



**Statement before the  
Senate Committee on Finance**

***“Cattle Supply Chains and  
Deforestation of the Amazon.”***

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## Introduction and General Trends in Deforestation

Chairman Wyden, Ranking Member Crapo, and distinguished Members of the Senate Committee on Finance, thank you for the opportunity to testify on this important topic. The views represented in this testimony are my own and should not be taken as representing those of my current or former employers.

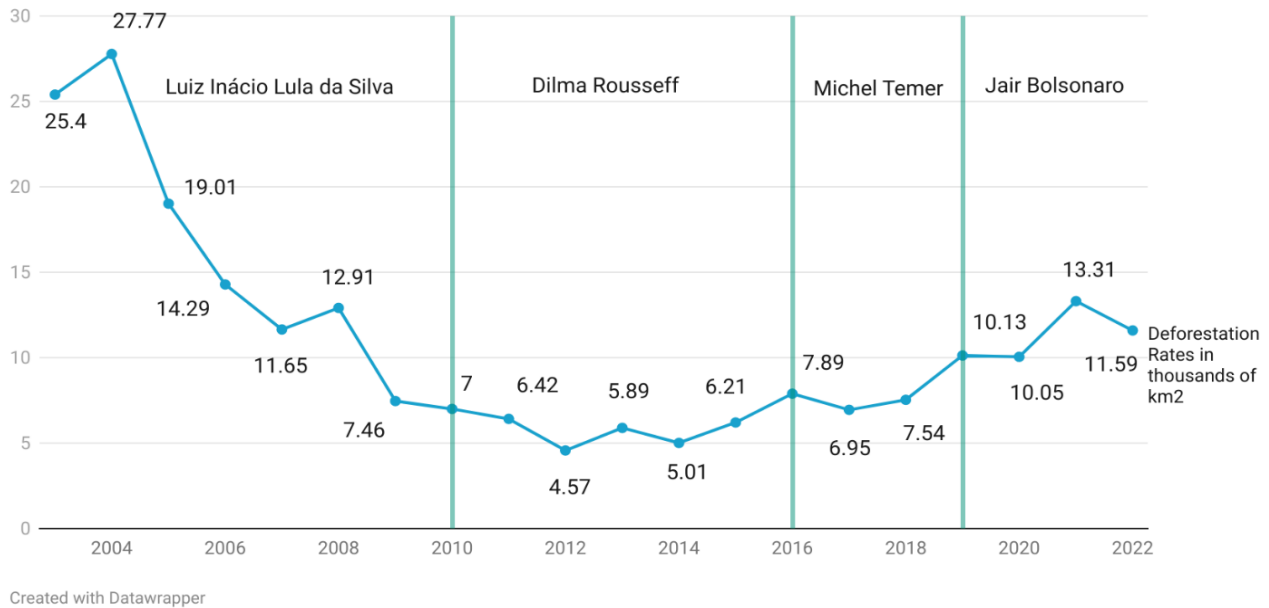
During the first term of Brazilian president Luiz Inácio ‘Lula’ da Silva (2002-2006), Lula presided over unprecedented rates of deforestation. Deforestation peaked midway through Lula’s first term, then fell as his administration implemented efforts to curtail the practice. Brazil’s then-environment minister (as well as current environment minister), Marina Silva, established nearly 600,000 square miles of reserves, improved monitoring, strengthened law enforcement, and created a blacklist that showcased municipalities with the highest rates of deforestation. Lula’s administration also established the Amazon Fund, which supports projects aimed at preventing, monitoring, and combating deforestation and at promoting the conservation and sustainable use of the Brazilian Amazon. By 2010, the deforestation rate was about one third of what it was when Lula took office in 2003.

