



ADDRESSING DEFORESTATION AND FOREST DEGRADATION – CAN THE VOLUNTARY CARBON MARKETS SAVE THE AMAZON?

The Amazon rainforest, the world’s largest rainforest, spans over 550 million hectares,¹ with most of its area in Brazil (about 330 million hectares).² The forest is recognized as crucial for biodiversity, regional climate, and the global carbon cycle.³ While its carbon sink effect accounts for 75% (around 500 MtCO_{2eq}/year) of Brazilian GHG total removals, it is also the primary source of the country’s emissions, accounting for 37% (about 910 MtCO_{2eq}/year) of total GHG emissions, mainly due to deforestation and forest degradation.^{4,5}

Deforestation in the Brazilian portion of the Amazon is a longstanding challenge, fueled primarily by agricultural expansion, fires, illegal logging, and infrastructure development. A clear corroboration is that over the last five years, deforestation rates increased from 700,000 hectares in 2018 to 1.2 million hectares in 2022,⁶ totaling 5.3 million hectares of deforestation during the period, primarily in the ‘Arc of Deforestation’ – a region located at the forest “border” and which stretches from east to south of Pará state towards the west, passing through the states of Mato Grosso, Rondônia, and Acre.⁷

In fact, 70% of the deforestation during this period (around 3.7 million hectares) occurred in 100 municipalities located inside the ‘Arc of Deforestation’.⁶ Considering data from 2022, these 100 municipalities in the ‘Arc of Deforestation’ account for about 37% of the total Amazon Forest area in Brazil (around 121 million hectares).^{2,6}

How much would it cost to halt deforestation and preserve the Amazon?

Preserving existing forests worldwide is a crucial priority in the battle against climate change. Despite significant funding from both governments and the private sector (the latter, primarily through voluntary carbon markets), it remains uncertain whether these resources are sufficient.

Using Brazil’s Amazon rainforest as example to estimate the funding needed to combat deforestation and protect the inner forest, it is crucial implementing a “buffer zone” where land stakeholders are financially incentivized to conserve the forest.

To implement a buffer of 50 to 75 kilometers would probably require protecting 200 to 255 Mha of forestland (Exhibit I), of which 68 to 100 Mha are currently designated as protected zones or lands of traditional communities. Assuming the remaining 132 to 155 Mha of forest land and considering an annual preservation cost of USD 12.40 per hectare of Amazon Forest,⁸ a yearly expense of USD 1.9 to 2.3 billion would be required. This is less than 1% of the economic value Amazon creates annually, which is estimated to be USD 317 billion by the World Bank.⁹ Beyond deforestation, conservation against forest degradation will also be key, as it represented roughly 44% of all gross forest emissions from 2003 to 2019.⁵

¹ For more information, see Science article “Amazon rainforest ability to soak up carbon dioxide is falling”.

² For more information, see the Mapbiomas platform.

³ For more information, see the Nature Climate Change article “Pronounced loss of Amazon rainforest resilience since the early 2000s”.

⁴ Values for 2021, available on SEEG Brasil – Total Emissions.

⁵ Kruid S, et al. 2021. Beyond Deforestation: Carbon Emissions From Land Grabbing and Forest Degradation in the Brazilian Amazon. *Frontiers in Forests and Global Change*, 4, doi: 10.3389/ffgc.2021.645282.

⁶ For more information, see the PRODES TerraBrasilis platform.

⁷ According to the Environmental Research Institute of the Amazon – IPAM.

⁸ Based on estimates from the Brazilian Initiative for the Voluntary Carbon Market for the average yearly cost of a REDD+ project in the Amazon Forest biome, including costs with land lease, feasibility and design, site preparation, management, maintenance, community payments and security.

⁹ More information in the World Bank Blog article “How much should we pay to preserve the Amazon?”

