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What's At "Steak": The Drivers of Deforestation in the Brazilian Amazon and Potential  
Multilateral Solutions

By Soleil Gaylord

Fall 2022

International Studies and Multilateral Diplomacy  
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## **ABSTRACT**

This paper examines the contemporary drivers of deforestation in the Brazilian Legal Amazon and how multilateral solutions can be employed to bring forest loss to zero. Insights from the scholarly literature and five expert interviews allow a critical assessment of how the rise of unilateralism presents a novel threat to the Brazilian Legal Amazon and, by proxy, those relying on the region's raw resources and ecosystem services. Integrating analyses of both Brazilian institutional structures and global environmental governance frameworks, this study examines the primary historical and contemporary factors driving accelerated deforestation rates observed under Brazil's President Jair Bolsonaro. In identifying the causes of deforestation during this period, the study presents how multilateral strategies can prevent future instances of politically fueled environmental degradation. This analysis evaluates potential economic and social strategies for combating deforestation, placing an emphasis on Brazil's autonomy in implementing environmental and social regulations with the aid of a diverse set of actors from across the international community.

## ACKNOWLEDGEMENTS

The Brazilian Amazon and its multifarious biological wonders have long captivated my interest. I am grateful for the opportunity to explore the threats to the world's largest rainforest among Geneva, Switzerland's community of renowned experts. I am doubly appreciative to have been exposed to diverse thought, particularly non-Western perspectives. The program has challenged me to reframe my thinking and to evaluate issues from novel angles, a valuable opportunity unique to the study abroad experience.

The conceptualization, research, and completion of this study were propelled continually by the intellectual vigor of program peers, professors, and the willing individuals I was fortunate to interview for an independent study project. Geneva has proved to be a unique, empowering, and invigorating location to study the most significant issues of our time and how the international community works to solve such complex problems innovatively and creatively.

I am indebted to the community I have found in Switzerland. Beginning my first day, I have consistently encountered kindness, support, and openness. From the home-cooked meals of my host mother, Anne Marie, to the daily laughs and thought-provoking conversations with fellow students, to the interviews I conducted with some of the world's leading experts in international relations and multilateral diplomacy, I have found exceptional individuals and transformative experiences. I thank SIT Study Abroad for coordinating such an excellent program and allowing me to cap my undergraduate career with an informative, inspiring experience abroad.

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## LIST OF ABBREVIATIONS

**CDP:** Carbon Disclosure Project  
**EU:** European Union  
**GHG:** Greenhouse gas  
**HDI:** Human Development Index  
**IBAMA:** Brazilian Institute of the Environment and Renewable Natural Resources  
**ICISS:** International Commission on Intervention and State Sovereignty  
**NDC:** Nationally determined contribution  
**NGO:** Non-governmental organization  
**OECD:** Organisation for Economic Co-operation and Development  
**PPCDAm:** Action Plan for the Prevention and Control of Deforestation in the Legal Amazon  
**PES:** Payment for ecosystem services  
**R2P:** Responsibility to protect  
**UNFCCC:** UN Framework Convention on Climate Change  
**US:** United States  
**UN:** United Nations  
**UN-REDD:** United Nations Programme on Reducing Emissions from Deforestation and Forest Degradation  
**WCED:** World Commission on Environment and Development  
**WEF:** World Economic Forum  
**WHO:** World Health Organization  
**WTO:** World Trade Organization  
**WWF:** World Wildlife Fund

## INTRODUCTION

### *What is the Amazon Rainforest and Why Does it Matter?*

The Amazon rainforest, commonly described as the "lungs of the planet," represents one of the earth's most vital organs. Covering 7.5 million square kilometers, containing 20% of the world's freshwater (Dagicour, 2020), and hosting one of the planet's largest bastions of biodiversity, the Amazon is of immense cultural, economic, social, and strategic importance to communities throughout the world. The potential destruction of the Amazon rainforest, therefore, presents a global systemic risk (WEF, 2018).

The consequences of Amazonian deforestation have rippled worldwide from the most minute regional scales to the broadest global extents. Locally, deforestation in the Amazon basin causes declines in rainfall, soil drying, accelerated erosion, and temperature increases. On a continental scale, where the Amazon is responsible for transporting atmospheric water southward to Argentina, forest loss significantly disrupts continental climate patterns. Globally, the Amazon rainforest is a significant carbon sink — responsible for absorbing five percent of the earth's annual carbon emissions (Macedo, 2021) — a driver of world climate, and a regulator of oceanic circulation (Le Tourneau, 2016); without the climate-stabilizing Amazon rainforest, global warming may spiral outside the scope of human control. Deforestation of just 20-25% of the world's largest rainforest could lead to a climactic tipping point (WEF, 2018). Tipping point theory holds that Brazil could become the fourth largest emitter in the world behind China, India, and the United States (US) if the Amazon reaches a certain threshold of deforestation, after

which scientists predict the region could produce an amount of atmospheric carbon equivalent to an additional Europe.

