How do we know REDD+ really reduces greenhouse gas emissions?

Brazil's experience shows that reducing deforestation and economic growth can go hand in hand.

REDD+, or "reducing emissions from deforestation and forest degradation in developing countries" in the language of the United Nations Framework Convention on Climate Change (UNFCCC), works to reduce greenhouse gas emissions to the atmosphere by reducing tropical deforestation.

REDD+ creates results-based payments and positive incentives for reducing deforestation and forest degradation.[1] Incentives work, but they need to be scaled up.
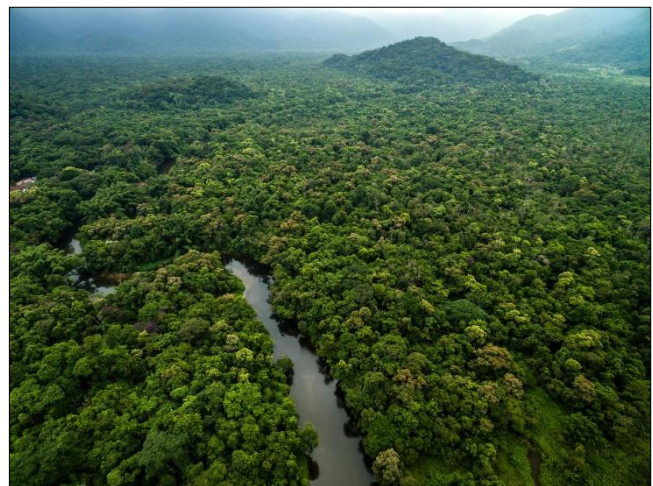
SUCCESSFUL REDD+ PROGRAMS
Two early REDD+ programs show how effective a REDD+ strategy can be if fully implemented.

The Amazon Fund
The Amazon Fund channeled donor country foreign assistance to Brazil for demonstrated reductions in Amazon deforestation, in accordance with Brazil's own policies and aspirations.

Norway, with Germany, the UK and Brazilian state oil company Petrobrás, allocated $1.3 billion in payments to the Amazon Fund between 2008 – 2019 for reductions below a historical baseline (the 1995 – 2005 average deforestation rate of 19.6 thousand km^2). While less than 4% of the reductions achieved in the Amazon were actually compensated, the Fund supported a plethora of projects and initiatives, including 1,236 environmental law enforcement operations; monitoring and sustainable development efforts in 65% of the Indigenous territories of the Amazon; and 190 environmentally protected areas, among others. The Amazon Fund was an important, and effective,

international validation of Brazil's efforts and achievements to halt deforestation.

Unfortunately, the Fund was paralyzed in 2019 when Brazil's environment minister unilaterally abrogated the governance agreement negotiated by previous governments.

REDD+ Early Movers
The REDD+ Early Movers program rewards jurisdictions that have succeeded in reducing deforestation before carbon market incentives are available. REDD+ Early Movers, launched in 2012 by Germany's Federal Ministry for Economic Cooperation and Development, has committed $264 million in payments for reduced deforestation in Colombia, Ecuador and the Brazilian states of Acre and Mato Grosso. REDD+ Early Movers aligns with decisions of the UNFCCC including those that strengthen environmental and social frameworks for REDD+. The program

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[1] Paris Rulebook, Article 5 (page 6).

retires all REDD+ emission reduction credits it acquires and does not engage in carbon trading.

BRAZIL'S SUCCESS STORIES

Following the launch of a Brazilian government initiative to promote sustainable agriculture and reduce deforestation in unprotected areas, called the Action Plan for the Prevention and Control of Deforestation in the Legal Amazon, Brazil reduced its Amazon deforestation by more than 80% between 2004 – 2012. Policy actions were further complemented by market signals from consumer goods companies with deforestation-free supply chain commitments.[2] This combined feat cut carbon dioxide emissions by about 3.2 Gt while *increasing* soy production and cattle herds.

Mato Grosso

Agricultural powerhouse Mato Grosso state, with a third of Brazil's soy production and the biggest cattle herd in the country, is a case in point. In 2004, were Mato Grosso a country, it would have been the 5th largest emitter in the world – ahead of all the rest of Brazil together. In 2014, it would have been 53rd – because of state-led programs to reduce deforestation in both the Amazon forest and tropical savanna (*cerrado*) biomes. Soy production and cattle herds increased over the same period. Mato Grosso's achievements are the gold standard of emissions reductions: the state decreased its aggregate emissions in absolute terms while it satisfied underlying economic demand