Missing from this story of the deceleration in deforestation, however, is the concurrent deceleration of Brazil’s economy. In Lula’s first term, a strong nexus between deforestation rates and Brazil’s economic growth was established. After Lula’s second term ended, Brazil entered a period of economic stagnation and domestic political instability, which culminated in the impeachment of Lula’s successor, President Dilma Rousseff. During this period—often dubbed Brazil’s “long political crisis”—the focus on deforestation faded and more proximate concerns, such as low and negative economic growth, as well as a wide-ranging corruption scandal that roiled much of the political and economic elite, dominated Brazil’s domestic debates. The turbulence of this period set the stage for anti-establishment candidate Jair Bolsonaro to win Brazil’s presidency, on a platform partly highlighting the impoverishment of areas in Brazil’s *interiorzão*—its large, often neglected interior states.<sup>1</sup> In other words, Brazil has never managed to fully sunder the nexus between deforestation rates and economic growth. The difference is that deforestation no longer figures into official development policy in Brazil.

Upon taking office in 2019, Bolsonaro prioritized reform and economic growth, especially for the 30 to 35 million Brazilians who call the Amazon home and live in areas that lag in terms of socioeconomic development.<sup>2</sup> The Bolsonaro government was lax on enforcement measures, occasionally clashed with environmental experts, and cut government funding meant to curtail deforestation efforts. Under Bolsonaro, Brazil’s agribusiness industry also expanded its influence. According to Brazil’s National Institute for Space Research (INPE), deforestation rose during the Bolsonaro years. To put these figures into greater context, however, deforestation in 2021—the highest number during Bolsonaro’s four years in office—was still less than half of what it was in 2004.

**Figure 1: Rates of Deforestation of the Legal Amazon by Brazilian Administration**

**Deforestation of the Legal Amazon in Brazil Across Administrations**



Produced by the Center for Strategic and International Studies Americas Program. Data source: [http://terrabrasilis.dpi.inpe.br/app/dashboard/deforestation/biomes/legal\\_amazon/rates](http://terrabrasilis.dpi.inpe.br/app/dashboard/deforestation/biomes/legal_amazon/rates).

Since returning to the presidency, Lula has positioned himself deftly as a steward of Brazil’s Amazon. In early June, he unveiled a plan to stop illegal deforestation of the Amazon by 2030.<sup>3</sup> This commitment marks the fifth phase of the Action Plan for the Prevention and Control of Deforestation in the Legal Amazon, which was created twenty years ago during Lula’s first term in office. The plan intends to deploy greater use of satellite imagery, maintain digital land registries, leverage financial intelligence to track money flows from illegal operations in the rainforest, align badly needed infrastructure projects with deforestation reduction goals, and maintain stricter concessions on state credit to agriculture interests. The strategy, which Lula intends to implement throughout his four-year term, also pledges to achieve net zero deforestation, which would involve replenishing lost vegetation. Lula also announced that the Brazilian government would readjust its commitment to cut carbon emissions by 37 percent by 2025 and 43 percent by 2030. Brazil is the world’s seventh largest emitter of greenhouses gases, with more than half of its emissions stemming from deforestation.<sup>4</sup> Among other things, increasing the amount of “green cover” capable of carbon absorption will be critical to meeting these goals.

While Brazil is well placed to lead international efforts to combat climate change, doing so will meet the country’s domestic realities and encounter headwinds. Lula has supported oil exploration projects by the state-owned oil firm Petrobras in the hopes that these projects could generate greater employment in the Amazon. Brazil’s agribusiness groups have also transformed the country’s domestic politics, especially the dynamics of its fractious Congress.<sup>5</sup> Although Lula won a narrow victory over Bolsonaro, the former president’s allies on the right hold the most seats in Congress.<sup>6</sup> As the percentage of Brazil’s economy represented by the agricultural sector grows—a domestic

transformation that is inseparable from its relationship to the People’s Republic of China—the country has fewer options to promote much-needed economic growth in sectors not so directly linked to deforestation.