The act of deforestation itself is a significant contributor to climate change; currently, tropical deforestation comprises eight percent of global greenhouse gas (GHG) emissions (CDP, 2019). From a global health perspective, deforestation exposes humans to disease vectors in the Amazon — coronaviruses among these — heightening the risk of a novel viral outbreak (Macedo, 2021). Finally, as home to 40% of the world's remaining rainforest and 25% of its terrestrial biodiversity an intact Amazon and its biodiversity provide a critical source for potential solutions to biological challenges, where, for example, venom from the Amazon's Fer de Lance viper led to the development of lifesaving drugs for millions afflicted by hypertension globally (World Bank, 2019).

Halting deforestation in Brazil — which contains 60% (Greenpeace) of the Amazon within its borders — is imperative to avoid the worst effects of the climate crisis and secure the security and well-being of present and future generations. Coordinating solutions that address the economic, environmental, and social drivers of deforestation is a monumental task that, like and actually entwined with the climate crisis, will require efforts at the state level aided by the participation and support stakeholders from across the international community. During the presidency of Luiz Inácio Lula da Silva, known mononymously as Lula, Brazil successfully addressed this enormous challenge, achieving a historical 84% reduction in deforestation from 2004 to 2012 (Kaplan, 2019). In 2018, however, with the election of Jair Bolsonaro to the Brazilian presidency, the Amazon rainforest came under threat once again. Bolsonaro's rhetoric and his



administration's work to dismantle institutional protections for the Amazon and its peoples served to re-accelerate both deforestation and the preponderance of Indigenous rights violations. Bolsonaro turned increasingly to isolationism, protectionism, and nationalism, doubting or outright rejecting multilateral bodies and international treaties — leading the international community to lose trust in Brazil.

***The Focus of The Study: Contemporary Drivers of Deforestation and Environmental Governance in the Brazilian Amazon***

As illustrated in previous sections, the Amazon Rainforest is a globally critical biome. Presently, unsustainable agribusiness expansion threatens the Amazon. From an external perspective, China, the European Union (EU), and the US — the primary consumers of Brazilian exports — contribute to deforestation by providing a market for unsustainably sourced products. Internally, without the domestic political will to enforce environmental protection, agriculture will continue to drive deforestation in Brazil. Critically, however, with a more sustainability-minded government aided by the international community's engagement, Brazil can continue economic growth while preserving its Amazon rainforest, and the world can continue to benefit from the region's exports and ecosystem services.

Firstly, as both a leading contributor to Amazonian deforestation and a power seeking to "bend the multilateral system in its favor" (Eggel & Galvin, 2020), analyzing China's role in the Amazon is critical to theorizing potential multilateral solutions for protecting the Amazon. According to a World Wildlife Fund (WWF) study, Chinese agricultural imports, primarily soybeans and beef, are the leading drivers of Amazonian deforestation. China consumes one-third of Brazil's beef exports and 65% of its soy

exports. Cattle farming has transformed two-thirds of the Amazon rainforest and Cerrado savanna into pastureland, and soybean agriculture is one of the leading drivers of deforestation (Chávez, 2021). While China is the largest consumer of forest-risk products and its importers are less strict in ensuring sustainability, one cannot absolve other global powers of their responsibility in fueling Amazonian forest loss. The EU is the second biggest importer of deforestation, where in 2017, it was responsible for 16% of deforestation linked with international trade. The US was responsible for 7% of such ecological destruction in the same year (WWF, 2021).

Secondly, coupled with rising demand from nations like China was the rise of Brazil's ex-president Jair Bolsonaro to power in 2018. Bolsonaro enabled the illegal expansion of agriculture in the Amazon through rhetorical and institutional channels. He called the Amazon "ours" and deforestation a "lie" while dismantling many of Brazil's environmental regulations and slashing the budget of its environmental agency, the Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA). Further, the president unilaterally withdrew Brazil from multilateral bodies and international treaties, deliberately choosing to avoid participation in global summits such as the COP26. Bolsonaro's efforts to relax environmental laws came at the expense of the Amazon rainforest and its Indigenous inhabitants. The leaders' inflammatory, nationalist, and anti-ecological rhetoric also served to alienate many of Brazil's allies among the international community.

Further, catalyzing Bolsonaro's ecologically and socially devastating policy was the rise of influential populist leaders worldwide. This trend has generally undermined the merits of global governance strategies needed to address complex environmental

issues. President Trump, for example, served as a model for similar leaders like Bolsonaro, rendering the use of isolationism and protectionism — contradictory to sustainable development — the norm. An outstanding example of isolationism's environmentally regressive effects was Trump's unilateral engagement in a trade war with China. This maneuver incited a rapid increase in Amazonian deforestation after China shifted most of its soybean supply from the US to Brazil. The rise of unilateralism — rhetorically and institutionally — has devastated the Amazon rainforest.

Finally, while unsustainable agribusiness and a concomitant dearth of political will to protect the environment are the most significant drivers of deforestation in the Brazilian Amazon, with reengagement into a multilateral system, Brazil can strengthen its economic and enforcement capacities while reducing the chance that another leader like Bolsonaro is elected. A diverse portfolio of actors, from non-governmental organizations (NGOs) to multinational corporations, have a role in supporting Brazilian-led sustainable economic development and bringing deforestation rates to zero. Brazil and the international community alike serve to benefit from collaborative efforts to preserve the Amazon rainforest in perpetuity.