for its products, decoupling emissions from deforestation, which historically always moved in lock step with agricultural production.
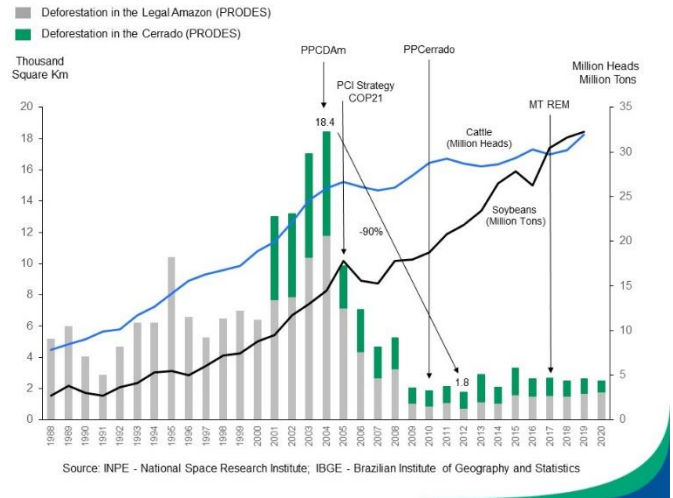

Figure 1. Mato Grosso deforestation, cattle, and soy production, 1988-2020

After 2014, deforestation in Brazil increased somewhat, including in Mato Grosso. Recent trends under the anti-environmental Bolsonaro government are very troubling. However, it's worth noting that large scale reductions in deforestation remain robust in the state and throughout Brazil, despite a neglected, defunded, and now dismantled federal forest protection policy framework from three successive national governments. In fact, deforestation in 2020 was little more than a third of 2004 levels. So, while it is concerning that deforestation has gone up since 2014, the emissions reductions from forest protection achieved, even as agricultural production increased, represent major enduring gains to the atmosphere, relative to what would have happened in the absence of government interventions. It shows that REDD+ works.

Similarly, in 2017 Mato Grosso signed a $52 million agreement with REDD+ Early Movers program for emissions reductions achieved between 2015 and 2019. Mato Grosso kept its deforestation below the agreed 1,788 km² limit and is now

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[2] Nepstad, D., D. McGrath, C. Stickler, A. Alencar, A. Azevedo, B. Swette, T. Bezerra, M. DiGiano, J. Shimada, R. Serao da Motta, E. Armijo, L. Castello, P. Brando, M. C. Hansen, M. McGrath-Horn, O. Carvalho, L. Hess. 2014. "Slowing Amazon deforestation through

public policy and interventions in beef and soy supply chains." *Science*. 6188: 1118-1123.

negotiating a second phase. In the first phase, 60% of the resources went to projects for smallholder agriculture, Indigenous and traditional peoples in the Amazon forest, Savanna and Pantanal wetland biomes, and sustainable production for mid-size farmers. The remaining 40% went to strengthening governance and policy development. The state's Environmental Secretariat contracted for a state-of-the-art, high resolution, real-time remote sensing monitoring system that has informed substantially enhanced enforcement efforts. Monthly deforestation alerts by the federal government DETER system points at reductions in deforestation from August 2020 through March 2021.

It is beyond remarkable that at the same time the federal government aggressively dismantled environmental law enforcement and actively promoted illegal deforestation and land grabs, Mato Grosso has stepped up its enforcement enough to start bringing down deforestation. In 2020, Mato Grosso's Environment Secretariat issued 25 times more fines than the federal government's Brazilian Environmental Institute (IBAMA). This, after being compensated for only a sliver of their emissions reductions.

Acre

Acre was the first state to participate in the REDD+ Early Movers program. Acre reduced deforestation about 65% between 2004 and 2017 and received $29 million between 2012 and 2018 for 6.5 million t/CO_2 of emissions reductions achieved between 2011 and 2015. Resources were dedicated to Indigenous people; sustainable rubber tapping and other non-timber forest product extraction; smallholder agriculture; and sustainable livestock sub-programs. Local initiatives received 70% of the funds, while 30% went to strengthening government institutions. An independent evaluation of the first phase concluded that, "the [REDD+ Early Movers] program can be considered a successful initiative to implement a pioneering REDD+ approach. The implementation provided a proof of concept for the sub-national jurisdictional approach."[3]

In 2017, Acre negotiated a second phase of the program, to run from 2018 to 2022 at $36.6 million for 7.2 million t/CO_2 reduced between 2015 and 2019. Like the Amazon Fund, the REDD+ Early Movers program paid for only a small fraction of Acre's emissions reductions.

CONCLUSION

Jurisdictions that have adopted a REDD+ strategy are reducing deforestation while increasing agriculture and cattle production. They have instituted systemic changes that break the historically iron-clad link between emissions and economic growth at significant scales for the planet, while also supporting biodiversity and local livelihoods. This represents the highest possible integrity and value in the world of emissions reductions.

We have only barely begun to tap the power of positive incentives. If we can scale incentives up even moderately, compared to existing levels, we could be looking at the end of tropical deforestation.

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[3] Röper, Camargo, and Brandão, 2019.