

## Testimony

### **Preserving the Amazon: A Shared Moral Imperative**

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Global warming is widely and correctly blamed for wild fires around the world. But the Amazon fires in Brazil represent a more specific government policy failure over many years, especially recently, as Brazilian public agencies that are supposed to curb man-made fires have been deliberately weakened. These fires, set by farmers, cattle owners, and others, take place every year, but they have risen in number and severity in 2019—after President Jair Bolsonaro took office and set about fulfilling his campaign pledge to ease environmental, land use, and health regulations.

The fires in Brazil are a classic case of what sociologists call the “tragedy of the commons,” a term that describes what happens when shared resources are exploited by users pursuing their own livelihoods at the expense of the common good. Societies know how to deal with this problem: through collective action and government regulation. The Amazon fires are not just a “tragedy” but an opportunity for the governments of Brazil and the United States to stop denying climate change and cooperate on strategies to preserve the rainforest and develop ways to sustainably use its natural resources. The record of such cooperation has already yielded positive results. For example, there is a history of collaboration between NASA and Brazil’s National Institute for Space Research (INPE) employing state-of-the-art technologies to monitor deforestation. We can return to the model of Brazil working with the United States to implement the Paris Climate Accord. It is possible to accommodate competing demands of economic interests, food security, and saving or even restoring the Amazon rainforest, along with its life-sustaining rainfall, for Brazil and the world at large.

Following are the major policy recommendations presented in this testimony:

- The United States should rejoin the Paris climate agreement and immediately establish a joint action plan with Brazil to implement steps to preserve and restore the rainforest.
- Brazil should impose greater regulations on land use in the Amazon region that would allow farming and cattle grazing in some areas to sustain livelihoods of local and indigenous people while cracking down on illegal uses, such as logging and mining, and the invasion of public lands.

To combat destructive activities, the government should encourage livestock rearing and cultivation in non-sensitive areas while more systematically demarcating land and property ownership rights in the rainforest itself.

- Brazil should lead an international effort to foster the diversity of native vegetation in the Amazon region while preserving the rainforest and also creating jobs and reducing poverty and income inequality. Sustainable production of livestock and soy is already happening in areas outside the Amazon region. These activities could be expanded to areas adjacent to the rainforest following an effort to demarcate land and enforce property rights.
- The international community should work with Brazil to revive and expand the Amazon Fund, created years ago but now in limbo, to raise international donations for investment in sustainable activities that protect the rainforest.

## BACKGROUND

The Amazon region covers 60 percent of Brazil's land area, or 3.3 million square miles, and is home to a population of 18 million. The region spanning nine Brazilian states has the largest continuous tropical forest in the world and harbors 20 percent of the planet's plant and animal species. The trees of the Amazon store 60 to 80 billion tons of carbon in total. The rainforest is often wrongfully portrayed as "the lungs of the world"—it stores carbon, but that is not what fights climate change. Setting fire to the forest for deforestation may release as much as 200 million tons of carbon into the atmosphere a year, which would spur climate change at a much faster clip, not to mention the associated changes in rainfall patterns that may result from tearing down the Amazon.<sup>1</sup>

The region has a rich diversity of native vegetation but also the nation's highest levels of poverty.<sup>2</sup>

The Amazon region has suffered decades of deforestation and land degradation. To promote economic development, Brazilian authorities have increasingly encouraged the building of roads, ports, hydroelectric power plants, and other infrastructure projects, as well as logging, soybean production, mining, and cattle ranching.<sup>3</sup> In 2004, accelerating deforestation prompted the Brazilian government to launch the Action Plan for Prevention and Control of Brazilian Amazon Deforestation (PPCDAm). It was aimed at monitoring deforestation activity, regulating land rights, and promoting sustainable development. The plan helped reduce deforestation rates by 80 percent from the rate ten years earlier.

The United States contributed by helping to strengthen monitoring mechanisms and law enforcement.<sup>4</sup> A modern satellite-based enforcement system, known as the System for Real Time Detection of Deforestation or DETER, was created in collaboration with NASA and is managed by INPE. It uses high-frequency satellite imagery to monitor recent changes in forest cover, sending alerts to the Brazilian Institute for the Environment and Renewable Natural Resources (IBAMA), which is responsible for law

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<sup>1</sup> Some studies find that these emissions could represent as much as 3 percent of global net emissions. See C. Azevedo-Ramos, "Sustainable Development and Challenging Deforestation in the Brazilian Amazon: The Good, the Bad, and the Ugly," paper presented at the symposium "Our Common Ground: Innovations in Land Use Decision-Making," May 8–9, 2007, Vancouver, Canada.