### ***Research Question***

This paper thus seeks to examine firstly, how Brazil's domestic policies, the lessening influence of the rules-based system, and the buy-in from consumer countries like China, the EU, and the US contributed to accelerated rates of Amazonian deforestation in the mid-2010s, with 2020 marking the highest rate of the decade (Silva Junior et al., 2021). Secondly, this paper will assess how multilateral solutions can strengthen the Brazilian economy and halt deforestation.

### ***Research Methodology***

This study combined primary and secondary sources; primary sources came primarily from Geneva's academic and nonprofit community and secondary sources from academic journals, acclaimed media outlets, and government and business reports. The researcher first condensed findings relevant to the research question by scouring the media, academic literature, and government data, accessing journal articles through the Dartmouth College Library database. The questions arising from secondary source research eventually informed interviewee recruitment and interview question formulation. The researcher recruited primary sources through LinkedIn and email, where all potential candidates agreed to participate. The researcher searched for experts on the Brazilian Amazon, tropical deforestation, and environmental economics. All candidates agreeing to participate were included in the study, where each interview guided the queries of the next and established further potential contacts. Every interviewee added a significant dimension to the political, social, economic, and cultural loci of a complex question, with non-Western views challenging the researcher's preconceptions and sparking further inquiry.

To adhere to ethical standards, the researcher informed interview participants of the purpose of the study, methods of analysis, and background of the researcher as a university student. Before scheduled interviews, the researcher sent participants a list of questions and informed individuals of their rights to privacy, confidentiality, withdrawal, and the ability to decline specific questions. Most interviewees agreed to the use of their first and last names and professional affiliation. One interviewee preferred to remain anonymous, citing professional limitations. After

concluding the interviews, the researcher informed participants of their right to include missing information or redact statements from the record.

### ***Literature Review***

The plight of the Amazon has received significant scholarly attention considering its global reach — the collapse of this ecosystem would jeopardize the entire planet's security (Macedo, 2021). A diversity of opinions exist as to what presently drives unsustainable deforestation. Some argue that Brazil's domestic policies cause forest loss, while others find that a broad range of international actors and global trends influence deforestation rates. Scholars, governments, and activist groups have proposed a plethora of strategies to achieve zero deforestation ranging from enacting the responsibility to protect (R2P) principle to more softball tactics such as employing market-based payment for ecosystem services (PES) schemes.

Firstly, some scholars contend that Brazil alone, containing most of the Amazon within its borders and the simultaneous enabler of weak social and environmental regulations, is the primary force behind unsustainable deforestation. Adherents to this camp see Amazonian deforestation as a global threat so severe that coercive, rapid institutional action is warranted to change Brazil's behavior. Some scholars, for example, argue for intervention by the United Nations (UN) Security Council given the existential threat posed by the destruction of the Amazon against the "referent object" (Macedo, 2021) — the future of humanity. Some members of this camp have advocated for the use of the R2P principle based on the third pillar of the 2001 International Commission on Intervention and State Sovereignty (ICISS) — the failure of a state to protect its populations — which, they argue, warrants the intervention of the international

community. Even state leaders have proposed such "stick" approaches, with France's leader Emmanuel Macron characterizing Amazonian deforestation as "ecocide" (Macedo, 2021) and readily approving the use of R2P. Some argue that the international community can employ sanctions or a similar attack for a state's violation of international law; they claim humanitarian intervention is warranted where a state — in this case, Brazil — is unwilling or more likely lacks the ability to protect its people (Walt, 2019). It is essential, however, to remain cognizant of the dangers inherent to coercive tactics, as such strategies can trigger a national backlash and further stymie collaborative solutions. This recognition segues into a discussion of the second camp, which views deforestation as resultant of broader global trends and proposes more cooperative multilateral strategies.

Some argue that while the strength and nature of Brazil's domestic environmental policies have morphed throughout administrations, politics and institutional structures have marginal influence where deforestation is driven primarily by "telecoupled" (Ecology & Society, 2018) human and natural systems in an increasingly global sphere. Consumers such as the EU, China, and the US, these scholars argue, propel demand, where distant yet interacting global factors like food insecurity in China or the outbreak of disease among cattle in the EU have historically accelerated agricultural exports from the Brazilian Amazon. As one scholar argues, with 20% of soy exports and 17% of beef exports from the Amazon to the EU originating from illegal deforestation practices, and with China acquiring 29% of Brazilian exports, these economic partners should recognize their role in indirectly driving deforestation and subsequent GHG emissions by failing to

block imports and continuing to import deforestation-linked products, whether illegal or not (Rajãa et al., 2020).

This study seeks to integrate the views of both scholarly camps. The researcher finds that the telecoupled forces of globalization drive rates of agricultural production and, by proxy, deforestation. However, the Brazilian government's policies and political rhetoric influence the degree to which globalization-fueled agribusiness occurs sustainably. Hearteningly, under President Lula, Brazil already proved its ability to maintain its agribusiness economy and contribute to global food security while simultaneously achieving climate goals and protecting one of the world's most biodiverse regions. Beyond domestic action, this study details how the international community can change its consumption patterns and, in doing so, signal on a market basis the value of sustainably produced products. Critical to reaching zero deforestation is the dual acknowledgment by Brazil and its international partners of their shared responsibility in finding solutions within a multilateral framework.

