Charner & Kottasová, *supra* note 466; 2018 PCAB ANNUAL REPORT, *supra* note 129, at 14.

536. See Zimmerman & Kormos, *supra* note 108, at 479 (“A convincing body of evidence shows that as it is presently codified, sustainable forest-management (SFM) logging implemented at an industrial scale [such as ITTO] guarantees commercial and biological depletion of high-value timber species within [the Brazilian Amazon]. . . . These results beg for a reevaluation of the [UNFCCC] proposals.”).

B. Diversify to Create Resiliency

The Bolsonaro administration has disrupted the ability of some international initiatives to respond to the recent increase in deforestation. These challenges have highlighted that initiatives must be flexible and able to withstand changes in government leadership and policy. While part of increasing resiliency is simply adequate funding that prices forest conservation attractively, another aspect is increasing the durability of institutions.

For example, the Amazon Fund is currently without management due to Brazil's federal administration's anti-conservation agenda.⁵³⁷ In 2019, President Bolsonaro abolished the Fund's technical and steering committees and then "demanded far-reaching changes in the way the Fund is managed."⁵³⁸ The Fund remains without management as of January 2022.⁵³⁹ As an initiative created under the UN's REDD+ program, the UN should implement a resiliency mechanism. For example, the REDD+ program administrators could engage with local Brazil-based and run NGOs to continue the Fund's work and facilitate international donations until the Brazilian government appoints leadership.

Another strategy is to continue and expand the use of "conjoined accounts"—the ability to bypass federal government bureaucracy when needed, as ARPA has done successfully.⁵⁴⁰ To implement this effectively, international actors must respect Brazil's sovereignty and use the conjoined accounts approach only as needed, building it into initiatives as an emergency practice. In implementation, this will mean the direction of funds should be directly to Brazil's federal, subnational, and Indigenous environmental protection efforts, rather than transferring the funds to the federal government to disburse.

C. Coordinate and Cooperate

It is no doubt challenging to coordinate the efforts of some 35 UN organizations,⁵⁴¹ 50 forest certification schemes,⁵⁴² 100 environmental groups,⁵⁴³ and

537. Amazon Fund, *Management*, AMAZON FUND, <http://www.amazonfund.gov.br/en/amazon-fund/> (last visited Mar. 27, 2022), ("The presidential decree enacted on April 11 2019 (Decree n. 9759/2019) extinguished all committees created by decrees or other administrative acts before January, 1st 2019. . . . To date, the new governance of the Amazon Fund has not been established.").

538. Sue Branford & Thais Borges, *Norway Freezes Support for Amazon Fund; EU/Brazil Trade Deal at Risk?*, MONGABAY (Aug. 16, 2019), <https://news.mongabay.com/2019/08/norway-freezes-support-for-amazon-fund-eu-brazil-trade-deal-at-risk/>.

539. See *Amazon Fund Guidance Committee*, AMAZON FUND, <http://www.amazonfund.gov.br/en/amazon-fund/COFA/> (last visited Jan. 17, 2022).

540. See *supra* note 450 and accompanying text.

541. See Vidal, *supra* note 153 ("According to the International Institute for Sustainable Development at least 35 UN organisations [sic] now influence global environmental governance. They are located in different places, often with overlapping or duplicate mandates, have varying levels of autonomy and all focus on separate, but interrelated, environmental problems.").

542. *Sustainable Forest Management Toolbox: Forest Certification*, FOOD & AGRICULTURE ORG., <http://www.fao.org/sustainable-forest-management/toolbox/modules/forest-certification/in-more-depth/en/> (last visited Mar. 27, 2022).

543. Elizabeth Heilman Brooke, *As Forests Fall, Environmental Movement Rises in Brazil*, N.Y. TIMES (June 2, 1992), <https://www.nytimes.com/1992/06/02/news/as-forests-fall-environmental-movement-rises-in-brazil.html>.

760 corporate commitments to zero deforestation.⁵⁴⁴ However, the urgency of the current situation compels cooperation: there is no time to dilute resources over a dizzying array of overlapping, and even competing, initiatives. Cooperation can be nurtured at UN events, which have proven successful at convening global actors on environmental issues and engendering action in the Amazon since 1972.⁵⁴⁵ The UN can also serve as a platform for coordination, expanding its current role of data collection.⁵⁴⁶

International actors must coordinate on standards and definitions surrounding forest conservation. The result will be a universal language of conservation where “zero deforestation” actually means *zero* deforestation. Cooperation should also be manifested in universal measurement procedures. Additionally, international actors should cooperate on third-party monitoring mechanisms to increase transparency and decrease the cost of monitoring on any one party. This will facilitate data collection and evaluation, allowing for informed decisions and continual adjustments. Most importantly, it will enable accountability because information will be available to check actors’ actions against their words.