### **Focusing on Beef**

Cattle ranching is an important driver of deforestation in Brazil’s Amazon. The rainforest, especially during the burning season, is slashed and burned to make space for illegal pastures. Although cattle traders and beef producers committed not to buy cattle from illegally forested land in 2009, the Amazon continues to lose thousands of square kilometers every year. Illegal deforestation for the purpose of cattle ranching represents an important percentage of the forest cover lost each year. Scientists and activists have attributed the continued deforestation to “cattle laundering,” which is the practice of moving cattle from illegal, “dirty” ranches to legal, “clean” ranches, obfuscating the environmental impact and origins of the cattle.

An important part of this story involves Brazil’s domestic politics. Production of beef has increased nearly 40 percent in Brazil, creating powerful domestic constituencies and interest groups that seek to protect ranchers from government influence. Consequently, the Brazilian state is less capable of enacting environmental protections and many politicians—at both the state and federal levels—owe their election in part to agrobusiness interests. Environmental protection is now a more polarizing issue in domestic politics than in previous eras. For instance, Brazilian privacy law has restricted information on animal IDs, meaning cattle buyers can often gain insight only into their supply chain one node prior to purchase.

Important progress has been made in addressing these challenges, however. Despite an increase in beef production, the area dedicated to cattle grazing in Brazil decreased by about 12 percent.<sup>7</sup> Technology is also driving solutions to untangle the opaque nature of supply chains. Researchers and advocates are designing software to help meatpackers trace and monitor their cattle supplies. The Gibbs Lab at the University of Wisconsin and the National Wildlife Federation (NWF) released software called Visipecc, with the aim of helping meatpacking companies in Brazil strengthen their supply chain management systems and gain further insight into nodes further up the supply chain.<sup>8</sup> As Brazilian domestic politics is unlikely to move drastically on the question of supply chain transparency, much of these technology-led solutions will require consensus and voluntary compliance. By establishing good practices for monitoring cattle supplies, meat companies can eliminate deforestation from their supply chains.

The process of deforestation grew worse under the tenure of President Jair Bolsonaro, who forged a powerful partnership with cattle ranchers, pushing farms deeper into the Amazon forests and accelerating bilateral trade with China. During the 2022 elections, cattle ranchers played an important part in the political movement to re-elect Bolsonaro.<sup>9</sup> While cattle ranching will continue to play a role in deforestation in Brazil, which will remain the world’s largest exporter of beef, focusing on its role exclusively fails to capture the full story of Amazon deforestation. And without a holistic understanding of deforestation, the U.S. cannot hope to have a productive bilateral climate dialogue with Brazil.

## Missing the Forest for the Trees: Broadening the Aperture on Deforestation

A focus on the cattle industry's relationship to deforestation, while warranted, misses some of the most important drivers of Brazil's deforestation and carbon emissions. Simply put, some of the biggest threats to the Amazon's future require that we think beyond the role of cows. Understanding the full picture is critical to developing a multifaceted approach to partner effectively with Brazil.

*Transnational Criminal Organizations:* The Amazon is rife with lawlessness. Rampant criminal activity, such as the illicit wildlife trade, illegal logging, and illegal gold mining, all have a pernicious role in fomenting deforestation. The increase in the price of gold, in particular, has contributed to a mining boom in the Amazon, leaving a pockmarked landscape marked by large open-air pits.<sup>10</sup> Pit mining for minerals is one of the most destructive forms of mining because it necessitates the clearing of massive areas of forest and produces deadly waste that can impact air and water quality, usually in the form of mercury-filled water that reaches Indigenous communities. This form of mining has become one of the primary drivers of the Amazon's deforestation in Brazil, Venezuela, Guyana, and Suriname, and a principal source of income for transnational criminal groups, such as Brazil's fearsome *Primeiro Comando da Capital* and the *Comando Vermelho*.<sup>11</sup> As one of the world's most biodiverse regions, the Amazon is also a prime target for the illegal wildlife trade. Across Bolivia, Venezuela, Ecuador, Guyana, and Suriname, criminal networks capture, kill, and traffic rare species in high demand, fomenting environmental destruction.