## **ANALYSIS: THE RETURN TO MULTILATERALISM**

### ***Roots of Capitalist Extraction in the Amazon and Lula's Reforms***

Foreign exploitation and an export-intensive economy are no novel trends in the Amazon basin, where unsustainable natural resource extraction has defined modern settlement and economic development. The 1960s and 1970s saw an expansive effort to open the Amazon to private investment, whereby the Brazilian government thoroughly mapped and inventoried resource riches of the Amazon rainforest to render its raw materials marketable. In tandem with these efforts to commodify the Amazon, the 1970s also witnessed the beginning of today's most significant threat to the expansive biome —

the permanent removal of forests for intensive agricultural production (Le Tourneau, 2016).

In the late 20th century, the Brazilian state continued to pursue sovereignty through economic growth, a strategy that increasingly took a neoliberal, supranational form, with little attention to environmentally and socially sustainable extraction modes (Dagicour, 2020). With the rapid growth of largely unregulated development in the Amazon, global concern over protecting the Amazon's natural resources and Indigenous peoples living within the region mounted. In 1987, the World Commission on Environment and Development (WCED) of the UN published 'Our Common Future,' which introduced the concept of sustainable development reinforced by the responsible use of natural resources, with environmental preservation and economic growth occurring in concert (Macedo, 2021). The report put forth three still-relevant proposals: to recognize the cross-border nature of environmental problems, to highlight the importance of international cooperation in enacting an environmental-economic revolution, and to advocate awareness and commitment across all of society's stakeholders towards this goal (Macedo, 2021). The end of the Cold War heralded a multilateral system defined by such inclusive, multi-stakeholder strategies and the contribution of new actors such as civil society, businesses, and NGOs in a novel "global governance" framework.

In the early 2000s, global governance strategies to reduce forest loss in Brazil — such as the climate financing initiative known as the "Amazon Fund" — were accompanied by domestic political reform. In 2004, after an unprecedented spike in deforestation rates, public pressure led Lula's government to head the "Action Plan for the Prevention and Control of Deforestation in the Legal Amazon" (PPCDAm). Under



the PPCDAm, Lula created national and state parks, designated territories for Indigenous groups, bolstered environmental enforcement agencies, increased the difficulty of exporting products linked with deforestation, and created robust satellite monitoring systems to track forest loss. Lula prioritized land protection with such command-and-control schemes and extensive automatic detection tools. Deforestation rates steadily declined until 2014, when Brazil had reduced forest loss by 70% compared to the average level from 1996 to 2005 (Centre for Public Impact). Brazil's emissions dropped alongside declining deforestation rates. Despite the powerful influence of telecoupled global trends, Lula nevertheless succeeded in significantly reducing deforestation and securing protections for Indigenous peoples of the Amazon. Environmental policies enacted by the Lula administration did not stymie Brazil's economy, which continued to expand at 3.5% average growth. Agricultural production increased by 56% (Kaplan, 2019). Brazil garnered international recognition as an environmental champion.

Lula's reforms — briefly appearing to signal a novel chapter in Brazilian history — did not last. The new leadership under President Jair Bolsonaro muddled Lula's efforts to strengthen domestic environmental and social protections, and Brazil's international image as a global leader in sustainability came into question (Macedo, 2021).

### ***A Novel Threat: The Decline of Multilateralism and the Rise of Unilateral Strategy***

Throughout its history as a large, diverse country with an export-dominant economy, Brazil has struggled to balance economic growth, the protection of its environment and the economic equality of its citizens. As outlined in previous sections, Lula's administration marked a turning point, where the country engaged in international collaborative efforts to promote sustainable development and completed a record-

breaking reduction in deforestation rates at no cost to Brazil's economy. With the election of Bolsonaro, however, and the protectionism, sanctions, treaty withdrawals, and coercive tactics his administration promoted, global governance strategies — vital to solving colossal environmental issues like Amazonian deforestation — stalled (Eggel & Galvin, 2020).

Bolsonaro led Brazil to renege on its ambitious commitments to address climate change, declared his intent to withdraw the country from the Paris Accords, ceased Brazil's offer to host the COP-25, proposed rejecting the EU-MERCOSUR deal and changed conditions of the Amazon Fund, leading Norway and Germany to halt their payments to Brazil (Leal-Albuquerque, 2021). Domestically, the president reduced the country's environmental budget by 27.4% (Macedo, 2021), acting against the interests of lower-level Brazilian governors. Bolsonaro charted a distinctly militaristic, neoliberal, and isolationist approach critical of global powers like the EU (Dagicour, 2020) and condemned multilateralism and diplomacy on the grounds that such policy undermined Brazilian sovereignty.

The pliability and diverse membership of multilateral arrangements like the Amazon Fund made such strategies particularly vulnerable to attack by leaders like Bolsonaro and Trump. Take nationally determined contributions (NDCs), central to the Paris Agreement, for example. These mitigation strategies are rooted in the notion of "common but differentiated responsibility," where all parties to an issue contribute based on their ability. In line with Bolsonaro or Trump's reasoning, NDCs and similar cooperative strategies absolve some stakeholders of their duties while placing an undue

burden upon others — which both leaders portrayed as a direct threat to national prestige.