<sup>2</sup> Brazilian Institute of Geography and Statistics (IBGE).

<sup>3</sup> According to Brazil's National Institute for Space Research (INPE).

<sup>4</sup> M. Bettwy, 2005, "NASA Satellite Data used by INPE provides Rapid Analysis of Amazon," NASA.

enforcement and the application of fines and other penalties. Proper functioning of INPE and IBAMA is crucial for combating deforestation.

In 2009, the Brazilian government set an ambitious target of reducing deforestation by another 80 percent by 2020. But according to INPE, deforestation has been rising again since 2017. In June 2019, the agency estimated an 88 percent increase in total deforestation compared with the same period in 2018.

### **BOLSONARO'S POLICIES TAKE A STEP BACKWARD**

President Bolsonaro's government has been backsliding in these areas, with disastrous results. The president took office in January 2019 after a far-right nationalist campaign promising to ease environmental regulations and possibly repudiate Brazil's participation in the Paris Climate Accord, although the government has recently affirmed its commitment to comply with the agreement.

Bolsonaro's government has weakened the PPCDAm 2004 and the capabilities of the environmental agencies that monitor and penalize perpetrators of illegal activities in the rainforest. His government has undercut their funding, dismissed personnel, and weakened their oversight and enforcement roles. The Brazilian leader has called the law enforcement activities of public environmental agencies excessive, referring to the agencies as "factories of fines and other penalties."

Bolsonaro's positions on climate change and the environment were foreshadowed in his campaign against government regulations and public agencies that he claimed were taking "draconian actions" against producers and exporters. He often declared that the Amazon should be explored by Brazilian producers to further the economic interests of Brazil, and he even accused environmentalists and NGOs of setting the recent fires without presenting evidence to prove the claim.

Earlier in 2019, Senator Flavio Bolsonaro, the president's son, proposed legislation to eliminate the so-called legal reserve requirement that rural properties in the Amazon region maintain native vegetation on 80 percent of their land area, allowing the remaining 20 percent to be used for agriculture or cattle grazing. He set aside the measure in the wake of the recent Amazon fires.

Scientists, NGOs, and environmental activists oppose Bolsonaro's policies, warning that they could stoke disaster. One target of his inflammatory rhetoric is the Amazon Fund, created in 2008 by then president Luiz Inácio Lula da Silva to collect donations for non-reimbursable investments in preventing, monitoring, and fighting deforestation in the Amazon basin, which includes all countries in the region. The Amazon Fund was among the first UN REDD+ initiatives to provide international funding to projects that successfully Reduce Emissions from Deforestation and forest Degradation. It is managed by BNDES, Brazil's state-owned development bank. Since its inception, Norway has been its largest contributor, accounting for 94 percent of its resources, followed by Germany (5 percent), and the Brazilian oil company Petrobras (1 percent). Some 60 percent of the fund's \$500 million in disbursements to date have gone to the federal government, the nine Brazilian states spanned by the rainforest, and the two major agencies responsible for regulation and oversight of natural resources, IBAMA and INPE. The remaining 40 percent has been given to universities engaged in environmental research and NGOs. An additional \$500 million has not been disbursed and could return to donors if the fund is terminated.

But in May 2019 the Bolsonaro administration announced its intention to change the rules of the fund to compensate Brazilian landowners who lost their properties on the ground that they were not in

compliance with the country's environmental codes. The Norwegian government responded by suspending \$500,000 in transfers to the Amazon Fund. Germany has also suspended donations. Bolsonaro further declared plans to change the composition of the fund's Steering Committee to pack its membership with more members from his own inner circle. In August, as the Amazon fires captured international attention, the G-7 pledged \$20 million in financial aid at its meeting in Biarritz. Bolsonaro rejected the funding as coming from vested interests. The *Washington Post*<sup>5</sup> has reported that Bolsonaro helped to persuade President Donald Trump to vote against the funding, which he did on the ground that Brazil needed to be better consulted. It was a strange turn of events, given that recent polls show the Brazilian public overwhelmingly in favor of international aid for the Amazon.<sup>6</sup> The aid was pushed by President Emmanuel Macron of France, who somehow managed to overlook the fact that predatory exploration of the Amazon rainforest is also rising in French Guiana, a department of France. (Another place of concern is Bolivia, where President Juan Evo Morales Ayma has accused environmental NGOs of having "opaque interests" in the region).