*China and an insatiable demand for soy:* The role of Brazil's soy industry is underappreciated in contributing to Brazil's changing landscape and its carbon footprint. In addition to having 60 percent of the Amazon, Brazil houses South America's largest savanna, the *cerrado*, representing 21 percent of the country's landmass. The *cerrado* is the second largest geographic area in Brazil behind the Amazon. Changes in the *cerrado*'s ownership structure—approximately 75 percent of it is privately owned—have complicated conservation efforts. Climactic conditions have made the *cerrado* the preferred zone for Brazil's soy industry. Driven largely by China's insatiable demand for soy, the *cerrado* has lost an immense amount of green cover and carbon absorption potential. The *cerrado* has become one of Brazil's most threatened and exploited regions, as approximately only 20 percent of the region's original vegetation remains intact. The *cerrado*'s biodiversity and ecology play a critical role in absorbing carbon, but vast amounts of this area have been rendered unable to serve as an effective carbon sink. Unlike cattle ranching, which has decreased in total area, soy cultivation continues to expand in Brazil.

Importantly, the transformation of the *cerrado* cannot be uncoupled from the rise of China and Brazil's burgeoning economic relationship with it. In 2020, China's economic weight in Latin America and the Caribbean was 17 times greater than it was in 2001, with Brazil representing its largest partner in the region by far.<sup>12</sup> Brazil accounts for more than 50 percent of the world's trade in soy, much of it destined for China. After the 2008-2009 financial crisis, Brazil's exports to China exceed its exports to the United States and the European Union combined. China's insatiable desire for agricultural commodities and its contribution to Brazil's "monoculture farming" carries significant implications.<sup>13</sup> As CSIS Senior Associate Lauri Tähtinen argues, China is a key player—perhaps *the key player*—in ending Brazil's climate crisis because of its nearly singular

role in reorienting Brazil's domestic economy away from industrial growth and toward commodities-based growth.<sup>14</sup>

*Venezuela's Criminal Regime:* While Brazil counts approximately 60 percent of the Amazon, it shares the rainforest with Bolivia, Colombia, Ecuador, Guyana, Peru, Suriname, Venezuela, and French Guiana. The fate of the Amazon in one country has the potential to reverberate across borders—and to state the obvious, efforts to protect the Amazon are not uniform across these countries. The worst offender is clearly the criminal regime of Nicolás Maduro in Venezuela, where an environmental horror show is currently unfolding.

Although Venezuela encompasses only 6 percent of the Amazon, the Maduro regime has presided over the fastest deforestation rate in the Neotropics<sup>15</sup> (the tropical regions of the Western Hemisphere) and the fifth fastest rate in the world.<sup>16</sup> One of the main drivers of Venezuela's deforestation is Maduro's promotion since 2016 of the so-called Orinoco Mining Arc, a region roughly the size of Portugal that serves to promote the regime's state-sponsored illegal mining policy. Besides Venezuela's trade in oil, illegal gold mining serves as a top source of Maduro's state finances.<sup>17</sup> Alongside Venezuela's active deforestation and its dilapidated oil and gas industries, some scholars have accused Maduro of committing "ecocide"—the deliberate and negligent destruction of nature and, in Maduro's case, part of a strategy aimed at consolidating and holding power.<sup>18</sup> Illegal gold miners in the region, known as *garimpeiros*, operate seamlessly across national borders.

### **Brazil's Domestic Headwinds**

In the context of recent trends in deforestation, Lula faces tremendous expectations—both from domestic and international audiences alike. The international community may have to attenuate those expectations and refine its sense of the possible, however, with a deeper understanding of Brazil's domestic headwinds. Domestic strictures pose a challenge to conservation efforts. Weak governance and state presence limits the ability of regional and local governments to provide adequate land governance.<sup>19</sup> The lack of law enforcement and resource management enables settlers and transnational criminal organizations to invade public lands and deforest the Amazon. In the past, the Brazilian government has attempted to divert deforestation by land titling reform and privatizing parts of the rainforest to promote sustainable logging.<sup>20</sup> Similar efforts would seem to be off the table in the current political environment.