Lacking the oversight of multilateral institutions, Bolsonaro's work to relax environmental and social regulations enabled foreign actors to operate in a similar unilateral fashion. With President Trump's escalation of the U.S.-China trade war, the Chinese retaliated by applying a 25% tariff on US soya imports. Subsequently, imports of Brazilian soy to China increased significantly (Harvey, 2019). China's growing appetite for meat — raised primarily on Brazilian soybeans — and the country's simultaneous scarcity of domestic agricultural productivity increased export quantities (Harvey, 2019). Entrenching agribusiness interests further, the political clout of the "ruralist" voting bloc, typically representing landholders in Brazil's National Congress, grew as money flowed in from Brazilian soybean exports (Fearnside, Adriano & Figueiredo, 2015). Brazil and China's close partnership, each country's respective lack of adherence to regulations and international norms, and their isolation from multilateral entities and the standards they prescribe entailed disaster for the Amazon rainforest and its communities.

The threats posed to multilateralism and the environmental and social protections such a system affords came startlingly to the fore with Bolsonaro's election and populist leaders like the Brazilian president. Bolsonaro's unilateral efforts to disengage Brazil from the international community while dismantling domestic regulations spelled a rise in Amazonian deforestation and increased violations of Indigenous sovereignty (Dagicour, 2020). During Bolsonaro's first year in office, deforestation increased by 34% (Macedo, 2021). Concomitant to this, Indigenous peoples of the Amazon experienced rising oppression and disenfranchisement as illegal land seizures increased. Illegal

logging, mining, and poaching on Indigenous territory spiked 137% in 2020 compared to the year before Bolsonaro's election (Human Rights Watch, 2022). Bolsonaro's policies had severe economic and diplomatic consequences as countries like Germany, Ireland, and Italy signaled their intent to suspend negotiations with Brazil. The negative repercussions experienced by Brazil under Bolsonaro only fortify the importance of multilateralism and global governance.

### ***Multilateral Solutions***

Many scholars postulate that the rise of populist and anti-globalist leaders like President Trump, Bolsonaro, and Xi Jinping signals a worrying trend towards "minilateralism" (Leal-Albuquerque, 2021) where agreements are non-binding, centralized around state sovereignty, and underlined by protectionism, unilateralism, and nationalism. To counter the growing possibility of such a system, confidence in the ability of multilateralism to solve pressing environmental issues needs to be restored. Rebuilding global governance will require a diversified coalition of multinational companies, NGOs, civil society, and a wide swath of stakeholders (Leal-Albuquerque, 2021) such that multilateralism is no longer the "sole prerogative of states" (Eggel & Galvin, 2020).

As the COVID-19 pandemic revealed, while multilateral institutions like the World Health Organization (WHO) are by no means equipped to solve global crises in entirety, unilateral or minilateral strategies utterly fail in the face of sweeping issues like a worldwide pandemic or, in the context of this study, climate-destabilizing deforestation. Well-orchestrated global governance is vital to predict, slow, and mitigate events like the

COVID-19 pandemic, the climate crisis, and Amazonian deforestation alike, not just epidemiologically but on the social and economic axes (Eggel & Galvin, 2020).

### Multilateral Economic Strategies

Deforestation in the Amazon has occurred in violation of international human rights law, the 1992 Convention on Biodiversity, and the "no harm" principle delineated internationally. Where political and legal mechanisms have failed, therefore, markets and private actors can intervene (WEF, 2018). Significantly, economic strategies rely on a robust multilateral system underlined by an international trust.

Felipe Guntin-Rodriguez, Reducing Emissions from Deforestation and Forest Degradation (REDD) Regional Technical Advisor at the UN Environment Programme, underscored the importance of multilateralism in pursuing economic solutions. Confirming this study's findings, Guntin-Rodriguez said that under the Bolsonaro administration, Brazil lost its credibility among the international community due to the president's incendiary rhetoric, volatility-inducing economic policy, and withdrawal from multilateral arrangements. As such, Guntin-Rodriguez said that Brazil's primary future challenge would be to restore the domestic institutions dismantled under Bolsonaro and repair trust between Brazil and the international community. Importantly, amending the relationship between the Brazilian government, foreign governments, and the private sector is critical to ensuring Brazil has the resources it needs to provide economic alternatives to deforestation. Without the international community's financial support, Brazil will have a reduced ability to diversify its economy beyond the present agribusiness-centric model and to enforce strict environmental standards. Brazilians will not turn to new opportunities where citizens lack economic alternatives beyond forest-

clearing agriculture. Guntin-Rodriguez articulated that conserving for conservation alone will not suffice to protect the Amazon. With an injection of resources from developed countries, the private sector, and a wide range of stakeholders, as well as additional oversight mechanisms to ensure the distribution of funds across society, Brazilians can rely less upon unsustainable deforestation practices to support their livelihoods (F., Guntin-Rodriguez, personal communication, November 8th, 2022). Critically, however, external funding and support will require Brazil's membership in a multilateral system, as the international community's negative response to Bolsonaro's isolationism revealed.