### **A WAY FORWARD FOR THE AMAZON REGION**

Brazilian administrations past and present have been unable to create a sustainable strategy for developing the Amazon region while preserving the rainforest. But many experts say that progress could be made through "regularization" of land use—clearly demarcating who owns what land and what the rights of squatters, or "invaders," should be. The answers are not easy. Many of the farming and grazing activities on lands demarcated for public use are illegal or informal, even though they have been carried out by generations of families, some of them engaging in subsistence farming. Illegal activities on these lands also include logging and mining, but cattle grazing seems to be the major problem. Some analysts maintain that the main obstacle to progress is the Brazilian economy's reliance on beef production, but that claim is an oversimplification. Most of Brazil's beef producers graze their cattle in areas outside the rainforest, where they have a record of respect for preserving forests and biodiversity.

Conserving rainforests can yield economic benefits, but these have rarely been measured. In 2018 Brazilian and American scientists, economists, and agricultural engineers published a study<sup>7</sup> showing that a standing rainforest as opposed to a depleted one can generate more than \$8 billion annually from activities like rubber extraction and nut harvesting. The figure also includes gains from the prevention of carbon emissions, which would contribute to combating climate change and preserving the rainforest, thus maintaining the Amazon's rainfall cycle (the rainforest is responsible for generating at least 50 percent of the rain it needs. The Amazon's rain cycle also influences hydrological patterns in much of Brazil and the Southern Cone). Regulating rainfall patterns is vital for farming and livestock, not to mention hydroelectric power generation. Thus, the economic benefit of conservation far outweighs the short-term gains from cutting down the forest and setting it ablaze.

Deforestation and forest degradation were shown to potentially cost agribusiness and the beef sectors \$400 million annually, outweighing the short-term gains of destroying land for cattle and soybean cultivation. Beef production does exist in areas adjacent to the rainforest, where some land is degraded

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<sup>5</sup> "How Brazil's nationalist leader built a bond with Trump and won his support in the Amazon fires dispute," *Washington Post*, August 31, 2019.

<sup>6</sup> Datafolha, September 1, 2019. Datafolha is one of Brazil's largest pollsters.

<sup>7</sup> J. Strand et al., "Spatially Explicit Valuation of the Brazilian Amazon Forest's Ecosystem Services," *Nature Sustainability* 1 (2018): 657–64.

to make way for large but low-yielding pasture areas. But outside the Amazon, many cattle producers enjoy adequate property rights and employ sophisticated production techniques and genetic laboratories, which have made Brazil one of the world's largest beef producers and exporters, combining high productivity with environmental sustainability. These more sophisticated livestock producers are increasingly aware that they can follow environmentally sustainable production practices and also boost business and revenues while gaining access to financing. They are also keenly aware of how changes in rainfall cycles in the Amazon region associated with deforestation can damage their livelihoods. They are consequently among the staunch supporters of conservation of the Amazon and harsh opponents of deforestation. Several studies show that since 2010, an estimated two-thirds of the Amazon's deforested area lies within public lands (30 percent) and undesignated areas (25 percent).<sup>8</sup> Fighting deforestation should, therefore, be a part of promoting land regularization to combat irregular occupation, squatting, land conflicts, and uncertainty regarding property rights.<sup>9</sup>

Brazil has ample opportunity to mobilize the government and major stakeholders to tap into the latest research on cattle ranching<sup>10</sup> and expand this sector of the economy. But the Amazon region poses difficult challenges related to land rights. Squatters and invaders are the main culprits in cutting down the rainforest for illegal logging, mining, and cattle grazing. Also, family units have been using previously cleared land for subsistence farming for generations—they are, for the most part, not responsible for deforestation. Distinguishing invaders from informal land users is no easy task. Therefore, one solution would be to grant amnesty to all, providing them with land titles and property rights. However, many environmentalists and other civil society groups are strongly against amnesty as it would compensate invaders for past and present criminal activities—squatters and invaders tend to have close ties with organized crime (drugs and arms trafficking) in the region. The alternative would be to strip those with no legal title of their land and possessions, but this would likely hurt very poor families who ultimately do no harm to the forest. Successive Brazilian administrations have been unable to overcome these obstacles.