Brazil's biggest domestic headwind, though, is structural and economic, and thus unlikely to change drastically under Lula's tenure. Manufacturing once accounted for 36 percent of Brazil's GDP. In 2022, manufacturing represented just 13 percent of the country's GDP. Yet, Brazil remains a largely developing country, with pockets of significant underdevelopment. Economists term this phenomenon "premature deindustrialization," whereby industry moves to cheaper locales and yet large segments of society have failed to receive the benefits of any industrialization process.<sup>21</sup> Brazil is a society that has undergone a process of industrialization and witnessed significant deindustrialization without all segments of that society partaking in the fruits of that process. And according to economists, out of a study that included 30 of the most manufacturing heavy countries, Brazil is suffering from the worst case of "premature deindustrialization" in the world as it sees a dwindling number of manufacturing opportunities at a much lower level of income per capita than other industrialized economies when they began the deindustrialization

process and transition to service-based economies.<sup>22</sup> Having industrialized and deindustrialized, it will be difficult for Brazil to recover that critical window of opportunity for significant industrialization to occur once again.

Arguably, nobody understands this reality better than President Lula, who began as a metalworker in São Bernardo do Campo.<sup>23</sup> However, Brazil's tepid economic growth and the lack of industry poses a frontal challenge to the country's prospects of achieving greater prosperity in areas other than agriculture.<sup>24</sup> Worse yet, thousands of large companies have shut their doors in Brazil in recent years, including Ford, Sony, Mercedes, LG, Roche, Eli Lilly, LafargeHolcim, CRH, and Kirin, and workers have been forced to move to low-skilled service jobs earning less income.<sup>25</sup> The auto industry, a fifth of Brazil's manufacturing output, has been hit particularly hard.

Since communities in the Amazon region are some of the poorest in Latin America, the lack of economic opportunities often compels people to engage in informal employment, such as subsistence agriculture.<sup>26</sup> Combined with the need to grow Brazil's economy and lower its high unemployment rate—lingering effects of the pandemic—Lula faces a set of incentives that could see more deforestation. These structural, socioeconomic challenges are a critical underlying cause of deforestation in Brazil.

Much of Brazil's deindustrialization, of course, has a nexus with its deep relationship with China, which altered the composition of Brazil's domestic economy.<sup>27</sup> As China has done elsewhere, the Sino-Brazilian relationship has hollowed out Brazil's manufacturing base while increasing the proportion of Brazil's GDP derived from the agroindustry to one-third of the overall economy. China became Brazil's largest trading partner in 2009, and a recent agreement to conduct bilateral commerce in their respective currencies rather than the U.S. dollar is set to move the countries even closer.<sup>28</sup> Further, the last 20 years of China-Brazil economic relations have spawned powerful agricultural lobbies that stymie domestic conservation efforts. As Lula fosters the trade, investment, and diplomatic relationship with China, efforts to boost Brazil's economic growth will clash with the goal of curtailing deforestation. Altering the existing equilibrium would require a large and unlikely external shock to Brazil's economy.

## **Broad Recommendations**

No single policy or approach can remedy deforestation in Brazil's Amazon. The following policies represent a fruitful start to curbing deforestation in Brazil's Amazon and, importantly, fit within the framework of a productive U.S.-Brazil bilateral relationship.

**A multifaceted crisis requires multifaceted approaches:** Cattle ranching is an important driver of deforestation and supply chains should be monitored and cleaned up to reflect the values of environmental sustainability. However, the U.S. and E.U. must broaden the aperture to understand the variegated drivers of deforestation, including structural changes in Brazil's economy, the deindustrialization process, Sino-Brazilian relations, the criminal regime in Venezuela, the explosion of transnational organized crime in the Amazon, and other factors. *Importantly, understanding Brazil's immense and varied geographies, and how they contribute (or not) to the common goal of carbon capture, is critical to understanding the country's role as an environmental steward for the world.* While the Amazon captures much of the public imagination, Brazil is home to other biomes, such as the *cerrado*, that are crucial to a healthier planet.