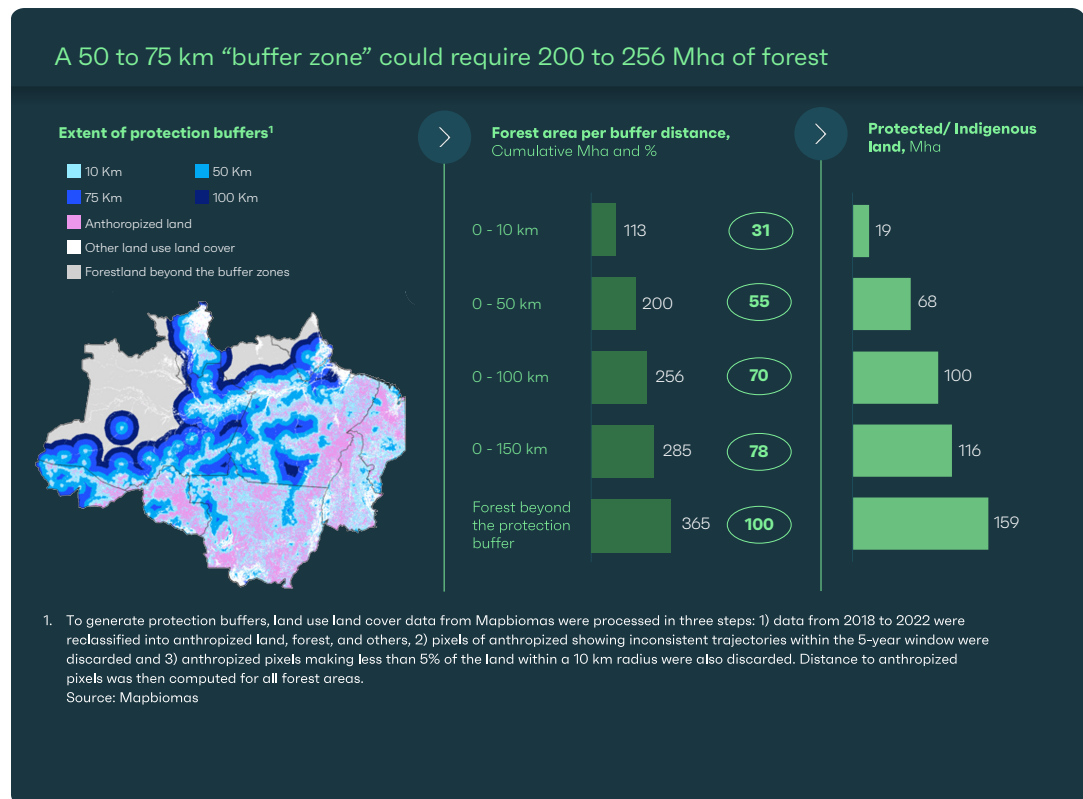
Among the various public initiatives aimed at addressing and financing this effort, the Amazon Fund is one that stands out. Established in 2008, it consists of a REDD+ mechanism to raise donations for non-reimbursable investments in efforts to prevent, monitor, and combat deforestation, as well as to promote the preservation and sustainable use of the Brazilian Amazon.¹⁰ During its 15 years of existence, the Amazon Fund has supported the conservation and management of 196 protected areas and 101 lands of traditional communities, corresponding to approximately 75 million hectares. The fund also monitors and controls activities and the sustainable development of local and traditional communities.

Currently,¹¹ the Fund has a USD 820 million reserve and expects to receive another USD 660 million in donations from the United States, Germany, Switzerland, Denmark, and the United Kingdom

together.¹² Considering its current reserve and the expected grants, the Amazon Fund could have approximately USD 1.5 billion to foster its activities. While this represents a significant amount of resources, the actual investment capacity (without depleting the fund) was around USD 104 million in 2022 and could grow to around USD 170 million with the additional grants – about 7% of the annual capital needed to preserve the “buffer zone” forestland.