D. Increase Communication with the Global Community

International actors at all levels must increase communication so that actions can be coordinated and actors can be held accountable. Freedom of access to forest data is crucial to feed the global grassroots activism accountability mechanisms which have proven so effective in the past. Without public knowledge of how much rainforest is being deforested and what the potential impacts are, global activism cannot play its role of pressuring actors to change. Additionally, a lack of transparency in supply chains or within voluntary corporate commitments inhibits accountability and requires investigative journalists to invest an incredible amount of resources to acquire the same information corporate and government actors already generate.⁵⁴⁷

CONCLUSION: MOBILIZING ACTION

In Part III, this Article identified and analyzed effective Amazon protection strategies and their components. Part IV proposed modifying and expanding such effective strategies using existing structures and systems. This Conclusion turns to the mechanics of mobilizing large-scale action before it is too late. The clock is ticking: the tipping point to savannization is dangerously near.⁵⁴⁸ A corresponding tipping point must be triggered within the international community, an impetus

544. There were an estimated 760 commitments among 447 companies in 2017. *Implementing and Scaling Up the CGF Zero Net Deforestation Commitment*, *supra* note 304.

545. See Nicolle & Leroy, *supra* note 12 and accompanying text.

546. See, e.g., FOOD & AGRICULTURE ORGANIZATION, *THE STATE OF THE WORLD’S FORESTS* (2020).

547. See e.g., Dom Phillips et al., *Revealed: Rampant Deforestation of Amazon Driven by Global Greed for Meat*, *GUARDIAN* (July 2, 2019), <https://www.theguardian.com/environment/2019/jul/02/revealed-amazon-deforestation-driven-global-greed-meat-brazil>.

548. Thomas E. Lovejoy & Carlos Nobre, Editorial, *Amazon Tipping Point: Last Chance for Action*, 5 *SCI. ADVANCES* 1 (Dec. 20, 2019) (“The tipping point is here, it is now”).

igniting collective action among the myriad actors with the power to support the Amazon's protection.

Just as the last forty years provide lessons for effective anti-deforestation strategies, they also provide the catalyst for collective action. On multiple occasions, international concern heightened and pressure intensified to a reactive level. This pressure was released only when responsible, powerful actors responded with promises to change, commitments to invest, and new or revitalized initiatives. The Rio Earth Summit of 1992 cultivated an international norm of forest conservation and inspired third-party certification schemes;⁵⁴⁹ the 2002 World Conference on Sustainable Development inspired ARPA and stimulated Brazil's enhanced enforcement of its environmental laws;⁵⁵⁰ and in 2006 and 2009, Greenpeace's scathing reports on the destruction caused by Brazil's soy and cattle industries resulted in SoyM and the Cattle Agreement.⁵⁵¹ Each of these events galvanized and coordinated global pressure and channeled it to trigger responsive action and, ultimately, decreased deforestation.

These two approaches to motivating action—global governance and NGO-lead social movements—require profoundly different inputs. Creating international pressure and momentum through summits and agreements involves an incredible investment of time, effort, and resources from a select few powerful actors.⁵⁵² Conversely, Greenpeace creates pressure through a three-pronged strategy that simultaneously proposes national legislation or executive action, identifies large, visible market actors as villains, and mobilizes a social movement through mass and social media.⁵⁵³ Greenpeace's strategy empowers the public, spreading the burden of action across many for the initial stages of the campaign.

Greenpeace's strategy provides the flexibility to act immediately. Part IV identified the national legislative and executive action to propose as well as the corporations to be labeled villains.⁵⁵⁴ The mass media prong was sparked by the 2019 fires,⁵⁵⁵ but needs to be rekindled. Crucially, in order to “mobilize large-scale demand for change,” the social movement must pivot from its focus on individual responsibility and behavior changes (“eat less meat,”⁵⁵⁶ buy more “conscious” brands)⁵⁵⁷ to unite and connect people through a common goal:⁵⁵⁸ deforestation

549. See Jopke & Schoneveld, *supra* note 302, at 3.

550. See *supra* notes 50, 351 and accompanying text.

551. See *supra* Part II.B.3.

552. See generally Jon Hovi et al., *Hope or Despair? Formal Models of Climate Cooperation*, 62 ENVTL & RESOURCE ECON. 665 (2015).

553. See generally E. A. Syarifuddin et al., *The Market Campaign Strategy of Greenpeace in Decreasing Rainforest Deforestation in Indonesia*, 575 IOP CONF. SERIES: EARTH & ENV'T SCI. 1 (2020).

554. See *supra* Part IV.

555. See Yair Oded *supra* note 7 and accompanying text.

556. See, e.g., Edoardo Liotta, *Feeling Sad About the Amazon Fires? Stop Eating Meat*, VICE (Aug. 23, 2019), <https://www.vice.com/en/article/bjwzk4/feeling-sad-about-the-amazon-fires-stop-eating-meat>.

557. See, e.g., Alexandra Haddow, *Seven Ways You Can Help Save the Amazon Rainforest*, INDY 100 (Aug. 24, 2019), <https://www.indy100.com/news/how-to-save-amazon-rainforest-fires-climate-change-brazil-9076416>.

558. Christina Vogel et al., *Preconception Nutrition*, 12 J. DEV. ORIGINS HUM. HEALTH & DISEASE 141, 144 (2020).

reduction through the strategies outlined in Part IV. The distinct pieces of such a strategy are ready to go; all that is needed is an international NGO to champion it. Let this Article serve as the formal request for the third installment of the “Eating Up the Amazon” series.

