2022

Jun

WHAT CARBON CREDIT REVENUES CAN DO FOR THE AMAZON FOREST OF BRAZIL

Daniel Nepstad | Executive Director & President

Anyone who is concerned about climate change should also be concerned about the Amazon forest. If we don't keep the forest whole and healthy, it will be much harder for humanity to avoid the catastrophic impacts of climate change. A large-scale Amazon forest dieback and "tipping point" could move vast amounts of Amazon tree carbon into the atmosphere while changing weather patterns around the world.

The best way to avoid an Amazon forest dieback is to slow and reverse the loss and degradation of the forest. Amazon forests, both mature and secondary, reduce the risks of extreme drought and forest fires–the two main ingredients of the forest dieback–by feeding the rainfall system and lowering temperatures in the region.

Fortunately, as we report in a new study, the rapidly expanding carbon market is poised to deliver a significant share of the finance that is needed by the regional societies of the Brazilian Amazon to bend the curve on Amazon forest loss and degradation and move the region into a regenerative phase of its development. That is, if the cash gets there soon enough. Many states and regions of the Amazon have been waiting for more than a decade.

Image available online: view image

The Amazon forest biome and the states, provinces and regional governments that are members of the Governors' Climate and Forests Task Force (dark green).

By "regenerative phase", I mean an Amazon-wide increase in forest cover and health, recovering fisheries, wildlife and aquatic ecosystems, and deepening rainfall security. Abundant, reliable rainfall sustains Amazon ecosystems, its cultures, its food production, its transportation networks, and its economies. And abundant, reliable rainfall depends upon the forest. Where forest loss is most advanced in southeastern Amazonia, the annual dry season is already a few weeks longer.

A regenerative phase of Amazon development is possible through changes in the rural economy that will require a major injection of finance over several years—an injection that carbon revenues could

provide a significant share of. A large-scale shift to low-carbon, land-sparing production systems will be needed, including aquaculture, agroforestry systems, integrated crop-livestock-forest systems, sustainable forest management for timber and non-timber products, and other systems that are bubbling up across the region. Incentives for those who forgo their legal right to clear forests, who allow secondary forests to regenerate on marginal land, and who successfully protect their forests from fire will be key to strengthen and expand the Amazon-wide network of forest allies on the land. The regenerative phase becomes possible through improvements in supply chain logistics for transporting, processing and commercializing products and through improvements in the efficiency and transparency of public institutions. In large parts of the region, the rule of law has still not been established. Agile capital, technology and technical support is needed to feed a growing entrepreneurial culture as community enterprises and start-ups proliferate across the region.

All of these are featured in the "Manaus Action Plan for a New Forest Economy" signed by the state and regional governments that are members of the Governors' Climate and Forest Task Force and whose territories encompass 72% of the Amazon forest (see map). All of these regional governments have developed forest-positive development strategies and investment plans through multi-stakeholder processes. And all of these strategies and plans are starved for finance and partnerships.

The Amazon is still locked into its depletion phase, however. In Brazil, with 81% of its original Amazon forest still standing and where most of the Amazon forest is found, deforestation declined 78% from 2005 to 2012. Since then, however, it has tripled, despite several interventions to keep forests standing (see figure below).

Image available online: view image

Annual deforestation in the Brazilian Amazon (1995-2021) and some of the public policy and supply chain interventions to reduce it. See our study for more information on the interventions. Deforestation data are from INPE/PRODES.

The main reason deforestation declined 78% is Brazil's own inter-agency strategy—the Plan for the Prevention and Control of Amazon Deforestation (PPCDAm). One of the biggest lessons emerging from the PPCDAm experience is that command-and-control measures alone are not enough to control a vast forest frontier and drive a regional transition to a regenerative phase of development. The PPCDAm's suppression of deforestation weakened in part because finance to compensate Brazil for the emissions reductions it achieved didn't materialize at the scale that was needed and anticipated. Brazil's huge investment in the PPCDAm resulted in 7 billion tons of avoided CO_2 emissions—one of the world's biggest climate change mitigation results. However, only 4% of these emissions reductions have been compensated by the international community—a total of $1.4 billion since 2009. Furthermore, the

main financial delivery mechanism for this funding, the Amazon Fund based at the Brazilian National Development Bank (BNDES), was slow and bureaucratic.

In the absence of finance at the scale and speed that is needed to implement forest-friendly development strategies, Amazon forest and natural resource depletion is likely to continue. Indeed, this is the history of the vast majority of industrialized societies.