Despite the numerous resolutions and initiatives by the UN Conferences of the Parties (COPs) to address deforestation and forest degradation, such as the Glasgow Leaders’ Declaration on Forests and Land Use,¹³ the funding allocated to domestic and international mitigation and adaptation efforts of forests remains insufficient. On average, only USD 2.2 billion per year is distributed to this cause, less than 1 percent of the

EXHIBIT I – BRAZILIAN AMAZON RAINFOREST BUFFER-ZONE SCENARIOS




¹⁰ More information on the Amazon Fund website.

¹¹ Status as of November 2023.

¹² More information on the Amazon Fund website and in the Article “Fundo Amazônia recebeu apenas 2,9% das novas doações” from Valor Econômico newspaper.

¹³ Glasgow Leaders’ Declaration on Forests and Land Use was launched during the 2021 United Nations Climate Change Conference (COP26). The declaration aimed to ‘halt and reverse forest loss and land degradation by 2030 while delivering sustainable development and promoting inclusive rural transformation’ and was signed by 143 nations, accounting for over 90% of the world’s forests.



estimated funding required to achieve global forest goals by 2050.¹⁴ For the Brazilian Amazon rainforest, specifically, there is a need to increase the financing level for preservation by nearly 20 times.

Improving the integrity of the voluntary carbon market is key to effectively contributing to scaling private finance towards forest conservation and enabling investors to invest in high-quality credits confidently. Although discussions on this matter took place last year during COP28, major reforms are still necessary, and 2024 will be a key year for providing the tools needed to ensure market integrity. In addition to the work of the Brazilian Initiative for the Voluntary Carbon Market, the IC-VCM¹⁵ Core Carbon Principles (CCPs) will come into effect;¹⁶ Verra recently launched its consolidated methodology for reducing deforestation and forest degradation emissions in developing countries;¹⁷ digital platforms are being introduced to provide evidence of changes in above-ground forest carbon; and independent carbon credit rating agencies are enhancing their tools. Given the complexity of the challenge and the size of the investment required, preventing deforestation of the Brazilian Amazon rainforest will most likely call for a multifaceted approach, including commitments from the federal and state governments, traditional communities, NGOs, foreign governments, and the private sector. A successful scenario could involve a tripartite approach with state aid, jurisdictional carbon markets, and projects that maintain jurisdictional integrity.

To this end, different entities will potentially need to coordinate efforts across a series of areas, for instance:

1. Address landownership to reduce or cease illegal deforestation through key enablers;
2. Meaningfully and quickly upscale methodologies and mechanisms to channel

private capital into conservation, including (but not limited to) the creation of frameworks to operationalize jurisdictional carbon markets, evolving conservation methodologies from deforestation prevention to carbon storage;

3. Work to significantly increase the integrity of private REDD+ projects;
4. Secure more public funding from world governments and the private sector for forestry (not only the Amazon) conservation since the benefits they provide are irrespective of political borders;
5. Develop a common framework for the socioeconomic impact of forestry conservation and restoration applicable to the social and legal characteristics of the region;
6. Define the corresponding framework of adjustments to enable restoration (sequestration) projects and the associated sale of carbon sequestration services internationally, further increasing buffer zones of existing forests and creating a carbon economy alternative to deforestation.

The consequences of not halting forest deforestation globally are alarming, as the loss of forests not only leads to habitat destruction and species extinction but also pushes biomes towards an ecological tipping point where restoration to their previous states may no longer be possible.¹⁸

While conservation funds and governments are undoubtedly crucial to halting deforestation, the private sector, through the voluntary carbon market, may also play a significant role in enabling the sustainable and inclusive development of these regions.

¹⁴ For more information, see the “2023 Forest Declaration Assessment: Off track and falling behind” report.

¹⁵ The Integrity Council for Voluntary Carbon Markets.

¹⁶ For more information, see the IC-VCM Core Carbon Principles website.

¹⁷ For more information, see the “VM0048 Reducing Emissions from Deforestation and Forest Degradation, v1.0” document.

¹⁸ For more information, see the Inter-American Development Bank report “An Amazon Tipping Point: The Economic and Environmental Fallout”.