The potential for diverse engagement in multilateral solutions has already proved effective. Brazil's expanding agroindustry can provide opportunities for conservation if institutions and purchasing companies, consumers, and producer organizations in importing countries, and Brazilian consumers pressure soy and beef producers. Several large multinational companies like McDonald's and Walmart signed an agreement to support deforestation-free soy by providing farmers with financial incentives to produce on previously cleared land. IKEA agreed to purchase deforestation-friendly products selectively. Similar corporate-led commitments succeeded in combating deforestation in the past. The 2006 Amazon Soy Moratorium, under which significant trade interests in Legal Amazonia committed to avoiding soy products from deforested regions, helped reduce deforestation by 80% from 2000 to 2015 (Mongabay, 2019). Beyond the private sphere, NGOs like the Nature Conservancy have negotiated with Brazilian farmers to promote environmentally sound farming practices, primarily through financial mechanisms (Le Tourneau, 2016).

Transitioning Amazonian beef and soy production towards sustainable models will be challenging given the high cost of compliance, which may constitute the greatest obstacle to achieving the legal prerequisites inherent to export markets and financial institutions (Nepstad, 2006). However, beef and soy producers could be compensated for high compliance costs with an internationally recognized system of environmental certification, which would drive better market access and, therefore, higher prices; certification could be awarded to producers complying with sustainable forestry practices. Ensuring compliance will require the full engagement of the international community both on a funding and oversight basis.

On a state level, developed countries can contribute funds to achieve their domestic climate goals while benefiting Brazil. As part of its efforts to combat climate change, for example, Norway has allocated a billion dollars to Brazil's "Amazon Fund," a PES scheme. If demand for deforestation continues to increase, supply chain interventions to dissuade forest loss weaken, and deforestation policy loses its political will, positive incentives for farmers, counties, and states working to reduce deforestation have an increasingly vital role to play. Climate finance programs like the Amazon Fund could fill this niche by establishing creative, competitive mechanisms for financing regional entities working towards deforestation-free, productive agriculture systems (Nepstad et al., 2014).

The importance of economic cooperation led by private and sector-led international coalitions becomes particularly apparent when one examines modern Brazilian land laws. Currently, citizens are permitted to settle public lands if the area is "improved," most commonly through agriculture. Most land titles are highly insecure,

increasing the impetus to secure ownership by converting forest to agricultural land. Furthermore, deforested land is often worth more than forested land (Le Tourneau, 2016). Therefore, the economic insecurity of Brazilian farmers drives these individuals to convert rainforests to agricultural land as efficiently as possible. Research shows that clearing native forests does not increase the Human Development Index (HDI) of local areas on a long-term basis; many regions within the legal Amazon are among those with the lowest HDI in the country (Interstate Consortium for Sustainable Development of the Legal Amazon Region, 2021). Debt peonage schemes often entrap rural workers with their employers.

Further, large-scale agriculture often crowds out smallholder farmers and indigenous communities and their specialized farming systems critical to Brazilian food security. Soybean crops, meanwhile, fail to provide domestic populations with nutrition and food security — soybeans are used almost entirely for animal feed, with only a tiny margin used directly for human consumption. Furthermore, Brazil would suffer economically if the Chinese market for these products were to collapse. If, however, Brazilian farmers are incentivized to protect, rather than deforest, their land, individuals will be more financially secure on a long-term basis, with intact rainforests paying dividends well into the future in terms of ecosystem services, ecotourism value, and the evident benefits afforded by biodiversity.

Multilateral economic strategies are essential to secure the protection of Brazilian communities and the security and longevity of commercial interests operating in the region. The agricultural sector, one of the most vulnerable industries in the face of climate change, is slated to suffer if failing to assess the climate risks associated with



deforestation appropriately; rainfall coming from the native vegetation that still blankets 60% of the Brazilian territory determines the productivity of agribusiness (Rajãa et al., 2020). The potential influence of the private sector in responsible global governance lessens if multinational firms continue to proceed in a regulatory-averse and profit-focused manner (Eggel & Galvin, 2020). Cargill, Amaggi, Bunge, and other large agricultural companies operating in the Amazon need to predict and prepare for potential shocks that grow in likelihood as climate change accelerates. Preventative measures could take the form of France's Duty of Vigilance law, for example, which identifies risks within supply chains and provides a legal framework for the completion of such measures (CDP, 2019) to increase the security of its food supply chains.

As the primary consumer, China has a significant role in signaling to these companies the importance of risk assessment (CDP, 2019). With greater oversight of its supply chains and by outlawing deforestation-linked exports, China can reduce its carbon footprint — an explicit goal of Xi Jinping's plan to reach peak CO<sub>2</sub> emissions before 2030 — reduce the risk of widespread food insecurity and demonstrate global leadership in the climate movement. China can extend its influence as a powerful international actor — its AIIB has 105 members as disparate as Saudi Arabia, France, and Russia — into environmental governance. As economic power shifts increasingly away from the US dollar to Chinese-led banks like the AIIB, China could exert significant international sway by requiring its central bank and financial institutions to accommodate the interests of deforestation-free soy producers (CDP, 2019).