Fortunately, the long-awaited demand for forest carbon credits is upon us. First, more than 5000 companies that have made commitments to become climate neutral, or "net zero", are moving the voluntary carbon market from niche to mainstream. Second, demand should expand further because of decisions made in Glasgow at the recent COP26 climate summit on Article 6 of the Paris Agreement, establishing the rules for the sale of carbon emissions reductions from government to government (Article 6.2) and from business to business or business to government (Article 6.4). These Article 6 decisions provide the global framework for carbon emissions reductions transactions that is linked to the decarbonization commitments every nation has made under the Paris Agreement through their nationally-determined contributions.

The states of the Brazilian Amazon are extremely well positioned to supply this growing market with high quality forest carbon credits. A large volume of forest carbon credits should soon be available from jurisdictional REDD+ (J-REDD+) programs developed over the last decade by many of these states. J-REDD+ programs are designed to finance the transition from a depletion phase to a regenerative phase of development through the sale of credits for reductions in emissions from deforestation and forest degradation that meet rigorous international standards. The money only flows if emissions reductions are real and additional, and if key stakeholders, including indigenous peoples and local communities, are full participants in the development of the program with a just share of the program's benefits.

The systemic approach to emissions reductions and regional decarbonization that is the foundation of J-REDD+ programs avoids many of the challenges faced by small-scale projects that are disconnected from public institutions or policies. The large geographical scale of J-REDD+ programs means that the risk of leakage is much lower. The problem of overstated impacts that has plagued forest carbon projects in the Brazilian Amazon is also avoided in J-REDD+ programs.

To be clear, there is still no finance flowing to J-REDD+ programs through the sale of credits, but their potential can be seen in the experiences of the two states in the Brazilian Amazon—Acre and Mato Grosso—that have established "results-based-payment" contracts with the governments of Germany and the UK. Through these contracts, Acre and Mato Grosso receive payments for emissions reductions already achieved; no carbon credits are transacted. These important laboratories of forest

frontier governance, involving amounts of finance that are far too small to bend the curve on deforestation, have demonstrated that indigenous peoples gain far greater participation in public policy dialogues and design processes, that significant benefits can reach communities on the ground, and governance structures can increase the transparency and efficiency of financial flows.

The new carbon market could deliver a significant share of the missing finance that is needed in the Brazilian Amazon to make the transition to the regenerative phase of its development. We estimated potential revenues from the sale of forest carbon credits from the J-REDD+ programs of Brazilian Amazon states assuming a transition to a regenerative phase of development (see figure below). Even at a price of only \$10/tCO_2, these revenues could surpass \$13 billion by 2030[1], or about \$2B/year. In comparison, the Amazon Fund provided \$1.4 billion over ten years.

Image available online: view image

Brazilian Amazon forest and emissions scenario analyzed in a new EII study. See the study for core assumptions. In this scenario, net emissions of Amazon forest carbon decline from roughly 700 $MtCO_2$ in 2021 to a net sink of 200 $MtCO_2$ in 2030. This net emissions estimate does not include net uptake by primary forests.

This potential financial flow is real. Contracts are under negotiation today between some states of the Brazilian Amazon and companies for the purchase of future J-REDD+ credits.

A whole, healthy Amazon forest is one essential component of the broader global agenda of decarbonization that must take place if we are to avoid the catastrophic effects of climate change. Companies that purchase high-quality forest carbon credits—such as those soon to become available from Brazilian state J-REDD+ programs—should be recognized for their legitimate contributions to this important piece of the climate change solutions puzzle. But such purchases of carbon credits should not be used by companies in lieu of reductions of emissions from their own operations, their suppliers, and their end users.

To cut global greenhouse gas emissions in half by 2030—as the science says we must—rapid progress by companies is needed to both decarbonize their direct and indirect emissions and fund regional reductions in emissions from deforestation and forest degradation through the purchase of J-REDD+ and other high-quality carbon credits. And companies that are doing both should be more competitive than those that are not—which is not a given. Public policies are urgently needed that accelerate the decarbonization of entire economies, making front-runner companies in each sector's race to zero more competitive than the laggards.

The burgeoning carbon market is not a panacea for the Brazilian Amazon and other tropical forest regions. It is a temporary window of opportunity to provide a significant amount of the finance needed to make the transition to forest-positive development.

To translate this opportunity into a new regenerative model of Amazon development will require collaboration and partnership with those who are broadly recognized as Amazon forest guardians—the indigenous peoples and local communities who have protected their forests and resources—and those who have been fighting for forest-friendly development of the region with little or no recognition—the governments of the Governors' Climate and Forests Task Force and forest-conserving farmers.

---

[1] At a price of $10 per tonne CO_2, and with a 40% allocation of credit volumes to buffers for possible leakage, performance reversals and measurement uncertainty, J-REDD+ revenues under the two main J-REDD+ standards (ART/TREES, JNR/VERRA) would be about $13 billion by 2030.