### **Possible Initiatives and Areas for Cooperation**

Combating illegal deforestation is crucial for Brazil's international reputation, as well as for promoting its vibrant agribusiness sector and protecting its share of global markets. The fires of the summer of 2019 demonstrate, however, that protecting the Amazon rainforest is a global cause.<sup>11</sup> The international community should, therefore, revive cooperation with the Amazon Fund to invest in ways to reduce deforestation through the possible use of payments for environmental services. Such payments are envisioned under Brazil's 2012 Forest Code but have yet to be regulated. There is great potential in growing the fund by diversifying its donor base to include more countries, such as the United States. These resources could also be used to improve existing monitoring and oversight capabilities, create well-functioning carbon markets in Brazil, and boost reforestation efforts. Reforestation activities that

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<sup>8</sup> Ibid.

<sup>9</sup> T. Fetzer and S. Marden, "Take What You Can: Property Rights, Contestability, and Conflict," *Economic Journal* 127 (2017): 757–83.

<sup>10</sup> D. Sathler, S. Adamo, and E. Lima, "Deforestation and local sustainable development in the Brazilian Legal Amazonia: An Exploratory Analysis," *Ecology and Society* 23, no. 2 (2018): 30.

<sup>11</sup> J. Strand et al. 2018.

encourage the regrowth of forests in sensitive areas provide jobs to some 4 million workers in the impoverished Amazon region.<sup>12</sup>

One recent study shows that reforestation of the Amazon has high job creation potential<sup>13</sup>: As many as 200 jobs may be created directly or indirectly for each 1,000 hectares of land in recovery. Under the Paris Climate Accord, Brazil has committed to restoring 12 million hectares of native vegetation. This process could create millions of additional jobs. This effort requires an expansion of monitoring efforts. Today Brazilian satellite monitoring systems detect loss of primary vegetation only<sup>14</sup> while ignoring areas that could be coming back to forested status. Tracking forest regeneration is central to compliance with the 2012 Forest Code and the goals established in the Paris Accord.

Finally, the Brazilian Constitution allows the economic exploration of indigenous lands in cooperation with local communities and with a focus on sustainability. However, use of these lands is yet to be formalized through adequate regulation—98 percent of designated indigenous lands are located in the Amazon. Lack of regulation has also led to an increase in predatory mining in areas equivalent to 20 percent of the Amazon, or 14 percent of Brazilian territory. The United States, with its experience in formulating and applying similar regulations, can play a key role in advising the Brazilian government on such rules.

## **CONCLUSION**

The rise in deforestation precedes President Bolsonaro's electoral victory. But the dismantling of environmental agencies INPE and IBAMA under his watch and his past and present rhetoric on environmental issues have emboldened farmers, loggers, and other players to engage in predatory behavior in the rainforest. On the other hand, the international attention to the Amazon fires provides an opportunity to return to and enhance policies to promote sustainable development strategies in the region.

Mechanisms to foster cooperation and provide financial incentives for sustainable use of the Amazon's resources already exist in the form of the Amazon Fund. Although the Amazon fires should be condemned, it is time for the international community to leave aside its justified grievances with the Bolsonaro administration and cooperate on a strategy to provide the resources to conserve and develop the planet's largest continuous rainforest. The close relationship that has developed between the leaders of Brazil and the United States should be used to jumpstart this effort before it is too late.

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<sup>12</sup> According to IBGE.

<sup>13</sup> C. A. Scaramuzza et al., "Elaboração da Proposta do Plano Nacional de Recuperação da Vegetação Nativa" ["Elaboration of the Proposal of the National Plan for Native Vegetation Recovery"], 2017, PLANAVEG, Ministry for the Environment, Brazil.

<sup>14</sup> J. Assunção and C. Gandour, "Combating Illegal Deforestation," 2019, White Paper, Climate Policy Initiative.