In a similar vein, to prevent future occurrences of rapid fluctuations in trade volume and the uncontrolled deforestation that can follow such volatility, it will be

critical to foster multilateral economic cooperation and restrict politically motivated economic warfare. History evidenced the devastating effects of protectionist financial tactics like those used in the U.S.-China trade war under President Trump. For decades, trade wars have resulted in increased soy production in Brazil; after a 1980 US embargo on soy exports to the Soviet Union, the amount of land in soy cultivation doubled (Fuchs, 2019). China and the US, therefore, should explicitly recognize their contributions to tropical deforestation and commit to future avoidance of such damaging protectionist economic policies.

An interviewee who preferred to remain anonymous affirmed these findings, highlighting the need to orient Brazil's trade strategy towards a more multilateral, transparent framework. The interviewee described Brazil's agricultural sector as the country's geopolitical locus — where Brazil is not a military power, agriculture, stability, and diplomacy are closely linked (Anonymous, personal communication, November 14th, 2022). With Brazil's present dependence on China as a customer, any potential disruption to the trade relationship would destabilize Brazil's economy. Therefore, it is critical that Brazil diversify its trading partners and anticipate the potential impacts of deforestation and climate change on its agricultural productivity. The interviewee added that as the only global rulemaking body, the World Trade Organization (WTO) could help align environmental goals with multilateral rather than protectionist causes. Where China and the US, for example, levy subsidies and tariffs for protectionist means, the WTO can intervene to the evident benefit of a more stable, predictable supply. Cooperative, transparent trade will lessen the likelihood of rampant agricultural export demand-linked escalations in deforestation. Within a more transparent trade system, the

international community can more effectively reduce "telecoupled" GHG emissions like those linked to EU consumption of Brazilian beef.

While employing multilateral strategies is critical to reducing Amazonian deforestation, the international community must recognize Brazil's autonomy within cooperative frameworks. Dr. Diego Enrique Silva-Garzon, a postdoctoral researcher with expertise in Latin American agricultural innovation, described why developing countries like Brazil need ultimate reign within multilateral strategy frameworks. Silva-Garzon said that developed nations' efforts to spearhead environmental protection in developing countries suffer from coordination and implementation issues detrimental to recipient countries. Where powerful developed countries like the US and the EU serve as leaders in multilateral organizations and international development aid programs, donors may look past the recipient country's specific needs and use transnational funds improperly or inefficiently (D. Silva-Garzon, personal communication, November 15th, 2022). Silva-Garzon provided the UN Framework Convention on Climate Change's (UNFCCC) Clean Development Mechanism as an example highlighting the difficulties of using high-level multilateral schemes within individual countries. Under this program, a country can meet its emissions reduction goals by implementing a project in a developing nation, yet Silva-Garzon said some have criticized the UNFCCC as inefficient and lacking proper assurances that funds are delivered directly to communities. While Silva-Garzon said that one must pay close attention to the potential misuse of international funds and the neocolonialist mindset that can accompany foreign intervention, Brazil will nevertheless require the international community's participation — within proper frameworks — to combat deforestation.

Silva-Garzon mentioned the potential of debt-for-environment swaps to ensure recipient countries retain independence in internationally coordinated efforts. Under such a program, in exchange for partial cancellation of debt, debtor governments raise the equivalent of the reduced amount in local currency for agreed purposes on agreed terms (OECD). Debt-for-environment swaps present an attractive alternative to direct aid programs. They reduce crippling debt within the recipient country, allowing states to open fiscal space, operate in domestic currency, and foster the development of internal, practical environmental solutions. This strategy also works to level the playing field between developed and developing countries within the multilateral framework, empowering developing countries to implement environmental protection programs independently while encouraging developed countries to recognize their role in accelerating deforestation and climate change.

#### *Multilateral Support for Domestic Reform*

Finally, as most of the Amazon falls within its borders, Brazil needs to strengthen its domestic environmental policies. Brazil should rebuild the programs successful under Lula's first presidency with the revived support and engagement of the international community. With global concern over the need to address climate change reaching new heights, preserving the Amazon is an easy first step towards reducing global GHG emissions — and Brazil stands to benefit from the resource it harbors in an intact Amazon rainforest.

Livio Miles Silva-Müller, a Ph.D. candidate researching transnational finance in the Brazilian Amazon, highlighted the importance of domestic political reforms. Confirming the findings of this study, Silva-Müller said that political rhetoric and

unsustainable agricultural expansion present the greatest threats to the Amazon. If leaders like Bolsonaro signal publicly that deforestation pays off, citizens will follow. If an individual can garner income by clearing a hectare of forest, Brazil needs government-led programs to establish jobs in alternative industries (L. Silva-Müller, personal communication, November 16th, 2022). Further, there needs to be the political will to crack down on illegal deforestation and accompanying government messaging that conveys the danger of deforestation to Brazil's people, the environment, and the global community.