**Prioritize a cooperative approach over a punitive one:** Divestment in Brazil and imposing tariffs or sanctions are often proposed to curb Brazil’s deforestation. A punitive approach, however, will contribute to a deterioration in bilateral relations and decrease United States and European Union influence in Brazil—all while strengthening China’s hand, arguably the only country with sufficient leverage to push Brazil toward more sustainable agricultural practices. As the top recipient of Brazil’s agricultural commodities, China currently reaps the benefits of Amazon destruction with little consequence. The same standards to which the United States and the European Union will hold themselves should also apply to China. A cooperative approach is also key to ensuring environmental stewardship and climate change remain central pillars of the U.S.-Brazil CEO Forum, while also ensuring Brazil continues to contribute to global food security in the macro context of Russia’s invasion of Ukraine.

**Understand domestic dynamics on the Amazon:** Too often, policymakers fail to appreciate how the Amazon is seen within Brazil itself, causing them to engage in ways that exacerbate tensions and eviscerate goodwill and cooperation. Specifically, Brazil tends to view the Amazon as a sovereignty issue. Brazilian diplomats bristle at suggestions of sanctions, tariffs, and other punishments to curtail deforestation. Consider, for instance, the diplomatic firestorm ignited by Stephen Walt’s article in *Foreign Policy* in 2019—“Who Will Save the Amazon (And How)?: It’s Only a Matter of Time Until Major Powers Try to Stop Climate Change by Any Means Necessary.”<sup>29</sup> The implication that Western powers would take strong action—including potentially kinetic action—to curtail deforestation dovetails with some of the country’s greatest fears and the persistent belief that climate criticism by outside powers is a veiled attempt to control Brazil’s Amazon. “A recent poll revealed that 95 percent of Brazilians believe foreign countries that criticize Brazil over management of the Amazon do so out of ulterior motives, such as exploiting the forest’s riches for their own economic gain.”<sup>30</sup> Indeed, a recent academic paper by leading Brazilian political scientists has demonstrated how foreign climate criticism of Brazil can fuel a domestic political market in Brazil for politicians who defy and resist this criticism, especially when the individuals in question identify as nationalist on the political spectrum.<sup>31</sup> Policymakers must have a highly nuanced understanding of how the Amazon figures as a domestic political issue to avoid fueling the political market for climate resistance.

**Provide incentives to reindustrialize Brazil:** Many of the Amazon region’s residents live in its largest urban areas such as Manaus and Belém, the same areas that have been hit hardest by Brazil’s premature deindustrialization. If Brazil fails to grow its industrial base sufficiently in some of these regions, the economic incentives to deforest will remain strong. The United States should think creatively about its role in reindustrializing Brazil, such as the use of special economic zones and incorporating these Amazonian cities, some of which lie near to the United States geographically, in its efforts to nearshore critical supply chains to the Western Hemisphere. A key part of this objective will be support for building sustainable infrastructure in the Amazon (i.e., green river transportation and affordable air travel, as opposed to railways through sensitive areas), where China has a devastating environmental record on infrastructure development.<sup>32</sup>

**Align Policies Across the Amazon Basin:** Beyond Lula’s plan to curb Brazil’s Amazon deforestation by the end of the decade, the Amazon Basin must achieve greater alignment across the countries that serve as the stewards of this critical biome. Later this year, Lula will host a



Summit of Amazon Countries, ostensibly to revive efforts in the 1995 Amazon Cooperation Treaty Organization, and forge greater consensus and alignment on policies across a diverse set of countries. The United States should provide support for that holistic approach, while also highlighting the role of rogue actors such as the Maduro regime in Venezuela that is intentionally fomenting “ecocide” as a matter of state policy. What happens in one country’s Amazon biome has the potential to reverberate across borders.

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