Dr. Marc Hufty, Programme Lead at the Geneva Institute's Centre for International Environmental Studies, argued similarly that Brazil's domestic political environment is the primary factor behind fluctuating deforestation rates. Mostly on a rhetorical basis, he argued, government signaling regarding the legality of deforestation affects individual decision-making heavily (M. Hufty, personal communication, November 16th, 2022). Hufty added that the even scant instances of regulatory crackdown, however, would serve to deter potential attempts at deforestation, highlighting the importance of the domestic enforcement of environmental law.

As Silva-Müller and Hufty discussed, the Amazon rainforest requires the protection of the Brazilian government. Domestic protections, however, need both the financial and symbolic support of the international system. Notably, the multilateral strategies discussed in previous sections should operate not only at the Brazilian government's highest levels but also at the sub-national level. Multilateral strategies involving the participation of local governments will reduce the chance of a future administration negating Brazil's standing in the international community. Diverse

partnerships between the private sector and local or subnational entities will similarly short-circuit the potential of administrative changeover leading to environmental backsliding like that observed during the Bolsonaro administration. Finally, strategies implemented on a more precise local basis will have a greater chance of success where regional environmental, social, and economic needs vary significantly in a country as large and complex as Brazil.

On a broader level, critical to domestic enforcement strategies is making Brazilians aware of the risk of deforestation — a signal that can come from multilateral approaches detailed in previous sections. If Brazil understands how markets might respond to deforestation, its government will be less likely to pursue unsustainable practices and its citizens less likely to elect incendiary leaders. After Bolsonaro denied the reality of deforestation and enabled unsustainable agricultural methods, important global stakeholders disengaged with Brazil, an international reaction that warned Brazil of the negative economic implications of unsustainable deforestation.

### ***Counter Arguments***

Some argue that it would be remiss to discount the importance of Brazilian agricultural products both for global food security and the Brazilian economy. The agribusiness sector, however, can continue to play a central role in the Brazilian economy and feed the world while operating in greater accordance with sustainable development.

Present agribusiness models fail to account for destabilizing risks of climate change but, too, operate inefficiently. For example, certain deforested regions of the Amazon only contribute to 10% of China's soy crop while producing 70% of its emissions (CDP, 2019). Silva-Müller affirmed these findings, stating that while the

sustainability of Brazilian agribusiness is a complex macroeconomic issue, Brazil can achieve zero deforestation while sustaining its agricultural exports. In fact, according to Silva-Müller, production can double without a subsequent increase in deforestation if the country adopts specific efficiency measures such as farming on already-cleared and underused lands (Hecht, 2020). Dr. Hufty reinforced this finding, describing the poor agricultural value of rainforest soils, particularly in comparison to richer lands located south of the Legal Amazon. He added that present deforestation trends are fueled by the suboptimal productivity of much of the Legal Amazon, where farmers must continue clearing land when a small tract fails to produce an economically viable crop.

Research proves Brazil can meet global food security demands without deforesting the Amazon. Brazil is, in fact, considered an "agricultural powerhouse" with significantly developed agricultural research and innovation capacities — reducing deforestation while expanding production is both feasible and will prove economically beneficial. Sustainable agriculture is in the interest of the global community and the diplomatic and economic interests of Brazil (Kaplan, 2019).

## **CONCLUSIONS**

Protecting the Brazilian Legal Amazon is a global moral and legal responsibility, with much of the onus to protect this critical biome falling upon Brazil. With the election of Bolsonaro in 2018, the international community took a step back from engagement with Brazil, and the country's ability to protect one of its most valuable assets appeared questionable. To prevent future backslides towards environmentally and socially harmful unilateral policy, Brazil needs to re-engage with the multilateral system. Global governance will give Brazil the economic mechanisms to diversify its economy, the

finance required to incentivize farmers to practice sustainable methods, and the resources to monitor its rainforests and enforce illegal deforestation practices. Brazil stands to gain from both the symbolic and economic benefits of an intact Amazon.

Protecting the world's largest rainforest from deforestation is no impossible goal; Brazil has historically centered environmental policy within its national strategy and, in doing so, strengthened its position as an environmental leader on the world stage. Critical to Brazil's success was the support of civil society, foreign governmental assistance, and domestic NGOs in monitoring and enforcing sustainable land use.

Hope is on the horizon after the election of President Lula in November 2022 initiated Brazil's rapid re-engagement with the international community. World leaders at the COP27 this month fell silent as Lula announced Brazil's intent to commit the rainforest nation to the climate movement. With global pressure to address climate change at a historic high, Brazil can leverage good environmental outcomes — such as carbon reduction — at the international level, using the economic benefits it reaps to finance sustainable domestic development.

The central challenge for Lula's administration and an essential subject of future research will be how to successfully implement and enforce long-term conservation-based legislation and sustainable agricultural production. These lofty tasks look increasingly achievable as the incentive to halt deforestation in Brazil — both to slow climate change and for the evident economic benefits an intact Amazon rainforest provides — grows worldwide. Perhaps, if Lula's recent remark that "Brazil is ready to come back" is any valuable indicator, faith in multilateralism is being restored as the world recognizes the impossibility of achieving zero deforestation alone. Rekindling



global governance may, after all, be all we have to protect the dwindling Amazon rainforest against destruction, and in doing so, the referent object that is the future of humanity.

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